CYTEK®

TRANSCEND THE CONVENTIONAL

2022 Annual Report

Dear Cytek Stockholders:

I am pleased to report that 2022 was another successful year for Cytek, reflecting the hard work and unwavering commitment of our employees throughout the year. As a result of their efforts and the transformational performance offered by our products, we achieved the revenue objective we announced at the beginning of 2022 and met our goal of operating the company profitably, while also making significant progress in expanding our product portfolio. These successes were made possible by the increasing recognition of Cytek as a go-to provider of powerful cell analysis solutions that advance scientific research and new drug discovery.

Our full year 2022 revenue of $164.0 million represented 28.1% growth over 2021 revenue despite strong foreign exchange headwinds caused by the strength of the US dollar. Without the foreign currency effect, Cytek's 2022 full year revenue would have been $171.8 million,* an increase of 34% as compared to 2021 GAAP revenue. Measured either way, our revenue growth was outstanding and demonstrates both the impressive contributions of our team members across the organization as well as the continued demand for our solutions by the scientific, pharmaceutical and bio-medical communities worldwide. Reflecting our strong revenue performance, our installed instrument base achieved robust growth, with 560 instruments placed during 2022 for a total installed base of over 1,600 instruments.

I am also proud of Cytek's other accomplishments in 2022. We made meaningful progress in diversifying our revenue stream beyond instruments by adding new reagent kits that address important scientific applications. These kits offer our customers substantial time savings and accuracy advantages and are performance optimized for Cytek's instruments. Another important innovation was our launch of the Cytek Cloud, a cloud-based platform that features two integrated tools to streamline workflows on Cytek's state-of-the-art cell sorters and analyzers. Importantly, we also strengthened our executive team with several key additions, which we believe will position us for future growth.

Our commitment to advancing scientific research is reflected in part by the breadth of peer-reviewed scientific publications that mention Cytek's products. A record 504 new publications covering a wide array of medical disciplines were issued in 2022, bringing the total to 1013. As an example of the significance of these research efforts, one paper published in *Nature* identifies a possible therapeutic target to alleviate cognitive deficits associated with Alzheimer's Disease. A second paper published in the *Journal of the International Society for Analytical Cytology* exemplifies how our high parameter flow cytometry instruments are being used to improve workflow and reduce costs when measuring residual disease in acute myeloid leukemia patients after being treated.

Looking to our future, in early 2023, Cytek expanded its lead as a provider of end-to-end solutions with the acquisition of imaging flow cytometry and capillary technologies from Luminex, including the Amnis® and Guava® product lines. We believe this acquisition will facilitate the development of new products through the powerful technology we obtained, will give Cytek access to a larger customer base and sales force, and will improve our operational efficiency through a larger and geographically diverse customer service team.

As we execute on the opportunities ahead of us, built upon our four business pillars including instruments, applications, bio-informatics and clinical solutions, Cytek will remain deeply committed to providing complete cell analysis solutions to our customers, grounded in our novel FSP™ platform and enhanced by the technologies we have acquired, as they push the bounds of scientific discovery and clinical studies.

All of us at Cytek remain grateful for your continued support as we work to create another successful year for the company in 2023.

Sincerely,

Wenbin Jiang, Ph.D.
Chairman of the Board and Chief Executive Officer

* Constant currency revenue is not determined in accordance with accounting principles generally accepted in the United States (GAAP) and should not be viewed as a substitute for the most directly comparable GAAP measure. Additional information regarding our use of 2022 constant currency revenue, including a reconciliation to the most closely comparable GAAP measure, can be found on page 69 of our Form 10-K, included in this Annual Report.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2022
OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
FOR THE TRANSITION PERIOD FROM TO

Commission File Number 001-40632

CYTEK BIOSCIENCES, INC.

(Exact name of Registrant as specified in its Charter)

Delaware	**47-2547526**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
47215 Lakeview Blvd. Fremont, California	**94538**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: **(877) 922-9835**

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.001 per share	**CTKB**	**The Nasdaq Global Select Market**

Securities registered pursuant to Section 12(g) of the Act: **None**
Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. YES ☒ NO ☐
Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. YES ☐ NO ☒
Indicate by check mark whether the Registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. YES ☒ NO ☐
Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). YES ☒ NO ☐
Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
Emerging growth company	☐		

If an emerging growth company, indicate by check mark if the Registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐
Indicate by check mark whether the Registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.☒
If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐
Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐
Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). YES ☐ NO ☒
The aggregate market value of registrant's voting and non-voting common stock held by non-affiliates of registrant on June 30, 2022, the last business day of the registrant's most recently completed second fiscal quarter, was approximately $1.3 billion, based upon the closing sale price of the common stock as reported on The Nasdaq Global Select Market. Shares of common stock held by each officer and director have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not a conclusive determination for other purposes.
The number of shares of Registrant's Common Stock outstanding as of February 17, 2023 was 135,430,624.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's Definitive Proxy Statement relating to the Registrant's 2023 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K where indicated. Such Definitive Proxy Statement will be filed with the Securities and Exchange Commission within 120 days after the end of the Registrant's fiscal year ended December 31, 2022.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements about us and our industry that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this Annual Report on Form 10-K, including statements regarding our future results of operations, financial condition, business strategy and plans and objectives of management for future operations, are forward-looking statements. In some cases, you can identify forward-looking statements because they contain words such as "anticipate," "believe," "contemplate," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "should," "target," "will" or "would," or the negative of these words or other similar terms or expressions.

We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. These forward-looking statements are subject to a number of risks, uncertainties, factors and assumptions described in the section titled "Risk Factors" and elsewhere in this Annual Report on Form 10-K, regarding, among other things:

- our expected future growth;
- the size and growth potential of the markets for our products, and our ability to serve those markets;
- our ability to accurately forecast demand for our products;
- general economic and market conditions, including as a result of the COVID-19 pandemic, seasonal demands, regulatory matters, economic recessions or slowdowns, the ongoing war in Ukraine and the general inflationary environment;
- the rate and degree of market acceptance of our products;
- the expected future growth of our sales and marketing organization;
- the performance of, and our reliance on, third parties in connection with the commercialization of our products, including single-source suppliers and, in some cases, sole source suppliers;
- our ability to accurately forecast and manufacture appropriate quantities of our products to meet commercial demand;
- our ability to integrate the businesses we acquire and to achieve and recognize the anticipated benefits of the transaction;
- regulatory developments in the United States and foreign countries;
- our ability to retain regulatory approval for our products or obtain regulatory approval for new products in the United States and in any foreign countries in which we make seek to do business;
- our research and development for existing products and any future products;
- the development, regulatory approval and commercialization of competing products;
- our ability to retain and hire senior management and key personnel;
- our ability to develop and maintain our corporate infrastructure, including our ability to remediate our existing material weaknesses and to design and maintain an effective system of internal controls;
- our financial performance and capital requirements; and
- our expectations regarding our ability to obtain and maintain intellectual property protection for our products, as well as our ability to operate our business without infringing the intellectual property rights of others.

These risks are not exhaustive. Other sections of this Annual Report on Form 10-K may include additional factors that could harm our business and financial performance. We operate in a very competitive and rapidly changing environment where new risk factors may emerge from time to time, and it is not possible for our management to predict all risk factors, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in, or implied by, any forward-looking statements.

You should not rely on forward-looking statements as predictions of future events. We have based the forward-looking statements contained in this Annual Report on Form 10-K primarily on our current expectations and projections about future events and trends that we believe may affect our business, financial condition and operating results. These forward-looking statements speak only as of the date of this annual report. We undertake no obligation to update any forward-looking statements made in this Annual Report on Form 10-K to reflect events or circumstances after the date of this Annual Report on Form 10-K or to reflect new information or the occurrence of unanticipated events, except as required by law. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based on information available to us as of the date of this Annual Report on Form 10-K. While we believe that information provides a reasonable basis for these statements, that information may be limited or incomplete. Our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all relevant information. These statements are inherently uncertain, and investors are cautioned not to unduly rely on these statements.

Unless the context indicates otherwise, as used in this Annual Report on Form 10-K, the terms "Company," "Cytek," "Registrant," "we," "us" and "our" refer to Cytek Biosciences, Inc., a Delaware corporation, and its direct and indirect subsidiaries, taken as a whole.

"Cytek," "SpectroFlo," "Tonbo Biosciences," "RedFluor," "VioletFluor," "Ghost Dye," "Ready-Set-Flow!," and "DxP Athena" are registered trademarks in the United States. "SpectroFlo" is also a registered trademark in Australia, the European Union, China and Canada. "ESP," "Enhanced Small Particle," "cFluor," "FSP," "Full Spectrum Profiling," "Viadye," "Spectrolearn," Spectrosort," and "Northern Lights" have pending trademark applications in the United States. All other service marks, trademarks and tradenames appearing in this Annual Report on Form 10-K are the property of their respective owners. We do not intend our use or display of other companies' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, these other companies. Solely for convenience, the trademarks and tradenames referred to in this Annual Report on Form 10-K appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or the right of the applicable licensor to these trademarks and tradenames.

PART I.

Item 1. Business

On February 28, 2023, we completed the acquisition of certain assets relating to the flow cytometry and imaging business of Luminex Corporation. The information set forth under this "Business" section relates primarily to our business of developing, manufacturing, marketing, and selling our full spectrum flow cytometers and related reagents, software and services. For information relating to the acquisition, please refer to the subsections entitled "Recent Developments—FCI Acquisition."

Overview

We are a leading cell analysis solutions company advancing the next generation of cell analysis tools by leveraging novel technical approaches. Our goal is to become the premier cell analysis company through continued innovation that facilitates scientific advances in biomedical research and clinical applications. We believe our core instruments, the Aurora and Northern Lights systems, are the first full spectrum flow cytometers able to deliver high-resolution, high-content and high-sensitivity cell analysis by utilizing the full spectrum of fluorescence signatures from multiple lasers to distinguish fluorescent tags on single cells ("Full Spectrum Profiling" or "FSP"). Our novel approach harnesses the power of information within the entire spectrum of a fluorescent signal to achieve a higher level of multiplexing with exquisite sensitivity. Our patented FSP technology optimizes sensitivity and accuracy through its novel optical and electronic designs that utilize an innovative method of light detection and distribution. Our FSP platform includes instruments, reagents, software and services to provide a comprehensive and integrated suite of solutions for our customers. Since our first U.S. commercial launch in mid-2017 through December 31, 2022, we have sold and deployed over 1,670 instruments— primarily comprised of our Aurora and Northern Lights systems—to customers around the world, including the largest pharmaceutical companies, over 200 biopharma companies, leading academic research centers, and clinical research organizations ("CROs"). In June 2021, we commercially launched the Aurora cell sorter ("Aurora CS"), which leverages our FSP technology to further broaden our potential applications across cell analysis.

Biological systems are highly complex, and scientists are challenged by the multitude of questions that remain unanswered. Analysis at the single-cell level is essential to understand these complex systems. Identifying the correct cell in the context of a given biological question can have profound implications for drug development and health care decisions. It is essential to correlate information derived from multiple cell analysis approaches and to translate what is known at the gene level to the actual cell function. There is growing demand for deep content through high dimensional cell analysis and for solutions that can provide a complete picture of cellular biological processes and interactions. To achieve this, scientists need to phenotype and isolate rare events or unique populations down to the single-cell through highly resolvable multi-dimensional cell analysis. While flow cytometry is a widely used tool for single-cell analysis, conventional flow cytometry, mass cytometry and early approaches to spectral flow cytometry technologies have historically been challenged due to limited dimensionality, sub-optimal resolution, low throughput, high cost for performance and/or significant technical expertise required to operate systems.

Our FSP platform addresses the inherent limitations of other technologies by providing a higher density of information with greater sensitivity, more flexibility and increased efficiency, all at a lower cost for performance. Our patented FSP technology is designed to optimize sensitivity and accuracy through its novel optical and electronic designs that utilize an innovative method of light detection and distribution to a specifically selected number and type of detectors. This patented optics design enables researchers to effectively collect the full range of light emissions in an extremely compact space, resulting in higher resolution. Our platform also provides higher content by enabling development of highly complex assays with more than 40 different colors (individual fluorochromes) and thus supporting more than 40 biomarkers, all accessible within just a single tube.

Our solutions have enabled researchers to make significant scientific advances in key areas of medical discovery (such as oncology, immunology and infectious diseases) in addition to empowering improved downstream cell analysis with complementary cell analysis technologies (such as next-generation sequencing ("NGS")). We believe that our innovative FSP and targeted cell isolation technology has the potential to accelerate scientific discovery and have a profound impact on the understanding of cell biology, immunotherapy, and targeted therapeutic approaches (personalized medicine). Further, there has been a meaningful acceleration in the rate of publications generated to showcase our technology, with over 1000 peer-reviewed articles published, including many prominent journals, across a wide range of applications including oncology, infectious diseases, immunology, immunotherapy and immuno-oncology.

Our FSP platform was purpose-built to advance the next generation of cell analysis by delivering deep insights, high-throughputs and ease-of-use. Our FSP platform is designed to offer the following key benefits:

- ***Ultra-sensitive:*** resolve the most challenging cell populations (such as cells with high autofluorescence or low levels of expression of key biomarkers) by providing high-resolution data at the single-cell level with an optimized signal-to-noise ratio.
- ***Deep, high integrity content:*** allow development of highly complex assays through access to more than 40 different colors and thus, supporting more than 40 biomarkers in a single tube without sacrificing precision and throughput to gain a deeper understanding of biological systems and arrive at faster and more accurate diagnoses in clinical settings.

- ***Flexible and compatible:*** enable a single configuration across a wide range of reagents and applications, full backwards compatibility across panels, and greater leverage for downstream analysis with complementary technologies, including NGS.
- ***Efficient and compact:*** improve costs and save time while maintaining industry-leading performance and efficient workflows that limit consumables usage and reduce labor costs—all within a highly compact footprint minimizing space requirements for laboratories.
- ***Integrated and intuitive:*** provide fully-integrated workflows through a suite of solutions that include instruments, reagents and kits, software and services. Our proprietary tools and the intuitive functionality of our proprietary SpectroFlo® software coupled with a user-friendly interface allow for enhanced ease-of-use and minimal operator training.

Our core instruments, the Aurora and Northern Lights systems, are full spectrum flow cytometers founded on our FSP platform technology. The Aurora system—our most advanced and comprehensive offering—is available with three to five lasers and is suitable for customers seeking to access more than 24 colors (with the ability to access more than 40 different colors and support more than 40 biomarkers), while our Northern Lights system—our entry-level offering—is available with one to three lasers and suitable for customers seeking to access a few colors to more than 24 colors. Both instruments are upgradeable based on the desired number of lasers. In June 2021, we commercially launched the Aurora CS, which leverages our FSP technology to rapidly isolate living cell populations from lower-to-higher complexity panels beyond 40 biomarkers. We believe the Aurora CS is the only cell sorter able to accommodate the same number of parameters with the same sensitivity as the Aurora cell analyzer system. Each system is supported by our highly intuitive, proprietary embedded SpectroFlo® software, our reagents, and our service offerings to provide a comprehensive, end-to-end platform of solutions for our customers.

Within the life sciences technology market, flow cytometry technologies currently provide solutions largely within cell proliferation, cell counting, cell identification, cell quality control and single-cell applications, representing an initial total addressable market of nearly $12 billion. However, we believe that, driven by enhanced capabilities, our FSP platform has the potential to capture an increasingly greater share of the broader cell analysis market, which according to industry sources is expected to grow from roughly $17 billion in 2022 to approximately $28 billion by 2027. Further, we believe our differentiated platform will enable us to expand the use of cell analysis into new markets, well beyond current applications addressed by prior flow cytometry technologies and other cell analysis technologies. Thus, we believe our potential total addressable market is larger than the current cell analysis market, which excludes new and existing markets addressable by our platform, such as clinical research applications within immunotherapy, immuno-oncology, bio-processing, infectious diseases, and immuno-deficiencies. In addition, the combination of our platform with complementary, downstream cell analysis technologies is expected to provide additional areas for new clinical research applications—for example, combining FSP technology with NGS has demonstrated an improved ability to predict leukemia relapse after therapy (such as minimal residual disease ("MRD") testing) and served to support the use of our technology within personalized medicine. As our FSP platform is further validated through the continued acceleration of peer-reviewed publications in new applications, we expect our total addressable market to expand.

We believe the combination of our people and our global reach across the United States, Europe and Asia will enable us to continue to execute on our growth strategies, stay ahead of competition and remain at the forefront of innovation in cell analysis. Our leadership team has extensive track records in the life sciences and technology sectors. Our multidisciplinary group of over 580 employees includes employees with expertise across optics, electronics, fluidics, computer sciences, chemistry, biology, and medical sciences. Our worldwide commercial team of more than 130 employees and our research and development team of more than 160 employees have significant expertise, industry experience and collaborative relationships with key opinion leaders ("KOLs"), industry leaders, innovators and potential customers.

We have a long history of providing high-quality and efficient customer service and our product development efforts reflect our deep understanding of our customers' needs. One of our key differentiators is our customer-facing technical team, which collaborates closely with our customers to identify and find solutions for unmet needs across the market. We collaborate closely with KOLs, generating relevant data and publications to demonstrate not only the feasibility, but also the quality of our FSP approach. We plan to continue executing on our strategy to accelerate our growth by driving adoption of our FSP solutions, inspiring innovation, investing in integrated workflow solutions, and driving application development and adoption in clinical markets.

We believe our financial results reflect the significant market demand for our offerings and adoption of our FSP technology: our strong financial profile is differentiated by the combination of our scaled revenue base, high revenue growth and profitability. Our revenue for fiscal years 2022, 2021 and 2020 was $164.0 million, $128.0 million, and $92.8 million, respectively. We generated net income of $2.5 million $3.0 million, and $19.4 million for fiscal years 2022, 2021 and 2020, respectively.

Our Competitive Strengths

We aim to transform the cell analysis market by continuing to build upon our success as a leading platform of innovative FSP solutions by leveraging our key competitive strengths, including:

- Our novel, patented FSP platform delivers high-resolution, high-content and high-sensitivity cell analysis by utilizing the full spectrum of fluorescent signatures.
- Our solutions address many of our customers' unmet needs.
- Our complete FSP offering is available across a range of price points while consistently delivering high performance.
- Our diversified customer base and breadth of relationships and scientific validation.
- Our global scale and reach.

Our Strategy

Our strategy includes the following core elements:

- ***Accelerate adoption of our FSP solutions.*** To continue driving adoption of our solutions and to support our leading global brand, we intend to further expand our sales infrastructure by hiring additional, highly qualified and reputable sales representatives, technical applications specialists and customer support staff, in addition to increasing marketing efforts. This investment will also support our entry into new markets as we rollout new solutions and applications and appropriately manage inbound interest from new customers.
- ***Continue to innovate and offer our customers best-in-class FSP solutions.*** Our development efforts focus on value-additive features and enhancements to meet the growing needs of the cell analysis market. These efforts drive continued innovation across our proprietary reagents, software and services offerings, in addition to new instrumentation releases, such as the recently launched Aurora CS.
- ***Invest in integrated workflow solutions to drive pull-through from our consumables and services.*** Our overarching goal is to become a comprehensive solutions provider to our customers by delivering a fully-integrated offering of instruments, consumables, software and services enabled by our FSP technology. As we continue to penetrate our addressable markets, we can leverage our growing installed base to drive consumable pull-through and recurring revenue.
- ***Drive clinical research application development.*** We are deeply committed to developing our platform's clinical research applications, and in particular, within disease detection, diagnosis, and treatment monitoring. We also focus on areas where we can leverage the combination of our FSP platform with complementary cell analysis technologies (such as NGS) to produce differentiated outcomes with greater sensitivity, such as with MRD testing. We can provide insights to clinicians to facilitate personalized medicine for patients, as well as facilitate biopharma's research and development efforts to develop the next-generation of targeted therapies. Our Northern Lights CLC system has been registered or approved for clinical use in the European Union and China and we plan to continue generating supporting publications and data, as well as pursue any required regulatory approvals for clinical use in the United States.

Our Market Opportunity and Industry Background

Our market opportunity. Within the life sciences technology market, flow cytometry technologies currently provide solutions, including cell proliferation, cell counting, cell identification, cell quality control and single- cell applications, largely within the global cell analysis market. However, we believe that the enhanced capabilities of our FSP platform relative to conventional flow cytometry ("CFCs"), mass cytometry and early approaches to spectral flow cytometry enable us to capture an increasingly greater share of the total addressable market by accessing the entire cell analysis market, which according to industry sources is expected to grow from roughly $17 billion in 2022 to approximately $28 billion by 2027. Further, we believe our differentiated platform will enable us to expand the use of cell analysis into new markets, well beyond current applications addressed by prior flow cytometry technologies and other cell analysis technologies. Thus, we believe our potential total addressable market is larger than the current cell analysis market, which excludes new and existing markets addressable by our platform, such as clinical research applications within immunotherapy, immuno-oncology, bio-processing, infectious diseases and immuno-deficiencies. In addition, the combination of our platform with complementary, downstream cell analysis technologies is expected to provide additional areas for new applications—for example, combining FSP technology with NGS has demonstrated an improved ability to predict leukemia relapse after therapy (such as MRD testing) and served to support the use of our technology within personalized medicine. As our FSP platform is further validated through the continued acceleration of peer-reviewed publications in new applications, we expect our total addressable market to expand.

Complementary technologies to FSP and multi-omics applications. Since our FSP platform provides highly complex data down to single-cell resolution at a rapid speed, it is inherently well-suited to drive more targeted and efficient downstream analyses for other single-cell technologies, such as NGS, single-cell capture and sample preparation, high-resolution microscopy (such as mass imaging cytometry, super resolution microscopy, confocal microscopy and high-throughput screening platforms), and micro and optofluidic

systems. FSP is highly complementary to single-cell genomics applications utilizing NGS as it can be used earlier in workflows to rapidly phenotype and isolate living cell populations to the single-cell level with highly multiplexed proteomic data. These cells can then be transferred from our instrument into NGS systems to correlate proteomic and genomic expression, which in turn enables researchers to develop novel drug targets for therapeutics and clinicians to drive outcomes for patients through more informed treatment decision-making. For example, a peer-reviewed article published in the Biology of Blood and Marrow Transplantation journal recognized that combining multiparameter flow cytometry with NGS resulted in an improved ability to predict leukemia relapse after therapy, demonstrating strong potential utility in the large and growing market for MRD testing. With MRD, end users require high sensitivity and standardization, which makes our FSP technology ideal in addressing these challenges. According to a global MRD testing market report by BIS Research in December 2020, flow cytometry technology has the largest market share in MRD testing among relevant technologies, including NGS, polymerase chain reaction and others.

Importance of cell analysis at the single-cell level. Due to the heterogeneity within tissues, understanding cellular biology, particularly at the single-cell level, is necessary to unravel mechanisms that might otherwise not be detectable in bulk assays. Deep cellular analysis is a key application that we expect to enable a new age of healthcare delivery, and in particular, personalized medicine. The global healthcare market requires advanced cell analysis technologies to research therapeutic and diagnostic solutions to address emerging and chronic infectious diseases, an aging population with a myriad of chronic diseases, and the need for more effective and targeted therapeutics. These primary market forces, among others, will drive the direction for cell analysis applications that provide new possibilities for novel drug development and improved patient outcomes through enhanced disease detection, diagnosis, and treatment monitoring.

OUR PRODUCTS

We are a leading cell analysis solutions provider that develops compact, cost-effective full spectrum profiling instruments with high multiplexing capability, and we offer a wide range of services to support scientists and clinicians. Our products are used in the world's most renowned pharmaceutical and clinical research organizations, as well as premier academic and research institutions.

Aurora and Northern Lights Systems

Our Aurora and Northern Lights systems were commercially launched in June 2017 and October 2018, respectively. Both instruments are highly flexible, intuitive, and ultra-sensitive full spectrum flow cytometers, utilizing state-of-the-art optics and low-noise electronics to provide excellent sensitivity and resolution, allowing researchers to resolve rare cell populations that were previously challenging to resolve. The optics and electronics designs, combined with flat-top beam profiles and a unique vacuum fluidics system, translate to outstanding performance from low to high sample flow rate, analyzing up to 35,000 events per second with certain configurations. Additionally, our optical design and unmixing algorithm make the instrument amenable to a wide array of applications and fluorochrome options, all without needing to reconfigure the instrument hardware as would otherwise be required on a CFC.

The Aurora system is available with three to five lasers and can detect more than 40 biomarkers in one sample tube. The Northern Lights system is available with one to three lasers and can detect more than 24 biomarkers in one sample tube. Both instruments are upgradeable based on the desired number of lasers, which drives greater or less access to biomarkers. In addition, both instruments incorporate our SpectroFlo® software, which offers an intuitive workflow from quality control to sample acquisition to data analysis, with technology- enabling tools that simplify running applications.

Our Aurora and Northern Lights systems are used in the study of infectious diseases, immunology, immunotherapy, immuno-oncology, oncology, inflammation, and drug discovery.

The Northern Lights CLC system was certified under the European Union In Vitro Diagnostic Medical Devices Directive ("IVDD") in September 2020 and is registered as an in vitro diagnostic medical device under Northern Lights Clinical Flow Cytometer. The certification enables the Northern Lights CLC system to be sold into in vitro diagnostic laboratories in the European Union and in other countries around the world that accept this specific certification. The Northern Lights CLC system is also certified for in vitro diagnostic use as a Class II device in China.

Aurora CS System

Key to the discovery of unraveling cellular complexity is the ability to perform additional downstream genomic and proteomic studies on the specific subsets identified using high dimensional phenotyping approaches. Our Aurora CS was commercially launched in June 2021 and is the first highly flexible, intuitive and ultra-sensitive cell sorter that leverages the detection and sensitivity capabilities of our FSP technology to isolate living cell populations from lower to higher complexity panels beyond 40 biomarkers. Our FSP technology enables the processing of a tremendous amount of highly complex information to provide real- time unmixing and sorting capabilities at the field-programmable gate array level. The implications are significant in terms of flexibility and user experience, including experiment workflow transportability and assay reproducibility, enabling a 40-biomarker assay to be run in both the Aurora and the Aurora CS systems, with similar results. With our technology, users can first identify cell populations and then isolate the live cells for downstream studies, such as single-cell RNA sequencing, proteomics, and cell biology. We believe this new technology will enable users to gain a deeper level of cell classification, take advantage of key trends and scientific expansion, and allow for greater clinical research applications, such as with MRD, cell analysis and disease discovery.

Unlike other high-capacity sorters, we believe the Aurora CS is the only cell sorter that can accommodate the same number of parameters with the same sensitivity as the Aurora system and isolate living cell populations of interest using the same panel and without having to alter the optical configuration, while also being able to sort panels designed for conventional analyzers.

Reagents and Kits

We also have launched our reagent products to provide additional options for researchers and clinical laboratories when choosing which biomarkers to run together in a panel, particularly since our Aurora, Northern Lights and Aurora CS systems allow for more fluorochromes to be run together than was previously commercially available. Our technology was able to inform our fluorochrome development through the identification of areas within the spectrum for which there were currently no available fluorochrome options. Our cFluor® reagents are fluorochrome conjugated antibodies used to identify cells of interest for analysis on our instruments. We offer and continue to develop cFluor® immunoprofiling kits, which include the cFluor reagents and tools necessary to simplify the workflow from sample preparation to data analysis.

We launched our 14-color immunoprofiling kit in December 2020, which is designed to distinguish different subsets of T, B and natural killer ("TBNK") cells, and our 25-color immunoprofiling assay in October 2021 to provide a turnkey solution for identifying major human immune subpopulations for TBNK cells, monocytes, dendritic cells, and basophils – all of which play important roles in the innate and adaptive immune response in various diseases. We released a 13-color human B cell monitoring kit in December 2022 to provide a turnkey solution for identifying and enumerating B cell subsets in human whole blood and peripheral blood mononuclear cells, and in January 2023, we introduced the single-tube 20-color panel for identifying and characterizing normal and aberrant cells and evaluating MRD in acute myeloid leukemia samples. Most recently, in February 2022, we released our pan leukocyte kit, a lyse-no-wash assay designed to help researchers fully enumerate the complete set of major leukocyte subsets in drug discovery and development. These research use only ("RUO") products are optimized for use with our Aurora and Northern Lights systems and designed to simplify the workflow and improve operational efficiency for our customers.

Our single-color reagents are registered as Class 1 with the China National Medical Products Administration (NMPA) and in the European Union under the IVDD. We are seeking Class 3 registration with the NMPA of our 6-color reagent cocktails that identify and determine the percentages and absolute counts of TBNK cells in peripheral blood. We expect these recent and planned reagent and application solutions to be a significant driver of our future reagent revenue and pull-through as our installed base of instruments grows.

To help accelerate our overarching goal to become a comprehensive solutions provider to our customers, we acquired the reagents business of Tonbo Biotechnologies Corporation in November 2021.

Automated Micro-Sampling System and Automated Sample Loader System

Our Automated Micro-Sampling ("AMS") system and Automated Sample Loader ("ASL") system were commercially launched in 2018 and 2021, respectively. The AMS and ASL systems are automated loaders designed to integrate seamlessly into the Aurora and Northern Lights systems, increasing sample throughput and adding automation capabilities to our FSP systems. The systems offer preset settings for ease of use, but also allow researchers to customize and fine-tune the systems for their unique experimental requirements. Their reliable 96-well plate acquisition solution increases productivity. The ASL adds additional compatibility with 96 deep-well plates 40-tube racks. Both systems have three throughput modes (high-throughput, default, low carryover) to meet changing customer priorities.

SpectroFlo® Software

Our proprietary SpectroFlo software is integrated into our systems and is unique in that it offers intuitive workflows for handling full spectrum flow cytometry data, from quality control to data analysis. The software was developed specifically for our Aurora and Northern Lights systems to streamline instrument setup, automated quality control, data analysis and experiment exports. With the ability to import a previously designed experiment template, users are able to quickly set up their experiments and there is no need to re-enter the panel design, acquisition criteria, reagent information or data analysis worksheets. With our SpectroFlo software, users can conveniently and efficiently collect both raw and unmixed FCS 3.1 files, which can be used to live unmix samples and extract autofluorescence that would otherwise negative impact data resolution.

Customer Support Tools

We strive to continually innovate by developing new quantitative tools, which are integrated into our software or available to our customers on our website, to enable users to independently create high- color panels for use with our systems, to support efficient workflow solutions and to provide an intuitive user experience. As fluorochrome (color) selection is a key component of assay development and optimization, our full spectrum viewer is a unique tool capable of displaying the full emission spectrum of a fluorochrome (emission at different wavelengths post-excitation with multiple lasers). Our FSP technology provides an in-depth understanding of the fluorescence emission characteristics of nearly every color available in the market and our full spectrum viewer provides users with comprehensive information regarding emission characteristics of the fluorochromes to optimize fluorochrome selection for assay development. As a complementary tool to our full spectrum viewer, we have developed the Similarity and the Complexity indices, which provide unique metrics for assessing fluorochrome compatibility within a panel. The Similarity index compares the emission spectrum of two dyes, identifying whether the dyes have unique characteristics or if the dyes are identical, which

determines whether they can be used together to analyze a sample in a flow cytometry assay. The Complexity index is a metric that predicts how well a panel of colors will work in combination to minimize loss of resolution and sensitivity. Additionally, we recently launched Cytek Cloud, a digital ecosystem that supports full spectrum flow cytometry research from panel design to data acquisition, seamlessly integrating with our SpectroFlo software. Cytek Cloud features two integrated online tools, Panel Builder and Experiment Builder, to streamline experiment workflow on our Aurora, Northern Lights and Aurora CS systems. Panel Builder enables users to quickly visualize, compare, and optimize their fluorochrome selections with multiple spectral panel design tools, allowing them to build their panels in a simple and organized interface. Experiment Builder allows users to set up their experiments in advance to make efficient use of their time on the instrument.

DxP Athena

Our DxP Athena conventional flow cytometry system commercially launched in 2016 and is currently available for sale only in China. It is certified for clinical use by China NMPA. The DxP Athena system incorporates DxP technology with efficient PMTs to enable high sensitivity and high resolution and our proprietary QbSure software to ensure optimal daily instrument performance. The system is available in multiple configurations with one to three lasers and up to 13 fluorescence detection channels. The automated monthly clean bleach cycle minimizes downtime, streamlines maintenance and encourages compliance.

SALES AND MARKETING

We distribute our products through our direct sales force and support organizations located in North America, Europe, China and several countries in the Asia-Pacific region, and through distributors or sales agents in several countries in Europe, Latin America, the Middle East and the Asia-Pacific region. Our sales and marketing efforts are targeted at academic and governmental institutions, CROs, pharmaceutical and biotechnology companies and clinical laboratories focused on single-cell analysis.

Our sales process often involves interactions and demonstrations with multiple people within an organization. Some potential customers conduct in-depth evaluations of the system, including running experiments on our system and competing systems. In addition, in many countries outside of North America, sales to academic or governmental institutions require participation in a tender process involving preparation of extensive documentation and a lengthy review process. As a result of these factors and the budget cycles of our customers, the sales cycle on our instrument, the time from initial contact with a customer to our receipt of a purchase order, can be six months or longer.

MANUFACTURING AND SUPPLY

Our manufacturing operations are located in Fremont and San Diego, California and Wuxi, China. We commenced manufacturing operations in Fremont, California in 2015. Our Fremont facility maintains ISO 9001 certification and manufactures our Aurora and Aurora CS systems, as well as our reagents and spare parts. Our Wuxi manufacturing facility commenced operations in 2017 and maintains ISO 9001 and ISO 13485 certification. Our Wuxi facility manufactures our Northern Lights and Athena instruments, reagents and spare parts and delivers certain instruments to our Fremont facilities for final assembly and testing. Our instruments and reagents for clinical use are currently manufactured only in our Wuxi facility.

We established the manufacturing facility in Wuxi, China to take advantage of the skilled workforce, supplier and partner network, lower operating costs and available government support. We are able to hire skilled employees from China's existing in vitro diagnostic and optical product industry. China also has a broad network of potential suppliers and partners for our manufacturing operations and we are able to locally source a large portion of the raw materials required for our manufacturing processes. We have received incentive grants from the local Wuxi government for research, development, and manufacturing.

We believe that having dual sources for our core products would help mitigate the potential impact of a production disruption at any one of our facilities to ensure a reliable and stable supply chain and product availability for our customers. We relocated our Fremont headquarters and manufacturing facility in October 2021 to provide us with capacity expansion capability that would be sufficient to support our growth. We expect that our existing manufacturing capacity for instrumentation and reagents will be sufficient to meet our anticipated needs for at least the next several years.

We rely on a limited number of suppliers for certain components and materials used in our systems. Key components in our products that are supplied by sole or limited source suppliers include certain lasers, semiconductors and mechanical components that are used in our optical, electrical and fluidic subassemblies. While we are in the process of qualifying additional sources of supply, qualifications can take 12 to 24 months and, in some cases, longer. If we were to lose one or more of our sole or limited source suppliers, it would take significant time and effort to qualify alternative suppliers. With respect to many of our suppliers, we are neither a major customer, nor do we have long term supply contracts. These suppliers may therefore give other customers' needs higher priority than ours, and we may not be able to obtain adequate supply in a timely manner or on commercially reasonable terms.

COMPETITION

We face significant competition from within the cell analysis and life sciences tools market. We currently compete with established and early stage life sciences and in vitro diagnostics ("IVD") companies developing or commercializing flow cytometry instruments and consumables, as well as other companies that design, manufacture and market instruments, consumables, reagent kits and software

for, among other applications, cell analysis, immunophenotyping, cell sorting and/or provide services related to the same. Our direct competitors include Agilent Technologies, Beckman Coulter (Danaher Corporation), Becton, Dickinson and Company, Bio-Rad Laboratories, Standard BioTools, Miltenyi Biotec, Sony Biotechnology (Sony Corporation) and Thermo Fisher Scientific. Our target customers may also elect to develop their workflows on CFCs, or using traditional methods, rather than implementing our platform or existing customers may decide to stop using our platform. In addition, there are many large, established companies in the life sciences tools market that we do not currently compete with but that could develop instruments, tools or other products that will compete with us in the future. These companies have substantially greater financial and other resources than us, including larger research and development, quality and regulatory staff or more established marketing and sales forces.

For further discussion of the risks we face relating to competition, see the section titled "Risk factors— Risks Related to Our Business and Strategy—The market for cell analysis technologies and life sciences tools, including flow cytometry, is highly competitive, and if we cannot compete successfully with our competitors, we may be unable to increase or sustain our revenue, or achieve and sustain profitability."

INTELLECTUAL PROPERTY

Our commercial success depends in part on our ability to obtain and maintain patent and other proprietary protection for our commercially important technology, inventions and know-how; to defend and enforce our parents; to operate without infringing, misappropriating or violating our proprietary rights. We have developed our own portfolio of issued patents and patent applications directed at our core and system level technology, including claims directed to methods and apparatus of flow cytometers and cell sorters with excitation, fluidics, emission, mechanical, magnetic, electronics, bio-safety and temperature control technology in configurations of our Aurora, Aurora CS, Northern Lights and Northern Lights CLC systems. We generally seek patent protection in the United States, Japan, China and selected countries of the European Union, such as France, Germany and the United Kingdom. Notwithstanding these efforts, we cannot be sure that patents will be granted with respect to any patent applications we have filed or may license or file in the future, and we cannot be sure that any patents we own or license or patents that may be licensed or granted to us in the future will not be challenged, invalidated or circumvented or that such patents will be commercially useful in protecting our technology. For more information regarding the risks related to our intellectual property, please see "Risk Factors—Risks Related to Our Intellectual Property."

As of December 31, 2022, we own 12 issued U.S. utility patents, two issued Japan utility patents, one issued European utility patent and one issued China utility patent. We have 42 pending utility patent applications, including 25 utility patent applications in the United States, five utility patent applications in the European Union, five utility patent applications in China and three utility patent applications in Japan. Assuming all maintenance fees are paid, the U.S. issued patents are expected to naturally expire between years 2023 and 2038. Patents covering intellectual property relating to design specific technologies invented by our researchers in Shanghai and Wuxi, China are filed in China and owned by our China subsidiaries, respectively. As of December 31, 2022, our Shanghai subsidiary owns 15 issued utility patents and one issued invention patent and has ten pending invention patent applications and one pending utility patent application, and our Wuxi subsidiary owns 36 issued patents and has eight pending patent applications, including nine pending utility patent applications and seven pending invention patent applications.

To our knowledge, there are no third party claims or contested proceedings with the issued patents or pending patent applications other than the ordinary course proceedings with pending patent applications before the respective patent offices. However, the patent positions of companies like ours are generally uncertain and involve complex legal and factual questions. Our patents may not enable us to obtain or keep any competitive advantage. Our pending U.S. and foreign patent applications may not issue as patents or may not issue in a form that will be advantageous to us. Any patents we have obtained or do obtain may be challenged by re-examination, opposition or other administrative proceeding, or may be challenged in litigation, and such challenges could result in a determination that the patent is invalid. In addition, competitors may be able to design alternative methods or devices that avoid infringement of our patents. Furthermore, numerous U.S. and foreign-issued patents and patent applications owned by third parties exist in the fields in which our products compete. Because patent applications can take many years to publish, there may be applications unknown to us, which may result in issued patents that our existing or future products or technologies may be alleged to infringe. To the extent our intellectual property protection offers inadequate protection, or is found to be invalid, we are exposed to a greater risk of direct competition. If our intellectual property does not provide adequate protection against our competitors' products, our competitive position could be adversely affected, as could our business. Both the patent application process and the process of managing patent disputes can be time consuming and expensive. Furthermore, the laws of some foreign countries may not protect our intellectual property rights to the same extent as do the laws of the United States.

In addition to pursuing patents on our technology, we have taken steps to protect our intellectual property and proprietary technology by entering into confidentiality agreements and intellectual property assignment agreements with our employees, consultants, corporate partners and, when needed, our advisors. Such agreements may not be enforceable or may not provide meaningful protection for our trade secrets or other proprietary information in the event of unauthorized use or disclosure or other breaches of the agreements, and we may not be able to prevent such unauthorized disclosure. Monitoring unauthorized disclosure is difficult, and we do not know whether the steps we have taken to prevent such disclosure are, or will be, adequate.

Our commercial success may depend in part on our non-infringement of the patents or proprietary rights of third parties. Third parties have asserted and may assert in the future that we are employing their proprietary technology without authorization. Competitors may assert that our products infringe their intellectual property rights as part of a business strategy to impede our successful entry into those markets and there has been substantial litigation regarding patent and other intellectual property rights in the medical device industry. In addition, our competitors and others may have patents or may in the future obtain patents and claim that use of our products infringes these patents. We could incur substantial costs and divert the attention of our management and technical personnel in defending any of these claims. Parties making claims against us may be able to obtain injunctive or other relief, which could block our ability to develop, commercialize and sell products, and could result in the award of substantial damages against us. In the event of a successful claim of infringement against us, we may be required to pay damages, obtain one or more licenses from third parties, or be prohibited from selling certain products. We may not be able to obtain these licenses at a reasonable cost, if at all.

KEY AGREEMENTS, LICENSES AND COLLABORATIONS

Biotium, Inc. Supply and License Agreement

On September 1, 2020, we entered into a Supply and License Agreement with Biotium, Inc. ("Biotium") pursuant to which Biotium agreed to supply, and we obtained a worldwide, non-exclusive license to market and resell to our customers and distributors, certain Biotium products to conjugate proteins and/or antibodies and to use such conjugates as a component in our cFluor reagent products, for research and analyte specific reagents (as defined by 21 CFR 864.4020) use only (the "Field of Use") (the "Biotium Agreement"). In consideration for such rights, we paid Biotium an upfront fee of $20,000 and will pay Biotium royalties at a mid-to-high single digit percentage rate on worldwide net sales on licensed products within the Field of Use. The Biotium Agreement terminates on the expiration of the last to expire of the valid claims of the Biotium patents subject to the Biotium Agreement. Either party may terminate the Biotium Agreement for the other party's bankruptcy or uncured material breach or if no Biotium product is purchased for an extended period; however, if such termination is by Biotium, we will have the opportunity to make a purchase following written notice from Biotium to avoid such termination. Our license under the Biotium Agreement does not include diagnostic use, which may be added through an amendment and additional payment to Biotium.

Becton, Dickinson and Company Settlement, License and Equity Issuance Agreement

On February 13, 2018, BD filed a lawsuit against us alleging trade secret misappropriation and copyright infringement. On October 6, 2020, we entered into a Settlement, License and Equity Issuance Agreement with BD pursuant to which we and BD agreed to a mutual release of all claims against each other as of the date thereof (the "BD Agreement"). As part of the settlement, BD granted us a non-exclusive, irrevocable, perpetual, worldwide, and non-transferrable license to certain BD patents and covenanted that it would not enforce, or permit or encourage the enforcement of BD patents against us or our affiliates in connection with the development, manufacture, use, importation, offer for sale or sale of our then-current instruments. In exchange, we agreed that we and our affiliates would not dispute or challenge in a legal proceeding the validity, enforceability or scope of the applicable BD patent claims and agreed to make certain payments to BD, including (i) a one-time upfront payment of $2.0 million, (ii) a low single digit royalty payment for ten years, based on net sales of certain of our products, (iii) a $6.0 million milestone payment upon the occurrence of a certain sales threshold, and (iv) a specified payment upon the closing of a change of control transaction, if any. We also issued 2,087,545 shares of our common stock to BD during the year ended December 31, 2020 in connection with the BD settlement.

Coherent NA, Inc. Supply Agreement

On August 25, 2021, we and Cytek (Wuxi) Biosciences Co., Ltd, our Wuxi, China subsidiary, entered into a Supply Agreement (the "Coherent Agreement") with Coherent NA, Inc. ("Coherent") pursuant to which Coherent agreed to sell and supply to us, on a non-exclusive basis, laser products manufactured by Coherent. We provide Coherent with rolling forecasts of our anticipated orders, which are non-binding. We do not have a minimum purchase obligation pursuant to the Coherent Agreement. The Coherent Agreement has an initial term of three years and will automatically renew for a subsequent one-year period unless either party provides written notice of non-renewal at least four (4) months prior to the expiration of the initial term. The Coherent Agreement may be terminated prior to the end of its term upon the occurrence of certain specified events.

HUMAN CAPITAL RESOURCES

We are focused on developing innovative products to meet unmet market needs and maintaining a diverse and inclusive work environment where employees are respected and encouraged to share their unique perspectives and ideas. As of December 31, 2022, we had 583 employees, including 162 employees in research and development, 134 employees in sales and marketing, 223 employees in manufacturing and operations, and 64 employees in general and administrative. We believe that the success of our business will depend, in part, on our ability to attract and retain qualified personnel. Our employees are neither represented by a labor union nor party to a collective bargaining agreement and we believe that we have strong employee relations.

Culture and Values

We seek to maintain high ethical standards and a culture that values honesty, integrity, accountability and transparency in all that we do. We are committed to our employees and to the communities we serve worldwide. It is our philosophy to foster open communication and our employees are encouraged to provide input on ways to improve our business strategy and tactics, work

environment and organization. We believe that our ability to provide employees with a dynamic environment and professional growth opportunities drives a culture embedded in our values.

Business Ethics

We are committed to conducting our business activities with employees, consultants, vendors, customers, communities and stockholders with integrity and fairness and in accordance with the highest ethical standards. We believe that our conduct has a direct impact on our reputation, our brand and our stakeholders. We are focused on ensuring that our legal, compliance and risk mitigation protocols further enhance our ability to comport ourselves with the highest levels of ethical standards.

Talent Attraction, Retention and Engagement

By focusing on individual performance, as well as teamwork and collaboration, we believe that we foster an environment that helps employees excel as individuals and as team members. To further engage and incentivize our workforce, we offer programs and avenues for support, motivation and professional development. For example, we utilize both instructor-led training and online learning to deliver proprietary, targeted training courses designed to position our commercial organization as the leading cell analysis solutions provider. For our talent pipeline development, we work closely with individual business functions to provide training and hands-on support for managers and leaders.

Compensation Philosophy

We strive to provide comprehensive compensation, including cash, equity, benefits and services that attract, motivate and retain exceptional employees. Compensation is driven by local market conditions, internal equity and employee performance.

Health and Wellness

We offer a comprehensive package including: 401(k) plan with a company-match component, medical, dental and vision insurance, life insurance, short-and long-term disability insurance, 18 paid vacation days per year or flexible time off (depending on employee level), paid days for illness and family emergencies, and health savings and flexible spending accounts.

GOVERNMENT REGULATION AND PRODUCT APPROVAL

Our Northern Lights CLC system has been approved for clinical use in the European Union and China and we plan to continue generating supporting publications and data, as well as pursue any required regulatory approvals for clinical use in the United States. In the United States, our products are currently labeled and promoted, and are, and in the near-future are expected to continue to be, sold primarily to academic and research institutions and biopharmaceutical companies as RUO products, and are not currently designed, or intended to be used, for clinical diagnostic tests. However, as we continue to expand our product lines and the applications and uses of our existing products into new fields, certain of our current or future products could become subject to regulation by the United States Food and Drug Administration (the "FDA") or comparable international agencies, including requirements for regulatory clearance, authorization or approval of such products before they can be marketed. Also, even if our products are labeled, promoted and intended as RUO, the FDA or comparable international agencies could disagree with our conclusion that our products are intended for research use only or deem our sales, marketing and promotional efforts as being inconsistent with RUO products. For example, our customers may independently elect to use our RUO labeled products in their own laboratory-developed tests ("LDT") for clinical diagnostic use, which could subject our products to government regulation, even if clinical uses of our RUO products by our customers were done without our consent.

FDA Regulation of Medical Devices

The FDA and other U.S. and foreign governmental agencies regulate, among other things, with respect to medical devices:

- design, development and manufacturing;
- testing, labeling, content and language of instructions for use and storage;
- clinical trials;
- product safety;
- marketing, sales and distribution;
- pre-market clearance and approval;
- record keeping procedures;
- advertising and promotion;
- recalls and field safety corrective actions;

- post-market surveillance, including reporting of deaths or serious injuries and malfunctions that, if they were to recur, could lead to death or serious injury;
- post-market approval studies; and
- product import and export.

In the United States, numerous laws and regulations govern all the processes by which medical devices are brought to market and marketed. These include the FDCA and the FDA's implementing regulations, among others.

FDA Pre-market Clearance and Approval Requirements

Each medical device we seek to commercially distribute in the United States must first receive 510(k) clearance, de novo classification, or approval of a pre-market approval (PMA) application, from the FDA, unless specifically exempted. Both the 510(k) clearance and PMA processes can be resource intensive, expensive and lengthy, and require payment of significant user fees, unless an exemption is available.

The FDA classifies all medical devices into one of three classes—Class I, Class II or Class III—depending on the degree of risk associated with each medical device and the extent of manufacturer and regulatory control needed to ensure its safety and effectiveness. Class I includes devices with the lowest risk to the patient and are those for which safety and effectiveness can be assured by adherence to the FDA's General Controls for medical devices, which include compliance with the applicable portions of the Quality System Regulation("QSR"), facility registration and product listing, reporting of adverse medical events, and truthful and non-misleading labeling, advertising, and promotional materials. Class II devices are subject to the FDA's General Controls, and special controls as deemed necessary by the FDA to ensure the safety and effectiveness of the device. These special controls can include performance standards, post-market surveillance, patient registries and additional conditions set forth in FDA guidance documents. While most Class I devices are exempt from the 510(k) pre-market notification requirement, manufacturers of most Class II devices are required to submit to the FDA a pre-market notification under Section 510(k) of the FDCA requesting permission to commercially distribute the device. The FDA's permission to commercially distribute a device subject to a 510(k) pre-market notification is generally known as 510(k) clearance. Devices deemed by the FDA to pose the greatest risks, such as life-sustaining, life-supporting or some implantable devices are placed in Class III, requiring approval of a PMA application. Some pre-amendment devices are unclassified, but are subject to the FDA's pre-market notification and clearance process in order to be commercially distributed.

Our products are expected to be classified as Class II devices.

510(k) Clearance Process

To obtain 510(k) clearance, we must submit a pre-market notification to the FDA demonstrating that the proposed device is substantially equivalent to a previously-cleared 510(k) device, a device that was in commercial distribution before May 28, 1976 for which the FDA has not yet called for the submission of PMA applications, or is a device that has been reclassified from Class III to either Class II or I. In rare cases, Class III devices may be cleared through the 510(k) process. The FDA's 510(k) clearance process usually takes from three to 12 months from the date the application is submitted and filed with the FDA, but may take significantly longer, particularly for a novel type of product. Although many 510(k) pre-market notifications are cleared without clinical data, in some cases, the FDA requires significant clinical data to support substantial equivalence. In reviewing a pre-market notification submission, the FDA may request additional information, including clinical data, which may significantly prolong the review process.

If the FDA agrees that the device is substantially equivalent to a predicate device currently on the market, it will grant 510(k) clearance to commercially market the device. If the FDA determines that the device is "not substantially equivalent" to a previously cleared device, the device is automatically designated as a Class III device. The device sponsor must then fulfill more rigorous PMA requirements, or can request a risk-based classification determination for the device in accordance with the de novo classification process, which is a route to market for novel medical devices that are low to moderate risk and are not substantially equivalent to a predicate device. Once a de novo application is reviewed and approved, it results in the device having a Class II status and future devices from the company or a competitor may use the company's de novo-classified device as a 510(k) predicate.

After a device receives 510(k) clearance, any subsequent modification of the device that could significantly affect its safety or effectiveness, or that would constitute a major change in its intended use, will require a new 510(k) clearance or could require a PMA. The FDA requires each manufacturer to make this determination initially, but the FDA may review any such decision and may disagree with a manufacturer's determination. If the FDA disagrees with a manufacturer's determination, the FDA may require the manufacturer to cease marketing and/or recall the modified device until 510(k) clearance or approval of a PMA is obtained. Under these circumstances, the FDA may also subject a manufacturer to significant regulatory fines or other penalties.

Legislative or regulatory reforms in the United States or the EU may make it more difficult and costly for us to obtain regulatory clearances or approvals for our products or to manufacture, market or distribute our products after clearance or approval is obtained.

De Novo Classification Process

Medical device types that the FDA has not previously classified as Class I, II, or III are automatically classified into Class III regardless of the level of risk they pose. The Food and Drug Administration Modernization Act of 1997 established a new route to market for low to moderate risk medical devices that are automatically placed into Class III due to the absence of a predicate device called the "Request for Evaluation of Automatic Class III Designation," or the de novo classification procedure. This procedure allows a manufacturer whose novel device is automatically classified into Class III to request down-classification of its medical device into Class I or Class II on the basis that the device presents low or moderate risk, rather than requiring the submission and approval of a PMA application. FDA is required to classify the device within 120 days following receipt of the de novo application. If the manufacturer seeks reclassification into Class II, the manufacturer must include a draft proposal for special controls that are necessary to provide a reasonable assurance of the safety and effectiveness of the medical device. In addition, the FDA may reject the reclassification petition if it identifies a legally marketed predicate device that would be appropriate for a 510(k) or determines that the device is not low to moderate risk or that general controls would be inadequate to control the risks and special controls cannot be developed.

Pre-Market Approval Process

A PMA application must be submitted if the medical device is in Class III (although the FDA has the discretion to continue to allow certain pre- amendment Class III devices to use the 510(k) process) or cannot be cleared through the 510(k) process. A PMA application must be supported by, among other things, extensive technical, preclinical, and clinical trials, as well as manufacturing and labeling data to demonstrate to the FDA's satisfaction the safety and effectiveness of the device.

Research Use Only

Our products and operations may be subject to extensive and rigorous regulation by the FDA and other federal, state, or local authorities, as well as foreign regulatory authorities. Certain of our products are currently marketed as RUO. An RUO product is one that is not intended for clinical diagnostic use and must be labeled "For Research Use Only. Not for use in diagnostic procedures." RUO products cannot make any claims related to safety, effectiveness or diagnostic utility and they cannot be intended for human clinical diagnostic use. Products that are intended for research use only and are properly labeled as RUO are exempt from compliance with the FDA requirements discussed above, including the approval or clearance and most QSR requirements. A product labeled RUO but intended to be used diagnostically may be viewed by the FDA as adulterated and misbranded under the FDC Act and is subject to FDA enforcement activities. The FDA may consider the totality of the circumstances surrounding distribution and use of an RUO product, including how the product is marketed, when determining its intended use. In November 2013 the FDA issued a guidance document entitled "Distribution of In Vitro Diagnostic Products Labeled for Research Use Only or Investigational Use Only" (RUO Guidance) which highlights the FDA's interpretation that distribution of RUO products with any labeling, advertising or promotion that suggests that clinical laboratories can validate the test through their own procedures and subsequently offer it for clinical diagnostic use as a laboratory developed test is in conflict with RUO status. The RUO Guidance further articulates the FDA's position that any assistance offered in performing clinical validation or verification, or similar specialized technical support, to clinical laboratories, conflicts with RUO status. If the FDA were to determine, based on the totality of circumstances, that our products labeled and marketed for RUO are intended for diagnostic purposes, they would be considered medical products that will require clearance or approval prior to commercialization.

Laboratory-developed tests (LDTs)

LDTs have generally been considered to be tests that are designed, developed, validated and used within a single laboratory. The FDA takes the position that it has the authority to regulate such tests as medical devices under the FDC Act. The FDA has historically exercised enforcement discretion and has not required clearance or approval of LDTs prior to marketing.

On October 3, 2014, the FDA issued two draft guidance documents regarding oversight of LDTs. These draft guidance documents proposed more active review of LDTs. The draft guidance documents have been the subject of considerable controversy, and in November 2016, the FDA announced that it would not be finalizing the 2014 draft guidance documents. On January 13, 2017, the FDA issued a discussion paper which laid out elements of a possible revised future LDT regulatory framework, but did not establish any regulatory requirements.

The FDA's efforts to regulate LDTs have prompted the drafting of legislation governing diagnostic products and services that sought to substantially revamp the regulation of both LDTs and IVDs. Congress may act to provide further direction to the FDA on the regulation of LDTs.

Pervasive and Continuing U.S. Food and Drug Administration Regulation

After a medical device is placed on the market, numerous FDA regulatory requirements apply, including, but not limited to the following:

- the QSR, which requires manufacturers to follow design, testing, control, documentation and other quality assurance procedures during the manufacturing process;

- establishment registration, which requires establishments involved in the production and distribution of medical devices, intended for commercial distribution in the United States, to register with the FDA;
- medical device listing, which requires manufacturers to list the devices they have in commercial distribution with the FDA;
- clearance or approval of product modifications to 510(k)-cleared devices that could significantly affect safety or effectiveness or that would constitute a major change in intended use of one of our cleared devices;
- medical device reporting regulations, which require that a manufacturer report to the FDA if a device it markets may have caused or contributed to a death or serious injury, or has malfunctioned and the device or a similar device that it markets would be likely to cause or contribute to a death or serious injury, if the malfunction were to recur;
- correction, removal and recall reporting regulations, which require that manufacturers report to the FDA field corrections and product recalls or removals if undertaken to reduce a risk to health posed by the device or to remedy a violation of the FDCA that may present a risk to health;
- complying with the new federal law and regulations requiring Unique Device Identifiers (UDI) on devices and also requiring the submission of certain information about each device to the FDA's Global Unique Device Identification Database;
- the FDA's recall authority, whereby the agency can order device manufacturers to recall from the market a product that is in violation of governing laws and regulations;
- labeling regulations, which prohibit "misbranded" devices from entering the market, as well as prohibit the promotion of products for unapproved or "off-label" uses and impose other restrictions on labeling; and
- post-market surveillance including Medical Device Reporting, which requires manufacturers report to the FDA if their device may have caused or contributed to a death or serious injury, or malfunctioned in a way that would likely cause or contribute to a death or serious injury if it were to recur.

The FDA enforces these requirements by inspection and market surveillance. Failure to comply with applicable regulatory requirements may result in enforcement action by the FDA, which may include one or more of the following sanctions:

- untitled letters or warning letters;
- customer notifications for repair, replacement or refunds;
- fines, injunctions, consent decrees and civil penalties;
- mandatory recall or seizure of our products;
- administrative detention or banning of our products;
- operating restrictions, partial suspension or total shutdown of production;
- refusing our request for 510(k) clearance or PMA of new product versions;
- revocation of 510(k) clearance or PMAs previously granted; and
- criminal prosecution and penalties.

Foreign Government Regulation

The regulatory review process for medical devices varies from country to country, and many countries also impose product standards, packaging requirements, environmental requirements, labeling requirements and import restrictions on devices. Each country has its own tariff regulations, duties, and tax requirements. Failure to comply with applicable foreign regulatory requirements may subject a company to fines, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions, criminal prosecution or other consequences.

European Union

The Medical Devices Regulation, among other things, is intended to establish a uniform, transparent, predictable and sustainable regulatory framework across the EEA for medical devices and in vitro diagnostic devices and ensure a high level of safety and health while supporting innovation.

The Medical Devices Regulation will among other things:

- strengthen the rules on placing devices on the market and reinforce surveillance once they are available;
- establish explicit provisions on manufacturers' responsibilities for the follow-up of the quality, performance and safety of devices placed on the market;
- improve the traceability of medical devices throughout the supply chain to the end user or patient through a unique identification number;
- set up a central database to provide patients, healthcare professionals and the public with comprehensive information on products available in the EU; and
- strengthen rules for the assessment of certain high-risk devices, such as implants, which may have to undergo an additional check by experts before they are placed on the market.

To the extent that our products have already been certified under the existing regulatory framework, the MDR allows us to market them provided that the requirements of the transitional provisions are fulfilled. In particular, the certificate in question must still be valid. Under article 120(2) MDR, certificates issued by notified bodies before May 25, 2017 will remain valid until their indicated expiry dates. By contrast, certificates issued after May 25, 2017 will be void at the latest by May 27, 2024. Accordingly, before that date, we will need to obtain new CE Certificates of Conformity. Furthermore, the regulation introduces UDI, a bar code that must be placed on the label of the device or on its packaging and manufacturers will be obligated to file adverse effects reports via the Eudamed platform in case there is an increase in the frequency or severity of incidents related to the medical device.

Other Healthcare Laws

Our current and future business activities are subject to healthcare regulation and enforcement by the federal government and the states and foreign governments in which we conduct our business. These laws include, without limitation, state and federal anti-kickback, fraud and abuse, false claims and physician sunshine laws and regulations.

The federal Anti-Kickback Statute prohibits, among other things, any person from knowingly and willfully offering, soliciting, receiving or providing remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce either the referral of an individual, for an item or service or the purchasing, leasing, ordering, or arranging for or recommending the purchase, lease or order of any good, facility, item or service, for which payment may be made, in whole or in part, under federal healthcare programs such as the Medicare and Medicaid programs. Although there are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution, the exceptions and safe harbors are drawn narrowly. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct per se illegal under the Anti-Kickback Statute. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all its facts and circumstances. Several courts have interpreted the statute's intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the Anti-Kickback Statute has been violated. In addition, a person or entity does not need to have actual knowledge of this statute or specific intent to violate it to have committed a violation.

Additionally, the civil False Claims Act prohibits, among other things, knowingly presenting or causing the presentation of a false or fraudulent claim for payment to, or approval by, the U.S. government. In addition to actions initiated by the government itself, the statute authorizes actions to be brought on behalf of the federal government by a private party having knowledge of the alleged fraud. Because the complaint is initially filed under seal, the action may be pending for some time before the defendant is even aware of the action. If the government intervenes and is ultimately successful in obtaining redress in the matter, or if the plaintiff succeeds in obtaining redress without the government's involvement, then the plaintiff will receive a percentage of the recovery. The federal government is using the False Claims Act, and the accompanying threat of significant liability, in its investigation and prosecution of life sciences companies throughout the country, for example, in connection with the promotion of products for unapproved uses and other sales and marketing practices. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act. The government has obtained multi-million and multi-billion dollar settlements under the False Claims Act in addition to individual criminal convictions under applicable criminal statutes. Given the significant size of actual and potential settlements, it is expected that the government will

continue to devote substantial resources to investigating healthcare providers' and manufacturers' compliance with applicable fraud and abuse laws.

The civil monetary penalties statute imposes penalties against any person or entity that, among other things, is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent.

The majority of states also have anti-kickback laws which establish similar prohibitions and, in some cases, may apply to items or services reimbursed by any third-party payor, including commercial insurers.

HIPAA created new federal criminal statutes that prohibit, among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Like the Anti-Kickback Statute, a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it to have committed a violation.

The shifting commercial compliance environment and the need to build and maintain robust and expandable systems to comply with different compliance and/or reporting requirements in multiple jurisdictions increase the possibility that a healthcare company may violate one or more of the requirements. If our future operations are found to be in violation of any of such laws or any other governmental regulations that apply to us, we may be subject to significant penalties, including, without limitation, civil and criminal penalties, damages, fines, the curtailment or restructuring of our operations, exclusion from participation in federal and state healthcare programs and imprisonment.

U.S. Foreign Corrupt Practices Act

The U.S. Foreign Corrupt Practices Act, or FCPA, prohibits U.S. corporations and their representatives from directly or indirectly offering, promising, authorizing or making corrupt payments, gifts or transfers to any foreign government official, government staff member, political party or political candidate in an attempt to obtain or retain business. The scope of the FCPA would include interactions with certain healthcare professionals in many countries

ENVIRONMENTAL MATTERS

Our research and development and manufacturing processes involve the controlled use of hazardous materials, including flammables, toxics, corrosives and biologics. Our research operations produce hazardous biological and chemical waste products. We seek to comply with applicable laws regarding the handling and disposal of such materials. Given the small volume of such materials used or generated at our facilities, we do not expect our compliance efforts to have a material effect on our capital expenditures, earnings and competitive position. However, we cannot eliminate the risk of accidental contamination or discharge and any resultant injury from these materials. We do not currently maintain separate environmental liability coverage and any such contamination or discharge could result in significant cost to us in penalties, damages and suspension of our operations.

RECENT DEVELOPMENTS

FCI Acquisition

On February 28, 2023, we completed the acquisition of certain assets (the "FCI Acquisition") relating to the flow cytometry and imaging business of Luminex Corporation ("Luminex"), including relating to the business of manufacturing, marketing, selling, servicing and maintaining Amnis-, CellStream-, Guava- and Muse-branded instruments, and flow cytometry reagent products and services (the "FCI Business"), for a purchase price of approximately $46.5 million in cash pursuant to an Asset Purchase Agreement between us and Luminex dated February 13, 2023. In connection with the FCI Acquisition, Luminex will provide certain transition services and manufacture and supply certain components, materials and finished products relating to the FCI Business for a period of up to six months following the closing.

FCI Business

The acquired FCI Business includes conventional flow and image-based flow cytometry instrumentation and related products and services, including the Amnis and Guava product lines (the "FCI Products"). Over 7,000 Amnis and Guava systems have been sold and deployed in academic and industry laboratories worldwide, with more than 1,500 active customers in more than 70 countries. We expect to hire all or substantially all of the employees of the FCI Business in connection with or following the FCI Acquisition.

FCI Products

Amnis Product Line

The Amnis imaging flow cytometers combine the speed, sensitivity, and phenotyping abilities of flow cytometry with high resolution images and functional insights of microscopy. Amnis instruments and applications are important tools in the investigation of cell morphology, intracellular translocation and cell-cell interaction in a variety of research areas, including immunology, neurobiology, stem cell research and cell biology.

The ImageStream imaging flow cytometer offers the highest image resolution and includes multiple configurations to fit specific research needs. The FlowSight imaging flow cytometer is a compact, cost-effective instrument that enables a broad range of applications. The CellStream flow cytometer does not have imaging capabilities but is a highly customizable instrument with exceptional sensitivity for studying small particles. The Amnis product line also includes the AI-enabled IDEAS Image Analysis Software, which allows for computer aided tagging of unique cell populations and the classification of cell clusters based on deep neuronal network models, and Amnis-specific cell imaging reagent kits that have been optimized for important cell pathway and drug discovery applications.

The Amnis systems are manufactured at a facility in Seattle, Washington comprised of approximately 27,000 square feet under a lease agreement that expires in November 2023. We assumed the Seattle, Washington lease in connection with the FCI Acquisition.

Guava Product Line

The Guava product line includes cost-effective, entry-level flow cytometers with microcapillary-based fluidics for cell analysis. The Guava microcapillary-based flow cytometers are mainly adopted by entry to mid-range flow cytometry users who are looking for easy-to-use and cost-effective solutions for applications such as cell counting, cell biology and lower-plex immunophenotyping.

The easyCyte flow cytometer is a highly dynamic benchtop system with great sensitivity and optional high-throughput capabilities powered by intuitive software. The Muse cell analyzer is a compact, easy-to-use benchtop device with a user-friendly touchscreen interface and intuitive cell analysis software. The Guava product line also includes optimized kits and reagents.

The Guava systems are manufactured at the Luminex-operated facility in Austin, Texas. Luminex will manufacture and supply certain components, materials and finished products relating to the FCI Business for a period of up to six months following the closing.

CORPORATE INFORMATION

We were incorporated under the laws of the state of Delaware in December 2014 under the name Cytoville, Inc. In August 2015, we changed our name to Cytek Biosciences, Inc. Our principal executive offices are located at 47215 Lakeview Blvd., Fremont, California 94538. Our telephone number is (877) 922-9835. Our website is www.cytekbio.com. Information contained on, or that can be accessed through, our website is not incorporated by reference into this Annual Report on Form 10-K, and you should not consider information on our website to be part of this Annual Report on Form 10-K.

AVAILABLE INFORMATION

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to reports filed pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, are filed with the SEC. Such reports and other information filed by us with the SEC are available free of charge on our website at www.investors.cytekbio.com when such reports are available on the SEC's website. The SEC maintains an internet site that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC at www.sec.gov. The information contained on the websites referenced in this Annual Report on Form 10-K is not incorporated by reference into this filing. Further, our references to website URLs are intended to be inactive textual references only.

ITEM 1A. Risk Factors

Our operations and financial results are subject to numerous risks and uncertainties, including those described below, which may have a material and adverse effect on our business, results of operations, cash flows, financial conditions, and the trading price of our common stock. The risks and uncertainties described below are not the only ones facing us. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations. You should consider these risks and uncertainties carefully, together with all of the other information included or incorporated by reference in this Annual Report on Form 10-K. If any of the following risks actually occur, our business, financial condition, results of operations and future prospects could be materially and adversely affected. You should not interpret our disclosure of any of the following risks to imply that such risks have not already materialized.

Summary Risk Factors

We may be unable for many reasons, including those that are beyond our control, to implement our business strategy successfully. Below is a summary of material factors that make an investment in our shares of common stock speculative or risky. Importantly, this summary does not address all of the risks and uncertainties that we face. Additional discussion of the risks and uncertainties summarized in this risk factor summary, as well as other risks and uncertainties that we face, immediately follows this risk factor summary. The below risk factor summary is qualified in its entirety by that more complete discussion of such risks and uncertainties.

- We have a limited operating history and only recently launched our commercial products, which may make it difficult to evaluate the prospects for our future viability and predict our future performance. We have limited experience marketing and selling our products.
- We are highly dependent on a limited number of product offerings. Our revenue has been primarily generated from sales of our core Aurora and Northern Light systems, which require a substantial sales cycle and are prone to quarterly fluctuations in revenue. Our future success depends on our ability to develop and successfully introduce new and enhanced products that meet the needs of our customers.
- We rely on single source suppliers and, in some cases, sole source suppliers, for certain components and materials used in our systems and may not be able to find replacements or immediately transition to alternative suppliers, which could have an adverse effect on our business, financial condition and results of operations. On August 25, 2021, we and Cytek (Wuxi) Biosciences Co., Ltd, our China subsidiary (the "Subsidiary"), entered into a Supply Agreement (the "Coherent Agreement") with Coherent NA, Inc. ("Coherent"). Pursuant to the Coherent Agreement, Coherent has agreed to sell and supply to us and the Subsidiary, on a non-exclusive basis, laser products manufactured by Coherent. Other than the Coherent Agreement, we do not currently have long-term supply contracts with our sole and single source suppliers of key components.
- Our results of operations will be harmed if we are unable to accurately forecast customer demand for our products and manage our inventory.
- Our business is dependent on adoption of our products by academic and government institutions, clinical research organizations, pharmaceutical companies and clinical laboratories for their research and development activities focused on cell analysis. If academic and government institutions, clinical research organizations, pharmaceutical companies and clinical laboratories are unwilling to adopt our products, it will negatively affect our business, financial condition, prospects and results of operations.
- If we are unable to manufacture our products in high-quality commercial quantities successfully and consistently to meet demand, our growth will be limited.
- Our future success is dependent upon our ability to increase penetration in our existing markets and expand into adjacent markets. If we are unable to successfully expand our commercial operations, including hiring additional qualified sales representatives, technical applications specialists and customer support staff, our business may be adversely affected.
- We and our suppliers are subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and subject us to penalties if we fail to comply with applicable regulatory requirements. Our products may become subject to more onerous regulation by the FDA or other regulatory agencies in the future, which could increase our costs and delay or prevent sales of our products or commercialization of new products and product enhancements.
- Concentration of ownership of our common stock among our executive officers, directors, principal stockholders and their respective affiliates may prevent new investors from influencing significant corporate decisions. Based on shares outstanding as of December 31, 2022, our executive officers, directors, holders of 5% or more of our common stock and their respective affiliates, in the aggregate, own approximately 45.2% of our common stock. These stockholders, acting

together, will be able to significantly influence all matters requiring stockholder approval, including the election and removal of directors and any merger or other significant corporate transaction.

- If we are unable to obtain and maintain patent or other intellectual property protection for any of our current or future products, or if the scope of the patent and other intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our current or future products may be harmed.
- Our business currently depends significantly on research and development spending by academic institutions and government-owned institutions, a reduction in which could limit demand for our solutions and adversely affect our business and operating results.
- International operations and expansion of our international business exposes us to business, regulatory, political, operational, financial and economic risks associated with doing business outside of the United States.
- The market for cell analysis technologies and life sciences tools, including flow cytometry, is rapidly evolving and highly competitive. If we are unable to successfully develop new products, adapt to rapid and significant technological change, respond to introductions of new products by competitors, make strategic and operational decisions to prioritize certain markets, technology offerings or partnerships, and develop and capitalize on markets, technologies or partnerships, our business could suffer.
- If our products do not perform as expected, our operating results, reputation and business will suffer.
- We may acquire other businesses or form other joint ventures or make investments in other companies or technologies that could negatively affect our operating results, dilute our stockholders' ownership, increase our debt or cause us to incur significant expense.
- If we are unable to expand or leverage the number of peer-reviewed articles published using data generated by our products or otherwise increase brand awareness, the demand for our products and our business may be adversely affected.
- We have increased the size of our organization and expect to further increase it in the future, and we may experience difficulties in managing our growth. If we are unable to manage the anticipated growth of our business, our future revenue and operating results may be harmed.
- We rely on distributors for sales of our products in certain geographies outside of the United States. If we are unable to secure additional distributors or maintain good relationships with our existing distributors, or if such distributors do not perform adequately or effectively, our business could suffer.
- We have identified material weaknesses in our internal control over financial reporting. If we are unable to remediate these material weaknesses, or if we identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, we may not be able to accurately or timely report our financial condition or results of operations.
- Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.
- We may need to raise additional capital to fund our existing operations, develop our products and/or expand our operations.
- Failure or perceived failure to comply with existing or future laws, regulations, contracts, self-regulatory schemes, standards, and other obligations related to data privacy and security (including security incidents) could harm our business. Compliance or the actual or perceived failure to comply with such obligations could increase the costs of our products and services, limit their use or adoption, and otherwise negatively affect our operating results and business.

Risks Related to Our Business and Strategy

We have a limited operating history and only recently launched our commercial products, which may make it difficult to evaluate the prospects for our future viability and predict our future performance. We have limited experience marketing and selling our products.

We have a limited operating history and may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown obstacles. We launched our first core commercial product, the Aurora system, in June 2017. Our limited commercial and operating history makes it difficult to evaluate our current business and predict our future performance. Although we have experienced significant revenue growth in recent periods, any assessment of our future revenue, profitability or prediction about our future success or viability is subject to significant uncertainty. We have encountered in the past, and will encounter in the future, risks and uncertainties frequently experienced by growing companies with limited operating histories in emerging and rapidly changing industries, including scaling up our infrastructure and headcount. If our assumptions regarding these risks and uncertainties, which we use to plan and operate

our business, are incorrect or change, or if we do not address these risks successfully, our results of operations could differ materially from our expectations, and our business, financial condition and results of operations could be materially and adversely affected.

We are highly dependent on a limited number of product offerings. Our revenue has been primarily generated from sale of our core Aurora and Northern Lights systems, which require a substantial sales cycle and are prone to quarterly fluctuations in revenue.

Our Aurora system was commercially launched in June 2017, our Northern Lights system was commercially launched in October 2018 and our Aurora CS was first commercially shipped in June 2021. Sales of the Aurora, Northern Lights and Aurora CS systems together accounted for a substantial portion of our revenue for the periods presented. We expect that, for at least the foreseeable future, sales of our Aurora, Northern Lights and Aurora CS systems will continue to account for a substantial portion of our revenue. The sales cycle for our flow cytometer instruments is slow and can take up to six months or longer to complete. As a result of this lengthy and unpredictable sales cycle, we will be prone to quarterly fluctuations in our revenue as sales of the Aurora and Northern Lights systems are expected to continue to comprise a significant component of our revenue. Additionally, we experience seasonality in our business, with revenue in the fourth quarter typically being higher as a result of higher sales volume. Quarterly fluctuations may make it difficult for us to predict our future operating results. Consequently, comparisons of our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance.

As a result of variability and unpredictability, we may also fail to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall short of the expectations of analysts or investors or any guidance we may provide, or if the guidance we provide falls short of the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met or exceeded any previously publicly stated guidance we may have provided.

We currently rely on single source suppliers and, in some cases, sole source suppliers, for certain components and materials used in our systems and may not be able to find replacements or immediately transition to alternative suppliers, which could have an adverse effect on our business, financial condition and results of operations.

We have sourced and will continue to source certain components of the Aurora, Northern Lights and Aurora CS systems from a limited number of suppliers and, in some cases, sole source suppliers. Key components in our products that are supplied by sole or single source suppliers include certain lasers, semiconductors and mechanical components that are used in our optical, electrical and fluidic subassemblies. On August 25, 2021, we and our China Subsidiary entered into the Coherent Agreement with Coherent. Pursuant to the Coherent Agreement, Coherent has agreed to sell and supply to us and the Subsidiary, on a non-exclusive basis, laser products manufactured by Coherent. We and the Subsidiary provide Coherent with rolling forecasts of our and the Subsidiary's anticipated orders, which are non-binding. Purchase orders submitted by us and the Subsidiary pursuant to the terms of the Coherent Agreement will be deemed accepted upon written acknowledgement of acceptance by Coherent. Other than the Coherent Agreement, we do not currently have long-term supply contracts with our sole and single source suppliers of key components. Additionally, we believe we are not a major customer to most of our suppliers. Our suppliers may therefore give other customers' needs higher priority than ours, and we may not be able to obtain adequate supply in a timely manner or on commercially reasonable terms. While we are in the process of qualifying additional sources of supply, qualifications can take 12 to 24 months and, in some cases, longer. If we were to lose one or more of our sole or single source suppliers, it would take significant time and effort to qualify alternative suppliers, if available. Moreover, in the event that we transition to a new supplier, particularly from any of our single source suppliers, doing so could be time-consuming and expensive, may result in interruptions in our ability to supply our products to the market and could affect the performance of our products, resulting in increased costs and negative customer perception.

Although we believe that we have stable relationships with our existing suppliers, we cannot assure you that we will be able to secure a stable supply of components materials going forward. In the event that any adverse developments occur with our suppliers, in particular for those products that are sole-sourced, or if any of our suppliers modifies any of the components they supply to us, our ability to supply our products may be temporarily or permanently interrupted. Obtaining substitute components could be difficult, time and resource-consuming and costly. Also, there can be no assurance that we will be able to secure a supply of alternative components at reasonable prices without experiencing interruptions in our business operations. In addition, quarantines, shelter-in-place and similar government orders related to the COVID-19 pandemic or other infectious disease outbreaks, or the perception that such orders, shutdowns or other restrictions on the conduct of business operations could occur, could impact the suppliers upon which we rely, or the availability or cost of materials, which could disrupt the supply chain for our products.

In addition, we cannot assure you that our suppliers have obtained and will be able to obtain or maintain all licenses, permits and approvals necessary for their operations or comply with all applicable laws and regulations, and failure to do so by them may lead to interruption in their business operations, which in turn may result in shortages of components supplied to us.

Supply interruptions have in the past arisen and could arise in the future from effects of the COVID-19 pandemic, shortages of raw materials, labor disputes or weather conditions affecting products or shipments, transportation disruptions, adjustments to our inventory levels or other factors within and beyond our control, and such supply interruption risk is increased by the limited number of

suppliers for certain of the components we use in our products. Our failure to maintain a continued supply of components that meets our quality control requirements for any reason, including changes to or termination of our agreements with key suppliers, or to enter into new agreements with other suppliers, particularly in the case of single or sole source suppliers, could result in the loss of access to important components and materials used in our products and impact our ability to manufacture and sell our products. Any delay or interruption in the supply of our materials could delay or suspend sales of our products and increase the costs of manufacturing our products, which could have an adverse effect on our business, financial condition and results of operations.

Our results of operations will be harmed if we are unable to accurately forecast customer demand for our products and manage our inventory.

To ensure adequate supply of our instruments and other products, we must forecast the inventory needs of our current and prospective customers, and manufacture our products based on our estimates of future demand. Our ability to accurately forecast demand for our products could be negatively affected by many factors, many of which are beyond our control, including our failure to accurately manage our expansion strategy, product introductions by competitors, an increase or decrease in customer demand for our products or for products of our competitors, our failure to accurately forecast market acceptance of new products, changes in general market conditions, including as a result of the COVID-19 pandemic, seasonal demands, regulatory matters, inflation or weakening of general economic conditions.

We seek to maintain sufficient levels of inventory of our instruments and other products to protect ourselves from supply interruptions. We rely in part on our support organizations and distributors to supply forecasts of anticipated product orders in their respective territories. If we fail to accurately estimate customer demand for our products, our inventory forecasts may be inaccurate, resulting in shortages or excesses of inventory. Inventory levels in excess of customer demand may result in inventory write-downs or write-offs, which would cause our gross margin to be adversely affected and negatively impact our business, prospects, financial condition and results of operations. Conversely, if we underestimate customer demand for our products, we may not be able to deliver products in a timely manner or at all, and this could result in reduced revenue and damage to our reputation and customer relationships. In addition, if we experience a significant increase in demand, we may not have adequate manufacturing capacity to meet such demand, and additional supplies may not be available when required on terms that are acceptable to us, or at all, or suppliers may not be able to allocate sufficient capacity to meet our increased requirements, all of which would negatively affect our business, financial condition and results of operations. If we are unable to meet customer demand, we could lose our existing customers or lose our ability to acquire new customers, which would also negatively impact our business, financial condition and results of operations.

We have limited experience manufacturing our products and if we are unable to manufacture our products in high-quality commercial quantities successfully and consistently to meet demand, our growth will be limited.

We have limited experience manufacturing our products. We currently manufacture our instruments and reagents at our manufacturing facilities in Fremont, California, and Wuxi, China, and reagents at our facility in San Diego, California. To manufacture our products in the quantities that we believe will be required to meet the currently anticipated market demand beyond the next several years, we will need to increase manufacturing capacity, which will involve significant challenges and may require additional quality controls and regulatory approvals. We may not successfully complete any required increase to existing manufacturing capacity in a timely manner, or at all.

If there is a disruption to our manufacturing operations, we will have no other means of producing our products until we resolve such issues with our manufacturing facilities, develop alternative manufacturing facilities, or contract with third-party manufacturers capable of producing our products. Additionally, any damage to or destruction of our manufacturing facilities or equipment may significantly impair our ability to manufacture products on a timely basis. There may also be unforeseen occurrences that increase our costs, such as increased prices of the components of our products, changes to labor costs or less favorable terms with third-party suppliers. There can be no assurance that we will not encounter such problems in the future.

If we are unable to manufacture products consistently and in sufficient quantities to meet anticipated customer demand, our business, financial condition, results of operations and prospects would be harmed. As we continue to scale the commercial production of our products and increase our manufacturing capacity, we may encounter quality issues that could result in product defects, errors or recalls. Manufacturing delays related to quality control could negatively impact our ability to bring our products to market, harm our reputation and decrease our revenue. Any defects, errors or recalls could be expensive and generate negative publicity, which could impair our ability to market or sell our products, and adversely affect our results of operations.

In addition, the introduction of new products may require the development of new manufacturing sites, processes or procedures as well as new suppliers. Developing new processes and negotiating supply agreements can be very time consuming, and any unexpected difficulty in doing so could delay the introduction of a product.

Our future success is dependent upon our ability to increase penetration in our existing markets and expand into adjacent markets.

Our customer base includes academic and government institutions, pharmaceutical and biotechnology companies, clinical research organizations and clinical laboratories focused on cell analysis. Approximately 44% and 46% of our revenue came from sales to academic and government-owned institutions and 56% and 54% of our revenue came from sales to pharmaceutical and biotechnology companies, distributors and CROs in the year ended December 31, 2022 and 2021, respectively. Our success will depend upon our ability to increase our market penetration. We cannot guarantee that we will be able to further penetrate our existing markets or that these markets will be able to sustain our current and future product and service offerings. Any failure to increase penetration in our existing markets would adversely affect our ability to improve our operating results.

Our success will also depend on our ability to further expand into adjacent markets, such as immunotherapy, immuno-oncology, bio-processing, infectious diseases and immune-deficiencies, as well as areas outside of healthcare, such as marine biology and alternative biofuels and other environmental fields. For example, in the United States, our products are currently labeled and promoted, and are, and in the near-future are expected to continue to be, sold primarily to academic and research institutions and biopharmaceutical companies as research use only products for non-diagnostic and non-clinical purposes, and are not currently designed, or intended to be used, for clinical diagnostic tests. We plan to continue generating supporting publications and data, as well as pursue any required regulatory approvals for clinical use for our products in the United States. Our ability to penetrate the clinical markets in the United States will depend in part on our ability to receive 510(k) clearance, *de novo* classification, or approval of a pre-market approval application from the FDA. Our failure to further expand in adjacent markets and attract new customers could adversely affect our ability to improve our operating results.

Our business is dependent on adoption of our products by academic and government institutions, clinical research organizations, pharmaceutical companies and clinical laboratories for their research and development activities focused on cell analysis. If academic and government institutions, clinical research organizations, pharmaceutical companies and clinical laboratories are unwilling to change current practices to adopt our products, it will negatively affect our business, financial condition, prospects and results of operations.

Our primary strategy to grow our revenue is to take a stepwise approach to market our products across key stakeholders in flow cytometry and cell analysis, such as academic and government institutions, clinical research organizations, pharmaceutical companies and clinical laboratories. While the number of customers using our products has increased in recent years, many academic and government institutions, clinical research organizations, pharmaceutical companies and clinical laboratories have not yet adopted our products, and such institutions and companies may choose not to adopt our products for a number of reasons, including:

- inadequate recruiting or training of talented sales force in existing and new markets to facilitate outreach and further adoption and awareness of our products;
- lack of experience with our products for cell analysis;
- perceived inadequacy of evidence supporting benefits or cost-effectiveness of our products over existing alternatives;
- liability risks generally associated with the use of new products and processes;
- the training required to use new products;
- a decrease or delay in the research and development activities using our products as a result of the COVID-19 pandemic;
- competing products and alternatives; and
- introduction of other novel alternative products for cell analysis.

We believe that educating notable industry KOLs, representatives of academic and government institutions, clinical research organizations, pharmaceutical companies and clinical laboratories, about the merits and benefits of our products for flow cytometry and cell analysis is one of key elements of increasing the adoption of our products. If these institutions and companies do not adopt our products for any reason, including those listed above, our ability to execute our growth strategy will be impaired, and it will negatively affect our business, financial condition, prospects and results of operations.

Our business currently depends significantly on research and development spending by academic and government-owned institutions, a reduction in which could limit demand for our solutions and adversely affect our business and operating results.

Approximately 44% and 46% of our revenue came from sales to academic and government-owned institutions in the year ended December 31, 2022 and 2021, respectively. Much of their funding was, in turn, provided by various state, federal and foreign government agencies. In the near term, we expect that a large portion of our revenue will continue to be derived from sales to academic and government-owned institutions. As a result, the demand for our solutions may depend upon the research and development budgets of these customers, which are impacted by factors beyond our control, such as:

- decreases in government funding of research and development;
- changes to programs that provide funding to research laboratories, hospitals and related institutions, including changes in the amount of funds allocated to different areas of research or changes that have the effect of increasing the length of the funding process;
- macroeconomic conditions and the political climate;
- scientists' and customers' opinions of the utility of new products or services;
- changes in the regulatory environment;
- differences in budgetary cycles;
- competitor product offerings or pricing;
- market-driven pressures to consolidate operations and reduce costs; and
- market acceptance of relatively new technologies, such as ours.

In addition, various state, federal and foreign agencies that provide grants and other funding may be subject to stringent budgetary constraints that could result in spending reductions, reduced grant making, reduced allocations or budget cutbacks, including as a result of negative or worsening conditions in the general economy, which could jeopardize the ability of these customers, or the customers to whom they provide funding, to purchase our solutions. For example, congressional appropriations to the National Institutes of Health (the "NIH") have generally increased year-over-year in recent years, but the NIH also experiences occasional year-over-year decreases in appropriations. There is no guarantee that NIH appropriations will not decrease or halt in the future. A decrease in the amount or halt of, or delay in the approval of, appropriations to NIH or other similar United States or foreign organizations, such as the Medical Research Council in the United Kingdom, could result in fewer grants benefiting life sciences research. These reductions or delays could also result in a decrease in the aggregate amount of grants awarded for life sciences research or the redirection of existing funding to other projects or priorities, any of which in turn could cause our customers and potential customers to reduce or delay purchases of our solutions. Our operating results may fluctuate substantially due to any such reductions and delays. Any decrease in our customers' budgets or expenditures, or in the size, scope or frequency of their capital or operating expenditures, could materially and adversely affect our business, operating results and financial condition.

We rely on distributors for sales of our products in certain geographies outside of the United States. If we are unable to secure additional distributors or maintain good relationships with our existing distributors, or if such distributors do not perform adequately or effectively, our business could suffer.

In addition to selling our products through our direct sales force and support organizations in North America, Europe, China, and several other countries in the Asia-Pacific region, we sell our products through third-party distributors or sales agents in certain countries in Europe, Latin America, the Middle East and the Asia-Pacific region. If current or future distributors do not perform adequately or effectively or fail to obtain or maintain any required regulatory approvals, we may not realize long-term international revenue growth and our business, operating results and financial condition may be harmed. We have limited control over our distributors, which may not commit the necessary resources to market our products to the level of our expectations.

We intend to continue to grow our business internationally and to do so we may choose to partner with additional distributors to maximize the commercial opportunity for our products. There is no guarantee that we will be successful in attracting or retaining desirable sales and distribution partners or that we will be able to enter into such arrangements on favorable terms, which could affect our ability to expand into or further penetrate certain geographies and adversely impact our business, operating results and financial condition.

International operations and expansion of our international business exposes us to business, regulatory, political, operational, financial and economic risks associated with doing business outside of the United States.

We currently have significant international operations and our business strategy incorporates further international expansion. We currently maintain relationships with distributors and suppliers outside of the United States and may in the future enter into new distributor and supplier relationships outside of the United States. In addition, we currently have manufacturing operations in both the United States and China. Doing business internationally involves a number of risks, including:

- multiple, conflicting and changing laws and regulations such as privacy regulations, tax laws, export and import restrictions, tariffs, economic sanctions and embargoes, employment laws, regulatory requirements and other governmental approvals, permits and licenses;
- failure by us or our distributors to obtain approvals to conduct our business in various countries;
- differing intellectual property rights;
- complexities and difficulties in obtaining intellectual property protection, enforcing our intellectual property and defending against third party intellectual property claims;
- difficulties in staffing and managing foreign operations;
- logistics and regulations associated with shipping systems and parts and components for our products, as well as transportation delays;
- travel restrictions that limit the ability of marketing, presales, sales, services and support teams to service customers, including those resulting from the COVID-19 pandemic;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises on demand and payment for our products and exposure to foreign currency exchange rate fluctuations;
- international trade disputes that could result in tariffs and other protective measures;
- natural disasters, political and economic instability, including wars, terrorism and political unrest such as the ongoing war in Ukraine, outbreak of disease, boycotts, curtailment of trade and other business restrictions; and
- regulatory and compliance risks that relate to maintaining accurate information and control over sales and distributors' activities that may fall within the purview of the U.S. Foreign Corrupt Practices Act (the "FCPA"), its books and records provisions, or its anti-bribery provisions.

Any of these factors could significantly harm our future international expansion and operations and, consequently, our business, financial condition, results of operations and prospects. In addition, certain international markets are subject to significant political and economic uncertainty, including, for example, the effect of the withdrawal of the United Kingdom from the European Union. Significant political and economic developments in international markets in which we currently or intend to operate, or the perception that any of them could occur, creates further challenges for operating in these markets in addition to creating instability in global economic conditions.

The market for cell analysis technologies and life sciences tools, including flow cytometry, is highly competitive, and if we cannot compete successfully with our competitors, we may be unable to increase or sustain our revenue, or achieve and sustain profitability.

We face significant competition in the cell analysis and life sciences tools markets. We currently compete with both established and early stage life sciences and in vitro diagnostics ("IVD") companies that design, manufacture and market flow cytometry instruments, consumables and software for cell analysis and/or provide services related to the same. An increasing number of applications for cell analysis, and more particularly flow cytometry, is leading to more companies offering competitive products and services. Our competitors include Agilent Technologies, Beckman Coulter (Danaher Corporation), Becton, Dickinson and Company ("BD"), Bio-Rad Laboratories, Standard BioTools Inc., Miltenyi Biotec, Sony Biotechnology (Sony Corporation), and Thermo Fisher Scientific. Our target customers may also elect to develop their workflows using other technologies rather than implementing our platform or existing customers may decide to stop using our platform. In addition, there are many large, established companies in the life sciences tools market that could develop instruments or other products that will compete with us in the future. These large, established companies have substantially greater financial and other resources than us, including larger research and development, quality and regulatory staff or more established marketing and sales forces.

Our competitors and potential competitors may enjoy a number of competitive advantages over us, including:

- longer operating histories;
- larger customer bases;

- greater brand recognition and market penetration;
- greater financial resources and capabilities;
- greater technological and research and development resources;
- larger intellectual property portfolios;
- better system reliability and robustness;
- greater selling and marketing capabilities; and
- better established, larger scale and lower cost manufacturing capabilities.

In addition, competitors may be acquired by, receive investments from or enter into other commercial relationships with larger, well-established and well-financed companies. Our competitors and potential competitors may be able to respond more quickly to changes in customer requirements, devote greater resources to the development, promotion and sale of their products and services than we can, secure key components from suppliers on more favorable terms, adopt more aggressive pricing policies or sell their products or offer services competitive with our products at prices and margins designed to win significant levels of market share. We may not be able to compete effectively against these organizations. If we are unable to compete successfully against current and future competitors, we may be unable to increase market adoption and sales of our products, which could negatively impact our business, financial condition, results of operations and prospects.

Our future success depends on our ability to develop and successfully introduce new and enhanced products that meet the needs of our customers.

Our current products include instruments, consumables and services to advance high-content and high-sensitivity cell analysis by utilizing our full spectrum profiling ("FSP") technology. We cannot assure you that the market for our current products will continue to generate significant or consistent demand. Demand for our current products could be significantly diminished by competitive technologies or products that replace them or render them obsolete or less desirable. Accordingly, we must continue to invest in research and development to develop competitive products and enabling services.

Our future success depends on our ability to anticipate our customers' needs and develop new products and enhance current products and services to address those needs. Introduction of new products and product enhancements will require that we effectively transfer production processes from research and development to manufacturing and coordinate our efforts with those of our suppliers to achieve the desired level of production. If we fail to transfer production processes effectively, develop product enhancements or introduce new products or enabling services in sufficient quantities to meet the needs of our customers, or effectively coordinate with our suppliers, our net sales may be reduced and our business would be harmed.

The commercial success of all of our products and services will depend upon their acceptance by the life sciences and biopharmaceutical industries. Some of the products and services that we are developing are based upon new technologies or approaches. As a result, there can be no assurance that these new products and services, even if successfully developed and introduced, will be accepted by customers. If customers do not adopt our new products, services and technologies, our results of operations may suffer and, as a result, the market price of our common stock may decline.

If we are unable to successfully develop new products, adapt to rapid and significant technological change, respond to introductions of new products by competitors, make strategic and operational decisions to prioritize certain markets, technology offerings or partnerships, and develop and capitalize on markets, technologies or partnerships, our business could suffer.

We currently sell our products primarily in the cell analysis market, which is characterized by significant enhancements and evolving industry and regulatory standards. As a result, our customers' needs are rapidly evolving. If we do not appropriately innovate and offer our customers comprehensive solutions and otherwise invest in new technologies, our offerings may become less desirable in the markets we serve, and our customers could move to new technologies offered by our competitors or make products themselves. Without the timely introduction of new instruments, consumables, software, services and enhancements, our offerings may become less competitive over time, in which case our competitive position and operating results could suffer. Accordingly, we focus significant efforts and resources on the development and identification of new products and applications to further drive adoption of our platform. To the extent we fail to timely introduce new and innovative products, offer enhancements to our existing products, adequately predict our customers' needs or fail to obtain desired levels of market acceptance, our business may suffer and our operating results could be adversely affected.

We believe our products have potential applications across a wide range of markets and we have targeted certain markets in which we believe our technology has significant advantages, or for which we believe we have a higher probability of success or revenue opportunity. For example, we are committed to developing our platform's applications within the clinical market, and in particular, within disease detection, diagnosis, and treatment monitoring. We seek to maintain a process of prioritization and resource allocation

among our programs to maintain a balance between advancing near-term opportunities and exploring additional markets and use cases for our technology. However, due to the significant resources required for the development of products or services for new markets, we must make decisions on which markets to pursue and the amount of resources to allocate to each. Our decisions concerning the allocation of research, development, collaboration, management and financial resources toward particular markets, products or services may not lead to the development of any viable products or services and may divert resources away from better opportunities. Similarly, our potential decisions to delay, terminate or collaborate with third parties in respect of certain markets may subsequently also prove to be suboptimal and could cause us to miss valuable opportunities. In particular, if we are unable to accelerate adoption of our FSP solutions, it could slow or stop our business growth and negatively impact our business, financial condition, results of operations and prospects.

New product development involves a lengthy and complex process and we may be unable to develop or commercialize products on a timely basis, or at all.

Products from our research and development programs will take time and considerable resources to develop, and may include improvements or changes to our current products, and we may not be able to complete development and commercialization of new or enhanced products on a timely basis, or at all. There can be no assurance that our research and development efforts will produce commercially viable products and solutions and before we can commercialize any new products, we will need to expend significant funds to, for example:

- conduct substantial research and development;
- obtain necessary regulatory approval;
- further develop and scale our laboratory, engineering and manufacturing processes to accommodate different products;
- source and enter into agreements with new suppliers; and
- further develop and scale our infrastructure.

Our product development processes involve a high degree of risk, and these efforts may be delayed or fail for many reasons, including failure of the product to perform as expected and failure to reliably demonstrate the advantages of the product.

Even if we are successful in developing new products, it will require us to make significant additional investments in marketing and selling resources to commercialize any such products. As a result, we may be unsuccessful in commercializing new products that we develop, which could adversely affect our business, financial condition, results of operations and prospects.

Our FSP systems are complex in design and may contain defects that are not detected until deployed by our customers, which could increase our costs and reduce our net sales. If our products do not perform as expected or the reliability of the technology on which our products and services are based is questioned, our operating results, reputation and business will suffer.

Our success depends on our ability to provide reliable, high quality products that enable high-content and high-sensitivity cell analysis through flexible, efficient and cost-effective solutions. Our FSP systems are complex in design and involve a highly complex and precise manufacturing process. As a result of the technological complexity of our systems, changes in our or our suppliers' manufacturing processes or the inadvertent use of defective materials by us or our suppliers could result in an adverse effect on our ability to achieve acceptable manufacturing yields and product reliability. To the extent that we do not achieve and maintain our projected yields or product reliability, our business, operating results, financial condition and customer relationships would be adversely affected. We provide warranties on a majority of our product sales, and reserves for estimated warranty costs are recorded during the period of sale. The determination of such reserves requires us to make estimates of failure rates and expected costs to repair or replace the products under warranty. We typically establish warranty reserves based on historical warranty costs for each product line. If actual repair and replacement costs differ significantly from our estimates, adjustments to cost of sales may be required in future periods which could have an adverse effect on our results of operations.

Our customers may discover defects in our products after the products have been fully installed and operated. In addition, some of our products include components from other vendors, which may contain defects. As a result, should problems occur, it may be difficult to identify the source of the problem. If we are unable to identify and fix defects or other problems, we could experience, among other things:

- loss of customers or orders;
- increased costs of warranty expenses;
- damage to our brand reputation;
- failure to attract new customers;
- diversion of development, engineering and manufacturing resources;

- regulatory actions by governmental authorities; and
- legal actions by our customers.

We believe that customers in our target markets are likely to be particularly sensitive to product defects and errors. Our reputation and the public image of our products, services and technologies may be impaired if our products or services fail to perform as expected. If our products do not perform, or are perceived to not have performed, as expected or favorably in comparison to competitive products, our operating results, reputation, and business will suffer, and we may also be subject to legal claims arising from product limitations, errors, or inaccuracies. Any of the foregoing could have an adverse effect on our business, financial condition and results of operations.

Although our products are tested prior to shipment, defects or errors could nonetheless occur. Our operating results depend on our ability to execute and, when necessary, improve our quality management strategy and systems and our ability to effectively train and maintain our employee base with respect to quality management. A failure of our quality control systems could result in problems with facility operations or preparation or provision of products. In each case, such problems could arise for a variety of reasons, including equipment malfunction, failure to follow specific protocols and procedures, problems with raw materials or environmental factors and damage to, or loss of, manufacturing operations.

We provide a one-year assurance-type warranty on our instruments. Existing and future warranties place us at the risk of incurring future repair and/or replacement costs. At the time revenue is recognized, we establish an accrual for estimated warranty expenses based on historical data and trends of product reliability and costs of repairing and replacing defective products. We exercise judgment in estimating the expected product warranty costs, using data such as the actual and projected product failure rates, estimated repair costs, freight, material, labor and overhead costs. While we believe that historical experience provides a reliable basis for estimating such warranty cost, unforeseen quality issues or component failure rates could result in future costs in excess of such estimates, or alternatively, improved quality and reliability in our products and consumables could result in actual expenses that are below those currently estimated. As of December 31, 2022, we had accrued approximately $2.1 million in expenses relating to product warranty accruals. Substantial amounts of warranty claims could have an adverse effect on our business, financial condition and results of operations.

Even after any underlying concerns or problems are resolved, any lingering concerns in our target markets regarding our technology or any manufacturing defects or performance errors in our products or services could continue to result in lost revenue, delayed market acceptance, damage to our reputation and claims against us.

We may acquire other businesses or form other joint ventures or make investments in other companies or technologies that could negatively affect our operating results, dilute our stockholders' ownership, increase our debt or cause us to incur significant expense

From time to time, we may pursue acquisitions of businesses and assets. For example, in February 2023, we entered into an asset purchase agreement with Luminex Corporation ("Luminex") to acquire certain assets related to the flow cytometry and imaging ("FCI") business unit of Luminex (the "FCI Acquisition"). We may choose to further expand our business by acquiring additional businesses or assets in the future. We also may pursue strategic alliances and additional joint ventures that leverage products and industry experience to expand our offerings or distribution. We have limited experience with acquiring other companies and forming strategic partnerships. We may not be able to find suitable partners or acquisition candidates, and we may not be able to complete such transactions on favorable terms, if at all. We may not be able to integrate acquisitions, including the recent FCI Acquisition, successfully into our existing business, and in certain cases we could assume unknown or contingent liabilities. Any future acquisitions also could result in the incurrence of debt, contingent liabilities or future write-offs of intangible assets or goodwill, any of which could have an adverse effect on our financial condition, results of operations and cash flows. In addition, any pursuit of an acquisition and any potential integration of an acquired company also may disrupt ongoing operations and divert management attention and resources that we would otherwise focus on developing our existing business. We may experience losses related to investments in other companies, which could have a negative effect on our results of operations and financial condition. We may not realize the anticipated benefits of any acquisition, technology license, strategic alliance or joint venture.

Shipping is a critical part of our business and any changes in our shipping arrangements or damages or losses sustained during shipping could adversely affect our business, financial condition, results of operations and prospects.

We currently rely on third-party vendors for our shipping. If we are not able to negotiate acceptable pricing and other terms with these entities or they experience performance problems or other difficulties, it could negatively impact our operating results and our customers' experience. Additionally, our manufacturing operations in Fremont and San Diego, California, and Wuxi, China require global shipping services which are subject to certain factors outside of our control, such as increased costs due to fuel surcharges or otherwise, delays passing through customs and disruptions to global shipping routes. We experienced shipping delays and difficulties due to the COVID-19 pandemic and may again experience such delays or difficulties due to future pandemics, other infectious disease outbreaks or natural disasters. Moreover, there is no guarantee that our systems will not become damaged or lost in transit, and we have experienced, and expect to continue to experience, delivery difficulties. If a system is damaged in transit, it may result in a substantial

delay in the fulfillment of the customer's order, and depending on the type and extent of the damage and whether the incident is covered by insurance, it may result in customer dissatisfaction and a substantial financial loss for us. If our products are not delivered in a timely fashion or are lost during the delivery process, our customers could also become dissatisfied and cease using our products or services, which would adversely affect our business, financial condition, results of operations and prospects. Additionally, delays in shipping could have an adverse impact on our ability to recognize revenue in a timely manner, which could have an adverse impact on our quarterly results of operations.

If we are unable to successfully expand our commercial operations, including hiring additional qualified sales representatives, technical applications specialists and customer support staff, our business may be adversely affected.

Our future sales will depend, in large part, on our ability to develop and substantially expand our sales infrastructure, particularly as we enter into new markets, rollout new solutions and applications and manage inbound interest from new customers. We distribute our products through our direct sales force and support organizations located in North America, Europe, China, and several countries in the Asia-Pacific region, and through distributors or sales agents in several countries in Europe, Latin America, the Middle East and the Asia-Pacific region. Our sales and marketing efforts are targeted at academic and governmental institutions, pharmaceutical and biotechnology companies, clinical research organizations and clinical laboratories focused on cell analysis. To continue driving adoption of our solutions and to support our global brand, we will need to further expand our sales infrastructure by hiring additional, highly qualified and reputable sales representatives, technical applications specialists and customer support staff, in addition to increasing advertising efforts.

Identifying and recruiting qualified personnel with sufficient industry experience and training them requires significant time, expense and attention. We have limited experience in training our personnel to successfully market and sell our products. If we provide inadequate training, fail to increase our sales and marketing capabilities or fail to develop broad brand awareness in a cost-effective manner, our business may be harmed. In addition, if our efforts to expand do not generate a corresponding increase in revenue or result in a decrease in our operating margin, our financial results will be adversely impacted. If we are unable to hire, develop and retain talented sales personnel or if new sales personnel are unable to achieve desired productivity levels in a reasonable period of time, we may not be able to realize the expected benefits of this investment or increase our revenue.

Additionally, our technical applications specialists work closely with researchers and clinicians to optimize and implement new panels and applications to meet their specific needs. Hiring these highly skilled specialists is competitive due to the limited number of people available with the necessary scientific and technical backgrounds and ability to understand our products at a technical level, and training such individuals requires significant time, expense and attention. Furthermore, we face intense competition in the labor market for such highly skilled specialists from competitors in our industry as well as competition from companies in other industries. To effectively support current and potential customers, we will need to hire, maintain, train and grow the number of our technical application specialists and customer support staff. If we are unable to maintain, attract, train or retain the number of qualified support personnel that our business needs, our business and prospects will suffer.

If we are unable to expand or leverage the number of peer-reviewed articles published using data generated by our products or otherwise increase brand awareness, the demand for our products and our business may be adversely affected.

We rely on a significant base of peer-reviewed publications to showcase and validate the importance and application of our technology in academic and clinical research settings. To date, there have been more than 1000 peer-reviewed articles published, including many published in prominent journals, using data generated by our technology across a wide range of key scientific research areas, including immunology and inflammation, infectious diseases, immuno-oncology, oncology and others. We believe that expanding the base of these publications, and otherwise developing and maintaining awareness of our brand in a cost-effective manner is critical to achieving broad acceptance of our solutions and attracting new customers. Such publications and other brand promotion activities may not generate customer awareness or increase revenue and, even if they do, any increase in revenue may not offset the costs and expenses we incur in building our brand. If we fail to successfully promote, maintain and protect our brand, we may fail to attract or retain the customers necessary to realize a sufficient return on our brand-building efforts, or to achieve the widespread brand awareness that is critical for broad customer adoption of our solutions.

We are highly dependent on our senior management team and key personnel and our business could be harmed if we are unable to attract and retain personnel necessary for our success.

We are highly dependent on our senior management team and key personnel. Our success will depend on our ability to retain senior management and to attract and retain qualified personnel in the future, including sales, marketing, scientific and technical professionals, and to integrate current and additional personnel in all departments. The loss of members of our senior management, sales, marketing, scientific and technical professionals could result in lower than expected sales and delays in product development. If we are not successful in attracting and retaining highly qualified personnel, it would have a negative impact on our business, financial condition and results of operations.

Competition for skilled personnel in our market is intense and has recently intensified further due to macro-economic conditions and industry trends in many areas where our employees are located. This may limit our ability to hire and retain highly qualified personnel on acceptable terms, or at all. To induce valuable employees to remain at our company, in addition to salary and cash incentives, we have issued, and will in the future issue, equity awards that vest over time. The value to employees of equity awards that vest over time may be significantly affected by movements in our stock price that are beyond our control and may at any time be insufficient to counteract more lucrative offers from other companies. Despite our efforts to retain valuable employees, they may terminate their employment with us on short notice. Our employment arrangements with our employees provide for at-will employment, which means that any of our employees could leave our employment at any time, with or without notice.

Many of the other cell analysis technology companies that we compete against for qualified personnel have greater financial and other resources, different risk profiles and a longer history in the industry than we do. They may also provide more diverse opportunities, better chances for career advancement and higher compensation. Some of these characteristics are more appealing to high quality candidates than what we can offer. Further, if we hire employees from competitors or other companies, their former employers may attempt to assert that these employees or we have breached legal obligations, resulting in a diversion of our time and resources and, potentially, damages.

In addition, job candidates and existing employees often consider the value of the equity awards they receive in connection with their employment. If the perceived benefits of our stock awards decline, either because we are a public company or for other reasons, it may harm our ability to recruit and retain highly skilled employees. Many of our employees have become or will soon become vested in a substantial amount of their equity awards. Our employees may be more likely to leave us if the equity they own have significantly appreciated in value relative to the original purchase prices of the shares, or if the exercise prices of the options that they hold are significantly below the market price of our common stock, particularly after the expiration of the lock-up agreements described herein.

Our future success also depends on our ability to continue to attract and retain additional executive officers and other key employees as we expand our business and operations. If we fail to attract new personnel or fail to retain and motivate our current personnel, it will negatively affect our business, financial condition and results of operations.

We have increased the size of our organization and expect to further increase it in the future, and we may experience difficulties in managing our growth. If we are unable to manage the anticipated growth of our business, our future revenue and operating results may be harmed.

As of December 31, 2022, we had 583 full-time employees. As our sales and marketing strategies develop, we expect to need additional managerial, operational, sales, marketing, financial and other personnel. Future growth would impose significant added responsibilities on members of management, including:

- identifying, recruiting, integrating, maintaining and motivating additional employees;
- managing our internal development efforts effectively, while complying with our contractual obligations to contractors and other third parties; and
- improving our operational, financial and management controls, reporting systems and procedures.

Since our inception, we have experienced growth and anticipate further growth in our business operations both inside and outside the United States. This future growth could strain our organizational, administrative and operational infrastructure, including quality control, operational, finance, customer service and sales organization management. We expect to continue to increase our headcount and to hire more specialized personnel in the future as we grow our business. We will need to continue to hire, train and manage additional qualified scientists, engineers, technical personnel and sales and marketing staff and improve and maintain our products to properly manage our growth. Rapid expansion in personnel could mean that less experienced people develop, market and sell our products, which could result in inefficiencies and unanticipated costs, reduced quality and disruptions to our operations. If our new hires perform poorly, if we are unsuccessful in hiring, training, managing and integrating these new employees or if we are not successful in retaining our employees, our business may be harmed. We may not be able to maintain the quality or expected turnaround times of our products, or satisfy customer demand as it grows. Our ability to manage our growth properly will require us to continue to improve our operational, financial and management controls, as well as our reporting systems and procedures. The time and resources required to implement these new systems and procedures is uncertain, and failure to complete this in a timely, efficient and effective manner could adversely affect our operations.

We have identified material weaknesses in our internal control over financial reporting. If we are unable to remediate these material weaknesses, or if we identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, we may not be able to accurately or timely report our financial condition or results of operations.

In connection with our financial statement close process for the year ended December 31, 2022, we identified deficiencies in the control environment and control activities components of the Committee of Sponsoring Organizations ("COSO") framework that

constitute material weaknesses, either individually or in the aggregate. Deficiencies in the control environment related to (i) the lack of a sufficient number of qualified resources within our accounting and IT functions with the appropriate level of technical accounting or other requisite knowledge to (a) timely identify and assess accounting implications of transactions; and (b) perform assigned responsibilities and have appropriate accountability for the design and operation of internal control over financial reporting. Deficiencies related to control activities related to (i) selecting and developing control activities that contribute to the mitigation of risks and support achievement of objectives; (ii) selecting and developing general control activities over technology to support the achievement of objectives; and (iii) deploying control activities through policies that establish what is expected and procedures that put policies into action and relate to substantially all financial statement accounts and disclosures Please see the section entitled "Item 9A. Controls and Procedures" for additional information.

A material weakness is a deficiency or combination of deficiencies in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of its financial statements would not be prevented or detected on a timely basis. These deficiencies could result in additional material misstatements to our consolidated financial statements that could not be prevented or detected on a timely basis.

We cannot be certain that the measures we have taken to date, and actions we may take in the future, will be sufficient to remediate the control deficiencies that led to our material weaknesses in our internal control over financial reporting or that they will prevent or avoid potential future material weaknesses. If we are unable to successfully remediate our existing or any future material weaknesses in our internal control over financial reporting, or identify any additional material weaknesses, the accuracy and timing of our financial reporting may be negatively impacted, we may be unable to maintain compliance with securities law requirements regarding timely filing of periodic reports in addition to applicable stock exchange listing requirements, investors may lose confidence in our financial reporting, and our stock price may decline as a result.

We may need to raise additional capital to fund our existing operations, develop our products and/or expand our operations.

Based on our current planned operations, we expect that our existing cash will enable us to fund our operating expenses for at least 12 months from the date hereof. However, if our available cash balances and anticipated cash flow from operations are insufficient to satisfy our liquidity requirements or otherwise, we may seek to issue equity or convertible debt securities, enter into a credit facility or another form of third-party funding, seek other debt financing or enter into collaborations or licensing arrangements.

We may consider raising additional capital in the future to expand our business, to pursue strategic investments, to take advantage of financing opportunities or for other reasons, including to further scale up our manufacturing of our products, to increase our sales and marketing efforts to drive market adoption of our products and address competitive developments, and to finance capital expenditures and general and administrative expenses.

Our present and future funding requirements will depend on many factors, some of which are beyond our control, including:

- our ability to achieve and maintain revenue growth;
- the cost of expanding our operations, including our sales and marketing efforts;
- our rate of progress in launching and commercializing new products, and the cost of the sales and marketing activities associated with, establishing adoption of our products;
- our rate of progress in, and cost of research and development activities associated with, products in research and development;
- the effect of competing technological and market developments;
- the potential cost of and delays in product development as a result of any regulatory oversight applicable to our products;
- the costs associated with any product recall that may occur;
- costs related to domestic and international expansion;
- the costs of attaining, defending and enforcing our intellectual property rights; and
- the terms and timing of any other collaborative, licensing and other arrangements that we may establish.

Additional funding may not be available on acceptable terms, or at all. Weakness and volatility in the capital markets and the economy in general could limit our access to the capital markets and increase our cost of borrowing If we do raise additional capital through public or private equity offerings, the ownership interest of our existing stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our existing stockholders' rights. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through other third-party funding, collaborations agreements, strategic alliances, licensing arrangements or marketing and distribution arrangements, we may have to

relinquish valuable rights to our technologies, future revenue streams, research programs or products or grant licenses on terms that may not be favorable to us.

In addition, our ability to raise additional funds may be adversely impacted by potential worsening global economic conditions and the disruptions to, and volatility in, the credit and financial markets in the United States and worldwide resulting from the COVID-19 pandemic, geopolitical tensions, such as the ongoing war in Ukraine, and rising interest rates. The global economy, including credit and financial markets, has experienced extreme volatility and disruptions, including severely diminished liquidity and credit availability, declines in economic growth, increases in inflation rates, higher interest rates and uncertainty about economic stability. If the equity and credit markets further deteriorate, or do not improve, it may make any necessary debt or equity financing more difficult, more costly and more dilutive. If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we may have to significantly delay, scale back or discontinue the development, manufacturing or commercialization of our products, or other research and development initiatives. If this were to occur, our ability to grow and support our business and to respond to market challenges could be significantly limited, which could have an adverse effect on our business, financial condition and results of operations.

Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.

Our quarterly and annual operating results may fluctuate significantly, which makes it difficult for us to predict our future operating results. These fluctuations may occur due to a variety of factors, many of which are outside of our control, including, but not limited to:

- the level of demand for any of our products, which may vary significantly;
- the timing and cost of, and level of investment in, research, development, manufacturing, regulatory approval and commercialization activities relating to our products, which may change from time to time;
- the size, seasonality and customer mix of the cell analysis market;
- sales and marketing efforts and expenses;
- the rate at which we grow our sales force and the speed at which newly-hired salespeople become effective;
- changes in the productivity of our sales force;
- the effectiveness of our distribution partners in selling our products;
- positive or negative coverage in the media or publications of our products or competitive products;
- the cost of manufacturing our products, which may vary depending on the quantity of production and the terms of our arrangements with our suppliers;
- the degree of competition in our industry and any change in the competitive landscape of our industry, including the introduction of new products or enhancements or technologies by us or others in the cell analysis market and competition-related pricing pressures;
- changes in governmental regulations or in the status of our regulatory approvals or applications;
- future accounting pronouncements or changes in our accounting policies;
- general economic conditions, both domestically and internationally, as well as economic conditions specifically affecting the industry in which we, including those related to the COVID-19 pandemic or other widespread health crises;
- future global financial crises and economic downturns, including those caused by widespread public health crises;
- economic factors, including changes in inflation, interest rates, foreign currency rates, and the potential effect of such factors on revenues and expenses; and
- general market conditions and other factors, including factors unrelated to our operating performance or the operating performance of our competitors.

The cumulative effects of factors discussed above could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance. This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the expectations of analysts or investors or below any guidance we may provide, or if the guidance we provide is below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated guidance we may provide.

The sizes of the markets for our products may be smaller than we estimate.

Within the life sciences technology market, flow cytometry technologies currently provide solutions largely within cell proliferation, cell counting, cell identification, cell quality control and single-cell applications, representing an initial total addressable market ("TAM") of nearly $12 billion. However, we believe that the enhanced capabilities of our FSP platform has the potential to capture an increasingly greater share of the broader cell analysis TAM. Our Northern Lights system has been approved for clinical use in the European Union and China. In the United States, our products are currently labeled and promoted, and are, and in the near-future are expected to continue to be, sold primarily to academic and research institutions and biopharmaceutical companies as research use only products for non-diagnostic and non-clinical purposes, and are not currently designed, or intended to be used, for clinical diagnostic tests. We plan to continue generating supporting publications and data, as well as pursue any required regulatory approvals for clinical use for our products in the United States. Our ability to penetrate the clinical markets in the United States will depend in part on our ability to receive 510(k) clearance, *de novo* classification, or approval of a pre-market approval application from the FDA. Further, we believe our differentiated platform will enable us to expand the use of cell analysis into new markets, well beyond current applications addressed by prior flow cytometry technologies and other cell analysis technologies. While we believe our assumptions and the data underlying our estimates are reasonable, we have not independently verified the accuracy of the third-party data on which we have based our assumptions and estimates, and these assumptions and estimates may not be correct and significantly different than actual market sizes, and the conditions supporting our assumptions or estimates may change at any time, including as a result of factors outside our control, thereby reducing the predictive accuracy of these underlying factors. If the actual number of customers who would benefit from our products, the price at which we can sell products or the annual addressable market for our products is smaller than we have estimated, it may impair our sales growth and have an adverse impact on our business, financial condition and results of operations.

In addition, our growth strategy involves launching new solutions and expanding sales of existing solutions into new markets and geographies in which we have limited experience. For example, we intend to develop our platform's applications within the clinical market, and in particular, within disease detection, diagnosis, and treatment monitoring. Sales of new or existing solutions into new market opportunities may take several years to develop and mature, and we cannot be certain that these market opportunities will develop as we expect. As a result, the sizes of the annual total addressable market for new markets and new products are even more difficult to predict.

If we were to be sued for product liability, we could face substantial liabilities that exceed our resources, limit sales of our existing products and limit commercialization of any products that we may develop.

The marketing, sale and use of our products could lead to the filing of product liability claims where someone may allege that our products identified inaccurate or incomplete information or otherwise failed to perform as designed. We may also be subject to liability for errors in, a misunderstanding of or inappropriate reliance upon, the information we provide in the ordinary course of our business activities. A product liability claim could result in substantial damages and be costly and time-consuming for us to defend. If we cannot successfully defend ourselves against product liability claims, we will incur substantial liabilities and reputational harm. In addition, regardless of merit or eventual outcome, product liability claims may result in:

- substantial litigation costs;
- distraction of management's attention from our primary business;
- the inability to commercialize our products or new products;
- decreased demand for our products;
- damage to our business reputation;
- product recalls or withdrawals from the market;
- loss of sales; or
- termination of existing agreements by our partners and potential partners failing to partner with us.

We maintain product liability insurance, but this insurance may not fully protect us from the financial impact of defending against product liability claims. Any product liability claim brought against us, with or without merit, could increase our insurance rates or prevent us from securing insurance coverage in the future.

While we may attempt to manage our product liability exposure by proactively recalling or withdrawing from the market any defective products, any recall or market withdrawal of our products may delay the supply of those products to our customers and may impact our reputation. We may not be successful in initiating appropriate market recall or market withdrawal efforts that may be required in the future and these efforts may not have the intended effect of preventing product malfunctions and the accompanying product liability that may result. Such recalls and withdrawals may also harm our reputation with customers, which could negatively affect our business, financial condition and results of operations.

Litigation and other legal proceedings may harm our business.

We have been, and may become, involved in legal proceedings relating to patent and other intellectual property matters, product liability claims, employee claims, tort or contract claims, federal or state regulatory investigations, securities class actions and other legal proceedings or investigations, which could have a negative impact on our reputation, business and financial condition and divert the attention of our management from the operation of our business. Litigation is inherently unpredictable and can result in excessive or unanticipated verdicts and/or injunctive relief that affect how we operate our business. We could incur judgments or enter into settlements of claims for monetary damages or for agreements to change the way we operate our business, or both. There may be an increase in the scope of these matters or there may be additional lawsuits, claims, proceedings or investigations in the future, which could harm our business, financial condition and results of operations. Adverse publicity about regulatory or legal action against us could damage our reputation and brand image, undermine our customers' confidence and reduce long-term demand for our products, even if the regulatory or legal action is unfounded or not material to our operations.

If our information technology systems or data, or those of third parties on which we rely, are compromised now, or in the future, we could experience adverse consequences resulting from such a compromise, including but not limited to regulatory investigations or actions; litigation; fines and penalties; disruptions of our business operations; reputational harm; loss of revenue or profits; loss of customers or sales; and other adverse consequences.

In the ordinary course of our business, we and the third parties upon which we rely, collect, use, store, safeguard, disclose, share, transfer, secure and otherwise process (collectively, "Process" or "Processing") proprietary, confidential and sensitive data, including personal information (such as key-coded data, health information and other special categories of personal information), intellectual property, trade secrets and proprietary business information owned or controlled by ourselves, our customers and other parties (collectively "Sensitive Information"). We may rely upon third parties (such as service providers) for our data processing–related activities. We may share or receive Sensitive Information with or from third parties.

We face a variety of evolving threats, which could cause security incidents. Cyber-attacks, malicious internet-based activity, online and offline fraud, and other similar activities threaten the confidentiality, integrity, and availability of our Sensitive Information and information technology systems, and those of the third parties upon which we rely. Such threats are prevalent and continue to rise, are becoming increasingly difficult to detect, and come from a variety of sources, including traditional computer "hackers," threat actors, "hacktivists," organized criminal threat actors, personnel (such as through theft or misuse), sophisticated nation-states, and nation-state-supported actors. Some actors now engage and are expected to continue to engage in cyber-attacks, including without limitation, nation-state actors for geopolitical reasons and in conjunction with military conflicts and defense activities. During times of war and other major conflicts, we and the third parties upon which we rely may be vulnerable to a heightened risk of these attacks, including cyber-attacks, that could materially disrupt our systems and operations, supply chain, and ability to produce, sell and distribute our goods and services. We and the third parties upon which we rely may be subject to a variety of evolving threats, including but not limited to social-engineering attacks (including through phishing attacks), malicious code (such as viruses and worms), malware (including as a result of advanced persistent threat intrusions), denial-of-service attacks (such as credential stuffing), credential harvesting, personnel misconduct or error, ransomware attacks, supply-chain attacks, software bugs, server malfunctions, software or hardware failures, loss of data or other information technology assets, adware, telecommunications failures, and other similar threats. In particular, severe ransomware attacks, including those perpetrated by organized criminal threat actors, nation-states, and nation-state-supported actors, are becoming increasingly prevalent and severe and can lead to significant interruptions in our operations, loss of Sensitive Information and income, reputational harm, and diversion of funds. Extortion payments may alleviate the negative impact of a ransomware attack, but we may be unwilling or unable to make such payments due to, for example, applicable laws or regulations prohibiting such payments. Additionally, employees working from home, while in transit and in public locations poses increased risks to our information technology systems and data when utilizing network connections, computers, and devices outside our premises or network.

In addition to experiencing a security incident, third parties may gather, collect, or infer Sensitive Information about us from public sources, data brokers, or other means that reveals competitively sensitive details about our organization and could be used to undermine our competitive advantage or market position. Future or past business transactions (such as acquisitions or integrations) could also expose us to additional cybersecurity risks and vulnerabilities, as our systems could be negatively affected by vulnerabilities present in acquired or integrated entities' systems and technologies. Furthermore, we may discover security issues that were not found during due diligence of such acquired or integrated entities, and it may be difficult to integrate companies into our information technology environment and security program.

We rely on third-party service providers and technologies to operate critical business systems to process Sensitive Information in a variety of contexts, including, without limitation, cloud-based infrastructure, data center facilities, encryption and authentication technology, employee email, content delivery to customers, and other functions. Our ability to monitor these third parties' information security practices is limited, and these third parties may not have adequate information security measures in place. If our third-party service providers experience a security incident or other interruption, we could experience adverse consequences. While we may be entitled to damages if our third-party service providers fail to satisfy their data privacy or security-related obligations to us, any award may be insufficient to cover our damages, or we may be unable to recover such award. In addition, supply-chain attacks have increased in frequency and severity, and we cannot guarantee that third parties' infrastructure in our supply chain or our third-party partners' supply chains have not been compromised.

Any of the previously identified or similar threats could cause a security incident or other interruption that could result in unauthorized, unlawful, or accidental acquisition, modification, destruction, loss, alteration, encryption, disclosure of, or access to our Sensitive Information or our information technology systems, or those of the third parties upon whom we rely. A security incident or other interruption could disrupt our ability (and that of third parties upon whom we rely) to provide our platform. We may expend significant resources or modify our business activities in an effort to protect against security incidents. Certain data privacy and security obligations may require us to implement and maintain specific security measures, industry-standard or reasonable security measures to protect our information technology systems and Sensitive Information. While we have implemented security measures designed to protect against security incidents, there can be no assurance that these measures will be effective. We take steps to detect and remediate vulnerabilities, but we may not be able to detect and remediate all vulnerabilities in our information technology systems because the threats and techniques used to exploit the vulnerability change frequently and are often sophisticated in nature. Therefore, such vulnerabilities could be exploited but may not be detected until after a security incident has occurred. These vulnerabilities pose a material risk to our business.

Applicable data privacy and security obligations may require us to notify relevant stakeholders of security incidents. Such disclosures are costly, and the disclosures or the failure to comply with such requirements could lead to adverse consequences. If we (or a third party upon whom we rely) experience a security incident or are perceived to have experienced a security incident, we may experience adverse consequences, such as government enforcement actions (for example, investigations, fines, penalties, audits, and inspections); additional reporting requirements and/or oversight; restrictions on processing data (including personal information); litigation (including class claims); indemnification obligations; negative publicity; reputational harm; monetary fund diversions; interruptions in our operations (including availability of data); financial loss; and other similar harms. Security incidents and attendant consequences may cause customers to stop using our products and services, deter new customers from purchasing our products and services, and negatively impact our ability to grow and operate our business.

Further, our contracts may not contain limitations of liability, and even where they do, there can be no assurance that limitations of liability in our contracts are sufficient to protect us from liabilities, damages, or claims related to our data privacy and security obligations. We cannot be sure that our insurance coverage will be adequate or sufficient to protect us from or to mitigate liabilities arising out of our privacy and security practices, that such coverage will continue to be available on commercially reasonable terms or at all, or that such coverage will pay future claims.

Business disruptions could seriously harm our future revenue and financial condition and increase our costs and expenses.

Our operations (including our manufacturing operations) and the operations of our distribution partners could be subject to earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics and pandemics, including the COVID-19 pandemic, and other natural or man-made disasters or business interruptions, for which we are predominantly self-insured. Our ability to obtain components for our products could be disrupted if the operations of our suppliers were affected by a man-made or natural disaster or other business interruption, including interruptions related to the COVID-19 pandemic. In addition, our corporate headquarters is located in Fremont, California and one of our reagents manufacturing facilities is located in San Diego, California, near major earthquake faults and fire zones, and the ultimate impact on us for being located near earthquake faults and fire zones and being consolidated in a certain geographical area is unknown. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses.

We manufacture our products at our manufacturing facilities located in Fremont and San Diego, California, and Wuxi, China, and we rely on various suppliers in the United States, China and other countries. Should our manufacturing facilities or the facilities of our suppliers be damaged or destroyed by natural or man-made disasters, such as earthquakes, fires or other events, or should events such as political unrest unfold, it could take months to relocate or rebuild, during which time our manufacturing and the operations of our suppliers would cease or be delayed and our products may be unavailable. Moreover, the use of a new facility or new manufacturing, quality control, or environmental control equipment or systems generally requires FDA review and approval. Because of the time required to authorize manufacturing in a new facility under FDA and non-U.S. regulatory requirements, we may not be able to resume production on a timely basis even if we are able to replace production capacity in the event we lose our manufacturing capacity. The inability to perform our manufacturing activities, combined with our limited inventory of materials and components and manufactured products, or the inability of our suppliers to continue their operations, may cause us to be unable to meet customer demand or harm our reputation, and we may be unable to reestablish relationships with such customers in the future. Consequently, a catastrophic event or business interruption at our manufacturing facilities or at our suppliers' facilities could harm our business, financial condition and results of operations.

Our insurance policies are expensive and protect us only from some business risks, which leaves us exposed to significant uninsured liabilities.

We do not carry insurance for all categories of risk that our business may encounter. Although we have general and product liability insurance that we believe is appropriate, this insurance is subject to deductibles and coverage limitations. Our current product liability insurance may not continue to be available to us on acceptable terms, if at all, and, if available, coverage may not be adequate to protect us against any future product liability claims. If we are unable to obtain insurance at an acceptable cost or on acceptable terms or otherwise protect against potential product liability claims, we could be exposed to significant liabilities. A product liability claim, recall or other claim with respect to uninsured liabilities or for amounts in excess of insured liabilities could negatively affect our business, financial condition and results of operations. We do not carry specific hazardous waste insurance coverage, and our property, casualty and general liability insurance policies specifically exclude coverage for damages and fines arising from hazardous waste exposure or contamination. Accordingly, in the event of contamination or injury, we could be held liable for damages or be penalized with fines in an amount exceeding our resources, and our clinical trials or regulatory approvals could be suspended. Although we carry cyber insurance, the coverage may not be sufficient to cover our losses in the event of a Security Breach. Additionally, no assurance can be given that such policies can be retained on acceptable terms or that litigation will not occur following an insurance claim.

We also expect that operating as a public company will make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. As a result, it may be more difficult for us to attract and retain qualified people to serve on our board of directors, on our board committees or as executive officers. We do not know, however, if we will be able to maintain existing insurance with adequate levels of coverage. Any significant uninsured liability may require us to pay substantial amounts, which would negatively affect our business, financial condition and results of operations.

We use hazardous biological materials that require considerable expertise for handling, storage and disposal and may result in claims against us. We and third parties with whom we contract must comply with environmental laws and regulations, which can be expensive and restrict how we do business, and could expose us to liability if our use of such hazardous materials cause injury.

Our research and development and manufacturing processes involve the controlled use of hazardous materials, including flammables, toxics, corrosives and biologics. Our research operations produce hazardous biological and chemical waste products, and we largely contract with third parties for the disposal of these products. Federal, state and local laws and regulations govern the use, generation, manufacture, storage, handling and disposal of these materials and wastes. We are subject to periodic inspections by federal, state and local authorities to ensure compliance with applicable laws. Compliance with applicable environmental laws and regulations is expensive, and current or future environmental laws and regulations may restrict our operations. If we do not comply with applicable regulations, we may be subject to fines and penalties. In the event of accidental contamination or injury from these materials or wastes, we could be liable for damages or penalized with fines in an amount exceeding our resources and our operations could be suspended or otherwise adversely affected.

In addition, because our product contains metals and electronic components which are purchased from third-party vendors, we may be required under rules promulgated by the U.S. Securities and Exchange Commission ("SEC") governing disclosure of the use of "conflict minerals" (tin, tungsten, tantalum and gold) to determine whether those minerals are necessary to the functionality or production of our products and, if so, conduct a country of origin inquiry with respect to all such minerals. If any such minerals may have originated in the Democratic Republic of the Congo, or DRC, or any of its adjoining countries, or covered countries, then we must conduct diligence on the source and chain of custody of those conflict minerals to determine if they originated in one of the covered countries and, if so, whether they financed or benefited armed groups in the covered countries. Disclosures relating to the products that may contain conflict minerals, the country of origin of those minerals and whether they are "DRC conflict free" must be provided in a Form SD (and accompanying conflict minerals report, if required, to disclose the diligence undertaken by us in sourcing the minerals and our conclusions relating to such diligence). If we are required to submit a conflict minerals report, that report must be audited by an independent auditor pursuant to existing government auditing standards. Compliance with this disclosure rule may be very time-consuming for our management and personnel (as well as time-consuming for our suppliers) and could involve the expenditure of significant amounts of money by us and them. Disclosures mandated by this rule, which can be perceived by the market to be "negative," may cause customers to refuse to purchase our products. The cost of compliance with the rule could adversely affect our results of operations.

Furthermore, environmental laws and regulations are complex, change frequently and have tended to become more stringent. We cannot predict the impact of such changes and cannot be certain of our future compliance. We do not currently maintain separate environmental liability coverage and any accidental contamination or discharge or any resultant injury from these materials could result in significant cost to us in penalties, damages and suspension of our operations.

We have received funding under the Coronavirus Aid, Relief and Economic Security Act, or the CARES Act.

In June 2020, we executed a note in favor of Wells Fargo Bank, National Association, evidencing an unsecured loan, ("PPP loan"), in the aggregate principal amount of $4.1 million, which was made pursuant to the Paycheck Protection Program, or the PPP. The PPP was established under the CARES Act, which was enacted on March 27, 2020, and is administered by the U.S. Small Business Administration, or the SBA. We have used all of the proceeds from the loan to retain employees, maintain payroll and make lease and utility payments and expect to repay the PPP loan in the second quarter of 2021. On May 4, 2021, we fully repaid the PPP loan.

The PPP loan application required us to certify, among other things, that the current economic uncertainty made the PPP loan request necessary to support our ongoing operations. In 2020, the SBA, in consultation with the Department of Treasury, issued new guidance requiring borrowers to consider their ability to access other sources of liquidity before certifying in their loan applications that current economic uncertainty makes this loan request necessary to support the ongoing operations. We made the certification in good faith after analyzing our financial situation and access to capital and believe that we satisfied all eligibility criteria for the PPP loan. However, the SBA guidance and criteria are subject to interpretation, including by the new Biden Administration, and if we are found to have been ineligible, we could be subject to significant penalties. If we become subject to penalties, it could result in harm to our business, results of operation and financial condition.

We are subject to foreign currency exchange risk.

A substantial amount of our revenues is derived from international operations, and we anticipate that a significant portion of our sales will continue to come from outside the United States in the future. As we have experienced in the twelve months ended December 31, 2022, where our prices are denominated in U.S. dollars, our sales and revenues could be adversely affected by declines in foreign currencies relative to the U.S. dollar. The revenues we report with respect to our operations outside the United States may be adversely affected by fluctuations in foreign currency exchange rates. See the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" for additional information on the financial impact of exchange rate fluctuations and the ways and extent to which we may attempt to address any impact. Any hedging activities we engage in may only offset a portion of the adverse financial impact resulting from unfavorable changes in foreign currency exchange rates. We cannot predict with any certainty changes in foreign currency exchange rates or the degree to which we can mitigate these risks.

Risks Related to Government Regulation and Our Industry

Our products may become subject to more onerous regulation by the FDA or other regulatory agencies in the future, which could increase our costs and delay or prevent sales of our products or commercialization of new products and product enhancements, thereby materially and adversely affecting our business, financial condition, results of operations and prospects.

Currently, our Northern Lights CLC system is available for clinical use in only China and the European Union. Our Aurora and Northern Lights systems are otherwise available to customers as research use only ("RUO") products. RUO products are regulated by the FDA as medical devices. Although medical devices are subject to stringent FDA oversight, products that are intended for RUO and are labeled as RUO are exempt from compliance with most FDA requirements, including premarket clearance or approval, manufacturing requirements and others. A product labeled RUO but which is actually intended for clinical diagnostic use may be viewed by the FDA as adulterated and misbranded under the Federal Food, Drug, and Cosmetic Act ("FDCA"), and subject to FDA enforcement action. The FDA has indicated that when determining the intended use of a product labeled RUO, the FDA will consider the totality of the circumstances surrounding distribution and use of the product, including how the product is marketed and to whom. The FDA could disagree with our assessment that our products are properly marketed as RUOs, or could conclude that products labeled as RUO are actually intended for clinical diagnostic use, and could take enforcement action against us, including requiring us to stop distribution of our products until we are in compliance with applicable regulations, which would reduce our revenue, increase our costs and adversely affect our business, prospects, results of operations and financial condition. In the event that the FDA requires us to obtain marketing authorization of our RUO products in the future, there can be no assurance that the FDA will grant any clearance or approval requested by us in a timely manner, or at all.

As part of our growth strategy, we plan to seek approval to offer our Aurora and Northern Lights systems for clinical use in the United States and in other countries. In the United States, before we can market a new medical device, or a new use of, new claim for or significant modification to an existing product, we must first receive either clearance under Section 510(k) of the FDCA, or approval of a premarket approval application from the FDA, unless an exemption applies. The process of obtaining approval or clearance from the FDA for new products, or with respect to enhancements or modifications to existing products, could take a significant period of time, require the expenditure of substantial resources, involve rigorous pre-clinical and clinical testing, require changes to products or result in limitations on the indicated uses of products. There can be no assurance that we will receive the required approvals or clearances for any new products or for modifications to our existing products on a timely basis or that any approval or clearance will not be

subsequently withdrawn or conditioned upon extensive post-market study requirements. Moreover, even if we receive FDA clearance or approval of new products or modifications to existing products, we will be required to comply with extensive regulations relating to the development, research, clearance, approval, distribution, marketing, advertising and promotion, manufacture, adverse event reporting, recordkeeping, import and export of such products, which may substantially increase our operating costs and have a material impact on our business, profits and results of operations. Failure to comply with applicable regulations could jeopardize our ability to sell our products and result in enforcement actions such as: warning letters, fines, injunctions, civil penalties, termination of distribution, recalls or seizures of products, delays in the introduction of products into the market, total or partial suspension of production, refusal to grant future clearances or approvals, withdrawals or suspensions of current approvals, resulting in prohibitions on sales of our products, and in the most serious cases, criminal penalties. Occurrence of any of the foregoing could harm our reputation, business, financial condition, results of operations and prospects.

We and our suppliers are subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and subject us to penalties if we fail to comply with applicable regulatory requirements.

Any medical device we market will be subject to continued regulatory review, oversight, requirements, and periodic inspections by the FDA and other domestic and foreign regulatory bodies. In particular, unless exempt, we and our suppliers are required to comply with the FDA's Quality System Regulation ("QSR") and other regulations enforced outside the United States which cover the manufacture of our products and the methods and documentation of the design, testing, production, control, quality assurance, labeling, packaging, storage and shipping of medical devices. Regulatory bodies, such as the FDA, enforce the QSR and other regulations through periodic inspections. The failure by us or one of our suppliers to comply with applicable statutes and regulations administered by the FDA and other regulatory bodies, or the failure to timely and adequately respond to any adverse inspectional observations or product safety issues, could result in, among other things, any of the following enforcement actions:

- untitled letters, warning letters, fines, injunctions, consent decrees and civil penalties;
- unanticipated expenditures to address or defend such actions;
- customer notifications for repair, replacement or refunds;
- recall, detention or seizure of our products;
- operating restrictions or partial suspension or total shutdown of production;
- refusing or delaying our requests for 510(k) clearance or PMA approval of new products or modified products;
- withdrawal of 510(k) clearances on PMA approvals that have already been granted;
- refusal to grant export approval for our products; or
- criminal prosecution.

If any of these actions were to occur, our reputation would be harmed and our product sales and profitability would be adversely impacted. Furthermore, our key component suppliers may not currently be or may not continue to be in compliance with all applicable regulatory requirements which could result in our failure to produce our products on a timely basis and in the required quantities, if at all.

Later discovery of previously unknown problems with our products, including manufacturing problems, or failure to comply with regulatory requirements such as the QSR, may result in changes to labeling, restrictions on such products or manufacturing processes, withdrawal of the products from the market, voluntary or mandatory recalls, a requirement to repair, replace or refund the cost of any medical device we manufacture or distribute, fines, suspension of regulatory approvals, product seizures, injunctions or the imposition of civil or criminal penalties which would adversely affect our business, operating results and prospects.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response, and could generate negative publicity. Any failure to comply with ongoing regulatory requirements may significantly and adversely affect our ability to commercialize and generate revenue from our products. If regulatory sanctions are applied or if regulatory clearance or approval is withdrawn, it would have a material adverse effect on our business, financial condition and results of operations.

Our products or any component thereof may be subject to product recalls in the future. A recall of our products, either voluntarily or at the direction of the FDA or another governmental authority, or the discovery of serious safety issues with our products, could have a significant adverse impact on us.

The FDA has the authority to require the recall of commercialized products that are subject to FDA regulation. Manufacturers may, under their own initiative, recall a product if any deficiency is found. For reportable corrections and removals, companies are

required to make additional periodic submissions to the FDA after initiating the recall, and often engage with the FDA on their recall strategy prior to initiating the recall. A government-mandated or voluntary recall by us or one of our distributors could occur as a result of an unacceptable health risk, component failures, failures in laboratory processes, malfunctions, manufacturing errors, design or labeling defects, or other deficiencies and issues. Recalls of any of our products would divert managerial and financial resources and adversely affect our business, results of operations, financial condition and reputation. We may also be subject to liability claims, be required to bear other costs or take other actions that may negatively impact our future sales and our ability to generate profits. Companies are also required to maintain certain records of corrections and removals, even if these do not require reporting to the FDA. We may initiate voluntary recalls involving our products. A recall announcement by us could harm our reputation with customers and negatively affect our business, financial condition, and results of operations. In addition, the FDA or other agency could take enforcement action for failing to report the recalls when they were conducted.

If we initiate a recall, including a correction or removal, for one of our products, issue a safety alert, or undertake a field action or recall to reduce a health risk, this could lead to increased scrutiny by the FDA, other governmental and regulatory enforcement bodies, and our customers regarding the quality and safety of our products, and to negative publicity, including FDA alerts, press releases, or administrative or judicial actions. Furthermore, the submission of these reports could be used against us by competitors and cause customers to delay purchase decisions or cancel orders, which would harm our reputation.

The misuse or off-label use of our products may harm our reputation in the marketplace, or result in injuries that lead to product liability suits, which could be costly to our business. Moreover, we could be subject to FDA sanctions if we are deemed to have engaged in off-label promotion.

Our promotional materials and training methods must comply with FDA and other applicable laws and regulations, including the prohibition on the promotion of an RUO device or medical device for an indication that has not been approved or cleared by the FDA, referred to as an off-label use. We cannot prevent our customers from using our products for off-label uses, including in laboratory developed tests for clinical use. If the FDA determines that our promotional materials constitute the unlawful promotion of an off-label use, it could subject us to regulatory or enforcement actions, including civil money penalties, criminal fines and penalties, and exclusion from participation in federal health programs, among others. Other federal, state or foreign governmental authorities might also take action if they consider our promotion or training materials to constitute promotion of an off-label use, which could result in significant fines or penalties under other statutory authorities. In that event, our reputation could be damaged and the use of our products in the marketplace could be diminished.

Furthermore, off-label uses of our products may lead to performance issues or produce erroneous results, which could harm our reputation in the marketplace and increase the risk of product liability. Product liability claims are expensive to defend and could divert our management's attention from our primary business and result in substantial damage awards against us. Any of these events could harm our business, results of operations and financial condition.

Changes in tariffs or other government trade policies may materially adversely affect our business and results of operations, including by reducing demand for our products.

The imposition of tariffs and trade restrictions as a result of international trade disputes or changes in trade policies may adversely affect our sales and profitability. For example, in 2018 and 2019, the U.S. government imposed and proposed, among other actions, new or higher tariffs on specified imported products originating from China in response to what it characterized as unfair trade practices, and China responded by imposing and proposing new or higher tariffs on specified U.S. products. There can be no assurance that a broader trade agreement will be successfully negotiated between the United States and China to reduce or eliminate these tariffs. These tariffs, and the related geopolitical uncertainty between the United States and China, may cause decreased demand for our products, which could have a material adverse effect on our business and results of operations. For example, certain of our foreign customers may respond to the imposition of tariffs or threat of tariffs on products we produce by delaying purchase orders or purchasing products from our competitors. Ongoing international trade disputes and changes in trade policies could also impact economic activity and lead to a general contraction of customer demand. In addition, tariffs on components that we may import from China or other nations will adversely affect our profitability unless we are able to exclude such components from the tariffs or we raise prices for our products, which may result in our products becoming less attractive relative to products offered by our competitors. Future actions or escalations by either the United States or China that affect trade relations may also negatively affect our business, or that of our suppliers or customers, and we cannot provide any assurances as to whether such actions will occur or the form that they may take. To the extent that our sales or profitability are negatively affected by any such tariffs or other trade actions, our business and results of operations may be materially adversely affected.

We are subject to governmental export controls that could impair our ability to compete in international markets due to licensing requirements and subject us to liability if we are not in compliance with applicable laws.

Exports of our products are subject to export controls and sanctions laws and regulations imposed by the U.S. government and administered by the U.S. Departments of State, Commerce, and Treasury. U.S. export control laws may require a license or other authorization to export products to certain destinations and end users. In addition, U.S. economic sanctions laws include restrictions or prohibitions on the sale or supply of certain products and services to U.S. embargoed or sanctioned countries, governments, persons and entities. Obtaining export licenses can be difficult, costly and time-consuming and we may not always be successful in obtaining necessary export licenses, and our failure to obtain required export approval for our products or limitations on our ability to export or sell our products imposed by export control or sanctions laws may harm our revenues and adversely affect our business, financial condition, and results of operations. Noncompliance with these laws could have negative consequences, including government investigations, penalties and reputational harm.

We are subject to stringent and changing U.S. and foreign data privacy and security laws, regulations, rules, and standards as well as policies, contractual obligations, and other obligations related to data privacy and security. Our actual or perceived failure to comply with such obligations could lead to government regulatory investigations or enforcement actions (that could include fines and penalties), a disruption of our business or commercialization of our products, private litigation, harm to our reputation, loss of revenue or profits, and other adverse effects on our business or prospects.

In the course of our operations, we collect, receive, store, process, generate, use, transfer, disclose, make accessible, protect, secure, dispose of, transmit, and share sensitive, confidential, and proprietary information, including personal information, business data, trade secrets, intellectual property, and sensitive third-party data. Accordingly, we are, and may increasingly become, subject to various data privacy and security laws, the number and scope of which are changing, subject to differing applications and interpretations, may be inconsistent among jurisdictions, and may conflict with each other.

In the United States, federal, state, and local governments have enacted numerous data privacy and security laws, including data breach notification laws, personal information privacy and security laws, and consumer protection laws (e.g., Section 5 of the Federal Trade Commission Act), and other similar laws (e.g., wiretapping laws). For example, the federal Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), as amended by the Health Information Technology for Economic and Clinical Health Act ("HITECH"), imposes specific requirements relating to the privacy, security, and transmission of individually identifiable health information. The California Consumer Privacy Act of 2018 ("CCPA") applies to personal information of consumers, business representatives, and employees, and requires businesses to provide specific disclosures in privacy notices and honor requests of California residents to exercise certain rights related to their personal information. The CCPA allows for statutory fines for noncompliance (up to $7,500 per violation) and allows private litigants affected by certain data breaches to recover significant statutory damages. In addition, the California Privacy Rights Act of 2020 ("CPRA") expands the CCPA's requirements, including by adding a new right for individuals to correct their personal information and establishing a new regulatory agency, the California Privacy Protection Agency, to implement and enforce the law, which could increase the risk of an enforcement action. Other states have enacted data privacy and security laws. For example, Virginia, Colorado, Utah, and Connecticut have similarly enacted comprehensive data privacy and security laws, all of which become effective in 2023. Similar laws are being considered in several other states, as well as at the federal and local levels. If we become subject to new data privacy and security laws, the risk of enforcement action against us could increase because we may become subject to additional obligations, and the number of individuals or entities that can initiate actions against us may increase (including individuals via a private right of action and state actors), increasing legal risk and compliances costs for us and the third parties upon whom we rely.

Outside the United States, an increasing number of laws, regulations, and industry standards apply to data privacy and security. For example, the European Union's General Data Protection Regulation ("EU GDPR") and the United Kingdom's General Data Protection Regulation ("UK GDPR") impose strict requirements for processing the personal information of individuals located, respectively within the European Economic Area ("EEA") and the United Kingdom ("UK"). For example, violations of the EU and UK GDPR can result in, temporary or definitive bans on data processing and other corrective actions; fines of up to 20 million Euros (£17.5 million for the UK GDPR) or 4% of annual global revenue, whichever is greater; or private litigation related to processing of personal information brought by classes of data subjects or consumer protection organizations authorized at law to represent their interests. Furthermore, in Europe, there is a proposed regulation related to artificial intelligence ("AI") that, if adopted, could impose onerous obligations related to the use of AI-related systems. Other countries outside of Europe have enacted or are considering enacting similar comprehensive data privacy and security laws and regulations, which could increase the cost and complexity of delivering our services and operating our business. For example, China's Personal Information Protection Law ("PIPL") broadly regulates data privacy and security practices and imposes strict requirements for processing personal information. As another example, Canada has enacted the Personal Information Protection and Electronic Documents Act and Canada's Anti-Spam Legislation, which broadly regulate the Processing of personal information and impose compliance obligations and penalties comparable to those of European data privacy and security laws. Complying with these and other similar laws and regulations (to the extent applicable) may cause us to incur substantial operational costs or require us to change our business practices, and could lead to material fines, penalties and liability.

In addition, many jurisdictions have enacted data localization laws and cross-border persona information transfer laws. These laws may make it more difficult for us to transfer personal information across jurisdictions, which could impede our business. For example, absent appropriate safeguards or other circumstances, the EU GDPR generally restricts the transfer of personal information to countries outside of the EEA, such as the United States, which the European Commission does not consider to provide an adequate level of data privacy and security. The European Commission released a set of Standard Contractual Clauses that are designed to be a mechanism by which entities can transfer personal information out of the EEA to jurisdictions that the European Commission has not found to provide an adequate level of protection. Currently, these Standard Contractual clauses are a valid mechanism to transfer personal information outside of the EEA. The Standard Contractual Clauses, however, require parties that rely upon that legal mechanism to comply with additional obligations, such as conducting transfer impact assessments to determine whether additional security measures are necessary to protect the at-issue personal information. Moreover, due to potential legal challenges, there exists some uncertainty regarding whether the Standard Contractual Clauses will remain a valid mechanism for transfers of personal information out of the EEA, and there is no assurance that we can satisfy or rely on these measures to lawfully transfer personal information to the United States or other countries. In addition, laws in Switzerland and the UK similarly restrict transfers of personal information outside of those jurisdictions to countries such as the United States of America that do not provide an adequate level of personal information protection. In addition to European restrictions on cross-border transfers of personal information, other jurisdictions have enacted or are considering similar cross-border personal information transfer laws and local personal information residency laws, any of which could increase the cost and complexity of doing business. If we cannot implement a valid compliance mechanism for cross-border data transfers, we may face increased exposure to regulatory actions, substantial fines, and injunctions against processing or transferring personal information from Europe or elsewhere. The inability to import personal information to the United States could significantly and negatively impact our business operations, including by limiting our ability to collaborate with parties that are subject to European and other data privacy and security laws, requiring us to increase our personal information processing capabilities in Europe and/or elsewhere at significant expense; increased exposure to regulatory actions; and substantial fines and penalties. Additionally, companies that transfer personal information out of the EEA and UK to other jurisdictions, particularly to the United States, are subject to increased scrutiny from regulators, individual litigants, and activist groups. Some European regulators have ordered certain companies to suspend or permanently cease certain transfers out of Europe for allegedly violating the GDPR's cross-border data transfer limitations.

In addition to data privacy and security laws, privacy advocates and industry groups have proposed, and may propose in the future, standards with which we are legally or contractually bound to comply. For example, we may also be subject to the Payment Card Industry Data Security Standard ("PCI DSS"). The PCI DSS requires companies to adopt certain measures to ensure the security of cardholder information, including using and maintaining firewalls, adopting proper password protections for certain devices and software, and restricting data access. Noncompliance with PCI DSS can result in penalties ranging from $5,000 to $100,000 per month by credit card companies, litigation, damage to our reputation, and revenue losses. We may also rely on vendors to process payment card data, and those vendors may be subject to PCI DSS, and our business may be negatively affected if our vendors are fined or suffer other consequences as a result of PCI DSS noncompliance. We are also bound by contractual obligations related to data privacy and security, and our efforts to comply with such obligations may not be successful. For example, certain data privacy and security laws, such as the EU/UK GDPR and the CCPA, require us to impose specific contractual restrictions on our service providers. We also publish privacy policies, marketing materials and other statements, such as compliance with certain certifications or self-regulatory principles, regarding data privacy and security. If these policies, materials or statements are found to be deficient, lacking in transparency, deceptive, unfair, or misrepresentative of our practices, we may be subject to investigation, enforcement actions by regulators or other adverse consequences.

Our obligations related to data privacy and security are quickly changing in an increasingly stringent fashion and creating regulatory uncertainty. These obligations may be subject to differing applications and interpretations, which may be inconsistent or in conflict among jurisdictions. Preparing for and complying with these obligations requires us to devote significant resources (including, without limitation, financial and time-related resources), which may necessitate changes to our information technologies, systems, and practices and to those of any third parties that process personal information on our behalf. In addition, these obligations may require us to change our business model. Although we endeavor to comply with all applicable data privacy and security obligations, we may at times fail (or be perceived to have failed) to do so. Moreover, despite our efforts, our personnel or third parties upon whom we rely may fail to comply with such obligations which could impact our compliance posture and business operations. If we or the third parties on which we rely fail, or are perceived to have failed, to address or comply with applicable data privacy and security obligations, we could face significant consequences. These consequences may include, but are not limited to, government enforcement actions (e.g., investigations, fines, penalties, audits, inspections, and similar); litigation (including class-action claims); additional reporting requirements and/or oversight, bans on processing personal information; orders to destroy or not use personal information; and imprisonment of company officials. Any of these events could have a material adverse effect on our reputation, business, or financial condition, including but not limited to: loss of customers, interruptions or stoppages in our business operations, inability to process personal information or to operate in certain jurisdictions, limited ability to develop or commercialize our products, expenditure of time and resources to defend any claim or inquiry, adverse publicity, or revision or restructuring of our business model or operations.

We are subject to U.S. and certain foreign anti-corruption and anti-money laundering laws and regulations. We can face criminal liability and other serious consequences for violations, which can harm our business.

We are subject to anti-corruption and anti-money laundering laws and regulations, including the FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, and other state and national anti-bribery and anti-money laundering laws in the countries in which we conduct or may in the future conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors and other third-party collaborators from authorizing, promising, offering, providing, soliciting or receiving, directly or indirectly, improper payments or anything else of value to or from persons in the public or private sector. The FCPA also requires public companies to make and keep books and records that accurately and fairly reflect the transactions of the corporation and to devise and maintain an adequate system of internal accounting controls.

In addition to selling our products internationally directly through our sales teams, we currently engage third parties outside of the United States, and may engage additional third parties outside of the United States, to sell our products internationally and to obtain necessary permits, licenses, patent registrations and other regulatory approvals. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities and other organizations. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors and other third-party collaborators, even if we do not explicitly authorize or have actual knowledge of such activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences.

If we fail to comply with U.S. federal and state fraud and abuse and other healthcare laws and regulations, including those relating to kickbacks and false claims, we could face substantial penalties and our business operations and financial condition could be harmed.

We are exposed to broadly applicable anti-fraud and abuse, anti-kickback, false claims and other healthcare laws and regulations that may constrain our business, our arrangements and relationships with customers, and how we market, sell and distribute our products. We have a compliance program, code of conduct and associated policies and procedures, but it is not always possible to identify and deter misconduct by our employees and other third parties, and the precautions we take to detect and prevent noncompliance may not be effective in protecting us from governmental investigations for failure to comply with applicable fraud and abuse or other healthcare laws and regulations. The laws that may affect our ability to operate include, among others:

- the Anti-Kickback Statute, which prohibits, among other things, knowingly and willingly soliciting, offering, receiving or paying remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward either the referral of a person, or the purchase, order or recommendation of, items or services for which payment may be made, in whole or in part, under a federal healthcare program such as the Medicare and Medicaid programs. The term "remuneration" has been broadly interpreted to include anything of value, and the government can establish a violation of the Anti-Kickback Statute without proving that a person or entity had actual knowledge of the law or a specific intent to violate. In addition, the government may assert that a claim, including items or services resulting from a violation of the Anti-Kickback Statute, constitutes a false or fraudulent claim for purposes of the FCA. There are a number of statutory exceptions and regulatory safe harbors protecting certain business arrangements from prosecution under the Anti-Kickback Statute; however, those exceptions and safe harbors are drawn narrowly, and there may be limited or no exception or safe harbor for many common business activities. Certain common business activities including, certain reimbursement support programs, educational and research grants or charitable donations, and practices that involve remuneration to those who prescribe, purchase or recommend medical devices, including discounts, providing items or services for free or engaging such people as consultants, advisors or speakers, may be subject to scrutiny if they do not fit squarely within any available exception or safe harbor and would be subject to a facts and circumstances analysis to determine compliance with the Anti-Kickback Statute. Our business may not in all cases meet all of the criteria for statutory exception or regulatory safe harbor protection from anti-kickback liability;
- the federal civil False Claims Act, or the FCA, which prohibits, among other things, persons or entities from knowingly presenting, or causing to be presented, a false or fraudulent claim for payment of government funds and knowingly making, using or causing to be made or used, a false record or statement to get a false claim paid or to avoid, decrease or conceal an obligation to pay money to the federal government. A claim including items or services resulting from a violation of the Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the FCA. Actions under the FCA may be brought by the government or as a qui tam action by a private person in the name of the government. These people, sometimes known as "relators" or, more commonly, as "whistleblowers," may share in any monetary recovery. Many medical device manufacturers have been investigated and have reached substantial financial settlements with the federal government under the FCA for a variety of alleged improper activities, including causing false claims to be submitted as a result of the marketing of their products for unapproved and thus non-reimbursable uses and interactions with prescribers and other customers, including those that may have affected their billing or coding practices and submission of claims to the federal government. FCA liability is potentially significant in the healthcare industry because the statute provides for

treble damages and mandatory monetary penalties for each false or fraudulent claim or statement. Because of the potential for large monetary exposure, life sciences companies often resolve allegations without admissions of liability for significant and material amounts to avoid the uncertainty of treble damages and per claim penalties that may be awarded in litigation proceedings. Settlements may require companies to enter into corporate integrity agreements with the government, which may impose substantial costs on companies to ensure compliance. Medical device manufacturers and other healthcare companies also are subject to other federal false claims laws, including, among others, federal criminal healthcare fraud and false statement statutes that extend to non-government health benefit programs;

- HIPAA, which imposes criminal and civil liability for, among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, or knowingly and willfully falsifying, concealing or covering up a material fact or making a materially false, fictitious or fraudulent statement or representation, or making or using any false writing or document knowing the same to contain any materially false, fictitious or fraudulent statement or entry in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the federal healthcare Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH Act, and their implementing regulations, also impose obligations, including mandatory contractual terms, on covered entities subject to the rule, such as health plans, healthcare clearinghouses and certain healthcare providers, as well as their business associates that perform certain services for them or on their behalf involving the use or disclosure of individually identifiable health information with respect to safeguarding the privacy, security and transmission of individually identifiable health information;

- various state laws govern the privacy and security of personal information, including the California Consumer Protection Act, or CCPA, which became effective January 1, 2020, and gives California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing and receive detailed information about how their personal information is used by requiring covered companies to provide new disclosures to California consumers (as that term is broadly defined) and provide such consumers new ways to opt-out of certain sales of personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches;

- the federal Physician Payments Sunshine Act, implemented as Open Payments, requires manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program to report annually, with certain exceptions to CMS, information related to payments or other "transfers of value" made to physicians, as defined by such law, and teaching hospitals, and requires applicable manufacturers and group purchasing organizations to report annually to CMS ownership and investment interests held by physicians and their immediate family members, physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists and certified nurse-midwives; and

- analogous state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers; state laws that require medical device companies to comply with the industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state beneficiary inducement laws, which are state laws that require medical device manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

State and federal regulatory and enforcement agencies continue to actively investigate violations of healthcare laws and regulations, and the U.S. Congress continues to strengthen the arsenal of enforcement tools. Enforcement agencies also continue to pursue novel theories of liability under these laws. In particular, government agencies have increased regulatory scrutiny and enforcement activity with respect to manufacturer reimbursement support activities, including bringing criminal charges or civil enforcement actions under the Anti-Kickback Statute, FCA and HIPAA's healthcare fraud and privacy provisions.

Because of the breadth of these laws and the narrowness of the statutory exceptions and regulatory safe harbors available under such laws, it is possible that some of our business activities, including certain sales and marketing practices of our products, could be subject to challenge under one or more such laws. If an arrangement were deemed to violate the Anti-Kickback Statute, it may also subject us to violations under other fraud and abuse laws such as the federal civil FCA and civil monetary penalties laws. Moreover, such arrangements could be found to violate comparable state fraud and abuse laws.

Achieving and sustaining compliance with applicable federal and state anti-fraud and abuse laws may prove costly. If we or our employees are found to have violated any of the above laws we may be subjected to substantial criminal, civil and administrative

penalties, including imprisonment, exclusion from participation in federal healthcare programs, such as Medicare and Medicaid, and significant fines, monetary penalties, forfeiture, disgorgement and damages, contractual damages, reputational harm, administrative burdens, diminished profits and future earnings and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our financial results. Any action or investigation against us for the violation of these healthcare fraud and abuse laws, even if successfully defended, could result in significant legal expenses and could divert our management's attention from the operation of our business. Companies settling FCA, Anti-Kickback Statute or civil monetary penalties law cases also may enter into a Corporate Integrity Agreement with the U.S. Department of Health and Human Services Office of Inspector General, or the OIG, to avoid exclusion from participation (such as loss of coverage for their products) in federal healthcare programs such as Medicare and Medicaid. Corporate Integrity Agreements typically impose substantial costs on companies to ensure compliance. Defending against any such actions can be costly, time-consuming and may require significant personnel resources, and may harm our business, financial condition and results of operations.

Our employees, independent contractors, consultants, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could harm our business, financial condition and results of operations.

We are exposed to the risk that our employees, independent contractors, consultants, commercial partners, distributors and vendors may engage in fraudulent or illegal activity. Misconduct by these parties could include intentional, reckless or negligent conduct or disclosure of unauthorized activities to us that violates: (1) the laws of the FDA and other similar regulatory bodies, including those laws requiring the reporting of true, complete and accurate information to such regulators, (2) manufacturing standards, (3) healthcare fraud and abuse laws in the United States and similar foreign fraudulent misconduct laws, or (4) laws that require the true, complete and accurate reporting of financial information or data. These laws may impact, among other things, future sales, marketing and education programs. In particular, the promotion, sales and marketing of healthcare items and services, as well as certain business arrangements in the healthcare industry, are subject to extensive laws designed to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, structuring and commissions, certain customer incentive programs and other business arrangements generally.

We have adopted a code of business conduct and ethics that applies to our directors, officers and employees, but it is not always possible to identify and deter misconduct by our employees and other third parties, and the precautions we take to detect and prevent these activities may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us and we are not successful in defending ourselves or asserting our rights, those actions could result in the imposition of significant fines or other sanctions, including the imposition of civil, criminal and administrative penalties, damages, monetary fines, disgorgement, imprisonment, additional integrity reporting and oversight obligations, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings and curtailment of operations, any of which could adversely affect our ability to operate our business and our results of operations. Whether or not we are successful in defending against any such actions or investigations, we could incur substantial costs, including legal fees and reputational harm, and divert the attention of management in defending ourselves against any of these claims or investigations, which could harm our business, financial condition and results of operations.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain patent or other intellectual property protection for any of our current or future products, or if the scope of the patent and other intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our current or future products may be harmed.

As with other flow cytometry companies, our success depends in large part on our ability to obtain, maintain and solidify a proprietary position for our current and any future products, which will depend upon our success in obtaining effective patent protection in the United States and other countries that cover, and other intellectual property with respect to, such products, their manufacturing processes and their intended methods of use and enforcing those patent claims once granted as well as our other intellectual property. In some cases, we may not be able to obtain issued patent claims or other intellectual property covering our technologies which are sufficient to prevent third parties, such as our competitors, from utilizing our products and negate any competitive advantage we may have. Any failure to obtain or maintain patent and other intellectual property protection with respect to our current and any future products or other aspects of our business could harm our business, financial condition and results of operations.

Changes in either the patent laws or their interpretation in the United States and other countries may diminish our ability to protect our inventions, obtain, maintain and enforce our intellectual property rights and, more generally, could affect the value of our intellectual

property or narrow the scope of our patents. Additionally, we cannot predict whether the patent applications we are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any issued patents will provide sufficient protection from competitors or other third parties.

The patent prosecution process is expensive, time-consuming and complex, and we may not be able to file, prosecute, maintain, enforce or license all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output in time to obtain patent protection. Although we enter into non-disclosure and confidentiality agreements with parties who have access to confidential or patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, suppliers, consultants, advisors and other third parties, any of these parties may breach the agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek and obtain patent protection. In addition, our ability to obtain and maintain valid and enforceable patents depends in part on whether the differences between our inventions and the prior art allow our inventions to be patentable over the prior art. Furthermore, the publication of discoveries in scientific literature often lags behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot be certain that we were the first to file for patent protection of such inventions.

As of December 31, 2022, we own 12 issued U.S. utility patents, two issued Japan utility patents, one issued European utility patent and one issued China utility patent. We have 42 pending utility patent applications, including 25 utility patent applications in the United States, five utility patent applications in the European Union, five utility patent applications in China and three utility patent applications in Japan. Assuming all maintenance fees are paid, the U.S. issued patents are expected to naturally expire between years 2023 and 2038. Patents covering intellectual property relating to design specific technologies invented by our researchers in Shanghai and Wuxi, China are filed in China and owned by our China subsidiaries, respectively. As of December 31, 2022, our Shanghai subsidiary owns 15 issued utility patents and one issued invention patent and has ten pending invention patent applications and one pending utility patent application, and our Wuxi subsidiary owns 36 issued patents and has eight pending patent applications, including five pending utility model patent applications and eight pending invention patent applications.

It is possible that none of our pending patent applications will result in issued patents in a timely fashion or at all, and even if patents are granted, they may not provide a basis for intellectual property protection of commercially viable products or services, may not provide us with any competitive advantages, or may be challenged and invalidated by third parties. It is possible that others will design around our current or future patented technologies. It is possible that in the future the scope, validity and enforceability of our patents, licensed patents, patent applications, trademarks, and trademark applications may be challenged at the United States Patent and Trademark Office ("USPTO") or in proceedings before the patent offices of other jurisdictions. We may not be successful in defending any such challenges made against our patents, patent applications, trademarks or trademark applications. Any successful third party challenge to our patents or trademarks could result in the unenforceability or invalidity of such patents or trademarks and increased competition to our business. We may have to challenge the patents, patent applications, trademarks, or trademark applications of third parties. The outcome of patent litigation or other proceeding can be uncertain, and any attempt by us to enforce our patent rights against others or to challenge the patent rights of others may not be successful, or, if successful, may take substantial time and result in substantial cost, and may divert our efforts and attention from other aspects of our business.

Moreover, in some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology that we license from or license to third parties or that we may jointly-own with third parties in the future and are therefore reliant on our licensors or licensees, and may be reliant on future joint-owners, licensors or licensees, to protect certain of our intellectual property used in our business. If our joint-owners, licensors or licensees fail to adequately protect this intellectual property or if we do not have exclusivity for the marketing of our products, whether because our joint-owners or licensors do not grant us exclusivity or they do not enforce the intellectual property against our competitors, our ability to commercialize products could suffer. Therefore, these and any of our patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

Defects of form in the preparation or filing of our patents or patent applications may exist, or may arise in the future, for example, with respect to proper priority claims, inventorship and the like. If we or any of our current or future joint-owners, licensors or licensees fail to establish, maintain, protect or enforce such patents and other intellectual property rights, such rights may be reduced or eliminated. If any current or future joint-owners, licensors or licensees are not fully cooperative or disagree with us as to the prosecution, maintenance or enforcement of any patent rights, such patent rights could be compromised. If there are material defects in the form, preparation or prosecution of our patents or patent applications, such patents or applications may be invalid and/or unenforceable. Any of these outcomes could impair our ability to prevent competition from third parties, which may impact our ability to commercialize our products and materially harm our business.

The strength of patent rights generally, and particularly the patent position of life sciences companies, involves complex legal and scientific questions and can be uncertain, and has been the subject of much litigation in recent years. This uncertainty includes

changes to the patent laws through either legislative action to changes to statutory patent law or court action that may reinterpret existing law or rules in ways affecting the scope or validity of issued patents or the chances that patent applications will result in issued claims and the scope of any such claims. Our current or future patent applications may fail to result in issued patents in the United States or foreign countries with claims that cover our current and any future products. Even if patents do successfully issue from our patent applications, third parties may challenge the validity, enforceability or scope of such patents, which may result in such patents being narrowed, invalidated or held unenforceable. Any successful challenge to our patents could deprive us of the exclusive rights necessary for the successful commercialization of our current and any future products, which may materially harm our business. Furthermore, even if they are unchallenged, our patents may not adequately protect our current and any future products, provide exclusivity for such products or prevent others from designing around the claims of our patents. If the scope of any patent protection we obtain is not sufficiently broad, or if we lose any of our patent protection, our ability to prevent our competitors from commercializing similar or identical technology and products would be adversely affected and would materially harm our business. If the breadth or strength of protection provided by the patents we hold or pursue with respect to our current and any future products is challenged, it could dissuade companies from collaborating with us to develop, or threaten our ability to commercialize, our current and any future products.

Patents have a limited lifespan. In the United States, the natural expiration of a utility patent is generally 20 years after its effective filing date and the natural expiration of a design patent is generally 14 years after its issue date, unless the filing date occurred on or after May 13, 2015, in which case the natural expiration of a design patent is generally 15 years after its issue date. However, the actual protection afforded by a patent varies from country to country, and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patent. The laws of some foreign countries do not protect our proprietary rights to the same extent as the laws of the United States, and we may encounter significant problems in protecting our proprietary rights in these countries. Various extensions may be available; however, the life of a patent, and the protection it affords, is limited. Without patent protection for our current and any future products and services, we may be open to competition, which may harm our business prospects. Further, if we encounter delays in our development efforts, the period of time during which we could market our current and any future products and services under patent protection would be reduced and, given the amount of time required for the development, testing and regulatory review of planned or future products, patents protecting our current and any future products might expire before or shortly after such products are commercialized. As our patents expire, the scope of our patent protection will be reduced, which may reduce or eliminate any competitive advantage afforded by our patent portfolio. As a result, our patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

Moreover, the coverage claimed in a patent application can be significantly reduced before the patent is issued, and its scope can be reinterpreted after issuance. Even if patent applications we license or own, currently or in the future, issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors or other third parties from competing with us, or otherwise provide us with any competitive advantage. Any patents that we own now or in the future may be challenged, narrowed, circumvented or invalidated by third parties. Consequently, we do not know whether our current and any future products or other technologies will be protectable or remain protected by valid and enforceable patents. Our competitors or other third parties may be able to circumvent our patents by developing similar or alternative technologies or products in a non-infringing manner which could harm our business, financial condition and results of operations.

Some of our patents and patent applications may in the future be jointly-owned with third parties, including certain universities and public institutions in the United States and China. If we are unable to obtain an exclusive license to any such third-party joint-owners' interest in such patents or patent applications, such co-owners may be able to license their rights to other third parties, including our competitors, and our competitors could market competing products and technology. In addition, we may need the cooperation of any such joint-owners patents to enforce such patents against third parties, and such cooperation may not be provided to us. Any of the foregoing could harm our business, financial condition and results of operations.

Additionally, we may find it necessary or prudent to acquire or obtain licenses from third-party intellectual property holders. However, we may be unable to acquire or secure such licenses to any intellectual property rights from third parties that we identify as necessary for our current and any future products. The acquisition or licensing of third-party intellectual property rights is a competitive area, and our competitors may pursue strategies to acquire or license third-party intellectual property rights that we may consider attractive or necessary. Our competitors may have a competitive advantage over us due to their size, capital resources and greater development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to acquire or license third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. If we are unable to successfully obtain rights to required third-party intellectual property rights or maintain the existing intellectual property rights we have, we may have to abandon development of the relevant products, which could harm our business, financial condition and results of operations.

Patents covering our current, and any future products, or our technologies could be found invalid or unenforceable if challenged in court or before administrative bodies in the United States or abroad, which could harm our business, financial condition and results of operations.

The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our patents may be challenged in the courts, the USPTO or patent offices abroad and may not provide us with adequate proprietary protection or competitive advantage against competitors with similar products. We may be subject to a third-party preissuance submission of prior art to the USPTO or become involved in opposition, derivation, revocation, reexamination, post-grant and inter partes review ("IPR"), or interference proceedings or other similar proceedings challenging our patent rights. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate or render unenforceable, such patent rights, allow third parties to commercialize our current and any future products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. Moreover, we may have to participate in post-grant challenge proceedings, such as oppositions in a foreign patent office, that challenge features of patentability with respect to our patents and patent applications. Such challenges may result in loss of patent rights, in loss of exclusivity or in patent claims being narrowed, invalidated or held unenforceable, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our current and any future products or technologies. Such proceedings also may result in substantial cost and require significant time from our management, even if the eventual outcome is favorable to us.

In addition, if we initiate legal proceedings against a third party to enforce a patent covering our current and any future products, the defendant could counterclaim that such patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution. Defenses of these types of claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. Third parties may also raise claims challenging the validity or enforceability of our patents before administrative bodies in the United States or abroad, even outside the context of litigation, including through re-examination, post-grant review, IPR, derivation proceedings and equivalent proceedings in foreign jurisdictions (such as opposition proceedings). Such proceedings could result in the revocation of, cancellation of or amendment to our patents in such a way that they no longer cover or provide meaningful protection of our current and any future products or technologies. The outcome for any particular patent following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant or other third-party were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our current and any future products and technology. Such a loss of patent protection would harm our business, financial condition and results of operations.

We rely substantially on our trademarks and trade names. If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be harmed.

We rely substantially upon trademarks to build and maintain the integrity of our brand. Our registered and unregistered trademarks or trade names may be challenged, infringed, circumvented, declared generic or determined to be violating or infringing on other marks. We may not be able to protect our rights to these trademarks and trade names, which we rely upon to build name recognition among potential partners and customers in our markets of interest. At times, competitors or other third parties may adopt trade names or trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion and asserting claims against such third parties may be prohibitively expensive. In addition, there could be potential trade name or trademark infringement or dilution claims brought by owners of other trademarks against us. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, trade secrets, domain names or other intellectual property may be ineffective, could result in substantial costs and diversion of resources and could harm our business, financial condition and results of operations.

Obtaining and maintaining our intellectual property, including patent, protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by government agencies, and our intellectual property, including patent, protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other government fees on intellectual property registrations and applications will be due to be paid to the applicable government agencies, including with respect to patents and patent applications the USPTO and similar agencies outside of the United States, over the lifetime of our intellectual property registrations and applications, including our patents and patent applications. The various applicable government agencies, including with respect to patents and patent applications the USPTO and similar agencies outside of the United States, require compliance with several procedural, documentary, fee payment and other similar provisions during the application process. In some cases, an inadvertent lapse can be cured by payment

of a late fee or by other means in accordance with the applicable rules. There are situations, however, in which non-compliance can result in the abandonment or lapse of the intellectual property registration or application, resulting in a partial or complete loss of intellectual property rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of an intellectual property registration or application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. In such an event, potential competitors might be able to enter the market with similar or identical products or technology, which could harm our business, financial condition and results of operations.

We have limited foreign intellectual property rights outside the United States, selected countries in the European Union, Japan and China and may not be able to protect our intellectual property and proprietary rights throughout the world, which could harm our business, financial condition and results of operations.

We have limited intellectual property rights outside the United States, selected countries in the European Union, Japan and China. Filing, prosecuting and defending patents or trademarks on our current and any future products in all countries throughout the world would be prohibitively expensive, and the laws of foreign countries may not protect our rights to the same extent as the laws of the United States. Consequently, we may not be able to prevent third parties from practicing our inventions or utilizing our trademarks in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection but enforcement is not as strong as that in the United States. These products may compete with our current and any future products, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our intellectual property and proprietary rights generally. Proceedings to enforce our intellectual property and proprietary rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, could put our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property and proprietary rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license. In addition, changes in the law and legal decisions by courts in the United States and foreign countries may affect our ability to obtain adequate protection for our technology and the enforcement of our intellectual property.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our current and any future products.

Changes in either the patent laws or interpretation of the patent laws in the United States could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. Assuming that other requirements for patentability are met, prior to March 2013, in the United States, the first to invent the claimed invention was entitled to the patent, while outside the United States, the first to file a patent application was entitled to the patent. After March 2013, under the Leahy-Smith America Invents Act, or the America Invents Act, enacted in September 2011, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third-party was the first to invent the claimed invention. A third-party that files a patent application in the USPTO after March 2013, but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by such third-party. This will require us to be cognizant of the time from invention to filing of a patent application. Since patent applications in the United States and most other countries are confidential for a period of time after filing or until issuance, we cannot be certain that we were the first to file any patent application related to our current and any future products.

The America Invents Act also includes a number of significant changes that affect the way patent applications will be prosecuted and also may affect patent litigation. These include allowing third-party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent by USPTO administered post-grant proceedings, including post-grant review, IPR and derivation proceedings.

Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in U.S. federal courts necessary to invalidate a patent claim, a third-party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third-party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third-party as a defendant in a district court action. Therefore, the America Invents Act and its

implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. In addition, future actions by the U.S. Congress, the federal courts and the USPTO could cause the laws and regulations governing patents to change in unpredictable ways. Any of the foregoing could harm our business, financial condition and results of operations.

In addition, recent U.S. Supreme Court rulings have made and will likely continue to make changes in how the patent laws of the United States are interpreted. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the validity and enforceability of patents, once obtained. Depending on future actions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that could weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future. We cannot predict how this and future decisions by the courts, the U.S. Congress or the USPTO may impact the value of our patents. Any similar adverse changes in the patent laws of other jurisdictions could also harm our business, financial condition, results of operations and prospects.

Third-party claims of intellectual property infringement, misappropriation or other violation against us, the joint-owners of our intellectual property, or our collaborators may prevent or delay the sale and marketing of our current and any future products.

The flow cytometry industry is highly competitive and dynamic. Due to the focused research and development that is taking place by several companies, including us and our competitors, in this field, the intellectual property landscape is in flux, and it may remain uncertain in the future. As such, we could become subject to significant intellectual property-related litigation and proceedings relating to our or third-party intellectual property and proprietary rights. Such litigation and proceedings may cause us to incur significant expense, including the payment of damages, settlement payments and/or royalty payments. For example, in February 2018, BD filed suit against us and certain of our employees in the United States District Court for the Northern District of California asserting a number of claims against us, including misappropriation of trade secrets and copyright infringement. In October 2020, we entered into a settlement agreement with BD resulting in a dismissal of all claims and a release of all claims between the parties. Pursuant to the settlement agreement with BD, we are required to make certain payments to BD, including royalty payments on sales of certain of our products.

Our commercial success depends in part on our and any potential future collaborators' ability to develop, manufacture, market and sell any products that we may develop and use our proprietary technologies without infringing, misappropriating or otherwise violating the patents and other intellectual property or proprietary rights of third parties. It is uncertain whether the issuance of any third-party patent would require us or any potential collaborators to alter our development or commercial strategies, obtain licenses or cease certain activities. The medical device industry is characterized by extensive litigation regarding patents and other intellectual property rights, as well as administrative proceedings for challenging patents, including interference, inter partes or post-grant review, derivation and reexamination proceedings before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions.

Third parties, including our competitors, may currently have patents or obtain patents in the future and claim that the manufacture, use or sale of our current and any future products infringes upon these patents. We have not conducted an extensive search of patents issued or assigned to other parties, including our competitors, and no assurance can be given that patents containing claims covering our current and any future products, components of our current and any future products, technology or methods do not exist, have not been filed or could not be filed or issued. In addition, because patent applications can take many years to issue and because publication schedules for pending applications vary by jurisdiction, there may be applications now pending of which we are unaware and which may result in issued patents which our current or future products infringe. Also, because the claims of published patent applications can change between publication and patent grant, there may be published patent applications that may ultimately issue with claims that we infringe. As the number of competitors in our market grows and the number of patents issued in this area increases, the possibility of patent infringement claims against us escalates, increasing the risk that we will be required to incur significant expenses defending any such claims or lose patent protection for our current or future products.

We may also be subject to claims that current or former employees, collaborators or other third parties have an interest in our patents, trade secrets or other intellectual property as an inventor or co-inventor. For example, we may have inventorship disputes arise from conflicting obligations of employees, consultants or others who are involved in developing our current and any future products. Litigation may be necessary to defend against these and other claims challenging inventorship of our patents, trade secrets or other intellectual property. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, intellectual property that is important to our current and any future products. If we were to lose exclusive ownership of such intellectual property, other owners may be able to license their rights to other third parties, including our competitors. We also may be required to obtain and maintain licenses from third parties, including parties involved in any such disputes. Such licenses may not be available on commercially reasonable terms, or at all, or may be non-exclusive. If we are unable to obtain and maintain such licenses, we may need to cease the development, manufacture and commercialization of one or more of our current and any future products. The loss of exclusivity or the narrowing of our patent claims could limit our ability to stop others from using or commercializing similar or identical technology and products. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees. Any of the foregoing could harm our business, financial condition and results of operations.

In the event that any third-party claims that we infringe their patents or that we are otherwise employing their proprietary technology without authorization and initiates litigation against us, even if we believe such claims are without merit, there is no assurance that a court would find in our favor on questions of infringement, validity, enforceability or priority. A court of competent jurisdiction could hold that these third-party patents are valid, enforceable and infringed by our current and any future products, which could harm our ability to commercialize any product we may develop and any other technologies covered by the asserted third-party patents. To successfully challenge the validity of any such U.S. patent in federal court, we would need to overcome a presumption of validity. As this burden is a high one requiring us to present clear and convincing evidence as to the invalidity of any such U.S. patent claim, there is no assurance that a court of competent jurisdiction would invalidate the claims of any such U.S. patent. If we are found to infringe third-party intellectual property rights, including patents, and we are unsuccessful in demonstrating that such patents or other intellectual property rights are invalid or unenforceable, such third parties may be able to block our ability to commercialize the applicable products or technology unless we obtain a license under the applicable patents, or until such patents expire or are finally determined to be held invalid or unenforceable. Such a license may not be available on commercially reasonable terms, or at all. Even if we are able to obtain a license, the license would likely obligate us to pay significant license fees and/or royalties, and the rights granted to us might be non-exclusive, which could result in our competitors gaining access to the same technology. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, or at all, we may be unable to commercialize our current and any future products, or such commercialization efforts may be significantly delayed, which could in turn significantly harm our business.

Defense of infringement claims, regardless of their merit or outcome, would involve substantial litigation expense and would be a substantial diversion of management and other employee resources from our business, and may impact our reputation. In the event of a successful claim of infringement against us, we may be enjoined from further developing or commercializing the infringing products and/or have to pay substantial damages for use of the asserted intellectual property, including treble damages and attorneys' fees were we found to willfully infringe such intellectual property. Claims that we have misappropriated the confidential information or trade secrets of third parties could harm our business, financial condition and results of operations. We also might have to redesign our infringing products or technologies, which may be impossible or require substantial time and monetary expenditure.

Engaging in litigation to defend against third-party infringement claims is very expensive, particularly for a company of our size, and time-consuming. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative, it could have a substantial negative impact on our common stock price. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of litigation or administrative proceedings more effectively than we can because of greater financial resources and more mature and developed intellectual property portfolios. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings against us could impair our ability to compete in the marketplace. The occurrence of any of the foregoing could harm our business, financial condition and results of operations.

We may become involved in lawsuits to protect or enforce our patents and other intellectual property rights, which could be expensive, time-consuming and unsuccessful.

Competitors may infringe our patents, or the patents of any future licensing partners, or we may be required to defend against claims of infringement. In an infringement proceeding, a court may decide that our patent is invalid or unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover such technology. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated or interpreted narrowly. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during litigation.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses and could distract our management and other personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative, it could have a substantial negative impact on our common stock price. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could harm our ability to compete in the marketplace. Any of the foregoing could harm our business, financial condition and results of operations.

Further, many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we are forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position may be impaired, and our business, financial condition and results of operations may be harmed.

We may be subject to claims that our employees, consultants or advisors have wrongfully used or disclosed alleged trade secrets of their current or former employers or claims asserting ownership of what we regard as our own intellectual property. Such claims could harm our business, financial condition and results of operations.

As is common in the life sciences industry, our employees, consultants and advisors may be currently or previously employed or engaged at universities or other life sciences companies, including our competitors and potential competitors. Although we try to ensure that our employees, consultants and advisors do not use the proprietary information or know-how of others in their work for us, we may in the future become subject to claims that we or these people have, inadvertently or otherwise, used or disclosed intellectual property, including trade secrets or other proprietary information, of their current or former employer. Also, we may in the future be subject to claims that these people are violating non-compete agreements with their former employers. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel, which could harm our business, financial condition and results of operations. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management.

In addition, while it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. The assignment of intellectual property rights may not be self-executing, or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property. Such claims could harm our business, financial condition and results of operations.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patent protection for our current and any future products, we also rely upon unpatented trade secrets, know-how and continuing technological innovation to develop and maintain a competitive position, especially where we do not believe patent protection is appropriate or obtainable. Trade secrets and know-how can be difficult to protect. We seek to protect such proprietary information, in part, through non-disclosure and confidentiality agreements with our employees, collaborators, contractors, advisors, consultants and other third parties and invention assignment agreements with our employees. We also have agreements with our consultants that require them to assign to us any inventions created as a result of their working with us. The confidentiality agreements are designed to protect our proprietary information and, in the case of agreements or clauses containing invention assignment, to grant us ownership of technologies that are developed through a relationship with employees or third parties.

We cannot guarantee that we have entered into such agreements with each party that has or may have had access to our trade secrets or proprietary information. Additionally, despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third-party, we would have no right to prevent them from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to, or independently developed by, a competitor or other third-party, our competitive position would be materially and adversely harmed. Furthermore, we expect these trade secrets, know-how and proprietary information to over time be disseminated within the industry through independent development, the publication of journal articles describing the methodology and the movement of personnel from academic to scientific industry positions.

We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these people, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known, or be independently discovered by, competitors. To the extent that our employees, consultants, contractors or collaborators use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions, which could harm our business, financial condition and results of operations.

Failure of a key information technology system, process, or site could have an adverse effect on our business.

We rely extensively on information technology systems to conduct our business. These systems affect, among other things, ordering and managing materials from suppliers, shipping products, processing transactions, complying with regulatory, legal or tax requirements, data security and other processes necessary to manage our business. Our systems and the data contained on them may be subject to computer viruses, ransomware or other malware, attacks by computer hackers, social engineering (including phishing), supply chain attacks, credential stuffing, efforts by individuals or groups of hackers and sophisticated organizations, including state-sponsored organizations, errors or malfeasance of our personnel, and security vulnerabilities in the software or systems on which we rely, and failures during the process of upgrading or replacing software, databases or components thereof. If the confidentiality, integrity, or availability of our systems or our data is compromised due to these, or any number of causes, ranging from catastrophic events and power outages to security breaches, and our business continuity plans do not effectively compensate on a timely basis, we may experience interruptions in our operations, including corruption of our data or release of our confidential information, which could have an adverse effect on our business. Furthermore, any breach in our information technology systems could lead to the unauthorized access, disclosure and use of non-public information, which may be protected by applicable laws. In addition, the COVID-19 pandemic has generally increased the risk of cybersecurity intrusions. For example, there has been an increase in phishing and spam emails as well as social engineering attempts from "hackers" hoping to use the COVID-19 pandemic to their advantage. Any such access, disclosure, or other loss of information could require substantial expenditures to remedy and could result in legal claims or proceedings, liability under laws that protect the privacy of personal information and damage to our reputation.

Our use of open source software could compromise our ability to offer our services and subject us to possible litigation.

We use open source software in connection with the software integrated in our instruments. Companies that incorporate open source software into their products have, from time to time, faced claims challenging their use of open source software and compliance with open source license terms. As a result, we could be subject to lawsuits by parties claiming ownership of what we believe to be open source software or claiming noncompliance with open source licensing terms. Some open source software licenses require users who distribute software containing open source software to publicly disclose all or part of the source code to the licensee's software that incorporates, links or uses such open source software, and make available to third parties for no cost, any derivative works of the open source code created by the licensee, which could include the licensee's own valuable proprietary code. While we monitor our use of open source software and try to ensure that none is used in a manner that would require us to disclose our proprietary source code or that would otherwise breach the terms of an open source agreement, such use could inadvertently occur, or could be claimed to have occurred, in part because open source license terms are often ambiguous. There is little legal precedent in this area and any actual or claimed requirement to disclose our proprietary source code or pay damages for breach of contract could harm our business and could help third parties, including our competitors, develop products and services that are similar to or better than ours. Any of the foregoing could harm our business, financial condition, results of operations and prospects.

Risks Related to Ownership of Our Common Stock

Our stock price may be volatile, and the value of our common stock may decline.

The market price of our common stock may be highly volatile and may fluctuate or decline substantially as a result of a variety of factors, some of which are beyond our control, including limited trading volume. In addition to the factors discussed in this "Risk Factors" section and elsewhere in this Annual Report on Form 10-K, these factors include:

- the degree and rate of market adoption of our products;
- variance in our financial performance from expectations of securities analysts or investors;
- actual or anticipated fluctuations in our financial condition and results of operations, including as a result of anticipated or unanticipated demand based on seasonal factors;
- changes in our projected operating and financial results;
- developments or disputes concerning our intellectual property or other proprietary rights;
- significant lawsuits, including patent or stockholder litigation;

- negative publicity associated with issues related to our products;
- changes in senior management or key personnel;
- future sales of our common stock or other securities, by us or our stockholders, as well as the anticipation of lock-up releases;
- the trading volume of our common stock;
- our ability to obtain and maintain regulatory approvals for our products;
- changes in laws or regulations applicable to our products;
- adverse developments concerning any of our third-party distribution partners and suppliers, including our single and sole-source suppliers;
- announcements by us or our competitors of significant business developments, acquisitions, or new offerings;
- our inability to engage additional distribution partners and establish collaborations, if needed;
- performance or news releases by other companies in our industry including about adverse developments related to safety, effectiveness, accuracy and usability of their products, reputational concerns, regulatory compliance, and product recalls;
- general economic, regulatory and market conditions, including economic recessions or slowdowns, the COVID-19 pandemic, the ongoing war in Ukraine and the general inflationary environment; and
- other events or factors, many of which are beyond our control.

Broad market and industry fluctuations, as well as general economic, pandemic, political, regulatory, and market conditions, may negatively impact the market price of our common stock. In addition, given the relatively small public float of shares of our common stock on the Nasdaq Global Select Market (the "Nasdaq"), the trading market for our shares may be subject to increased volatility. In the past, securities class action litigation has often been brought against companies that have experienced volatility or following a decline in the market price of its securities. This risk is especially relevant for us, because life sciences companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

We have broad discretion in the use of our cash and may invest or spend the funds in ways with which you do not agree and in ways that may not yield a return.

We have broad discretion over the use of our cash. Investors may not agree with our decisions, and our use of cash may not yield any return on your investment. We currently intend to use our cash to fund manufacturing activities, sales and marketing activities, including the hiring and training of additional sales and marketing personnel, and the remainder for working capital and general corporate purposes, including research and development activities. In addition, a portion of our cash may also be used to acquire assets or complementary businesses. Our failure to use our cash effectively could impair our ability to pursue our growth strategy or could require us to raise additional capital. In addition, pending their use, our cash may be placed in investments that do not produce income or that may lose value. If we do not invest or apply our cash in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

Substantial future sales of shares of our common stock or securities convertible into our common stock will result in additional dilution of the percentage of ownership of our stockholders and could cause the market price of our common stock to decline.

Sales and issuances of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. We are unable to predict the effect that such sales and issuances may have on the prevailing market price of our common stock.

In addition, we may offer and sell up to $150 million shares of common stock registered under our universal shelf registration statement on Form S-3 pursuant to the Sales Agreement with Piper in one or more "at the market" offerings. To date, we have not made any sales of common stock pursuant to the Sales Agreement. The extent to which we utilize the Sales Agreement with Piper as a source of funding will depend on a number of factors, including the prevailing market price of our common stock, general market conditions and other restrictions and the extent to which we are able to secure funds from other sources.

In addition, certain of our stockholders have registration rights that would require us to register shares owned by them for public sale in the United States. We have also filed a registration statement to register shares reserved for future issuance under our equity compensation plans. As a result, subject to the satisfaction of applicable exercise periods and applicable volume and restrictions that

apply to affiliates, the shares issued upon exercise of outstanding stock options or upon settlement of outstanding restricted stock unit awards are available for immediate resale in the United States in the open market.

Sales of shares of our common stock could also impair our ability to raise capital through the sale of additional equity securities in the future and at a price we deem appropriate. These sales could also cause the trading price of our common stock to decline and make it more difficult for you to sell shares of our common stock.

Concentration of ownership of our common stock among our executive officers, directors and principal stockholders may prevent new investors from influencing significant corporate decisions.

Based on the number of shares of common stock outstanding as of December 31, 2022, our executive officers, directors, holders of 5% or more of our common stock and their respective affiliates, in the aggregate, own approximately 45.2% of our common stock. These stockholders, acting together, will be able to significantly influence all matters requiring stockholder approval, including the election and removal of directors and any merger or other significant corporate transactions. The interests of this group of stockholders may not coincide with the interests of other stockholders. For example, because many of these stockholders purchased their shares at prices substantially below the current market price or our shares and have held their shares for a longer period, they may be more interested in selling our company to an acquirer than other investors, or they may want us to pursue strategies that deviate from the interests of other stockholders.

We do not intend to pay dividends for the foreseeable future and, as a result, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We have never declared or paid any cash dividends on our capital stock, and we do not intend to pay any cash dividends in the foreseeable future. Any determination to pay dividends in the future will be at the discretion of our board of directors and may be restricted by the terms of any then-current debt instruments. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

We are subject to the periodic reporting requirements of the Securities Exchange Act of 1934 (the "Exchange Act"). We designed our disclosure controls and procedures to provide reasonable assurance that information we must disclose in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met.

These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

Anti-takeover provisions under our charter documents and Delaware law could delay or prevent a change of control which could limit the market price of our common stock and may prevent or frustrate attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. Some of these provisions include:

- a board of directors divided into three classes serving staggered three-year terms, such that not all members of the board will be elected at one time;
- a prohibition on stockholder action through written consent, which requires that all stockholder actions be taken at a meeting of our stockholders;
- a requirement that special meetings of stockholders be called only by the chairman of the board of directors, the chief executive officer, the president, or by a majority of the total number of authorized directors;
- advance notice requirements for stockholder proposals and nominations for election to our board of directors;
- a requirement that no member of our board of directors may be removed from office by our stockholders except for cause and, in addition to any other vote required by law, upon the approval of not less than two-thirds of all outstanding shares of our voting stock then entitled to vote in the election of directors;

- a requirement of approval of not less than two-thirds of all outstanding shares of our voting stock to amend any bylaws by stockholder action or to amend specific provisions of our certificate of incorporation; and
- the authority of the board of directors to issue redeemable convertible preferred stock on terms determined by the board of directors without stockholder approval and which redeemable convertible preferred stock may include rights superior to the rights of the holders of common stock.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporate Law, which may prohibit certain business antitakeover provisions and other provisions in our amended and restated certificate of incorporation and amended and restated bylaws could make it more difficult for stockholders or potential acquirors to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors and could also delay or impede a merger, tender offer, or proxy contest involving our company. These provisions could also discourage proxy contests and make it more difficult for you and other stockholders to elect directors of your choosing or cause us to take other corporate actions you desire. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

Our amended and restated certificate of incorporation and amended and restated bylaws provide that the Court of Chancery of the State of Delaware will be the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation and amended and restated bylaws provide that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for the following types of actions or proceedings under Delaware statutory or common law: (i) any derivative action or proceeding brought on our behalf, (ii) any action or proceeding asserting a claim of breach of a fiduciary duty owed by any of our current or former directors, officers, or other employees to us or our stockholders, (iii) any action or proceeding asserting a claim against us or any of our current or former directors, officers, or other employees, arising out of or pursuant to any provision of the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws, (iv) any action or proceeding to interpret, apply, enforce, or determine the validity of our amended and restated certificate of incorporation or our amended and restated bylaws, (v) any action or proceeding as to which the Delaware General Corporation Law confers jurisdiction to the Court of Chancery of the State of Delaware and (vi) any action asserting a claim against us or any of our directors, officers, or other employees governed by the internal affairs doctrine, in all cases to the fullest extent permitted by law and subject to the court's having personal jurisdiction over the indispensable parties named as defendants.

These provisions would not apply to suits brought to enforce a duty or liability created by the Exchange Act. Furthermore, Section 22 of the Securities Act of 1933 (the "Securities Act") creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated certificate of incorporation and our amended and restated bylaws will further provide that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our amended and restated certificate of incorporation and our amended and restated bylaws. This may require significant additional costs associated with resolving such action in other jurisdictions and the provisions may not be enforced by a court in those other jurisdictions.

These exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees and may discourage these types of lawsuits. Furthermore, the enforceability of similar choice of forum provisions in other companies' certificates of incorporation or bylaws has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable. If a court were to find either exclusive forum provision contained in our amended and restated certificate of incorporation or amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with resolving such action in other jurisdictions, all of which could seriously harm our business.

General Risk Factors

As a result of being a public company, we are obligated to develop and maintain proper and effective internal control and procedures over financial reporting, and any failure to maintain the adequacy of these internal controls in a timely or efficient manner may adversely affect investor confidence in our company and, as a result, the value of our common stock.

We are required, pursuant to Section 404 of the Sarbanes–Oxley Act, to furnish a report by management on, among other things, the effectiveness of our internal control and procedures over financial reporting for the fiscal year ending December 31, 2022, which is the year covered by the second annual report following the completion of our IPO. This assessment will need to include disclosure of any material weaknesses identified by our management in our internal control over financial reporting. In addition, based on the total annual gross revenue of the fiscal year ended December 31, 2022, we ceased to be an "emerging growth company," a "smaller reporting company" or a "non-accelerated filer" as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"), as of December 31, 2022. As a result, we will also be required to include in our annual report an attestation report by our independent registered public accounting firm on internal control over financial reporting, beginning with respect to the fiscal year ending December 31, 2022. We have begun the costly and challenging process of compiling the system and processing documentation necessary to perform the evaluation needed to comply with Section 404, and we may not be able to complete our evaluation, testing and any required remediation in a timely fashion. Our compliance with Section 404 will require that we incur substantial accounting, legal and other compliance expense and expend significant management efforts. We currently do not have an internal audit group, and we will need to hire additional accounting and finance staff and consultants with appropriate public company experience and technical accounting knowledge and compile the system and process documentation necessary to perform the evaluation needed to comply with Section 404.

If we are unable to conclude that our internal control and procedures over financial reporting is effective, or if our independent registered public accounting firm determines we have material weaknesses in our internal control over financial reporting, we could lose investor confidence in the accuracy and completeness of our financial reports, it would be possible that a material misstatement of our financial statements would not be prevented or detected on a timely basis, and as a result, the market price of our common stock could decline, and we could be subject to sanctions or investigations by the SEC or other regulatory authorities. Failure to remedy any material weakness or significant deficiency in our internal control over financial reporting, or to implement or maintain other effective control systems required of public companies, could also restrict our future access to the capital markets.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our operating results could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our common stock.

The preparation of our consolidated financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities, equity, revenue and expenses that are not readily apparent from other sources. For example, in connection with the revenue accounting standard, Accounting Standards Codification, or ASC, Topic 606, management makes judgments and assumptions based on our interpretation of the new standard. The revenue standard is principle-based and interpretation of those principles may vary from company to company based on their unique circumstances. It is possible that interpretation, industry practice and guidance may evolve as we apply the standard. If our assumptions underlying our estimates and judgments relating to our critical accounting policies change or if actual circumstances differ from our assumptions, estimates or judgments, our operating results may be adversely affected and could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our common stock.

We could be subject to securities class action litigation.

In the past, securities class action litigation has often been brought against companies following a decline in the market price of its securities. This risk is especially relevant for us because life sciences companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

We will incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to compliance with our public company responsibilities and corporate governance practices.

As a public company, we have incurred and will continue to incur significant legal, accounting, and other expenses that we did not incur as a private company. We expect such expenses to further increase as we are no longer an emerging growth company. The Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of Nasdaq and other applicable securities rules and regulations impose various requirements on public companies. Furthermore, the senior members of our management team do not have significant experience with operating a public company. As a result, our management and other personnel

will have to devote a substantial amount of time to compliance with these requirements. Moreover, these rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. We cannot predict or estimate the amount of additional costs we will incur as a public company or the timing of such costs, which could negatively affect our business, financial condition and results of operations.

Our failure to meet Nasdaq's continued listing requirements could result in a delisting of our common stock.

If we fail to satisfy the continued listing requirements of Nasdaq, such as the corporate governance requirements or the minimum closing bid price requirement, Nasdaq may take steps to delist our common stock. Such a delisting would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our common stock when you wish to do so. In the event of a delisting, we can provide no assurance that any action taken by us to restore compliance with listing requirements would allow our common stock to become listed again, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the Nasdaq minimum bid price requirement or prevent future non-compliance with the listing requirements of Nasdaq.

If securities or industry analysts do not publish research or publish unfavorable or inaccurate research about our business, our common stock price and trading volume could decline.

Our stock price and trading volume will be heavily influenced by the way analysts and investors interpret our financial information and other disclosures. If securities or industry analysts do not publish research or reports about our business, delay publishing reports about our business or publish negative reports about our business, regardless of accuracy, our common stock price and trading volume could decline.

The trading market for our common stock will depend, in part, on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. If the number of analysts that cover us declines, demand for our common stock could decrease and our common stock price and trading volume may decline. Even if our common stock is actively covered by analysts, we do not have any control over the analysts or the measures that analysts or investors may rely upon to forecast our future results. Over-reliance by analysts or investors on any particular metric to forecast our future results may result in forecasts that differ significantly from our own.

Regardless of accuracy, unfavorable interpretations of our financial information and other public disclosures could have a negative impact on our stock price. If our financial performance fails to meet analyst estimates, for any of the reasons discussed above or otherwise, or one or more of the analysts who cover us downgrade our common stock or change their opinion of our common stock, our stock price would likely decline.

Our ability to use our net operating losses ("NOLs") to offset future taxable income may be subject to certain limitations.

As of December 31, 2022, we had no federal and state NOL carryforwards. Certain state NOLs will begin to expire in the calendar year 2036, unless previously utilized. Certain NOL carryforwards subject to expiration could expire unused and be unavailable to offset future income tax liabilities.

Under the 2017 Tax Cuts and Jobs Act (the "Tax Act"), as modified by the Coronavirus Aid, Relief and Economic Security Act, or CARES Act, federal NOLs incurred in taxable years beginning after December 31, 2017 may be carried forward indefinitely, but the deductibility of such federal NOLs in taxable years beginning after December 31, 2020 is limited to 80% of taxable income in such years. There is variation in how states have responded and may continue to respond to the Tax Act and CARES Act. In addition, for state income tax purposes, there may be periods during which the use of NOLs is suspended or otherwise limited.

Separately, under Section 382 of the Internal Revenue Code of 1986, as amended ("Code") if a corporation undergoes an "ownership change," which is generally defined as a greater than 50% change, by value, in its equity ownership over a three-year period, the corporation's ability to use its pre-change NOL carryforwards and other pre-change tax attributes to offset its post-change income or taxes may be limited. Similar rules may apply under state tax laws. We determined that an ownership change occurred on September 7, 2018, October 23, 2020, and in connection with our IPO on July 23, 2021. As of December 31, 2022, we had not experienced an ownership change subsequent to the ownership change on July 23, 2021. In addition, we may in the future experience ownership changes, as a result of changes in our stock ownership (some of which are not in our control). If an ownership change occurs, our ability to utilize our NOL carryforwards and other tax attributes to reduce future tax liabilities may be limited. Many states have provisions similar to Code Section 382. Annual limitations may result in the expiration of the state net operating loss carryforwards before utilization.

Changes in our effective tax rate or tax liability may have an adverse effect on our results of operations.

Our effective tax rate could increase due to several factors, including:

- changes in the relative amounts of income before taxes in the various jurisdictions in which we operate that have differing statutory tax rates;
- changes in tax laws, tax treaties, and regulations or the interpretation of them;

- changes to our assessment about our ability to realize our deferred tax assets that are based on estimates of our future results, the prudence and feasibility of possible tax planning strategies, and the economic and political environments in which we do business;
- the outcome of current and future tax audits, examinations, or administrative appeals; and
- limitations or adverse findings regarding our ability to do business in some jurisdictions.

Additionally, a tax authority may disagree with tax positions that we have taken, which could result in increased tax liabilities. For example, a tax authority could assert that we are subject to tax in a jurisdiction where we believe we have not established a taxable connection, often referred to as a ''permanent establishment'' under international tax treaties, and such an assertion, if successful, could increase our expected tax liability in one or more jurisdictions.

Changes in tax law and regulations may have a material adverse effect on our business, financial condition and results of operations.

The rules dealing with U.S. federal, state and local income taxation are constantly under review by the Internal Revenue Service, the U.S. Treasury Department and other governmental bodies. Changes to tax laws (which changes may have retroactive application) could adversely affect us or holders of our common stock. In recent years, many such changes have been made and changes are likely to continue to occur in the future. Future changes in tax laws could have a material adverse effect on our business, financial condition, results of operations, and cash flow. We urge investors to consult with their legal and tax advisers regarding the implication of potential changes in tax laws on an investment in our common stock.

Changes and uncertainties in the tax system in the countries in which we have operations, could materially adversely affect our financial condition and results of operations, and reduce net returns to our shareholders.

We conduct business globally and file income tax returns in multiple jurisdictions. Our consolidated effective income tax rate could be materially adversely affected by several factors, including: changing tax laws, regulations and treaties, or the interpretation thereof; tax policy initiatives and reforms under consideration; the practices of tax authorities in jurisdictions in which we operate; the resolution of issues arising from tax audits or examinations and any related interest or penalties. We are unable to predict what tax reform may be proposed or enacted in the future or what effect such changes would have on our business, but such changes, to the extent they are brought into tax legislation, regulations, policies or practices in jurisdictions in which we operate, could increase the estimated tax liability that we have expensed to date and paid or accrued on our statement of financial position, and otherwise affect our financial position, future results of operations, cash flows in a particular period and overall or effective tax rates in the future in countries where we have operations, reduce post-tax returns to our shareholders and increase the complexity, burden and cost of tax compliance.

Item 1B. Unresolved Staff Comments.

None

Item 2. Properties.

We currently lease approximately 99,000 square feet of office and laboratory space at our headquarter in Fremont, California. The lease is expected to expire in December 2028. We lease approximately 40,000 square feet of manufacturing and office space at our facility in Wuxi, China, under leases expiring in May and October 2025, respectively, and approximately 14,000 square feet of office and laboratory space at our facility in Shanghai, China, under multiple leases expiring between March 2024 and December 2023. We also lease office space in Seattle, Washington; Bethesda, Maryland; San Diego, California; Beijing, China; and Amsterdam, Netherlands. We believe that our existing office, laboratory and manufacturing space, together with additional space and facilities available on commercially reasonable terms, will be sufficient to meet our current and future needs.

Item 3. Legal Proceedings.

We are not currently engaged in any material pending legal proceedings. From time to time, we may be subject to legal proceedings and claims arising in the ordinary course of business.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Our common stock began trading on the Nasdaq Global Select Market on July 23, 2021 and trades under the symbol "CTKB". Prior to July 23, 2021, there was no public trading market for our common stock

Holders of Record

As of February 13, 2023, there were approximately 24 stockholders of record. Because brokers and other institutions hold many of our shares on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders.

Dividend Policy

We have never declared or paid any cash dividends on our capital stock and we do not currently intend to pay any cash dividends on our capital stock for the foreseeable future. We currently intend to retain all available funds and any future earnings to support operations and to finance the growth and development of our business. Any future determination to pay dividends will be made at the discretion of our board of directors, subject to applicable laws and will depend upon, among other factors, our results of operations, financial condition, contractual restrictions and capital requirements.

Recent Sales of Unregistered Equity Securities

None

Use of Proceeds

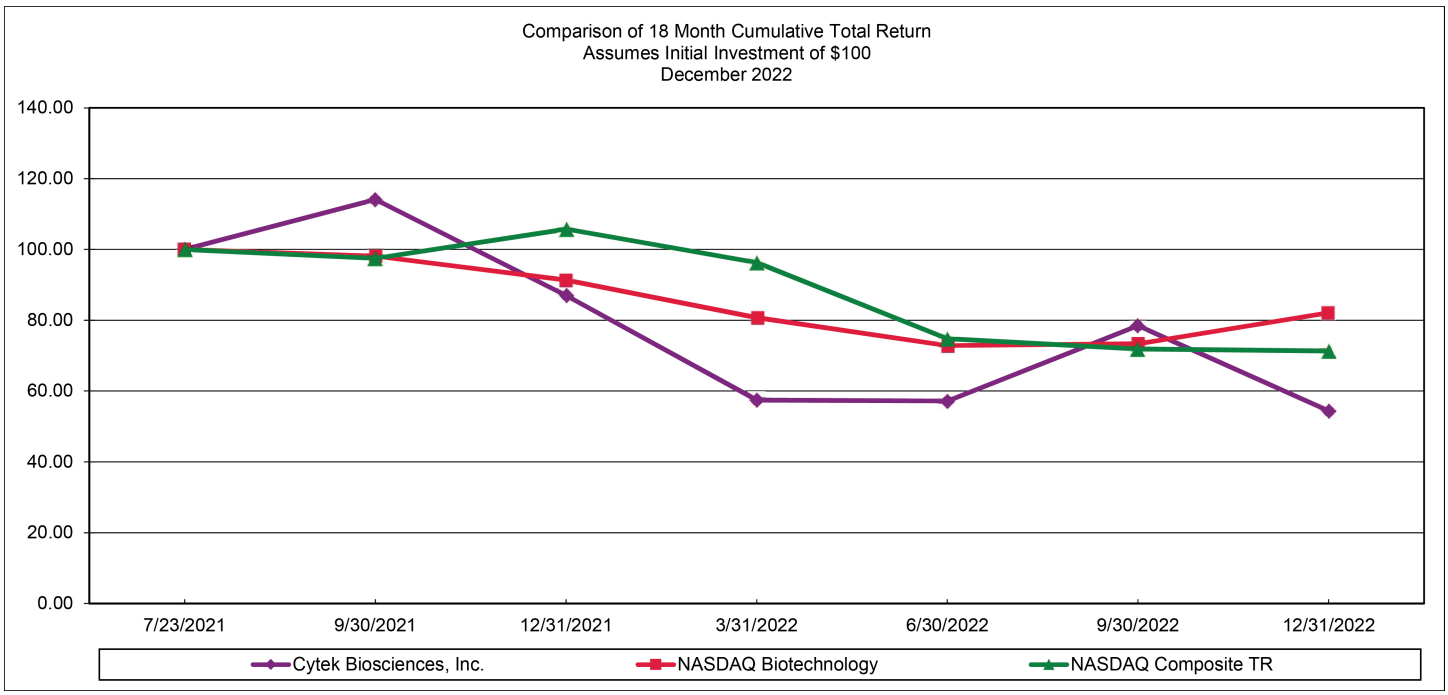
In July 2021, we issued and sold an aggregate of 13,949,401 shares of common stock in connection with our IPO, including the full exercise by the underwriters of their option to purchase an additional 2,184,695 shares from us, and the selling stockholders sold 2,799,929 shares of common stock, at a public offering price of $17.00 per share. All of the shares of common stock issued and sold in our IPO were registered under the Securities Act pursuant to a registration statement on Form S-1 (Registration No. 333-257663), which was declared effective by the SEC on July 22, 2021. There has been no material change in the use of proceeds from our IPO from those disclosed in the final prospectus for our IPO dated July 22, 2021 and filed with the SEC pursuant to Rule 424(b)(4) of the Securities Act on July 23, 2021.

Issuer Purchases of Equity Securities

None

Performance Graph (1)

The following graph shows the cumulative total return on an investment of $100 in cash on July 23, 2021 through December 31, 2022, in our common stock, the Nasdaq Composite Index and the Nasdaq Biotechnology Components Index and assuming that all dividends were reinvested. The stockholder return shown on the graph below is not necessarily indicative of future performance, and we do not make or endorse any predictions as to future stockholder returns.



(1) This Section is not "soliciting material," is not deemed "filed" with the SEC and is not to be incorporated by reference in any filing of Cytek Biosciences under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

Item 6. [Reserved]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes included in this Annual Report on Form 10-K. This discussion contains forward-looking statements that involve risks and uncertainties. See "Special Note Regarding Forward-Looking Statements" at the beginning of this Annual Report on Form 10-K. Our actual results could differ materially from those contained in these forward-looking statements due to a number of factors, including those discussed in Part I, Item 1A "Risk Factors" and elsewhere in this Annual Report on Form 10-K. Unless the context requires otherwise, references in this Annual Report on Form 10-K to "we," "us" and "our" refer to Cytek Biosciences, Inc.

The following is a discussion and year-to-year comparisons of our financial condition and results of operations for the years ended December 31, 2022 and 2021. For a discussion of the results of operations and financial condition for the years ended December 31, 2020 and year-to-year comparisons between 2021 and 2020, please refer to "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of fiscal 2021 Annual Report on Part II, Item 7 of Form 10-K, filed on March 17, 2022.

Overview

We are a leading cell analysis solutions company advancing the next generation of cell analysis tools by leveraging novel technical approaches. Our goal is to become the premier cell analysis company through continued innovation that facilitates scientific advances in biomedical research and clinical applications. We believe our core instruments, the Aurora and Northern Lights systems, are the first full spectrum flow cytometers able to deliver high-resolution, high-content and high-sensitivity cell analysis by utilizing the full spectrum of fluorescence signatures from multiple lasers to distinguish fluorescent tags on single cells ("Full Spectrum Profiling" or "FSP"). Our novel approach harnesses the power of information within the entire spectrum of a fluorescent signal to achieve a higher level of multiplexing with exquisite sensitivity. Our patented FSP technology optimizes sensitivity and accuracy through its novel optical and electronic designs that utilize an innovative method of light detection and distribution. Our FSP platform includes instruments, reagents, software and services to provide a comprehensive and integrated suite of solutions for our customers. Since our first U.S. commercial launch in mid-2017, we have sold and deployed over 1,670 instruments—primarily comprised of our Aurora and Northern Lights systems—to customers around the world, including the largest pharmaceutical companies, over 200 biopharma companies, leading academic research centers, and clinical research organizations ("CROs"). In June 2021, we began shipping the Aurora cell sorter ("Aurora CS"), which uses our FSP technology to further broaden our potential applications across cell analysis.

We manufacture our instruments in our facilities in Fremont, California and in Wuxi, China. We have designed our operating model to be capital efficient and to scale efficiently as our product volumes grow.

Our total revenue was $164.0 million and $128.0 million in the year ended December 31, 2022 and 2021, respectively. The increase was primarily due to continued demand across our full portfolio of product offerings and an increase in the average blended selling price due to product mix.

To date, we have adopted a direct sales model in North America, Europe, China, and several other countries in the Asia-Pacific region, and sell our products through third-party distributors in certain countries in Europe, Latin America, the Middle East, Africa and the Asia-Pacific region. Revenue from direct sales represented 79% and 86% of total revenue for the year ended December 31, 2022 and 2021, respectively, and revenue from distributors represented 21% and 14% of total revenue for the year ended December 31, 2022 and 2021, respectively.

We focus a substantial portion of our resources on developing new products and solutions to meet our customers' needs. Our research and development efforts focus on developing new and complementary instruments, reagents and reagent kits, and continued operating software development. We incurred research and development expenses of $34.9 million and $24.4 million for the year ended December 31, 2022, and 2021, respectively. We intend to continue to make significant investments in research and development in the future.

We expect to continue to invest in our commercial infrastructure through hiring additional employees with strong scientific and technical backgrounds to support growth in sales of our Aurora, Northern Lights and Aurora CS systems, as well as our planned expansion of reagents offerings and panel design capabilities. We also plan to continue to invest in sales, marketing and business development across the globe to drive commercialization of our products. We incurred sales and marketing expenses of $33.2 million and $24.7 million for the year ended December 31, 2022 and 2021, respectively.

Since our inception in 2014, we have financed our operations primarily through sales of our securities and revenue from the sale of our products and services.

Our net income was $2.5 million and $3.0 million for the year ended December 31, 2022 and 2021, respectively. The change for the year ended December 31, 2022 compared to the year ended December 31, 2021 resulted primarily from expenses driven by an increase in headcount and salaries and efforts in research and development and marketing initiatives.

We expect our expenses will increase substantially in connection with our ongoing activities, as we:

- attract, hire and retain qualified personnel;
- invest in processes, commercial infrastructure and supporting functions to scale our business and introduce new products and services;
- support our research and development efforts;
- continue to expand geographically;
- protect and defend our intellectual property; and
- make strategic investments in complementary businesses, services, products or technologies.

On November 2, 2021, we completed the acquisition of the reagents business of Tonbo Biotechnologies Corporation ("Tonbo") as detailed in Note 9, *Acquisition,* to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. The acquired assets include a portfolio of life science research reagents related to cell preparation, flow cytometry, molecular immunology/polymerase chain reaction and cell culture covering application areas across immunology, apoptosis and immunoprofiling.

Key factors affecting our results of operations and future performance

We believe that our financial performance has been, and in the foreseeable future will continue to be, primarily driven by multiple factors as described below, each of which presents growth opportunities for our business. These factors also pose important challenges that we must successfully address to sustain our growth and improve our results of operations. Our ability to successfully address these challenges is subject to various risk and uncertainties, including those described under the heading "Risk Factors" included elsewhere in this Annual Report on Form 10-K.

Global customer adoption

Our financial performance has largely been driven by our ability to increase the adoption of our FSP platform, a key factor on which our future success depends. We plan to drive global customer adoption through business development efforts, direct sales and marketing and third-party distributions. We are investing in our direct sales organization and commercial support functions and developing third-party distributor relationships to support global expansion and drive revenue growth. As part of this effort, we increased our direct sales force by 60% in the year ended December 31, 2022 compared to the year ended December 31, 2021. We intend to continue increasing our workforce in line with our growth.

Recurring revenues

We believe our expanding installed base of instruments to new and existing customers will provide us with greater leverage to drive pull-through for reagent and service revenue, which are recurring by nature. Furthermore, as we develop and identify new applications and products, we expect to further increase pull-through across our installed base. We expect recurring revenue on an absolute basis to increase and become an increasingly important contributor to our revenue as our installed base expands.

Revenue mix and gross margin

Our revenue is primarily derived from sales of our instruments and services with our instruments recognizing higher gross margins than our services. Although we expect sales of our instruments to continue to represent the largest percentage of our revenue in the future, we expect reagent sales to increase as a percentage of our total revenue and our gross margins to experience a corresponding improvement as we grow our installed base and increase our focus on commercializing reagents. We also expect a higher gross margin on our instruments as we increase manufacturing efficiency, instrument reliability and training for personnel using our instruments, which we expect to lead to a reduction in warranty claims. Our sales in certain regions, particularly outside of the United States, are realized through third-party distribution partners that typically receive discounted prices, thus resulting in lower gross margins than those recognized by our direct sales organization. Furthermore, our gross margins and instrument selling prices may fluctuate in the future as we continue to grow our volume of third-party distribution partners in geographies outside of the United States, introduce new products and reduce our production costs as a result of variability in the timing of new product introductions.

In the near term, we expect the continued optimization of our manufacturing processes related to our instruments and the expansion of product manufacturing distribution facilities to have the greatest impact on our gross margin. In addition to the impact of competing products entering the market, the future gross margin profiles of our instruments, services and reagents will depend on the outcome of any royalties we are required to pay and the royalty rates and products to which such royalties apply.

Expansion into new markets

We focus our research and development efforts on the greatest value-additive FSP products to meet the growing and unmet needs of the research and clinical markets. We work closely with researchers and clinicians to optimize and implement new panels and applications to meet their specific needs. We also gain valuable insight on potential new products, new applications and enhancements to existing products, as well as biomarker combinations that would be beneficial in different fields, through collaborations with our

customers, academic laboratories, KOLs and industry partners. We plan to continue to invest in new product development and enhancements to support our expansion into new markets.

Our Northern Lights system obtained clinical certification in China in 2019 and received CE Marking under the European Union In Vitro Diagnostic Medical Devices Directive in September 2020. With these achievements, our Northern Lights system is available for clinical diagnostic use in hospitals, laboratories, and clinics in China and the European Union.

Key business metrics

We regularly review the following key business metrics to evaluate our business, measure our performance, identify trends affecting our business, formulate financial projections and make strategic decisions. We believe that the following metrics are representative of our current business; however, we anticipate these will change or may be substituted for additional or different metrics as our business grows.

	Year ended December 31,		
(In thousands)	2022	2021	Dollar Change
Sales channel mix			
Direct sales channel	$ 129,098	$ 110,520	$ 18,578
Distributor channel	34,938	17,430	17,508
Total revenue, net	$ 164,036	$ 127,950	$ 36,086
Customer mix			
Academia and government	$ 73,706	$ 59,415	$ 14,291
Biotechnology, pharmaceutical, distributor and CRO	90,330	68,535	21,795
Total revenue, net	$ 164,036	$ 127,950	$ 36,086

Distributors typically sell to end customers identified in other customer categories.

The table below sets forth our cumulative instruments shipped as of the dates presented:

	December 31 2022	September 30 2022	June 30, 2022	March 31, 2022
Instruments shipped	1,670	1,501	1,359	1,226

Known Trends, Events and Uncertainties

The recent trends towards rising inflation may adversely affect our business and corresponding financial position and cash flows. Inflationary factors, such as increases in the cost of materials and supplies, interest rates and overhead costs may adversely affect our operating results. The general consensus among economists suggests that we should expect a higher recession risk to continue over the next year, which could result in further economic uncertainty and volatility in the capital markets in the near term, and could negatively affect our operations. Although we do not believe that inflation has had a material impact on our financial position or results of operations to date, we may experience increases in the near future (especially if inflation rates continue to rise) on our operating costs, including our labor costs and research and development costs, due to supply chain constraints, consequences associated with COVID-19 and the ongoing conflict between Russia and Ukraine.

Components of our results of operations

Total revenue, net

We currently generate our total revenue, net from product revenue and service revenue.

Product. Our product revenue primarily consists of sales of our instruments, including the Aurora, Northern Lights and Aurora CS systems, instrument accessories, such as loaders, and consumables, such as reagents. We offer multiple versions of our Aurora and Northern Lights systems with different price points based on the number of lasers integrated in the systems. We also derive revenue from sales of our conventional flow cytometry system, which is available for sale in China. We recognize product revenue when control of the instrument is transferred to the customer.

Service. Our service revenue primarily consists of post-warranty service contracts, installations and repairs which are recognized over time. Post-warranty service contracts are recognized ratably over the term of the contract and installations and repair services are recognized as they are delivered to the customer.

We expect our revenue to increase in absolute dollars as we expand our sales organization and sales territories, broaden our customer base, and expand awareness of our products with new and existing customers. Our revenue was $164.0 million and $128.0 million for the year ended December 31, 2022 and 2021, respectively.

Total cost of sales, gross profit and gross margin

Our total cost of sales is comprised of product cost of sales and service cost of sales.

Product. Cost of sales associated with our products primarily consist of manufacturing-related costs incurred in the production process, inventory write-downs, warranty costs, third party royalty costs, personnel and related costs, costs of component materials, overhead, packaging and delivery and depreciation expense.

Service. Cost of sales associated with our services primarily consists of personnel and related costs, expenses related to product replacements, product updates and qualification validation of our products and depreciation expense.

We expect our total cost of sales to increase in absolute dollars in future periods, corresponding to our anticipated growth in revenue and employee headcount to support our manufacturing, operations, field service team and support organizations.

Gross profit is calculated as revenue less total cost of sales. Gross margin is gross profit expressed as a percentage of revenue. Our gross profit in future periods will depend on a variety of factors, including market conditions that may impact our pricing, sales mix changes among our instruments and service agreements, product mix changes between established products and new products, excess and obsolete inventories, our cost structure for manufacturing operations relative to volume and product warranty obligations.

Operating expenses

Our operating expenses are primarily comprised of research and development, sales and marketing, and general and administrative expenses, depreciation and amortization, and related overhead.

Research and development. Our research and development expenses primarily consist of salaries, benefits, stock-based compensation costs for employees in our research and development department, independent contractor costs, laboratory supplies, equipment maintenance and materials expenses.

We plan to continue to invest in our research and development efforts, including hiring additional employees to enhance existing products and develop new products. We expect research and development expense will increase in absolute dollars in future periods and vary from period to period as a percentage of revenue due to our continuing investment in product development.

Sales and marketing. Our sales and marketing expenses consist primarily of salaries, benefits, and stock-based compensation costs for employees in our sales and marketing department, sales commissions, marketing material costs, travel expenses and costs related to trade shows, trainings and various workshops. We expect our sales and marketing expense to increase in absolute dollars as we expand our commercial sales, marketing, and business development teams, increase our presence globally and increase marketing activities to drive awareness and adoption of our platform. While these expenses may vary from period to period as a percentage of revenue, we expect these expenses to increase as a percentage of sales in the short-term as we continue to grow our commercial organization to support anticipated growth of the business.

General and administrative. Our general and administrative expenses primarily consist of salaries, benefits, and stock-based compensation costs for employees in our executive, accounting and finance, legal and human resource functions, as well as professional services fees, such as consulting, audit, tax, legal, general corporate costs and allocated overhead expenses. We expect our operating expenses to increase as a public company. In particular, we expect our accounting, legal, personnel-related expenses and directors' and officers' insurance costs reported within general and administrative expense to increase as we establish more comprehensive compliance and governance functions, maintain IT costs, review internal controls over financial reporting in accordance with the Sarbanes-Oxley Act and prepare and distribute periodic reports as required by the rules and regulations of the SEC. As a result, our historical results of operations may not be indicative of our results of operations in future periods.

We expect these expenses to vary from period to period as a percentage of revenue.

Other income (expense), net

Interest expense. Interest expense consists primarily of accretion of the present value of the litigation settlement liability. See Note 11 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for further details regarding the settlement.

Interest income. Our interest income consists primarily of interest earned on our cash and cash equivalents which are invested in cash deposits and in money market funds.

Other expense, net. Our other expense, net consists primarily of foreign exchange gains and losses.

Income taxes

Our provision for (benefit from) income taxes consists primarily of provision for federal taxes and local taxes in the United States as well as foreign taxes. As we plan to expand the scale and scope of our international business activities, any changes in the United States and foreign taxation of such activities may increase our overall provision for income taxes in the future.

Results of operations

Comparison of the year ended December 31, 2022 and 2021

The results of operations presented below should be reviewed in conjunction with the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K.

The following table sets forth our consolidated results of operations and comprehensive income data for the periods presented:

	Year ended December 31,	
(In thousands)	**2022**	**2021**
Revenue, net:		
Product	$ 148,600	$ 119,519
Service	15,436	8,431
Total revenue, net	164,036	127,950
Cost of sales:		
Product	49,955	37,377
Service	13,107	11,429
Total cost of sales	63,062	48,806
Gross profit	100,974	79,144
Operating expenses:		
Research and development	34,858	24,442
Sales and marketing	33,230	24,710
General and administrative	34,690	20,835
Total operating expenses	102,778	69,987
Income (loss) from operations	(1,804)	9,157
Other income (expense):		
Interest expense	(2,573)	(1,741)
Interest income	4,619	49
Other expense, net	1,018	(1,527)
Income before income taxes	1,260	5,938
Provision for (benefit from) income taxes	(1,224)	2,911
Net income	$ 2,484	$ 3,027
Foreign currency translation adjustment, net of tax	(1,611)	832
Unrealized gain (loss) on marketable securities	17	-
Net comprehensive income	$ 890	$ 3,859

Total revenue, net

	Year ended December 31,		Change	
(In thousands, except percentages)	**2022**	**2021**	**Amount**	**%**
Revenue, net				
Product	$ 148,600	$ 119,519	$ 29,081	24%
Service	15,436	8,431	7,005	83%
Total revenue, net	$ 164,036	$ 127,950	$ 36,086	28%

Total revenue, net increased by $36.1 million, or 28%, for the year ended December 31, 2022 as compared to the year ended December 31, 2021. The increase in revenue was primarily driven by continued sales of the Aurora and Northern Lights systems and an increase in sales of our Aurora CS system, which was commercially launched in June 2021.

Product revenue increased by $29.1 million or 24%, to $148.6 million, for the year ended December 31, 2022 as compared to the year ended December 31, 2021. The increase was primarily driven by an increase in sales of the Aurora and Northern Lights systems and an increase in sales of our Aurora CS system, which commercially launched in June 2021, and recently launched reagents and consumables.

Service revenue increased by $7.0 million, or 83%, to $15.4 million, for the year ended December 31, 2022 as compared to the year ended December 31, 2021. The increase in service revenue was mainly driven by continued growth in the instruments installed base with more instruments coming off warranty.

Total cost of sales, gross profit and gross margin

(In thousands, except percentages)	Year ended December 31, 2022	Year ended December 31, 2021	Change Amount	Change %
Cost of sales:				
Product	$ 49,955	$ 37,377	$ 12,578	34%
Service	13,107	11,429	1,678	15%
Total cost of sales	$ 63,062	$ 48,806	$ 14,256	29%
Gross profit	$ 100,974	$ 79,144	$ 21,830	28%
Gross margin	62%	62%		

Total cost of sales increased by $14.3 million, or 29%, for the year ended December 31, 2022 as compared to the year ended December 31, 2021. The increase in cost of sales was driven by increases in product and service revenue, primarily due to more instruments shipped, increased material costs, and increased service and manufacturing headcount and associated personnel cost, including an increase of $1.3 million in stock-based compensation for the year ended December 31, 2022 as compared to the year ended December 31, 2021.

Total gross profit margin was 62% and 62% as a percent of total revenue for the year ended December 31, 2022 and 2021, respectively. Gross profit margin depends on many factors, including market conditions that might affect our pricing; services; product mix changes between instrument configurations; excess and obsolete inventories; our cost structure for manufacturing operations relative to volume, freight costs and product support.

(In thousands, except percentages)	Year ended December 31, 2022	Year ended December 31, 2021	Change Amount	Change %
Product:				
Revenue	$ 148,600	$ 119,519	$ 29,081	24%
Cost of sales	49,955	37,377	12,578	34%
Product gross profit	$ 98,645	$ 82,142	$ 16,503	20%
Gross margin	66%	69%		
Service:				
Revenue	$ 15,436	$ 8,431	$ 7,005	83%
Cost of sales	13,107	11,429	1,678	15%
Service gross profit	$ 2,329	$ (2,998)	$ 5,327	178%
Gross margin	15%	-36%		

Product gross profit and product revenue for the year ended December 31, 2022 increased 20% and 24%, respectively, as compared to the year ended December 31, 2021. Product cost of sales for the year ended December 31, 2022 increased by 34% as compared to the same period in 2021. The lower product gross margins in the year ended December 31, 2022 compared to the year ended December 31, 2021 were driven primarily by higher material costs and by less favorable instrument product mix.

Service gross profit and service revenue for the year ended December 31, 2022 increased 178% and 83%, respectively, as compared to the year ended December 31, 2021. Service cost of sales for the year ended December 31, 2022 increased by 15% as compared to the same period in 2021. The higher service gross margins in the year ended December 31, 2022 compared to the year ended December 31, 2021 were mainly driven by continued growth in the instruments installed base with more instrument coming off warranty.

Operating expenses

Research and development

(In thousands, except percentages)	Year ended December 31, 2022	Year ended December 31, 2021	Change Amount	Change %
Research and development	$ 34,858	$ 24,442	$ 10,416	43%

Research and development expenses were $34.9 million for the year ended December 31, 2022 as compared to $24.4 million for the year ended December 31, 2021. The increase of $10.4 million in research and development expenses was primarily due to an increase in headcount and personnel-related expenses, including stock-based compensation of $3.2 million.

We expect our research and development expense to increase in absolute dollars as we continue to develop new products and enhance existing instruments and technologies.

Sales and marketing

(In thousands, except percentages)	Year ended December 31, 2022	2021	Change Amount	%
Sales and marketing	$ 33,230	$ 24,710	$ 8,520	34%

Sales and marketing expenses were $33.2 million for the year ended December 31, 2022 as compared to $24.7 million for the year ended December 31, 2021. The increase of $8.5 million in sales and marketing expenses was primarily due to an increase in headcount, commissions, and personnel-related expenses of $7.0 million, including stock-based compensation of $2.0 million.

We expect our sales and marketing expenses to increase in absolute dollars as we hire additional sales and marketing personnel, expand our sales support infrastructure and invest in our brand and product awareness to further penetrate the United States and the international markets.

General and administrative

(In thousands, except percentages)	Year ended December 31, 2022	2021	Change Amount	%
General and administrative	$ 34,690	$ 20,835	$ 13,855	66%

General and administrative expenses were $34.7 million for the year ended December 31, 2022 as compared to $20.8 million for the year ended December 31, 2021. The increase of $13.9 million in general and administrative expenses was primarily due to an increase in general corporate personnel-related costs and infrastructure services to support the growth of our overall operations. The increase in personnel-related costs was primarily due to increased headcount and stock-based compensation of $3.5 million.

We expect to continue to incur additional general and administrative expenses as a result of operating as a public company, including expenses related to compliance with the rules and regulations of the SEC and the Nasdaq Stock Market, additional insurance costs, investor relations activities and other administrative and professional services. As a result, we expect general and administrative expenses to increase in absolute dollars in future periods.

Interest expense

(In thousands, except percentages)	Year ended December 31, 2022	2021	Change Amount	%
Interest expense	$ (2,573)	$ (1,741)	(832)	48%

Interest expense was $2.6 million for the year ended December 31, 2022 as compared to $1.7 million for the year ended December 31, 2021. The increase was mainly due to the accretion of the present value discount related to the settlement agreement with Becton, Dickinson and Company ("BD"). See Note 11 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for further details.

Interest income

(In thousands, except percentages)	Year ended December 31, 2022	2021	Change Amount	%
Interest income	$ 4,619	$ 49	4,570	9327%

Interest income was $4.6 million and $0.5 million for the year ended December 31, 2022 and 2021, respectively. The increase in interest income was the result of higher interest earned on our cash and cash equivalents due to an increase in interest rates as compared to 2021.

Other expense, net

(In thousands, except percentages)	Year ended December 31, 2022	2021	Change Amount	%
Other expense, net	$ 1,018	$ (1,527)	2,545	-167%

Other expense, net was $1.0 million for the year ended December 31, 2022 as compared to other expense, net of $1.5 million for the year ended December 31, 2021, respectively. The decrease of $2.5 million was primarily the result of the net impact of foreign exchange gains and losses during the year ended December 31, 2022.

Income Taxes

(In thousands, except percentages)	Year ended December 31, 2022	2021	Change Amount	%
Provision for (benefit from) income taxes	$ (1,224)	$ 2,911	(4,135)	-142%

Benefit from income tax was $1.2 million for the year ended December 31, 2022. The provision for income tax was $2.9 million for the year ended December 31, 2021. The net change of $4.1 million for the year ended December 31, 2022 was the result of lower earnings in 2022 combined with an increase in research and development credits claimed. Income tax benefit from research credits

exceeded 2022 earnings before income tax and accordingly income tax benefit was recorded despite other items which increased the effective tax rate on earnings.

Non-GAAP Financial Measure

To supplement our consolidated financial statements presented in accordance with generally accepted accounting principles, we use constant currency revenue, which is a non-GAAP financial measure. We believe the presentation of revenue on a constant currency basis, in addition to results reported in accordance with U.S. GAAP, provides useful information about our operating performance because the constant currency presentation excludes the effects of foreign currency volatility and highlights our core operating results. The presentation of revenue on a constant currency basis should be considered in addition to, but not as a substitute for, measures of financial performance reported in accordance with U.S. GAAP. Revenue on a constant currency basis, as we present it, may not be comparable to similarly titled measures used by other companies.

The FX Impact is calculated as the difference between the current year amounts and the current year amounts translated at prior period average exchange rates. The FX Impact % represents the percentage change on a period-over-period basis adjusted for foreign currency impacts.

The following table presents a reconciliation of constant currency revenue to our reported net revenue for the periods indicated (in thousands, except percentages):

Revenue	Year ended December 31,2022	Three months ended December 31,2022
As reported	164,036	48,336
Non-GAAP constant currency	171,793	51,184
FX Impact [$]	7,757	2,848
FX Impact [%]	4.7%	5.9%

Liquidity and capital resources

Overview

To date, our primary sources of capital have been through sales of our securities and revenue from the sale of our products and services. As of December 31, 2022 and December 31, 2021, we had approximately $296.6 million and $364.6 million, respectively, in cash and cash equivalents, which were primarily held in U.S. short-term bank deposit accounts and money market funds.

Funding and material cash requirements

We anticipate continuing to expend significant amounts of cash in the foreseeable future as we continue to invest in research and development of our product offerings, commercialization of new products and services, and expansion into new markets. Our future capital requirements will depend on many factors including our revenue, research and development efforts, the timing and extent of additional capital expenditures to invest in existing and new facilities, as well as our manufacturing operations, the expansion of sales and marketing and the introduction of new products. We have entered into, and may in the future enter into, arrangements to acquire or invest in businesses, services and technologies, and any such acquisitions or investments could significantly increase our capital needs.

We currently anticipate making additional capital expenditures during the next 12 months, which is expected to primarily include equipment to be used for manufacturing and investment in research and development, as well as spend associated with the expansion of our facilities in Wuxi, China.

In addition, we lease certain office facilities under operating lease arrangements that expire on various dates through fiscal year 2027. Under the terms of the leases, we are responsible for certain expenses related to operations, maintenance, repairs and management fees. Future minimum lease payments under non-cancelable operating leases totaled $16.4 million as of December 31, 2022.

Based on our current business plan, we believe our existing cash and cash equivalents and anticipated cash flows from operations will be sufficient to meet our working capital and capital expenditure needs for at least the next 12 months from the date of this Annual Report on Form 10-K.

Sources of liquidity

We have financed our operations primarily through sales of our securities. In July 2021, we completed our IPO, which resulted in net proceeds to us of approximately $215.7 million. We have also benefited from operating cash flows from the sale of our products and services.

On May 7, 2020, we received loan proceeds in the amount of approximately $4.1 million under the PPP. The PPP, established as part of the CARES Act, provides for loans to qualifying businesses for amounts up to 2.5 times of the average monthly payroll expenses of the qualifying business. On May 4, 2021, we fully repaid the PPP loan.

On August 26, 2022, we entered into a sales agreement (the "Sales Agreement") with Piper Sandler & Co. ("Piper") as sales agent to sell from time to time up to $150 million of our common stock through an "at the market" offering program. To date, we have not made any sales of common stock pursuant to the Sales Agreement. The securities in this transaction were offered pursuant to an automatic shelf registration statement on Form S-3ASR (File No. 333-267118) that was filed with the SEC on August 26, 2022.

Cash flows

The following table summarizes our cash flows for the periods presented:

	Year ended December 31,	
(In thousands)	**2022**	**2021**
Net cash (used in) provided by:		
Operating activities	$ (12,231)	$ 4,630
Investing activities	(55,909)	(20,993)
Financing activities	5,513	213,559
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(2,491)	1,303
Net (decrease) increase in cash, cash equivalents and restricted cash	$ (65,118)	$ 198,499

Operating activities

Net cash used in operating activities for the year ended December 31, 2022 was $12.2 million including net income of $2.5 million. We also incurred non-cash stock-based compensation expense, depreciation and amortization, amortization of right-of-use assets, and interest expenses for accretion of the legal settlement liabilities of $16.6 million, $2.5 million, $3.2 million, and $2.2 million, respectively. Usage of cash included an increase of inventories of $17.7 million, an increase of trade accounts receivable of $19.7 million due to an increase in sales, and an increase in prepaid expenses and other assets of $19.4 million. This was partially offset by an increase of trade accounts payables of $1.9 million, an increase in deferred revenue of $9.4 million, an increase in accrued expenses and other liabilities of $7.5 million and an increase in the legal settlement liability of $0.4 million.

Net cash provided by operating activities for the year ended December 31, 2021 was $4.6 million, including net income of $3.0 million. We also incurred non-cash stock-based compensation expense, interest expenses for accretion of the legal settlement liabilities, and depreciation and amortization of $6.6 million, $1.7 million, and $1.2 million, respectively. Usage of cash included an increase of trade accounts receivable of $12.4 million due to an increase in sales, an increase in inventories of $7.1 million, an increase in prepaid expenses and other assets of $6.3 million, and a decrease in the legal settlement liability of $3.7 million due to payment to BD of $6.0 million, which is offset by increased royalty accrual. This was partially offset by an increase in deferred revenue of $10.0 million and an increase in accrued expenses and other liabilities of $11.0 million.

Investing activities

Net cash used in investing activities during the year ended December 31, 2022 was $55.9 million driven by purchases of marketable securities of $44.5 million, purchases of property and equipment of $9.9 million, and payment of investments of $1.6 million.

Net cash used in investing activities during the year ended December 31, 2021 was $21.0 million driven by our acquisition of Tonbo's reagents business for $17.0 million, an increase in purchases of property and equipment of $4.4 million partially offset by the payment for the additional investment in Cytek Japan Kabushiki Kaisha ("Cytek Japan"), net of cash acquired of $371,000. See Note 18 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Financing activities

Net cash provided by financing activities during the year ended December 31, 2022 was $5.5 million driven by proceeds from a loan of $2.9 million and issuance of our common stock under our equity incentive plans.

Net cash provided by financing activities during the year ended December 31, 2021 was $213.6 million primarily driven by our IPO, which resulted in net proceeds to us of approximately $215.7 million.

Contractual Obligations and Commitments

During the year ended December 31, 2022, there were no material changes to our contractual obligations and commitments from those described under "Management's Discussion and Analysis of Financial Condition" which is contained in our 10-K and filed with the SEC on March 17, 2022.

Off-balance sheet arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet financing arrangements or any relationships with unconsolidated entities or financial partnerships, including entities sometimes referred to as structured finance or

special purpose entities, that were established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Critical accounting policies, significant judgments and use of estimates

We have prepared our consolidated financial statements in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). Our preparation of these consolidated financial statements requires us to make estimates, assumptions and judgments that affect the reported amounts of assets, liabilities, revenue, expenses, and related disclosures. We evaluate our estimates and judgments on an ongoing basis. We based our estimates on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources.

Actual results could therefore differ materially from these estimates under different assumptions or conditions. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

While our significant accounting policies are described in Note 2 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K, we believe that the following accounting policies are the most critical to understanding and evaluating our reported consolidated financial results.

Revenue recognition

Our product revenue primarily consists of sale of our Aurora, Aurora CS and Northern Lights systems, instrument accessories, such as loaders and, to a lesser extent, consumables such as reagents. We offer multiple versions of our Aurora and Northern Lights systems with different price points based on the number of lasers integrated in the systems. We also derive revenue from sales of our conventional flow cytometry system, which is available for sale in China. We recognize product revenue when control of the instrument is transferred to the customer.

Our service revenue consists of post-warranty service contracts, preventative maintenance plans, repairs, installation and quality check, customer training and other specialized product support services. We recognize service contract revenue ratably over the term of the contract and other service obligations as they are performed. Revenue is recognized when control of promised goods or services is transferred to a customer in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To determine revenue recognition for its arrangements with customers, we perform the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation.

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is defined as the unit of account for revenue recognition under the contract with customers guidance. Performance obligations are considered distinct if they are both capable of being distinct, and distinct within the context of the contract. The Company identified the following performance obligations in the contracts: product sales of instrument systems, installation on instrument systems, delivery of instrument accessories such as loaders, consumables, reagents, extended service contracts and professional services revenue for post-warranty service contracts, preventative maintenance plans, repairs, installations, training, time and material services and other specialized support services. A good or service is distinct when the customer can benefit from the good or service either on its own or together with other resources that are readily available from third parties or from the Company, and is distinct in the context of the contract, where the transfer of the good or service is separately identifiable from other promises in the contract.

Payments from customers are in arrears. For arrangements where the anticipated period between timing of transfer of services and the timing of payment is one year or less, we have elected to not assess whether a significant financing component exists. For arrangements with terms greater than one year, payments are received up-front and are for reasons other than financing. Revenue is recognized only to the extent that it is probable that a significant reversal of the cumulative amount recognized will not occur in future periods.

Certain of our sales contracts involve the delivery or performance of multiple products and services within contractually binding arrangements. Significant judgment is sometimes required to determine the appropriate accounting for such arrangements, including whether the deliverables specified in a contract with multiple promises should be treated as separate performance obligations for revenue recognition purposes and, if so, how the related sales price should be allocated among the performance obligations, when to recognize

revenue for each performance obligation, and the period over which revenue should be recognized. For most of our performance obligations, we have established the stand-alone selling prices ("SSP") as a range rather than a single value, based on standalone sales of products. We allocate revenue to the performance obligations based on their relative standalone selling prices SSP.

Taxes, such as sales, value-add and other taxes, collected from customers concurrent with revenue generating activities and remitted to governmental authorities are not included in revenue. Shipping and handling costs associated with outbound freight are accounted for as a fulfillment cost and are included in cost of sales.

The following describes the nature of our primary types of revenue and the revenue recognition policies and significant payment terms as they pertain to the types of transactions we enter into with our customers.

Product revenue

Our standard arrangement for sales to end users is generally a purchase order or an executed contract. Product revenue is recognized upon transfer of control of the product to the customer, which, for us, generally occurs at a point in time depending on the shipping terms. Payment terms are generally 30 to 90 days from the date of invoicing.

Our distributor arrangements with our customers include a purchase order. The purchase order is governed by terms and conditions of the distributor agreements. Revenue is recognized upon transfer of control of the products to the distributor, which for us, occurs at a point in time depending on the shipping terms.

Service revenue

Our services are primarily a mix of service contracts, installation services, and time and material-based repair and support. We recognize revenue from the sale of service contracts over the respective period, while revenue on product support is recognized as the services are performed. Service contracts are typically between one and three years. Payment terms are generally 30 days from the date of invoicing. Installation revenue is recognized upon completion of the installation, which, for us, occurs at a point in time.

Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is computed using standard cost, which approximates actual cost on a first-in, first-out basis. We regularly monitor inventory quantities on hand and record write-downs for excess and obsolete inventories based on our estimate of demand for our products, potential obsolescence of technology, product life cycles, and whether pricing trends or forecasts indicate that the carrying value of inventory exceeds its estimated selling price. These factors are impacted by market and economic conditions, technology changes, and new product introductions and require estimates that may include elements that are uncertain. Our estimates of forecasted demand are based upon our analysis and assumptions including, but not limited to, expected product lifecycles, product development plans and historical usage by product. If inventory is written down, a new cost basis is established that cannot be increased in future periods.

Contract assets and contract liabilities

Contract assets are recorded when the amount of revenue recognized exceeds the amount invoiced to the customer and the right to payment is not solely subject to the passage of time. As of December 31, 2021 and 2020, we had immaterial amounts of contract assets included within prepaid expenses and other current assets on the consolidated balance sheets.

Contract liabilities consist of fees invoiced or paid by our customers for which the associated services have not been performed and revenue has not been recognized based on our revenue recognition criteria described above. Such amounts are reported as deferred revenue for service and customer deposits for instruments on the consolidated balance sheets. Deferred revenue that is expected to be recognized during the following 12 months is recorded as a current liability and the remaining portion is recorded as noncurrent.

Goodwill and intangible assets

In January 2017, the FASB issued ASU 2017-04, Intangibles – Goodwill and Other: Simplifying the Test for Goodwill Impairment, to simplify the subsequent measurement of goodwill by eliminating Step 2 from the goodwill impairment test. We adopted this guidance during the year ended December 31, 2019, and the adoption did not have a material impact on the consolidated financial statements.

We recognize goodwill in accounting for business combinations based on the amount by which the total consideration transferred, exceeds the fair value of identifiable assets acquired and liabilities assumed. Identifiable intangible assets other than goodwill are primarily comprised of patents and trademarks which amortize on a straight-line basis over an assigned useful life based on management's estimate of the period the asset is expected to contribute to future cash flows.

We assess our goodwill and indefinite-lived intangible assets for impairment at least annually in the fourth quarter, or more frequently if factors indicate impairment may exist. Our qualitative goodwill impairment analysis consists of assessing whether any events or circumstances listed in ASC 350-20-35-3A ("triggering events") existed or occurred in the year under review to the date of the financial statements. The qualitative analysis assesses macroeconomic conditions, market, and industry considerations, change in cost factors, overall company financial performance, and any events affecting the reporting unit. Based on the qualitative analysis results, we determined that it is more likely than not that the fair values of the reporting unit exceed the carrying value and that no triggering events were noted that would require a quantitative impairment assessment in the fiscal year.

Stock-based compensation

We maintain an equity incentive compensation plan under which incentive stock options and nonqualified stock options to purchase common stock, and restricted stock units for common stock, are granted primarily to employees and non-employee consultants.

Stock-based compensation cost is measured at the grant date based on the fair value of the award and is recognized as expense over the vesting period. The fair value of stock options is estimated using the Black-Scholes option pricing model. We record forfeitures as they occur.

The Black-Scholes model considers several variables and assumptions in estimating the fair value of stock- based awards. These variables include the per share fair value of the underlying common stock, exercise price, expected term, risk-free interest rate, expected annual dividend yield and expected stock price volatility over the expected term. For all stock options granted, we calculated the expected term using the simplified method for standard stock option awards. After our IPO, the fair value of our common stock is determined by the closing price of our common stock on the date of grant as reported on the Nasdaq Global Select Market. The risk-free interest rate is based on the yield available on U.S. Treasury zero-coupon issues similar in duration to the expected term of the equity-settled award.

The following table summarizes the weighted-average assumptions used in estimating the fair value of stock options granted during each of the periods presented:

	Year Ended December 31,		
	2022	2021	2020
Expected term (in years)	5.91	6.05	5.96
Expected volatility	75%	90%	83%
Risk-free interest rate	2%	1%	1%
Dividend yield	—	—	—

Expected volatility—Expected volatility is estimated by studying the volatility of selected industry peers deemed to be comparable to our business corresponding to the expected term of the awards.

Expected term—Expected term represents the period that our stock-based awards are expected to be outstanding and is determined using the simplified method.

Risk-free interest rate—The risk-free interest rate is based on the U.S. Treasury zero-coupon issued in effect at the time of grant for periods corresponding with the expected term of the option.

Dividend yield— The expected dividend yield is zero as we have never declared or paid cash dividends and have no current plans to do so in the foreseeable future.

Recently adopted accounting pronouncements

See Note 2 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for a description of recent accounting pronouncements applicable to our financial statements.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk.

We are exposed to market risk in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily the result of fluctuations in foreign currency exchange rates.

Interest rate risk

The market risk inherent in our financial instruments and in our financial condition represents the potential loss arising from adverse changes in interest rates or exchange rates. As of December 31, 2022, we had cash and cash equivalents of $296.6 million, which consisted primarily of money market funds and bank deposits. The primary objective of our investment is to preserve principal and provide liquidity. These money market funds and bank deposits generate interest income at variable rates.

We therefore do not believe we are exposed to, nor do we anticipate being in the near future exposed to, material risk due to changes in interest rates because of the short-term nature of our cash and cash equivalents.

Foreign currency risk

Our revenue has been generated across the globe, mainly in the United States, Europe and Asia. Our foreign currency risk related to our revenue and operating expenses denominated in currencies other than the U.S. dollar, primarily the renminbi and the euro, causes both our revenue and our operating results to be impacted by fluctuations in the exchange rates.

As we expand our presence in international markets, our results of operations and cash flows may increasingly be subject to fluctuations due to changes in foreign currency exchange rates and may be adversely affected in the future due to changes in foreign exchange rates. To date, we have not entered into any hedging arrangements intended to minimize the impact of these fluctuations in the exchange rates. As our international operations grow, we intend to continue to reassess our approach to manage our risk relating to fluctuations in currency rates.

We do not believe that either inflation or foreign currency risk had a material effect on our business, financial condition, or results of operations during the periods presented. Please see the section entitled “Management's Discussion and Analysis of Financial Condition and Results of Operations— Non-GAAP Financial Measure” for a presentation of revenue on a constant currency basis, which provides information regarding our operating performance excluding the effects of foreign currency volatility.

Item 8. Financial Statements and Supplementary Data.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Cytek Biosciences, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Cytek Biosciences, Inc. and subsidiaries (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of operations and comprehensive income, redeemable convertible preferred stock and stockholders' equity (deficit), cash flows, for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America or International Financial Reporting Standards as issued by the International Accounting Standards Board.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 1, 2023, expressed an adverse opinion on the Company's internal control over financial reporting because of material weaknesses.

Change in Accounting Principle

As discussed in Note 2 to the financial statements, the Company has changed its method of accounting for leases effective January 1, 2022, due to adoption of Accounting Standards Codification Topic 842, *Leases*.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Inventories – Excess and Obsolete Inventories — Refer to Notes 2 and 5 to the financial statements

Critical Audit Matter Description

The Company records write-downs for excess and obsolete inventories based on the Company's estimate of demand for its products, potential obsolescence of technology, product life cycles, and whether pricing trends or forecasts indicate that the carrying value of inventory exceeds its estimated selling price. These factors are impacted by market and economic conditions, technology changes, and new product introductions and require estimates that may include elements that are uncertain. The Company's estimates of forecasted demand are based upon analysis and assumptions including, but not limited to, expected product lifecycles, product development plans and historical usage by product. The Company's inventories balance is $48.2 million as of December 31, 2022.

We identified excess and obsolete inventories as a critical audit matter because of the estimates and assumptions made by management to evaluate inventories for excess and obsolescence, especially considering the uncertainty present in these estimates and assumptions. This required a high degree of auditor judgment when performing audit procedures to evaluate the reasonableness of management's estimates and assumptions related to excess and obsolete inventories.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to excess and obsolete inventories included the following, among others:

- We tested the effectiveness of internal controls over management's estimates and assumptions used to evaluate excess and obsolete inventories, including internal controls over the estimates of demand for products.
- We evaluated the reasonableness of management's method, assumptions, and judgments used in developing their estimate of excess and obsolete inventories, which included estimates of demand for its products, potential obsolescence of technology, product life cycles, pricing trends and forecasts, and selling prices.
- We tested underlying data used and considered by management in making their estimates and assumptions related to excess and obsolete inventories, including the amount of inventory on hand, estimates of demand for products, and historical usage by product.
- We compared actual inventory usage and write-down activity in the current year to the excess and obsolete estimates made by management in the prior year to evaluate management's ability to make accurate estimates.
- We selected a sample of inventory items from a) those management determined to be excess and obsolete and b) those management did not determine to be excess and obsolete, and performed the following:
  — We evaluated the reasonableness of management's estimates and assumptions by obtaining product-specific information.
  — We inquired of management, including personnel with operational roles, regarding the estimates and assumptions specific to the selected inventory items.
- We considered inventory write-downs made subsequent to December 31, 2022 in evaluating the reasonableness of management's estimates and assumptions related to excess and obsolete inventories.

/s/ Deloitte & Touche LLP

San Jose, California
March 1, 2023

We have served as the Company's auditor since 2019.

Cytek Biosciences, Inc.
Consolidated Balance Sheets

(In thousands, except share and per share data)	December 31, 2022	December 31, 2021
Assets		
Current assets:		
Cash and cash equivalents	$ 296,601	$ 364,618
Restricted cash	2,899	-
Marketable securities	44,548	-
Trade accounts receivable, net	48,864	29,760
Inventories	48,154	32,171
Prepaid expenses and other current assets	12,954	5,184
Total current assets	454,020	431,733
Deferred income tax assets, noncurrent	20,459	9,173
Property and equipment, net	13,682	5,851
Operating lease right-of-use assets	13,883	-
Goodwill	10,144	10,144
Intangible assets, net	4,331	4,739
Other noncurrent assets	2,957	1,665
Total assets	$ 519,476	$ 463,305
Liabilities, redeemable convertible preferred stock and stockholders' equity		
Current liabilities:		
Trade accounts payable	$ 4,805	$ 3,034
Legal settlement liability, current	2,163	1,463
Accrued expenses	21,126	15,251
Other current liabilities	7,960	6,352
Deferred revenue, current	12,986	7,081
Total current liabilities	49,040	33,181
Legal settlement liability, noncurrent	15,596	13,745
Deferred revenue, noncurrent	13,124	9,790
Operating lease liability, noncurrent	12,312	-
Long term debt	2,271	-
Other noncurrent liabilities	1,587	1,204
Total liabilities	$ 93,930	$ 57,920
Commitments and contingencies (Note 19)		
Stockholders' equity:		
Common stock, $0.001 par value; 1,000,000,000 authorized shares as of December 31, 2022 and December 31, 2021, respectively; 135,365,381 and 133,749,663 issued and outstanding shares as of December 31, 2022 and December 31, 2021, respectively	135	126
Additional paid-in capital	442,887	423,625
Accumulated deficit	(17,030)	(19,606)
Accumulated other comprehensive (loss) income	(697)	897
Noncontrolling interest in consolidated subsidiary	251	343
Total stockholders' equity	$ 425,546	$ 405,385
Total liabilities, redeemable convertible preferred stock and stockholders' equity	$ 519,476	$ 463,305

The accompanying notes are an integral part of these consolidated financial statements

Cytek Biosciences, Inc.
Consolidated Statements of Operations and Comprehensive Income

(In thousands, except share and per share data)	Year Ended December 31 2022	2021	2020
Revenue, net:			
Product	$ 148,600	$ 119,519	$ 85,283
Service	15,436	8,431	7,556
Total revenue, net	164,036	127,950	92,839
Cost of sales:			
Product	49,955	37,377	32,277
Service	13,107	11,429	8,852
Total cost of sales	63,062	48,806	41,129
Gross profit	100,974	79,144	51,710
Operating expenses:			
Research and development	34,858	24,442	13,693
Sales and marketing	33,230	24,710	14,988
General and administrative	34,690	20,835	9,370
Total operating expenses	102,778	69,987	38,051
Income (loss) from operations	(1,804)	9,157	13,659
Other income (expense):			
Interest expense	(2,573)	(1,741)	(333)
Interest income	4,619	49	110
Other expense, net	1,018	(1,527)	994
Total other income (expense), net	3,064	(3,219)	771
Income before income taxes	1,260	5,938	14,430
Provision for (benefit from) income taxes	(1,224)	2,911	(4,981)
Net income	$ 2,484	$ 3,027	$ 19,411
Less: net loss (income) allocated to noncontrolling interests	92	(26)	-
Less: net income allocated to participating securities	-	(3,001)	(16,195)
Net income attributable to common stockholders, basic and diluted	$ 2,576	$ -	$ 3,216
Net income attributable to common stockholders per share, basic	$ 0.02	$ -	$ 0.11
Net income attributable to common stockholders per share, diluted	$ 0.02	$ -	$ 0.10
Weighted-average shares used in calculating net income per share, basic	134,510,831	76,741,858	29,126,792
Weighted-average shares used in calculating net income per share, diluted	138,562,111	81,542,729	32,599,847
Comprehensive income:		-	
Net income	$ 2,484	$ 3,027	$ 19,411
Foreign currency translation adjustment, net of tax	(1,611)	832	212
Unrealized gain (loss) on marketable securities	17	-	-
Net comprehensive income	$ 890	$ 3,859	$ 19,623

The accompanying notes are an integral part of these consolidated financial statements

Cytek Biosciences, Inc
Consolidated Statements of Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit)

(In thousands, except share data)	Redeemable convertible preferred stock Shares	Amount	Common stock Shares	Amount	Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive income (loss)	Noncontrolling interest in consolidated subsidiary	Total stockholders' equity (deficit)
Balances at December 31, 2019	69,516,626	$ 74,653	28,397,955	$ 21	$ 443	$ (42,018)	$ (147)	$ —	$ (41,701)
Issuance of Series D redeemable convertible preferred stock, net of issuance costs of $334	17,752,068	119666							-
Exercise of stock options			756,416	1	194				195
Stock-based compensation					611				611
Stock issuance for litigation settlement			2,087,545	1	5,243				5,244
Foreign currency translation adjustment, net of tax							212		212
Net income						19,411			19,411
Balances at December 31, 2020	87,268,694	194,319	31,241,916	$ 23	$ 6,491	$ (22,607)	$ 65	$ -	$ (16,028)
Exercise of stock options			1,289,652	2	642				644
Stock-based compensation					6,586				6,586
Issuance of common stock upon initial public offering, net of underwriting discounts and commissions and other offering costs			13,949,401	14	215,675				215,689
Conversion of redeemable convertible preferred stock to common stock upon initial public offering	(87,268,694)	(194,319)	87,268,694	87	194,231				194,318
Foreign currency translation adjustment, net of tax							832		832
Net income						3,001		26	3,027
Noncontrolling interest								317	317
Balances at December 31, 2021	-	$ -	133,749,663	$ 126	$ 423,625	$ (19,606)	$ 897	$ 343	$ 405,385
Shares issued in connection with employee stock plans			1,632,467	9	2,876				2,885
Shares of Common Stock withheld related to net share settlement			(16,749)		(209)				(209)
Stock-based compensation					16,595				16,595
Unrealized gain (loss) on marketable securities							17		17
Foreign currency translation adjustment, net of tax							(1,611)		(1,611)
Net income						2,576			2,576
Noncontrolling interest								(92)	(92)
Balances at December 31, 2022	-	$ -	135,365,381	$ 135	$ 442,887	$ (17,030)	$ (697)	$ 251	$ 425,546

The accompanying notes are an integral part of these consolidated financial statements

Cytek Biosciences, Inc
Consolidated Statements of Cash Flows

(In thousands)	Year ended December 31, 2022	2021	2020
Cash flows from operating activities:			
Net income	$ 2,484	$ 3,027	$ 19,411
Adjustments to reconcile net income to net cash (used in) provided by operating activities:			
Depreciation and amortization	2,492	1,242	603
Amortization of operating lease-right-of use assets	3,167	-	-
Allowance for doubtful accounts	102	-	175
Stock-based compensation	16,595	6,586	611
Gain on equity method investment	-	(40)	-
Loss on lease exit cost	-	283	-
Provision for excess and obsolete inventory	756	488	1,569
Loss (gain) on investments, accretion, and amortization, net	(77)	-	-
Interest expenses for accretion of the legal settlement liabilities	2,178	1,690	323
Change in operating assets and liabilities:			
Trade accounts receivable	(19,744)	(12,367)	334
Inventories	(17,653)	(7,068)	(5,704)
Prepaid expenses and other assets	(19,362)	(6,252)	(8,216)
Trade accounts payable	1,862	(256)	(55)
Accrued expenses and other liabilities	7,470	10,978	3,269
Legal settlement liabilities	373	(3,693)	458
Deferred revenue	9,411	10,012	2,378
Lease liabilities	(2,285)	-	-
Net cash (used in) provided by operating activities	(12,231)	4,630	15,156
Cash flows from investing activities:			
Purchases of marketable securities	(44,454)	-	-
Purchase of property and equipment	(9,748)	(4,364)	(1,547)
Acquisition of business	-	(17,000)	-
Purchase of intangible assets (patents)	(120)	-	-
Payment for investment	(1,587)	-	-
Payment for additional investment in Cytek Japan, net of cash acquired	-	371	-
Net cash used in investing activities	(55,909)	(20,993)	(1,547)
Cash flows from financing activities:			
Proceeds from Paycheck Protection Program loan	-	-	4,082
Repayment of Paycheck Protection Program loan	-	(2,772)	(1,310)
Net proceeds from issuance of Series D redeemable convertible preferred stock	-	-	119,666
Proceeds from initial public offering, net of underwriting discounts and commissions and other offering costs	-	215,689	-
Proceeds from loan	2,983	-	-
Repayment of loan	(50)	-	-
Proceeds from Employee Stock Purchase Plan	1,585	-	-
Payments for taxes related to net share settlement of equity awards	(209)	-	-
Proceeds from issuance of common stock under employee stock plans	1,204	642	169
Net cash provided by financing activities	5,513	213,559	122,607
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(2,491)	1,303	(587)
Cash, cash equivalents and restricted cash:			
Net (decrease) increase in cash, cash equivalents and restricted cash	(65,118)	198,499	135,629
Cash, cash equivalents and restricted cash at beginning of period	364,618	166,119	30,490
Cash, cash equivalents and restricted cash at end of period	$ 299,500	$ 364,618	$ 166,119
Supplemental disclosure of cash flow information:			
Cash paid for taxes	$ 10,390	$ 2,863	$ 2,073
Non-cash investing and financing activities:			
Fixed asset purchases in accounts payable at period end	$ 67	$ 134	$ —
Intangible asset in accrued expenses at period end	$ 30	$ 93	$ —
Stock option exercise in other receivables at period end	$ 96	$ —	$ 26
Common stock issuance for legal settlement	$ —	$ —	$ 5,244

The accompanying notes are an integral part of these consolidated financial statements

1. Description of business

Cytek Biosciences, Inc. ("Cytek" or the "Company") is a leading cell analysis solutions company advancing the next generation of cell analysis tools by leveraging novel technical approaches. The Company has focused on becoming the premier cell analysis company through continued innovation that facilitates scientific advances in biomedical research and clinical applications.

The Company has successfully developed and manufactured its full spectrum flow cytometry platform ("instrument(s)" or "product(s)"). The Company believes its core instruments, the Aurora and Northern Lights systems, are the first full spectrum flow cytometers able to deliver high-resolution, high-content and high-sensitivity cell analysis by utilizing the full spectrum of fluorescence signatures from multiple lasers to distinguish fluorescent tags on single cells ("Full Spectrum Profiling" or "FSP"). The Company's FSP platform includes instruments, accessories, reagents, software, and services to provide a comprehensive and integrated suite of solutions for its customers.

The Company was incorporated in the state of Delaware in December 2014 and is headquartered in Fremont, California with offices, manufacturing facilities and distribution channels across the globe.

Initial Public Offering

In July 2021, the Company priced its initial public offering ("IPO") of 13,949,401 shares of common stock, which included the full exercise by the underwriters of their option to purchase an additional 2,184,695 shares from the Company, at an initial public offering price of $17.00 per share for gross proceeds of $237.1 million, which resulted in net proceeds to the Company of approximately $215.7 million, after deducting underwriting discounts and commissions of approximately $17.3 million and offering-related transaction costs of approximately $5.3 million. In addition, certain selling stockholders offered and sold an additional 2,799,929 shares or common stock in the IPO. The Company did not receive any proceeds from the sale of such shares by the selling stockholders.

In addition, in connection with the completion of the IPO on July 27, 2021, all outstanding shares of convertible preferred stock (see Note 11) were automatically converted into 87,268,694 shares of the Company's common stock and were reclassified as permanent equity. Further, immediately following the closing of the IPO, the Company amended and restated its certificate of incorporation such that the total number of shares of common stock authorized to be issued was 1,000,000,000 and the total number of shares of preferred stock authorized to be issued was 10,000,000. Following the IPO, there are no shares of convertible preferred stock outstanding.

Shelf Registration Statement and At-the-Market Offering

On August 26, 2022, the Company filed with the SEC an automatic shelf registration statement on Form S-3ASR (File No. 333-267118) (the "Registration Statement"). In connection with the filing of the Registration Statement, the Company also entered into a sales agreement (the "2022 Sales Agreement") with Piper Sandler & Co. ("Piper") as sales agent to sell from time to time up to $150 million of the Company's common stock through an "at-the-market" offering program as defined in Rule 415 promulgated under the Securities Act of 1933, as amended (the "Securities Act").

Pursuant to the terms of the 2022 Sales Agreement, the aggregate compensation payable to Piper is up to 3% of the gross proceeds from the sale of common stock sold by Piper pursuant to the 2022 Sales Agreement. Each party agreed in the 2022 Sale Agreement to provide indemnification and contribution against certain liabilities, including liabilities under the Securities Act, subject to the terms of the 2022 Sales Agreement. As of December 31, 2022, the Company has not made any sales of common stock pursuant to the 2022 Sales Agreement.

2. Basis of presentation and summary of significant accounting policies

The Company has prepared the accompanying consolidated financial statements in accordance with U.S. GAAP. Any reference in these notes to applicable guidance is meant to refer to the authoritative U.S. GAAP as found in the Accounting Standards Codification ("ASC") and Accounting Standards Updates ("ASUs") of the Financial Accounting Standards Board ("FASB").

Principles of consolidation

The consolidated financial statements include the accounts of Cytek Biosciences, Inc., its wholly-owned subsidiaries, Cytek Limited (HK), Cytek Biosciences B.V. (Europe), Cytek (Shanghai) Biosciences Co., Ltd., Cytek Biosciences (Wuxi) Co., Ltd., Cytoville Biosciences Shanghai Co., Ltd. and Cytek (Shanghai) Software Development Technology Co., Ltd. and its majority-owned subsidiary, Cytek Japan Kabushiki Kaisha ("Cytek Japan"). The noncontrolling interest is presented in stockholders' equity in the consolidated balance sheets and consolidated statements of redeemable convertible preferred stock and stockholders' equity (deficit). All intercompany accounts and transactions have been eliminated in consolidation.

On July 16, 2021, the Company effected a 1.3333-for-1 stock split of its common stock and redeemable convertible preferred stock (the "Stock Split"). All share and per share information has been retroactively adjusted to reflect the Stock Split for all periods presented.

Variable interest entities and voting interest entities

The Company determines whether it has a controlling financial interest in an entity by first evaluating whether the entity is a variable interest entity ("VIE") and therefore subject to the consolidation requirements under the VIE model. Only if the entity does not meet the definition of a VIE, the Company will apply the voting interest model ("VOE") or other applicable GAAP. VOEs are entities in which the total equity investment at risk is sufficient to enable the entity to finance itself independently and provides the equity holders with the obligation to absorb losses, the right to receive residual returns and the right to make decisions about the entity's activities. The Company consolidates VOEs in which it has greater than 50% of the voting shares and that other equity holders do not have substantive voting, participating or liquidation rights. As defined in applicable accounting standards, VIEs are entities that lack one or more of the characteristics of a voting interest entity. A controlling financial interest in a VIE is present when an enterprise has both the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and an obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE. The Company consolidates a VIE where it has been determined that the Company is the primary beneficiary of the entity's operations. The Company does not currently hold an interest in a VIE.

Use of estimates

The preparation of the consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses and the disclosure of contingent assets and liabilities in the Company's consolidated financial statements and accompanying notes as of the date of the consolidated financial statements. These estimates and assumptions are based on current facts, historical experience and various other factors believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the recording of expenses that are not readily apparent from other sources. Actual results may differ materially and adversely from these estimates.

Operating segments

Operating segments are defined as components of an enterprise about which separate discrete information is available for evaluation by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company's Chief Executive Officer, who is the chief operating decision maker, reviews financial information on an aggregate basis for allocating and evaluating financial performance. The Company operates and manages its business as one reportable and operating segment.

Foreign currency translation and transactions

The Company has determined that the functional and reporting currency for its operations across the globe is the functional currency of the Company's international subsidiaries. Accordingly, all foreign balance sheet accounts have been translated into U.S. dollars using the rate of exchange at the respective balance sheet date. Components of the consolidated statements of operations and comprehensive income have been translated at the average exchange rate for the year or the reporting period. Translation gains and losses are recorded in accumulated other comprehensive income as a component of stockholders' equity. Gains or losses arising from currency exchange rate fluctuations on transactions denominated in a currency other than the local functional currency are included in the consolidated statements of operations and comprehensive income.

Cash, cash equivalents, and restricted cash

The Company considers all highly liquid investments with a maturity of three months or less when purchased to be cash equivalents. Cash equivalents are carried at cost, which approximates fair value.

The Company's cash and cash equivalents consist of money held in demand depositary accounts and money market funds. The carrying amount of cash and cash equivalents was $296.6 million and $364.6 million as of December 31, 2022 and 2021, respectively, which approximates fair value and was determined based upon Level 1 inputs. The money market account is valued using quoted market prices with no valuation adjustments applied and is categorized as Level 1. The Company limits its credit risk associated with cash and cash equivalents by maintaining its bank accounts at major and reputable financial institutions. The Company's cash and cash equivalents balance exceeded the federally insured limit of $250,000 as of December 31, 2022 and 2021.

The Company classifies restricted cash as current on the accompanying consolidated balance sheets based upon the term of the remaining restrictions.

The following is a summary of cash, cash equivalents and restricted cash on the consolidated balance sheets (in thousands):

	December 31, 2022	December 31, 2021
Cash	$ 123,371	$ 18,939
U.S. Treasury	29,930	345,679
Federal agency securities	19,908	-
Commercial paper	5,955	-
Money market funds	117,437	-
Restricted cash	2,899	-
Total cash, cash equivalents and restricted cash as presented on the consolidated statements of cash flows	$ 299,500	$ 364,618

Investments

Available-for-sale investments. The Company's investments may consist of U.S. treasury and U.S. government agency securities, corporate notes and bonds, commercial paper, and money market funds. The Company has designated all investments as available-for-sale and, therefore, such investments are reported at fair value, with unrealized gains and losses recorded in accumulated other comprehensive income (loss). The Company generally holds securities until maturity; however, they may be sold under certain circumstances including, but not limited to, when necessary for the funding of acquisitions and other strategic investments. Realized gains and losses on the sale of investments are recorded in interest and other income, net in the Consolidated Statements of Income. Investments with remaining maturities at date of purchase greater than 90 days and remaining maturities as of the reporting period less than one year are classified as short-term investments. Investments with remaining maturities greater than one year are classified as long-term investments.

Equity Investment. The Company's investment consists of non-marketable equity investments in a privately held company. The Company’s non-marketable equity investments do not have readily determinable fair values. Therefore, the Company elects to apply the measurement alternative and record these investments at cost, less any impairment, plus or minus observable price changes in orderly transactions for identical or similar investments of the same issuer. Investment are included within other noncurrent assets on our consolidated balance sheets and adjustments to their carrying amounts are recorded in other income (expense), net in the consolidated statements of operations. There were no material events or circumstances impacting the carrying amount of our strategic investments during the year ended December 31, 2022.

Trade accounts receivable, net

The Company’s accounts receivable consists principally of amounts due related to product sales of instrument systems and accessories, as well as installation and repair services. These receivables are generally due within 30 to 45 days of the period in which the corresponding sales occur and do not bear interest are classified as trade accounts receivable, net on the consolidated balance sheets. Trade accounts receivable are reported at their estimated net realizable value.

Allowance for uncollectible receivables

The Company adopted ASU 2016-13, Financial Instruments - Credit Losses, on December 31, 2022, which was retroactively applied as of the first day of fiscal year 2022, as further described within the section below titled Recently Adopted Accounting Pronouncements. This accounting standard requires companies to measure expected credit losses on financial instruments based on the total estimated amount to be collected over the lifetime of the instrument. Prior to the adoption of this accounting standard, the Company recorded incurred loss reserves against receivable balances based on current and historical information.

Expected credit losses for uncollectible receivable balances consider both current conditions and reasonable and supportable forecasts of future conditions. Current conditions considered include pre-defined aging criteria, as well as specified events that indicate the balance due is not collectible. Reasonable and supportable forecasts used in determining the probability of future collection consider publicly available macroeconomic data and whether future credit losses are expected to differ from historical losses.

The Company is not party to any off-balance sheet arrangements that would require an allowance for credit losses in accordance with this accounting standard.

The changes in the allowance for uncollectible receivables for the year ended December 31, 2022 were as follows (in thousands):

Allowance for doubtful accounts	
Balance at December 31, 2021	$ 3
Cumulative effect adjustment upon adoption of ASU 2016-13	—
Balance at January 1, 2022	3
Utilization of allowance for doubtful accounts	(3)
Provision for credit losses	102
Balance at December 31, 2022	$ 102

Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is computed using standard cost, which approximates actual cost on a first-in, first-out basis. The Company regularly monitors inventory quantities on hand and records write-downs for excess and obsolete inventories based on an estimate of demand for products, potential obsolescence of technology, product life cycles, and whether pricing trends or forecasts indicate that the carrying value of inventory exceeds its estimated selling price. These factors are impacted by market and economic conditions, technology changes, and new product introductions and require estimates that may include elements that are uncertain. The Company's estimates of forecasted demand are based upon analysis and assumptions including, but not limited to, expected product lifecycles, product development plans and historical usage by product. If inventory is written down, a new cost basis is established that cannot be increased in future periods.

Property and equipment, net

Property and equipment are recorded at cost, net of accumulated depreciation. Depreciation is recorded using the straight-line method based on the estimated useful lives of the depreciable property or, for leasehold improvements, the remaining term of the lease, whichever is shorter. Assets not yet placed in use are not depreciated. The Company's estimated useful lives of its property and equipment are as follows:

	Estimated Useful Lives
Building	20 years
Furniture and fixtures	7 years
Laboratory equipment	5 years
Office and computer equipment	3 years
Leasehold improvements	Shorter of expected lease term or estimated useful life

Upon sale or retirement of the assets, the cost and related accumulated depreciation are removed from the accounts and the resulting gain or loss is recognized in the consolidated statement of operations and comprehensive income. Expenditures for general maintenance and repairs are expensed as incurred.

Goodwill and intangible assets, net

In July 2015, the Company entered into a purchase agreement with Cytek Development Technology ("Cytek Tech") involving the acquisition of substantially all assets of Cytek Tech for the aggregate purchase amount of $900,000 in cash and the assumption of Cytek Tech liabilities. The Company recorded goodwill of $476,000 and intangible assets of $476,000 at the transaction date. The addition of goodwill in 2021 is discussed in Note 9, *Acquisition*.

Goodwill represents the excess of the purchase price over the fair value of the net tangible and identifiable intangible assets acquired in a business combination. Intangible assets resulting from the acquisition of entities are estimated by management based on the fair value of assets received. Intangible assets are amortized on a straight-line basis over the estimated useful lives. The Company's estimated useful lives of its intangible assets are as follows:

	Estimated Useful Lives
Patent	20 years
Trademarks	10 years
Tradename	4 years
Customer relationship	7 years
Reagent licenses	7 years
IP license	5 years

Accounting for Impairment of Long-Lived Assets

Long-lived assets with finite lives include property and equipment and acquired intangible assets. The Company evaluates long-lived assets, including acquired intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets held and used is measured by comparison of the carrying amount of an asset or an asset group to estimated undiscounted future net cash flows expected to be generated by the asset or asset group. If the carrying amount of an asset exceeds these estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the assets exceeds the fair value of the asset or asset group.

Goodwill and indefinite-lived intangible assets are not amortized but rather tested for impairment at least annually in the fourth quarter, or more frequently if events or changes in circumstances indicate that impairment may exist. Goodwill impairment is recognized when the quantitative assessment results in the carrying value of the reporting unit exceeding its fair value, in which case an impairment charge is recorded to goodwill to the extent the carrying value exceeds the fair value, limited to the amount of goodwill. The Company did not recognize any impairment of goodwill for all periods presented.

Fair value of financial instruments

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

Level 1—Quoted prices in active markets for identical assets or liabilities.

Level 2—Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.

Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The categorization of a financial instrument within the valuation hierarchy is based on the lowest level of input that is significant to the fair value measurement. The Company recognizes transfers between levels of the fair value hierarchy on the date of the event or change in circumstances that caused the transfer.

The carrying amounts reflected in the consolidated balance sheets for cash and cash equivalents, trade accounts receivable, net, trade accounts payable and accrued expenses approximate their fair values.

Revenue recognition

The Company's product revenue consists of sales of its instrument systems and accessories. The Company recognizes product revenue at the point in time when control of the instrument is transferred to the customer.

The Company's service revenue primarily consists of post-warranty service contracts, installations and repairs, which are recognized over time. Post-warranty service contracts are recognized ratably over the term of the contract and installations and repair services are recognized as they are delivered to the customer.

Revenue is recognized when control of promised goods or services is transferred to a customer in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To determine revenue recognition for its arrangements with customers, the Company performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation.

Invoicing for products occurs upon delivery and payment terms are 30 to 90 days. Service contracts are invoiced upfront and payment terms are generally 30 days. For those arrangements that have terms greater than one year, any payments received upfront are for reasons other than financing. Revenue is recognized only to the extent that it is probable that a significant reversal of the cumulative amount recognized will not occur in future periods. Variable consideration is not material.

Certain of the Company's sales contracts involve the delivery or performance of multiple products and services within contractually binding arrangements. The Company has determined these performance obligations qualify as distinct performance obligations, as the customer can benefit from the good or service on its own or together with other resources that are readily available to the customer, and the Company's promise to transfer the good or service is separately identifiable from other promises in the contract. For these arrangements that contain multiple performance obligations, the Company allocates transaction price based on the relative standalone selling price ("SSP") method by comparing the SSP of each distinct performance obligation to the total value of the contract. The Company uses a range of amounts to estimate SSP for products and services sold together in a contract to determine whether there is a discount to be allocated based on the relative SSP of the various products and services. In instances where SSP is not directly observable, such as when the Company does not sell the product or service separately, the Company determines the SSP using information that may include market conditions and other observable inputs.

Sales, value-add and other taxes, collected from customers concurrent with revenue generating activities and remitted to governmental authorities are not included in revenue. Shipping and handling costs associated with outbound freight are accounted for as a fulfillment cost and are included in cost of sales.

The Company recognizes revenue in certain circumstances before product delivery occurs (commonly referred to as bill-and-hold transactions). When the Company enters into bill-and-hold arrangements, the Company determines if the customer obtains control of the product by determining (a) the reason for the bill-and-hold arrangement; (b) whether the product was identified separately as belonging to the customer; (c) whether the product was ready for physical transfer to the customer; and (d) whether the Company was unable to utilize the product or direct it to another customer. For bill-and-hold arrangements, the associated product inventory is identified separately by the Company as belonging to the customer and is ready for physical transfer.

As of December 31, 2022, the Company recorded $12.1 million of revenue under bill-and-hold arrangements. As of December 31, 2021, revenue recorded under bill-and-hold arrangements was immaterial. At December 31, 2022, $5.9 million was included in revenue for products that had not shipped.

Product revenue

The Company's standard arrangement for sales to end users is a purchase order or an executed contract. Revenue is recognized upon transfer of control of the product to the customer, which occurs at a point in time depending on the shipping terms.

The Company's arrangements with its distributors include a purchase order. The purchase order is governed by terms and conditions set forth in the applicable distribution agreement. Revenue is recognized upon transfer of control of the products to the distributor, which occurs at a point in time depending on the shipping terms.

Service revenue

The Company's service revenue primarily consists of post-warranty service contracts, installations and repairs, which are recognized over time. Post-warranty service contracts are recognized ratably over the term of the contract and installations and repair services are recognized as they are delivered to the customer. Service contracts are typically between one and three years.

Contract liabilities

Contract liabilities consist of fees invoiced or paid by the Company's customers for which the associated services have not been performed and revenue has not been recognized based on the Company's revenue recognition criteria described above. Such amounts are reported as deferred revenue for service and customer deposits for instruments on the consolidated balance sheets. Deferred revenue that is expected to be recognized during the following 12 months is recorded as a current liability and the remaining portion is recorded as noncurrent.

Assurance-type product warranties

The Company provides a one-year assurance-type warranty that is included with the sale of its instruments. At the time revenue is recognized for the products, the Company establishes an accrual for estimated warranty expense based on historical data and trends of product reliability and costs of repairing and replacing defective products. The Company exercises judgment in estimating the expected product warranty costs, using data such as the historical repair costs. While management believes that historical experience provides a reliable basis for estimating such warranty cost, unforeseen quality issues or component failure rates could result in future costs in excess of such estimates, or alternatively, improved quality and reliability in the Company's products could result in actual expenses that are below those currently estimated.

Deferred offering costs

Deferred offering costs, which consist of direct incremental legal, consulting, banking and accounting fees relating to the Company's planned initial public offering, are capitalized, and will be offset against proceeds from the IPO upon the effectiveness of the offering. In the event an anticipated offering is terminated, deferred offering costs will be expensed. On July 27, 2021, the Company completed the IPO; accordingly, the Company recognized the initial public offering costs of approximately $5.3 million as a reduction from gross proceeds associated with the IPO through additional paid-in capital in the accompanying consolidated balance sheet. Accordingly, there were no deferred offering costs related to the IPO as of December 31, 2022 and December 31, 2021.

Research and development costs

Research and development costs are expensed as incurred. Research and development expenses to date consist primarily of salaries, benefits, stock-based compensation, independent contractor costs, laboratory supplies, equipment maintenance, materials expenses, and software license fees. Payments made prior to the receipt of goods or services to be used in research and development activities are recorded as prepaid expenses until the related goods or services are received.

Advertising costs

The cost of advertising, marketing and media is expensed as incurred. For the year ended December 31, 2022 and 2021, advertising, marketing and media expenses were $2.5 million and $1.8 million, respectively.

Stock-based compensation

The Company maintains an equity incentive compensation plan under which incentive stock options and nonqualified stock options to purchase common stock, and restricted stock units for common stock, are granted to employees and non-employee consultants. Stock-based compensation cost is measured at the grant date, based on the fair value of the award, and is recognized as expense over the requisite service period. The fair value of stock options granted to employees is estimated using the Black-Scholes option pricing model. The Company records forfeitures as they occur. The weighted-average assumptions used in estimating the fair value of stock options granted during each of the periods presented are:

Expected Volatility—Expected volatility is estimated by studying the volatility of selected industry peers deemed to be comparable to the Company's business corresponding to the expected term of the awards.

Expected Term—Expected term represents the period that the Company's stock-based awards are expected to be outstanding and is determined using the simplified method.

Dividend Yield— The expected dividend yield is zero as the Company has never declared or paid cash dividends and has no current plans to do so in the foreseeable future.

Risk-Free Interest Rate—The risk-free interest rate is based on the U.S. Treasury zero-coupon issued in effect at the time of grant for periods corresponding with the expected term of the option.

Income taxes

The Company accounts for income taxes under an asset and liability approach. Deferred income taxes comprise the impact of temporary differences between assets and liabilities recognized for financial reporting purposes and the amounts recognized for income tax reporting purposes, net operating loss carryforwards, and other tax credit carryforwards measured by applying currently enacted tax laws. A valuation allowance is provided when necessary to reduce deferred tax assets to an amount that is more likely than not to be realized.

The Company determines whether a tax position is more likely than not to be sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The Company uses a two-step approach to recognize and measure uncertain tax positions. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained upon tax authority examination, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon ultimate settlement. The Company's policy for interest and penalties related to uncertain tax positions is to recognize interest and penalties, if any, in interest expense and other expense, respectively, in the accompanying consolidated statement of operations. Accrued interest and penalties, if any, are included in accrued expenses in the consolidated balance sheet.

The Company files income tax returns in the U.S. federal jurisdiction, various U.S. state jurisdictions and foreign jurisdictions. The U.S. state and foreign jurisdictions have statutes of limitations that generally range from three to five years. The Company's federal, state and foreign income tax returns are subject to examination unless the statutes of limitations close. The Company is not currently under examination for federal, state, and foreign income tax purposes.

The Company intends to reinvest its undistributed earnings of its foreign operations. Following enactment of the Tax Act, the repatriation of cash to the United States is generally no longer taxable for federal income tax purposes. However, the repatriation of cash held outside the United States could be subject to applicable foreign withholding taxes and state income taxes. The Company may remit foreign earnings to the United States to the extent it is tax efficient to do so. It does not expect the tax impact from remitting these earnings to be material. The Company adopted this guidance on January 1, 2021 on a prospective basis, and the adoption did not have a material impact to the Company's consolidated financial statements.

Net income attributable to common stockholders per share

Basic net income attributable to common stockholders per share and diluted net income attributable to common stockholders per share are computed using the weighted-average number of shares of common stock outstanding for the period. Net income per share attributable to common stockholders is calculated using the two-class method, which is an earnings allocation formula that determines net income per share for the holders of shares of the Company's common stock and participating securities. The Company's redeemable convertible preferred stock contains participation rights in any dividend paid by the Company and is deemed to be a participating security. The participating securities include a contractual obligation to participate in the income of the Company and are included in the calculation of net income per share in the periods in which net income is recorded.

Diluted net income attributable to common stockholders per share is computed using the more dilutive of (a) the two-class method or (b) the if-converted method. The Company allocates earnings first to preferred stockholders based on non-cumulative dividend rights if and when declared and then to common and preferred stockholders based on ownership interests. The weighted-average number of shares of common stock included in the computation of diluted net income attributable to common stockholders per share gives effect to all potentially dilutive common stock equivalents, including outstanding options and redeemable convertible preferred stock.

Common stock equivalents are excluded from the computation of diluted net income attributable to common stockholders per share if their effect is antidilutive.

Business Combinations

The Company uses the acquisition method of accounting under ASC 805, *Business Combinations*. Each acquired company's operating results are included in the Company's consolidated financial statements starting on the date of acquisition. The purchase price is equivalent to the fair value of consideration transferred. Tangible and identifiable intangible assets acquired and liabilities assumed as of the date of acquisition are recorded at the acquisition date fair value. Goodwill is recognized for the excess of purchase price over the net fair value of assets acquired and liabilities assumed.

Amounts allocated to assets and liabilities are based upon fair values. Such valuations require management to make significant estimates and assumptions, especially with respect to the identifiable intangible assets. Management makes estimates of fair value based upon assumptions believed to be reasonable and that of a market participant. These estimates are based on historical experience and information obtained from the management of the acquired companies and the estimates are inherently uncertain. The separately identifiable intangible assets generally include customer relationships, trade names, and reagent licenses.

Recently adopted accounting pronouncements

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*, to improve financial reporting and disclosures about leasing transactions. This ASU requires companies that lease assets to recognize on the balance sheet the assets and liabilities for the rights and obligations created by those leases, for substantially all leases. The recognition, measurement and presentation of expense and cash flows arising from a lease by a lessee will depend primarily on its classification as a finance or operating lease; both types of leases will be recognized on the balance sheet. This ASU also requires disclosures to help financial statement users to better understand the amount, timing and uncertainty of cash flows arising from leases. The new lease standard was adopted by the Company on its effective date of January 1, 2022. The Company used the optional transition method to the modified retrospective approach in which results for reporting periods beginning on January 1, 2022 are presented under Topic 842, while prior period amounts continue to be reported and disclosed in accordance with the Company's historical accounting treatment under ASC Topic 840, *Leases*.

A number of practical expedients and policy elections are available under the new guidance to reduce the burden of adoption and ongoing compliance with Topic 842. The Company elected the "package of practical expedients" permitted under the transition guidance, which did not require reassessment of whether contracts entered into prior to January 1, 2022 are or contain leases, and allowed carryforward of the historical lease classification for existing leases. The Company has not elected to adopt the "hindsight" practical expedient, and therefore will measure the right-of-use (ROU) asset and lease liability using the remaining portion of the lease term at adoption on January 1, 2022.

The Company made an accounting policy election under Topic 842 not to recognize ROU assets and lease liabilities for leases with a term of twelve months or less. For all other leases, the Company recognizes ROU assets and lease liabilities based on the present value of lease payments over the lease term at the commencement date of the lease (or January 1, 2022 for existing leases upon the adoption of Topic 842). The ROU assets also include any initial direct costs incurred and lease payments made at or before the commencement date and are reduced by any lease incentives.

Future lease payments may include fixed rent escalation clauses or payments that depend on an index (such as the consumer price index). Subsequent changes an index and other periodic market-rate adjustments to base rent are recorded in variable lease expense in the period incurred. Residual value guarantees and payments for terminating a lease are included in the lease payments only when it is probable they will be incurred.

The Company's leases may include a non-lease component representing additional services transferred to the Company, such as common area maintenance for real estate. The Company made an accounting policy election to account for each separate lease component and the non-lease components associated with that lease component as a single lease component. The non-lease components are generally variable in nature and recorded in variable lease expense in the period incurred.

The Company uses its incremental borrowing rate to determine the present value of lease payments, as the Company's leases do not have a readily determinable implicit discount rate. The incremental borrowing rate is the rate of interest the Company would have to pay to borrow on a collateralized basis over a similar term and amount in a similar economic environment. Judgement is applied in assessing factors such as Company-specific credit risk, lease term, nature and quality of the underlying collateral, currency, and economic environment in determining the incremental borrowing rate to apply to each lease.

Adoption of Topic 842 resulted in the recording of ROU assets and lease liabilities related to the Company's operating leases of approximately $14.6 million and $15.2 million, respectively, on January 1, 2022. The adoption of the new lease standard did not materially impact the Company's consolidated net income or consolidated cash flows and did not result in a cumulative-effect adjustment to the opening balance of retained earnings. Refer to Note 16 for additional disclosures.

In June 2016, the FASB issued ASU 2016-13, Financial Instruments - Credit Losses, which requires entities to estimate all expected credit losses for financial assets measured at amortized cost basis, including trade receivables, held at the reporting date based on historical experience, current conditions and reasonable and supportable forecasts. The Company adopted this guidance using the modified retrospective adoption method on December 31, 2022, which was retroactively applied as of the first day of fiscal year 2022. The adoption of this accounting standard did not have a material impact to the Company's consolidated financial statements.

3. Concentrations of credit risk and other risks and uncertainties

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash, cash equivalents and marketable securities. The Company maintains accounts in federally insured financial institutions in excess of federally insured limits. Management believes the Company is not exposed to significant credit risk due to the financial position of the depository institutions in which these deposits are held and of the money market funds in which these investments are made. The Company holds marketable securities with high credit ratings.

4. Revenue from contracts with customers

Disaggregation of revenue

The following table depicts the disaggregation of revenue by sales channel mix and customer mix as defined by the nature of workflows (in thousands):

	Year ended December 31,		
	2022	2021	2020
Sales channel mix			
Direct sales channel	$ 129,098	$ 110,520	$ 77,106
Distributor channel	34,938	17,430	15,733
Total revenue, net	$ 164,036	$ 127,950	$ 92,839
Customer mix			
Academia and government	$ 73,706	$ 59,415	$ 45,674
Biotechnology, pharmaceutical, distributor and contract research organizations	90,330	68,535	47,165
Total revenue, net	$ 164,036	$ 127,950	$ 92,839

Revenue by geographical markets is presented in Note 23, *Geographic areas*.

Remaining performance obligations

The following table includes estimated revenues expected to be recognized in the future related to performance obligations that are unsatisfied (or partially satisfied) as of December 31, 2022 (in thousands):

	Less than 1 year	Greater than 1 year	Total
Product revenue	199	—	199
Service revenue	12,787	13,124	25,911
Total revenue	$ 12,986	$ 13,124	$ 26,110

Contract balances

The following table provides information about receivables, deferred revenue from contracts with customers, and customer deposits (in thousands):

	December 31, 2022	December 31, 2021
Trade accounts receivable	$ 48,864	$ 29,760
Contract liabilities:		
Deferred revenue	$ 26,110	$ 16,871
Customer deposits, which are included in 'Other current liabilities'	1,555	1,018
Total contract liabilities	$ 27,665	$ 17,889

The following provides a roll-forward of the contract liabilities (in thousands):

Contract liabilities	
Balance at December 31, 2019	$ 5,253
Revenue recognized	(10,678)
Revenue deferred	13,170
Balance at December 31, 2020	$ 7,745
Revenue recognized	(15,008)
Revenue deferred	25,152
Balance at December 31, 2021	$ 17,889
Revenue recognized	(24,686)
Revenue deferred	34,462
Balance at December 31, 2022	$ 27,665

5. Balance sheet details

Inventories

The following table shows the components of inventory (in thousands):

	December 31, 2022	December 31, 2021
Raw materials	$ 26,925	$ 17,260
Work in progress	4,897	2,297
Finished goods	16,332	12,614
Total inventories	$ 48,154	$ 32,171

Prepaid expenses and other current assets

The following table shows the components of prepaid expenses and other current assets (in thousands):

	December 31, 2022	December 31, 2021
Prepaid expenses:		
Prepaid inventory	$ 621	$ 397
Prepaid rent	293	201
Prepaid insurance	1,466	1,873
Prepaid income tax	2,080	-
Other	2,687	2,132
Other current assets:		
Tax refund receivable	2,011	(127)
Other	3,796	708
Total prepaid expenses and other current assets	$ 12,954	$ 5,184

Accrued expenses

The following table shows the components of accrued expenses (in thousands):

	December 31, 2022	December 31, 2021
Accrued expenses:		
Accrued compensation and related benefits	$ 13,911	$ 9,117
Professional service fees	1,276	1,119
Purchases	2,457	2,483
Product warranty	2,126	1,760
Other	1,356	772
Total accrued expenses	$ 21,126	$ 15,251

For the product warranty analysis refer to Note 21.

Other current liabilities

The following table shows the components of other current liabilities (in thousands):

	December 31, 2022	December 31, 2021
Other current liabilities:		
Customer deposits	$ 1,555	$ 1,018
Income tax payable	246	2,476
Sales and use tax payable	1,421	1,403
Operating lease liability, current	2,931	—
Current portion of loan	580	—
Other	1,227	1,455
Total other current liabilities	$ 7,960	$ 6,352

6. Fair value of financial instruments

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants at the reporting date. The categorization of a financial instrument within the valuation hierarchy

is based on the lowest level of input that is significant to the fair value measurement. The following table sets forth the fair value of the Company's financial assets and liabilities by level within the fair value hierarchy (in thousands):

	December 31, 2021	Quoted prices in active markets for identical assets (level 1)	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)
Assets:				
Money market funds	$ 345,679	$ 345,679	$ —	$ —
Total	$ 345,679	$ 345,679	$ —	$ —

Description:	December 31, 2022	Quoted prices in active markets for identical assets (level 1)	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)
Cash equivalents:				
U.S. Treasury	$ 29,930	$ 29,930	$ —	$ —
Federal agency securities	19,908	-	19,908	-
Commercial paper	5,955	-	5,955	-
Money market funds	117,437	117,437	-	-
Short-term investments:				
U.S. Treasury	9,786	9,786	-	-
Federal agency securities	11,626	-	11,626	-
Commercial paper	23,136	-	23,136	-
Total	$ 217,778	$ 157,153	$ 60,625	$ —

The Company did not have any transfers of financial assets measured at fair value on a recurring basis to or from Level 1, Level 2 or Level 3 for any of the periods presented.

The table above does not include the Company's investments in privately held equity securities. Non-marketable equity investments of $1.6 million are included within Other noncurrent assets on the consolidated balance sheet as of December 31, 2022.

7. Investments

The following tables summarize the Company's investments in available-for-sale securities by significant investment category reported as short-term as of December 31, 2022 (in thousands):

	December 31 2022			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Loss	Estimated Fair Value
Marketable securities:				
U.S. Treasury	9,783	3	-	9,786
Federal agency securities	11,613	15	(1)	11,627
Commercial paper	23,136	-	-	23,136
Total available-for-sale investments	$ 44,532	$ 18	$ (1)	$ 44,549

The following table summarizes the contractual maturities of the Company's available-for-sale securities at December 31, 2022 (in thousands):

	December 31 2022	
	Amortized Cost	Fair Value
Mature in less than one year	44,532	44,549
Total	$ 44,532	$ 44,549

8. Property and equipment, net

The following table shows the components of property and equipment, net (in thousands):

	December 31, 2022	December 31, 2021
Laboratory equipment	$ 4,777	$ 2,410
Leasehold improvements	3,481	3,021
Building and land	5,553	-
Construction in progress	178	344
Office and computer equipment	890	673
Furniture and fixtures	1,962	1,263
Total property and equipment	16,841	7,711
Less: accumulated depreciation	(3,159)	(1,860)
Property and equipment, net	$ 13,682	$ 5,851

Total depreciation expense for the year ended December 31, 2022, 2021, and 2020 were $1.7 million, $0.9 million and $0.5 million, respectively.

9. Acquisition

On November 2, 2021, the Company completed the acquisition of the reagents business of Tonbo Biotechnologies Corporation ("Tonbo") for an aggregate cash consideration of $17 million. The acquired assets include a portfolio of life science research reagents related to cell preparation, flow cytometry, molecular immunology/polymerase chain reaction and cell culture covering application areas across immunology, apoptosis and immunoprofiling.

The acquisition was accounted for as a business combination in accordance with ASC 805. The tangible and intangible assets acquired were recorded at fair value on the acquisition date. The purchase price allocation is based upon preliminary valuations and estimates and assumptions which are subject to change within the purchase price allocation period, generally one year from the acquisition date. The following table represents the allocation of the purchase price to the assets acquired by the Company as part of the acquisition included in the Company's consolidated balance sheets, and is reconciled to the purchase price.

	Tonbo (in thousands)
Current assets	$ 2,549
Fixed Assets	83
Reagent licenses	1,800
Tradename	700
Customer relationships	2,200
Total identifiable net assets acquired	7,332
Goodwill	9,668
Total	$ 17,000

The $9.7 million of goodwill arising from the Tonbo acquisition is primarily attributed to significant time-to-market advantages, as the Company gained immediate access to Tonbo's products, existing relationships and business infrastructure and Tonbo's knowledgeable and experienced workforce. The goodwill is expected to be deductible for tax purposes.

Intangible assets eligible for recognition separate from goodwill were those that satisfied either the contractual or legal criterion or the separability criterion in the accounting guidance. The identifiable intangible assets acquired and their estimated useful lives for amortization are as follows:

	Tonbo	
	Fair Value	Useful life (years)
	(In thousands, except for years)	
Customer relationships	$ 2,200	7
Reagent licenses	1,800	7
Tradename	700	4
Total	$ 4,700	

The customer relationships intangible asset represents the fair value of the underlying relationships with Tonbo's customers. The tradename intangible asset represents the fair value of brand and name recognition associated with the marketing of Tonbo's reagents. The reagent license intangible asset represents the fair value of access to certain antibodies to manufacture reagents.

The fair value of the customer relationships intangible asset was determined based on the excess earnings method; the fair values of the tradename intangible assets were determined based on the relief-from-royalty method; and the fair value of the reagent license intangible asset was determined based on the cost approach method. The key assumptions used in estimating the fair values of intangible assets included forecasted financial information; customer retention rates; royalty rate of 2.0% for the tradename intangible assets; discount rate of 13.0% for all intangible assets; and certain other assumptions.

All acquired intangibles are being amortized over their estimated useful lives using the straight-line method of amortization.

The fair value assigned to the assets acquired are based on reasonable assumptions and estimates that market participants would use. Actual results may differ from these estimates and assumptions.

The results of operations for the acquisition are included in the consolidated financial statements of the Company from the date of the acquisition and net revenues and operating loss are not material. The Company has not included pro forma financial information related to the acquisition as the overall impact to the financial statements was not material. Transaction costs incurred by the Company related to the acquisition totaled approximately $230,000 for the year ended December 31, 2021, which were expensed and recorded as a component of general and administrative expenses in the consolidated statement of operations.

10. Goodwill and intangible assets, net

The addition of goodwill for the year ended December 31, 2021 is discussed in Note 9. There were no changes in goodwill for the year ended December 31, 2022.

The following table shows the components of intangible assets, net (in thousands):

	December 31, 2022	December 31, 2021
Patents and trademarks	$ 534	$ 387
Tradename	700	700
IP license	476	476
Customer relationships	2,200	2,200
Reagent license	1,800	1,800
Total intangible assets	5,710	5,563
Less: accumulated amortization	(1,379)	(824)
Intangible assets, net	$ 4,331	$ 4,739

Total amortization expense for the year ended December 31, 2022, 2021, and 2020 were approximately $835,000, $334,000 and $71,000, respectively.

11. Legal settlement liability

On February 13, 2018, Becton, Dickinson, and Company (“BD”) filed a lawsuit against the Company alleging trade secret misappropriation and copyright infringement. On October 6, 2020, the Company entered into a Settlement, License and Equity Issuance Agreement with BD pursuant to which the Company and BD agreed to a mutual release of all claims against each other as of the date thereof (the “BD Agreement”). Additionally, BD granted Cytek a non-exclusive, irrevocable, perpetual, worldwide and non-transferrable license to certain BD patents and covenanted that it would not enforce or permit or encourage the enforcement of BD patents against Cytek or its affiliates in connection with the development, manufacture, use, importation, offer for sale or sale of its then-current instruments. In exchange, the Company agreed that Cytek and its affiliates would not dispute or challenge in a legal proceeding the validity, enforceability or scope of the applicable BD patent claims and agreed to make certain payments to BD, including (i) a one-time upfront payment of $2.0 million, (ii) a low single digit royalty payment for ten years, based on net sales of certain of its products, (iii) $6.0 million milestone payment upon the occurrence of a certain sales threshold, and (iv) a specified payment upon the closing of a change of control transaction, if any. The Company also issued 2,087,545 shares of the Company’s common stock to BD during the year ended December 31, 2020 in connection with the BD settlement. The Company achieved the sales milestone and made the milestone payment in the quarter ended December 31, 2021.

The Company separated the settlement agreement into two elements, the litigation settlement and future licensing rights. The Company could not readily determine the fair value of the litigation settlement of prior infringement claims between the Company and BD. Therefore, the Company applied the residual method and allocated the difference between the total present value consideration payable under the BD Agreement and the estimated fair value of the future licensing rights to the litigation settlement element. The Company determined the estimated fair value of the future licensing rights based on the relief from royalty method. The significant assumptions used were the market royalty rate estimated as a royalty rate that a market participant would pay to license the BD intellectual property, forecasted sales subject to the market royalty rate and the discount rate.

The patents in question were determined to have an average useful life of 18 months. Accordingly, beginning the second quarter of 2022, the remaining contractual payments will be classified as operating expenses as they are considered to be represented of deferred litigation settlement. The Company recorded $0.6 million, $3.3 million, and $2.5 million product cost of sales related to royalty expense

for the year ended December 31, 2022, 2021, and 2020, respectively. The Company recorded $2.2 million, $1.7 million, and $0.3 million of interest expense for the year ended December 31, 2022, 2021, and 2020, respectively, to accrete the present value discount of the payment streams over the payment period of ten years from the settlement date using the effective interest rate method. The Company made a one-time upfront payment and issued 2,087,545 shares of the Company's common stock to BD during the year ended December 31, 2020. The Company recorded legal settlement liability on the consolidated balance sheets of $17.8 million and $15.2 million as of December 31, 2022 and December 31, 2021, respectively, and will record licensing expense in future periods.

The following table shows the components of the legal settlement liability (in thousands):

	December 31, 2022	December 31, 2021
Current:		
Legal settlement liability	$ 2,163	$ 1,463
Noncurrent:		
Legal settlement liability	15,596	13,745
Total legal settlement liability	$ 17,759	$ 15,208

12. Debt

On November 7, 2022, Cytek (Wuxi) Biosciences Co., Ltd, the Company's China subsidiary ("Cytek Wuxi"), entered a fixed asset loan agreement with Bank of Communications, China. The loan is denominated in Chinese renminbi and collateralized by Cytek Wuxi's cash deposit to the bank. The deposit is in a separate account with Cytek Wuxi's name, but the use of such account is restricted. The Company considered the deposit as restricted cash and are presented on the consolidated Balance Sheets. Total loan amount is $2.9 million and the loan term is five years. The current portion of the loan, $580,000, is included in other current liabilities. The fixed interest rate on the loan was 4.5% as of December 31, 2022.

13. Redeemable convertible preferred stock

In March 2015, the Company entered into a Series A Preferred Stock Purchase Agreement ("Series A Agreement") with certain investors pursuant to which it sold and issued 9,799,755 shares of Series A redeemable convertible preferred stock ("Series A shares") at a purchase price of $0.38 per share in the initial closing. In July 2015, the Company sold and issued an additional 8,166,462 Series A shares at a purchase price of $0.38 per share pursuant to a subsequent closing under the Series A Agreement. In October 2015, the Company sold and issued an additional 14,699,632 Series A shares at a purchase price of $0.38 per share pursuant to a milestone closing under the Series A Agreement. A total of 32,665,849 Series A shares were issued for $12.2 million, net of issuance costs of $89,000.

In December 2016, the Company entered into a Series B Preferred Stock Purchase Agreement ("Series B Agreement") with certain investors pursuant to which it sold and issued 9,888,639 shares of Series B convertible redeemable preferred stock ("Series B shares") at a purchase price of $0.75 per share in the initial closing. In January 2018, the Company sold and issued an additional 6,110,957 Series B shares at a purchase price of $0.75 per share pursuant to a milestone closing under the Series B Agreement.

In September 2018, the Company entered into a Series C Preferred Stock Purchase Agreement ("Series C Agreement") with certain investors pursuant to which it sold and issued 18,717,804 shares of Series C convertible redeemable preferred stock ("Series C shares" and together with Series A shares, Series B shares and Series C shares, the "2018 Preferred Stock") at a purchase price of $2.40 per share in the initial closing. In November and December 2018, the Company sold and issued an additional 2,501,265 and 2,084,387 Series C shares, respectively, at a purchase price of $2.40 per share pursuant to subsequent closings under the Series C Agreement.

In October 2018, the Company repurchased 2,452,270 Series A shares at a price per share of $2.04 ("Series A Repurchase"), for an aggregate purchase price of $5.0 million. In connection with the Series A Repurchase, the Company filed a Certificate of Retirement with the Secretary of State in the State of Delaware to (i) cancel and retire the repurchased shares as required by the Company's Amended and Restated Certificate of Incorporation, (ii) reduce the number of 2018 Preferred Stock authorized under the Company's Amended and Restated Certificate of Incorporation to 70,212,570 from 72,664,850 and (iii) reduce the number of Series A shares authorized under the Company's Amended and Restated Certificate of Incorporation to 30,213,574 from 32,665,849.

In October 2020, under the amended and restated certificate of incorporation dated October 22, 2020 ("October COI"), the Company issued 17,752,068 shares of Series D redeemable convertible preferred stock ("Series D shares" and together with Series A shares, Series B shares, Series C shares, the "Preferred Stock") at a purchase price of $6.76 per share for net proceeds of $119.7 million and authorized the reduction of the Series C to 23,303,456.

In July 2021, all of the then-outstanding shares of Preferred Stock automatically converted into 87,268,694 shares of common stock immediately upon the closing of Company's IPO.

The Company classified its Preferred Stock as temporary equity in the accompanying consolidated balance sheets due to terms that allow for redemption of the shares upon certain change in control events that are outside of the Company's control, including sale or transfer of control of the Company, as holders of the Preferred Stock could cause redemption of the shares in these situations.

14. Common stock

As of December 31, 2022, the Company has authorized 1,000,000,000 shares of common stock at $0.001 par value. Holders of common stock are entitled to one vote per share, and to receive dividends, only and if declared by the Board of Directors and, upon liquidation or dissolution, are entitled to receive all assets available for distribution to stockholders, subordinate to the rights, preferences and privileges of any outstanding Preferred Stock with respect to dividends and in connection with a liquidation, winding up and dissolution of the Company. The holders have no preemptive or other subscription rights.

On July 16, 2021, the Board and the Company's stockholders approved an amendment and restatement of the Company's certificate of incorporation to effect the Stock Split, which became effective upon filing with the Secretary of State of the State of Delaware on July 16, 2021.

On July 16, 2021, the Board and the Company's stockholders approved an amendment and restatement of the Company's certificate of incorporation, which became effective immediately following the closing of the IPO on July 27, 2021 and filing with the Secretary of State of the State of Delaware.

On August 26, 2022, the Company filed a Registration Statement with the SEC. In connection with the filing of the Registration Statement, the Company also entered into the "2022 Sales Agreement" with Piper as sales agent to sell from time to time up to $150 million of the Company's common stock through an "at-the-market" offering program as defined in Rule 415 promulgated under the Securities Act.

Pursuant to the terms of the 2022 Sales Agreement, the aggregate compensation payable to Piper is up to 3% of the gross proceeds from the sale of common stock sold by Piper pursuant to the 2022 Sales Agreement. Each party agreed in the 2022 Sale Agreement to provide indemnification and contribution against certain liabilities, including liabilities under the Securities Act, subject to the terms of the 2022 Sales Agreement. As of December 31, 2022, the Company has not made any sales of common stock pursuant to the 2022 Sales Agreement.

15. Stock-based compensation plan

Stock Plans

As of December 31, 2022, the Company had three stock-based compensation plans (the "Plans") which are described below.

2015 Equity Incentive Plan

In March 2015, the Board approved the 2015 Equity Incentive Plan ("2015 Plan"), which provided for the granting of stock options to employees, directors and consultants of the Company. As of the effective date of the 2021 Plan described below, the 2015 Plan was terminated and no further equity awards may be granted pursuant to the 2015 Plan. Outstanding stock options granted under the 2015 Plan will continue to be governed by the provisions of the 2015 Plan until expiration or exercise, whichever is earlier.

2021 Equity Incentive Plan

In July 2021, the Board approved the 2021 Equity Incentive Plan (the "2021 Plan"), which provides for the granting of stock options, stock appreciation rights, restricted stock awards, restricted stock unit ("RSU") awards, performance awards, and other awards to employees, directors and consultants of the Company. The 2021 Plan became effective on July 22, 2021 in connection with the IPO. Upon the 2021 Plan's effective date, there were 18,000,000 shares of the Company's common stock reserved for issuance thereunder. On January 1 of each year commencing after the effective date of the IPO and continuing through and including January 1, 2031, the number of shares of the Company's common stock reserved for issuance under the 2021 Plan will increase automatically by an amount equal to 4% of the number of shares of the Company's common stock outstanding on the preceding December 31, unless the Company's Board of Directors elects to authorize a lesser number of shares prior to the applicable January 1. As of December 31, 2022, the total number of shares of common stock available for issuance under the 2021 Plan was 18,785,426 shares.

2021 Employee Stock Purchase Plan

In July 2021, the Board approved the 2021 Employee Stock Purchase Plan (the "ESPP"). The ESPP became effective on July 22, 2021 in connection with the IPO. Upon the ESPP's effective date, there were 2,000,000 shares of the Company's common stock reserved for issuance thereunder. On January 1 of each year commencing after the effective date of the IPO and continuing through and including January 1, 2031, the number of shares of the Company's common stock reserved for issuance under the ESPP will increase automatically by an amount equal to the lesser of (1) 1% of the number of shares of the Company's common stock outstanding on the preceding December 31, (2) 5,000,000 shares and (3) a number of shares determined by the Board. During the year ended December 31, 2022, 192,470 shares were issued pursuant to purchases under the ESPP.

Stock option valuation assumptions

The Company estimates the fair value of each stock option grant on the date of grant using the Black-Scholes option pricing model. The model assumptions include expected volatility, expected term, dividend yield, and the risk-free interest rate. The expected volatility was based on the volatility of a group of similar entities. The Company derived expected term by using the "simplified" method

(the expected term is determined as the average of the time-to-vesting and contractual life of the option), as the Company has limited historical information to develop expectations about future exercise patterns and post vesting employment termination behavior. The Company based the risk-free rate on U.S. Treasury zero-coupon issues with remaining terms similar to the expected term of the option. The Company has never paid any dividends and does not anticipate paying dividends in the foreseeable future, and therefore used an expected dividend yield of zero in the valuation model.

Stock Options

The following table shows stock option activity during the periods indicated (in thousands except share and per share data):

	Number of options outstanding	Weighted-average exercise price	Weighted-average remaining contractual term (in years)	Aggregate intrinsic value
Balance as of December 31, 2020	6,174,778	$ 0.67	7.79	$ 11,405
Options granted	4,344,187	12.99		
Options exercised	(1,289,652)	0.51		
Options forfeited	(417,797)	5.05		
Options expired	(5,666)	1.39		
Balance as of December 31, 2021	8,805,850	$ 6.56	8.03	$ 147,623
Options granted	715,352	12.43		
Options exercised	(1,224,564)	1.07		
Options forfeited	(641,036)	9.85		
Options expired	(76,967)	2.33		
Balance as of December 31, 2022	7,578,635	$ 7.76	7.42	$ 37,200
Options exercisable as of December 31, 2022	4,219,843	$ 4.89	6.64	$ 28,852

The weighted-average grant date fair value of options granted during the year ended December 31, 2022, 2021, and 2020 were $8.21, $10.42, and $0.97 per share, respectively.

There was $28.1 million of unrecognized stock-based compensation expense related to unvested stock options as of December 31, 2022. The unrecognized stock-based compensation expense is estimated to be recognized over a period of 2.23 years as of December 31, 2022.

The Company currently uses authorized and unissued shares to satisfy option exercises.

The aggregate intrinsic value is calculated as the difference between the exercise price and the estimated fair value of the Company's common stock as of December 31, 2022.

RSU Awards

The following table shows RSU awards activity during the periods indicated:

	Shares	Weighted-average grant date fair value per share
Unvested balance at December 31, 2020	-	$ -
Granted	104,876	$ 21.10
Vested	-	$ -
Forfeited	-	$ -
Unvested balance at December 31, 2021	104,876	$ 21.10
Granted	1,361,133	$ 12.93
Vested	(215,433)	$ 14.51
Forfeited	(81,068)	$ 13.03
Unvested balance at December 31, 2022	1,169,508	$ 13.36

There was $14.5 million of unrecognized stock-based compensation expense related to unvested RSU awards as of December 31, 2022. The unrecognized stock-based compensation expense is estimated to be recognized over a period of 3.22 years as of December 31, 2022.

Stock-based compensation expense

The following table shows the allocation of stock-based compensation expense related to the Company's stock-based awards (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Cost of sales	$ 2,855	$ 1,508	$ 232
Research and development	5,035	1,877	109
Sales and marketing	3,419	1,375	183
General and administrative	5,286	1,826	87
Total stock-based compensation	$ 16,595	$ 6,586	$ 611

The following table shows the weighted-average valuation assumptions used in determining the fair value of employee stock options:

	Year Ended December 31,		
	2022	2021	2020
Expected term (in years)	5.91	6.05	5.96
Expected volatility	75%	90%	83%
Risk-free interest rate	2%	1%	1%
Dividend yield	—	—	—

The following table summarizes the weighted-average assumptions used in estimating the fair value of the ESPP for the current offering period using the Black-Scholes option-pricing model:

	Year Ended December 31,		
	2022	2021	2020
Expected term (in years)	0.5	0.5	—
Expected volatility	77%	75%	—%
Risk-free interest rate	3%	1%	—%
Dividend yield	—	—	—

16. Employee benefit plan

401(k) retirement savings plan

The Company currently maintains a 401(k) retirement savings plan the covers substantially all of its employees ("401(k) Plan"). The 401(k) Plan permits voluntary contributions by employees, a portion of which are matched by the Company. The Company's contributions to the 401(k) Plan were approximately $1,045,000, $770,000, and $584,000 for the year ended December 31, 2022, 2021, and 2020, respectively.

17. Income taxes

For the years ended December 31, 2022, 2021, and 2020, income from continuing operations before taxes consisted of amounts related to U.S. operations and income associated with the Company's foreign operations. The geographical breakdown of the Company's income (loss) before provision for (benefit from) income taxes is as follows (in thousands):

	2022	2021	2020
Domestic	$ (1,347)	$ (1,870)	$ 14,136
International	2,607	7,808	294
Profits before provision for income taxes	$ 1,260	$ 5,938	$ 14,430

Income tax expense attributable to income from continuing operations consists of (in thousands):

	2022	2021	2020
Current provisions for income taxes:			
Federal	$ 7,280	$ 3,666	$ 1,108
State	1,339	440	580
Foreign	1,442	601	709
Total current	10,061	4,707	2,397
Deferred tax expense (benefit):			
Federal	(9,164)	(2,529)	(4,956)
State	(1,910)	(579)	(1,086)
Foreign	(211)	1,312	(1,336)
Total deferred tax expense (benefit)	(11,285)	(1,796)	(7,378)
Total provision for (benefit from) income taxes	$ (1,224)	$ 2,911	$ (4,981)

Tax rate reconciliation

The following table presents a reconciliation of the federal statutory rate to the Company's effective tax rate:

	2022	2021	2020
U.S. federal tax benefit at statutory rate	21.0 %	21.0 %	21.0 %
State income taxes, net of federal benefit	(60.0)	(3.9)	5.5
Foreign income taxed at different rates	(37.9)	(9.6)	(3.7)
Foreign-derived intangible income deduction	(39.2)	(3.9)	(1.5)
Research and development credits	(146.4)	(6.6)	(2.4)
Tax impact of foreign earnings and losses	89.4	7.8	1.1
Subpart F	67.2	23.1	-
Share-based compensation	7.1	21.7	0.7
Other permanent adjustments	1.9	1.0	(3.2)
Prior year true up due to tax rate change	(47.1)	(0.6)	1.9
Change in valuation allowance, net	60.6	1.1	(53.4)
162M Compensation	4.4	-	-
Foreign Tax Credit	(19.6)		
Other	1.5	(2.2)	(0.5)
Effective tax rate	(97.1) %	48.9 %	(34.5) %

Significant components of deferred taxes

The tax effects of temporary differences and carryforwards that give rise to significant portions of the deferred tax assets and deferred tax liabilities at December 31, 2022 and 2021 are presented below (in thousands):

	2022	2021
Deferred tax assets		
Net operating loss Carryforwards	$ 755	$ 632
Foreign Tax Credit Carryforward	492	430
Research and Development Credit Carryforward	904	155
Stock Based Compensation	1,578	-
Legal Settlement	4,050	3,544
Deferred Revenue	4,415	2,595
Research and Development Capitalization	4,948	-
Inventory Reserve	881	792
Accrued bonus	1,236	776
Lease Liability	3,388	-
Other accruals	3,108	1,510
Gross deferred tax assets	25,755	10,434
Valuation allowance	(1,248)	(483)
Net deferred tax assets	$ 24,507	$ 9,951
Deferred tax liabilities		
Accounting method change	-	(196)
ROU assets	(3,053)	
Depreciation and amortization	(995)	(581)
Net deferred tax liabilities	$ (4,048)	$ (777)
Net deferred tax assets (liabilities)	$ 20,459	$ 9,174

The Company assesses the available positive and negative evidence to estimate if sufficient future taxable income will be generated to utilize the existing deferred tax assets. During 2020 the Company released the valuation allowance on its U.S. deferred tax assets. The Company believes its deferred tax assets are more likely than not to be realized except for one entity in China which is expected to incur tax losses due to research and development deductions available.

As of December 31, 2022, the Company maintained a valuation allowance with respect to one of its foreign subsidiary's net operating loss that it believes is not more likely than not to be realized. The Company will continue to reassess the valuation allowance annually and if future evidence allows for a partial or full release of the valuation allowance, a tax benefit will be recorded accordingly.

As of December 31, 2022, the Company does not have state net operating loss carryforwards. As of December 31, 2021, the Company had state net operating loss carryforwards of $2.1 million, to reduce future taxable income. The state net operating loss begins to expire in 2036 if not utilized. As of December 31, 2022 and 2021, the Company had state tax credit carryforwards of $1.8 million and $0.8 million, respectively, to offset future tax liability. The credit carryforwards are not subject to expiration. As of December 31, 2022, the Company had foreign tax credit for Cytek (Shanghai) Bio Sciences Co., Ltd of $0.5 million which expires in 2027 if not utilized.

Internal Revenue Code Section 382 places a limitation on the amount of taxable income that can be offset by net operating loss carryforwards and tax credit carryforwards after a greater than 50% change in control in ownership. California has similar rules. The Company had performed a Section 382 analysis and determined that its capitalization have resulted in such a change in prior year and current year. Utilization of the net operating loss carryforwards and tax credit carryforwards had been subject to the annual limitations

under IRC Section 382 and similar state provisions. The annual limitation may result in the expiration of the state net operating loss carryforwards before utilization.

Uncertain Tax Positions

The following is a tabular reconciliation of the total amounts of unrecognized tax benefits (in thousands):

	2022	2021	2020
Unrecognized tax benefits as of the beginning of the year	$ 1,321	$ 737	$ 234
Increases related to prior year tax provisions	298	65	77
Increase related to current year tax provisions	616	519	426
Unrecognized tax benefits as of the end of the year	$ 2,235	$ 1,321	$ 737

The Company accounts for uncertain tax positions under ASC 740. As of December 31, 2022, 2021 and 2020, there was approximately $2.2 million, $1.3 million and $0.7 million of unrecognized tax benefits, respectively. Of the unrecognized tax benefits, $2.0 million, $1.1 million and $0.6 million represents the amount that if recognized, would favorably affect the effective income tax rate in 2022, 2021 and 2020, respectively. The Company does not expect a significant change to its unrecognized tax benefits or recorded liabilities over the next twelve months. The unrecognized tax benefits may increase or change during the next year for items that arise in the ordinary course of business.

The Company files income tax returns in U.S. federal jurisdiction, various state jurisdictions and foreign jurisdictions. The U.S., state and foreign jurisdictions have statutes of limitations that generally range from three to five years. The Company's federal, state and foreign income tax returns are subject to examination unless the statutes of limitations close. The Company is not currently under examination for federal, state or foreign income tax purposes.

As of December 31, 2022, the Company's management is asserting that it is their intent to indefinitely reinvest unremitted foreign earnings for all its foreign entities.

18. Lease

The Company determines if an arrangement is or contains a lease at inception, which is the date on which the terms of the contract are agreed to, and the agreement creates enforceable rights and obligations. Under Topic 842, a contract is or contains a lease when (i) explicitly or implicitly identified assets have been deployed in the contract and (ii) the customer obtains substantially all of the economic benefits from the use of that underlying asset and directs how and for what purpose the asset is used during the term of the contract. The Company also considers whether its service arrangements include the right to control the use of an asset.

The Company leases office facilities and equipment from unrelated parties under operating lease agreements that have initial terms ranging from one to 7.25 years. Some leases include one or more options to renew, generally at the Company's sole discretion, with renewal terms that can extend the lease term up to five years. In addition, certain leases contain termination options, where the rights to terminate are held by either the Company, the lessor, or both parties. These options to extend or terminate a lease are included in the lease terms when it is reasonably certain that the Company will exercise that option. The Company's leases generally do not contain any material restrictive covenants. The Company is a sub-lessor in an agreement with a term of three years.

Operating lease cost is recognized on a straight-line basis over the lease term. The components of lease expense are as follows (in thousands):

	Year ended December 31, 2022
Operating lease cost	$ 3,539
Short-term lease cost	48
Total lease cost	$ 3,587

For the year ended December 31, 2022, sublease income was $266,000, recorded as other income.

Supplemental cash flow information related to leases is as follows (in thousands):

	Year ended December 31, 2022
Cash paid for amounts included in measurement of lease liabilities:	
Operating cash outflows - payments on operating leases	$ 2,332
Right-of-use assets obtained in exchange for new lease obligations:	
Operating leases	$ 16,852

Supplemental balance sheet information related to leases is as follows (in thousands):

	December 31, 2022
Operating lease right-of-use assets	$ 13,883
Included in other current liabilities:	
Operating lease liabilities, current	$ 2,931
Operating lease liabilities, noncurrent	12,312
Total operating lease liabilities	$ 15,243

Weighted-average remaining lease term - operating leases:	5.47
Weighted-average discount rate - operating leases:	2.6%

Future undiscounted cash flows for each of the next five years and thereafter and reconciliation to the lease liabilities recognized on the balance sheet as of December 31, 2022 is as follows (in thousands):

2023	$ 3,278
2024	3,106
2025	2,683
2026	2,578
2027	2,315
Thereafter	2,395
Total lease payments	$ 16,355
Less imputed interest	(1,112)
Total present value of lease liabilities	$ 15,243

As of December 31, 2021, a summary of the Company's future minimum lease payments, as determined under Topic 840, for all non-cancelable operating leases, excluding minimum sublease rentals of $0.6 million due in the future under a non-cancelable sublease, was as follows (in thousands):

	Operating leases
2022	$ 2,251
2023	2,803
2024	2,417
2025	2,215
2026	2,220
Thereafter	4,571
Total future minimum lease payments	$ 16,477

19. Commitments and contingencies

Paycheck Protection Program Loan

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") was enacted to, amongst other provisions, provide emergency assistance for individuals, families and businesses affected by the COVID-19 pandemic. The CARES Act includes a Paycheck Protection Program ("PPP") administered through the Small Business Association ("SBA"). Under the PPP, beginning April 3, 2020, small businesses and other entities and individuals could apply for loans from existing SBA lenders and other approved regulated lenders that enroll in the program, subject to numerous limitations and eligibility criteria.

On May 7, 2020, the Company received gross proceeds in the amount of approximately $4.1 million under the PPP. The PPP, established as part of the CARES Act, provides for loans to qualifying businesses for amounts up to 2.5 times the average monthly payroll expenses of the qualifying business. On May 4, 2021, the Company fully repaid the PPP loan.

Legal proceedings

The Company evaluates the status of each legal matter, if any, and assesses potential financial exposure. If the potential loss from any legal proceedings or litigation is considered probable and the amount can be reasonably estimated, the Company accrues a liability for the estimated loss. Significant judgment is required to determine the probability of a loss and whether the amount of the loss is reasonably estimated. The outcome of any proceeding is not determinable in advance. As a result, the assessment of a potential liability and the amount of accruals recorded are based on the information available at the time.

The Company is not currently involved in legal actions, nor is management aware of any potential claims or legal actions, for which the ultimate disposition could have a material effect on the Company's financial position, results of operations or liquidity.

20. Investment in Cytek Japan

In May 2019, the Company jointly formed Cytek Japan with TOMY Digital Biology ("TOMY"). Cytek Japan was created for the purpose of expanding the Company's presence in Japan. The Company and TOMY each purchased $46,000 of common stock of Cytek Japan. The Company previously accounted for its 50% interest in Cytek Japan as an equity method investment. The Company recorded $40,000 for its proportionate share of Cytek Japan's earnings prior to its additional investment, which is included in other income (expense), net in the consolidated statements of operations and comprehensive income for the year ended December 31, 2022.

In March 2021, the Company purchased an additional $688,000 of common stock of Cytek Japan and TOMY purchased an additional $229,000 of common stock of Cytek Japan. The Company's interest in Cytek Japan increased from 50% to 73% giving the Company controlling interest. The Company consolidated Cytek Japan as of March 31, 2021 under the VOE model as Cytek Japan does not meet the definition of a VIE and as TOMY does not have substantive voting, participating or liquidation rights.

The Company recognized net assets of $1.1 million, consisting primarily of $1.0 million cash. The Company recorded noncontrolling interest of $315,000 on the unaudited interim consolidated financial statements as of March 31, 2021. The net income attributable to noncontrolling interest was $92,000 for the year ended December 31, 2022 and net loss of $26,000 for the year ended December 31, 2021.

21. Product warranty

The following table shows the activity in the product warranty accrual included in accrued expenses on the consolidated balance sheets (in thousands):

	December 31, 2022	December 31, 2021
Balance, beginning of the period	$ 1,760	$ 969
Accrual for current year warranties	2,841	3,304
Warranty cost incurred	(2,475)	(2,513)
Balance, end of period	$ 2,126	$ 1,760

22. Net income attributable to common stockholders per share

The following table sets forth the computation of the Company's basic and diluted net income attributable to common stockholders per share for the year ended December 31, 2022, 2021, and 2020 (in thousands except share and per share data):

	Year ended December 31,		
	2022	2021	2020
Numerator			
Net income	$ 2,484	$ 3,027	$ 19,411
Less: net loss (income) allocated to noncontrolling interests	92	(26)	-
Less: net income allocated to participating securities	-	(3,001)	(16,195)
Net income attributable to common stockholders, basic and diluted	$ 2,576	$ -	$ 3,216
Denominator			
Weighted-average common shares outstanding, attributable to common stockholders, basic	134,510,831	76,741,858	29,126,792
Effect of employee stock plans	4,051,280	4,800,871	3,473,055
Weighted-average common shares outstanding, attributable to common stockholders, diluted	138,562,111	81,542,729	32,599,847
Net income attributable to common stockholders per share, basic	$ 0.02	$ -	$ 0.11
Net income attributable to common stockholders per share, diluted	$ 0.02	$ -	$ 0.10

23. Geographic areas

The Company sells its products worldwide and attributes revenue to the geography where the product is delivered. The geographical distribution of revenue for the year ended December 31, 2022, 2021, and 2020 was as follows (in thousands):

	Year ended December 31,		
	2022	2021	2020
United States	$ 94,592	$ 72,724	$ 55,477
EMEA	43,958	36,967	25,912
APAC	22,523	16,078	10,740
Other	2,963	2,181	710
Total revenue, net	$ 164,036	$ 127,950	$ 92,839

EMEA includes Europe, the Middle East and Africa; APAC includes Asia and the Pacific countries; Other includes Canada and Latin America.

For the year ended December 31, 2022 and 2021, the Company had no major customers.

As of December 31, 2022 and December 31, 2021, the Company's long-lived assets by geographic area were as follows (in thousands):

	December 31, 2022	December 31, 2021
United States	$ 6,426	$ 3,801
APAC	7,256	2,050
Total	$ 13,682	$ 5,851

As of December 31, 2022 and December 31, 2021, substantially all of the Company's long-lived assets were located in the United States and in Wuxi, China.

24. Related party transactions

On May 7, 2022, the Company's wholly-owned Hong Kong subsidiary ("Cytek HK") completed an investment of $1.6 million in Tianjin Deep Analysis Intelligent Technology Development Co., Ltd, a company incorporated under the laws of the People's Republic of China ("DeepCyto") in consideration for the issuance of Series A preferred shares of DeepCyto, representing an ownership interest of approximately 3.3%. An entity affiliated with Northern Light Venture Capital ("NLVC") has a significant ownership interest in DeepCyto and has a representative serving on the DeepCyto board of directors. The founding managing partner of NLVC served as a member of the Company's board of directors until June 1, 2022.

25. Subsequent Events

In January 2023, the Company purchased all shares of Cytek Japan held by TOMY. As a result of the purchase, Cytek Japan became a wholly-owned subsidiary of the Company.

On February 13, 2023, the Company entered into an Asset Purchase Agreement with Luminex Corporation ("Luminex"), pursuant to which the Company agreed to acquire certain assets relating to the business of manufacturing, marketing, selling, servicing and maintaining Amnis-, CellStream-, Guava- and Muse-branded instruments, and flow cytometry reagent products and services of Luminex for a purchase price of approximately $46.5 million in cash (the "Acquisition"). The Acquisition closed on February 28, 2023.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

Not applicable.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, have evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of the end of the period covered by this Annual Report on Form 10-K. Any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objective and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as a result of the material weaknesses in our internal control, our disclosure controls and procedures were not effective as of December 31, 2022.

Management's Annual Report on Internal Control Over Financial Reporting

Management, including our Chief Executive Officer and Chief Financial Officer, is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a- 15(f) and 15d-15(f) under the Exchange Act and based upon the criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("the COSO framework"). Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of our financial statements for external purposes in accordance with U.S. GAAP.

An effective internal control system, no matter how well designed, has inherent limitations, including the possibility of human error or overriding of controls, and therefore can provide only reasonable assurance with respect to reliable financial reporting. Because of its inherent limitations, our internal control over financial reporting may not prevent or detect all misstatements, including the possibility of human error, the circumvention or overriding of controls, or fraud. Effective internal controls can provide only reasonable assurance with respect to the preparation and fair presentation of financial statements.

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we have conducted an evaluation of the effectiveness of our internal control over financial reporting based on the COSO framework. Based on evaluation under these criteria, management determined, based upon the existence of the material weaknesses described below, that we did not maintain effective internal control over financial reporting as of December 31, 2022.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that a reasonable possibility exists that a material misstatement of our annual or interim financial statements would not be prevented or detected on a timely basis.

We identified deficiencies in the control environment and control activities components of the COSO Framework that constitute material weaknesses, either individually or in the aggregate.

- Control environment – Management did not maintain an effective control environment based on the criteria established in the COSO framework and identified deficiencies in the principles associated with the control environment of the COSO framework. Specifically, the Company does not have a sufficient number of qualified resources within our accounting and IT function with the appropriate level of technical accounting or other requisite knowledge to (1) timely identify and assess accounting implications of transactions and (2) perform assigned responsibilities and have appropriate accountability for the design and operation of internal control over financial reporting.
- Control activities – Management did not design and implement effective control activities based on the criteria established in the COSO framework and identified deficiencies in the principles associated with the control activities component of the COSO framework. Specifically, these related to: (i) selecting and developing control activities that contribute to the mitigation of risks and support achievement of objectives; (ii) selecting and developing general control activities over technology to support the achievement of objectives; and (iii) deploying control activities through policies that establish what is expected and procedures that put policies into action and relate to substantially all financial statement accounts and disclosures.

  The following material weaknesses were contributing factors: (i) inadequate general information technology controls (GITCs) in the areas of access security and program change-management over certain information technology systems that support the Company's financial reporting processes. Some of our business process controls (automated and manual) are dependent on the affected GITCs; they too were deemed ineffective because they could have been adversely impacted; and (ii) ineffective design and/or review procedures for journal entries and balance sheet account reconciliations.

Deloitte & Touche LLP, our independent registered public accounting firm, has audited the effectiveness of our internal control over financial reporting as of December 31, 2022 and has issued an attestation report on our internal controls over financial reporting, which is included herein.

Remediation Plan and Status

We are committed to remediating the control deficiencies that constituted the above material weaknesses by implementing changes to our internal control over financial reporting. Management has implemented, and continues to implement, measures designed to ensure that control deficiencies contributing to the material weaknesses are remediated, such that these controls are designed, implemented and operating effectively. During 2022, we executed and we continue to execute the following steps intended to remediate the material weaknesses described above and strengthen our internal control over financial reporting:

- With support from external consultants, we will revise and improve the design of our controls, implement reviews and monitor the effectiveness of our system of internal controls, including GITCs.
- We will identify and assign qualified personnel to implement appropriate accountability for the design and operation of internal control over financial reporting and monitor the progress of remediation.
- We are committed to adding qualified personnel within our accounting and information technology functions.
- We will continue to revise and enhance the design of existing controls and implement new controls, update documentation, expand education and training, and strengthen supervisory reviews by our management.
- We strengthened, and will continue to strengthen, GITCs related to financial accounting and reporting systems including implementing monitoring controls as appropriate.
- We will continue to automate workflows and enhance oversight over the execution and review of manual journal entry controls and account reconciliations, and will continue to provide training for such enhanced oversight and review.

We plan to continue to devote significant time and attention to remediate the above material weaknesses as soon as reasonably practicable. As we continue to evaluate our controls, we will make the changes described above as well as any others needed to enhance our control environment and remediate the material weaknesses. We believe these actions will be sufficient to remediate the identified material weaknesses and strengthen our internal control over financial reporting; however, there can be no guarantee that such remediation will be sufficient. We will continue to evaluate the effectiveness of our controls and will make any further changes management determines appropriate.

Changes in Internal Control over Financial Reporting

We are taking actions to remediate the material weaknesses relating to our internal control over financial reporting. Other than the changes intended to remediate the material weaknesses noted above, there was no change in our internal control over financial reporting that occurred during the quarter ended December 31, 2022 that materially affected, or were reasonably likely to materially affect, our internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Cytek Biosciences, Inc.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Cytek Biosciences, Inc. and subsidiaries (the "Company") as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, because of the effect of the material weaknesses identified below on the achievement of the objectives of the control criteria, the Company has not maintained effective internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control — Integrated Framework (2013) issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2022, of the Company and our report dated March 1, 2023, expressed an unqualified opinion on those financial statements and included an explanatory paragraph regarding the Company's adoption of Accounting Standards Codification Topic 842, *Leases*.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Material Weaknesses

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or

detected on a timely basis. The following material weaknesses have been identified and included in management's assessment:

Control environment – Management did not maintain an effective control environment based on the criteria established in COSO and identified deficiencies in the principles associated with the control environment of COSO. Specifically, the Company does not have a sufficient number of qualified resources within its accounting and IT function with the appropriate level of technical accounting or other requisite knowledge to (1) timely identify and assess accounting implications of transactions and (2) perform assigned responsibilities and have appropriate accountability for the design and operation of internal control over financial reporting.

Control activities – Management did not design and implement effective control activities based on the criteria established in the COSO framework and identified deficiencies in the principles associated with the control activities component of COSO. Specifically, these related to: (i) selecting and developing control activities that contribute to the mitigation of risks and support achievement of objectives; (ii) selecting and developing general control activities over technology to support the achievement of objectives; and (iii) deploying control activities through policies that establish what is expected and procedures that put policies into action and relate to substantially all financial statement accounts and disclosures.

The following material weaknesses were contributing factors: (i) inadequate general information technology controls in the areas of access security and program change-management over certain information technology systems that support the Company's financial reporting processes. Some of the Company's business process controls (automated and manual) are dependent on the affected general information technology controls; they too were deemed ineffective because they could have been adversely impacted; and (ii) ineffective design and/or review procedures for journal entries and balance sheet account reconciliations.

These material weaknesses were considered in determining the nature, timing, and extent of audit tests applied in our audit of the consolidated financial statements as of and for the year ended December 31, 2022, of the Company, and this report does not affect our report on such financial statements.

/s/ Deloitte & Touche LLP

San Jose, California

March 1, 2023

Item 9B. Other Information

Not applicable.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this item is incorporated by reference to the definitive Proxy Statement for the 2023 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after December 31, 2022.

Item 11. Executive Compensation.

The information required by this item is incorporated by reference to the definitive Proxy Statement for the 2023 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after December 31, 2022.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this item is incorporated by reference to the definitive Proxy Statement for the 2023 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after December 31, 2022.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this item is incorporated by reference to the definitive Proxy Statement for the 2023 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after December 31, 2022.

Item 14. Principal Accountant Fees and Services.

The information required by this item is incorporated by reference to the definitive Proxy Statement for the 2023 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after December 31, 2022.

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this Annual Report on Form 10-K:

(1) Consolidated Financial Statements

The consolidated financial statements filed as part of this Annual Report on Form 10-K are included in Part II, Item 8 of this Annual Report on Form 10-K.

Report of Independent Registered Public Accounting Firm (PCAOB ID No. 34)
Consolidated Balance Sheet
Consolidated Statements of Operations and Comprehensive Income
Consolidated Statements of Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit)
Consolidated Statements of Cash Flows
Notes to consolidated financial statements

(2) Financial Statement Schedules

Financial statement schedules have been omitted in this Annual Report on Form 10-K because they are not applicable, not required under the instructions or the information requested is set forth in the financial statements or related notes thereto in Part II, Item 8 of this Annual Report on Form 10-K.

(3) List of Exhibits required by Item 601 of Regulation S-K

		Incorporated by Reference				
Number	**Exhibit Title**	**Form**	**File No.**	**Exhibit**	**Filing Date**	**Filed Herewith**
3.1	Amended and Restated Certificate of Incorporation	8-K	001-40632	3.1	07/27/2021	
3.2	Amended and Restated Bylaws	8-K	001-40632	3.2	07/27/2021	
4.1	Reference is made to Exhibits 3.1 and 3.2.					
4.2	Form of common stock certificate of Cytek Biosciences, Inc.	S-1/A	333-257663	4.1	07/19/2021	
4.3	Description of Securities.					X
10.1+	Supply Agreement between the Registrant and Cytek (Wuxi) Biosciences Co., Ltd, a China subsidiary of Cytek Biosciences, Inc., and Coherent NA, Inc. dated August 25, 2021.	10-Q	001-40632	10.1	11/12/2021	
10.2	Forms of Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement under the 2021 Equity Incentive Plan	10-Q	001-40632	10.2	11/12/2021	
10.3	Amended and Restated Investors' Rights Agreement, by and among Cytek Biosciences, Inc. and certain of its stockholders, dated October 23, 2020.	S-1	333-257663	10.1	07/02/2021	
10.4	Cytek Biosciences, Inc. 2015 Equity Incentive Plan, as amended.	S-1	333-257663	10.2	07/02/2021	
10.5	Forms of Option Agreement, Notice of Stock Option Grant and Exercise Notice under Cytek Biosciences, Inc. 2015 Equity Incentive Plan.	S-1	333-257663	10.3	07/02/2021	
10.6	Cytek Biosciences, Inc. 2021 Equity Incentive Plan.	S-1/A	333-257663	10.4	07/19/2021	
10.7	Forms of Option Agreement and Notice of Stock Option Grant under 2021 Equity Incentive Plan.	S-1/A	333-257663	10.5	07/19/2021	
10.8	Cytek Biosciences, Inc. 2021 Employee Stock Purchase Plan.	S-1/A	333-257663	10.6	07/19/2021	
10.9	Form of Indemnification Agreement, by and between Cytek Biosciences, Inc. and each of its directors and executive officers.	S-1/A	333-257663	10.7	07/19/2021	
10.10	Offer letter, by and between Cytek Biosciences, Inc. and Patrik Jeanmonod, dated October 5, 2018.	S-1	333-257663	10.9	07/02/2021	

10.11	Cytek Biosciences, Inc. Amended and Restated Severance Benefit Plan.	S-1/A	333-257663	10.9	07/19/2021	
10.12+	Supply and License Agreement, by and between Biotium, Inc. and Cytek Biosciences, Inc., dated as of September 1, 2020.	S-1	333-257663	10.11	07/02/2021	
10.13+	Settlement, License, and Equity Issuance Agreement, by and between Becton, Dickinson and Company and Cytek Biosciences, Inc., dated October 5, 2020.	S-1	333-257663	10.12	07/02/2021	
10.14	Lease, by and between Crest Properties LLC and Cytek Biosciences, Inc., dated as of July 24, 2015.	S-1	333-257663	10.13	07/02/2021	
10.15	Lease, by and between SNH Medical Office Properties Trust and Cytek Biosciences, Inc., dated November 20, 2020.	S-1	333-257663	10.14	07/02/2021	
10.16+	Asset Purchase Agreement, dated February 13, 2023, by and between Cytek, Inc. and Luminex Corporation					X
10.17	Equity Distribution Agreement, by and between the Company and Piper Sandler & Co. dated August 26, 2022.	S-3	333-267118	1.2	08/26/2022	
21.1	List of Subsidiaries of the Registrant					X
23.1	Consent of Deloitte & Touche LLP, independent registered public accounting firm.					X
24.1	Power of Attorney (incorporated by reference to the signatures page of this Annual Report on Form 10-K)					X
31.1	Certification of Principal Executive Officer required by Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification of Principal Financial Officer required by Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
32.1*	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.*					X
32.2*	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.*					X
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document.					X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.					X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.					X

101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.	X
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibits 101).	X

+ Pursuant to Item 601(b)(10) of Regulation S-K, portions of this exhibit have been omitted as the Registrant has determined that the omitted information is both not material and is the type that the Registrant treats as private and confidential.

* As contemplated by SEC Release No. 33-8212, these exhibits are furnished with this Annual Report on Form 10-K and are not deemed filed with the SEC and are not incorporated by reference in any filing of Cytek Biosciences, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date hereof and irrespective of any general incorporation language contained in such filings.

Item 16. Form 10-K Summary.

Not provided.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Cytek Biosciences, Inc.

Date: March 1, 2023

By: /s/ Wenbin Jiang
Wenbin Jiang, Ph.D.
President and Chief Executive Officer
(Principal Executive Officer)

Date: March 1, 2023

By: /s/ Patrik Jeanmonod
Patrik Jeanmonod
Chief Financial Officer
(Principal Financial and Accounting Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Wenbin Jiang, Patrik Jeanmonod and Valerie Barnett, and each or any one of them, his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this report, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-facts and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his or her substitutes or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Name	Title	Date
/s/ Wenbin Jiang Wenbin Jiang, Ph.D.	President, Chief Executive Officer and Director *(Principal Executive Officer)*	March 1, 2023
/s/ Patrik Jeanmonod Patrik Jeanmonod	Chief Financial Officer *(Principal Financial and Accounting Officer)*	March 1, 2023
/s/ Ming Yan Ming Yan, Ph.D.	Chief Technology Officer and Director	March 1, 2023
/s/ Jack Ball Jack Ball	Director	March 1, 2023
/s/ Don Hardison Don Hardison	Director	March 1, 2023
/s/ Deborah Neff Deborah Neff	Director	March 1, 2023
/s/ Gisele Dion Gisele Dion	Director	March 1, 2023
/s/ Vera Imper Vera Imper, Ph.D.	Director	March 1, 2023

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BOARD AND MANAGEMENT

Directors

Wenbin Jiang, Ph.D.

Jack Ball

Gisele Dion

Don Hardison

Vera Imper, Ph.D.

Deborah Neff

Ming Yan, Ph.D.

Executive Officers

Wenbin Jiang, Ph.D.
President and Chief Executive Officer

Ming Yan, Ph.D.
Chief Technology Officer

Patrik Jeanmonod
Chief Financial Officer

Todd Garland
Chief Commercial Officer

Chris Williams
Chief Operating Officer

Allen Poirson, Ph.D.
Senior Vice President, Marketing and Corporate Development

Valerie Barnett
General Counsel and Corporate Secretary

ANNUAL REPORT ON FORM 10-K

Stockholders may receive a copy of our Annual Report on Form 10-K, including the financial statements and the financial statement schedules, free of charge upon written request. Please send such requests to:

Cytek Biosciences, Inc.
47215 Lakeview Boulevard
Fremont, California 94538
Attention: Corporate Secretary

CORPORATE INFORMATION

Corporate Headquarters

Cytek Biosciences, Inc.
47215 Lakeview Boulevard
Fremont, California 94538

Annual Meeting

Cytek's 2023 Annual Meeting will be held virtually through a live webcast on June 14, 2023 at 11 a.m. Pacific Time.

You will be able to attend the Annual Meeting, submit questions and vote during the live webcast by visiting www.virtualshareholdermeeting.com/CTKB2023.

Shareholder Services

You may contact our transfer agent by writing to American Stock Transfer and Trust Company, LLC at 6201 15th Avenue, Brooklyn, NY 11219. You may also contact our transfer agent by calling (800) 937-5449 or help@astfinancial.com.

Stock Exchange Information

Our common stock is traded on The Nasdaq Stock Market under the symbol "CTKB".

Internet Address Information

Visit us online at www.cytekbio.com for more information about us and our products and services. The 2022 Annual Report is available online by visiting www.proxyvote.com and typing in the control number as set forth either on the proxy card as to stockholders of record, or on the voting instruction form as to individuals who hold shares through a broker, bank, trustee, or other nominee.

FORWARD LOOKING STATEMENTS

This 2022 Annual Report contains forward- looking statements that are based on our management's beliefs and assumptions and on information currently available to our management. Forward-looking statements include statements that are not historical facts and can be identified by terms such as "anticipates," "believes," "continues," "could," "estimates," "expects," "intends," "may," "plans," "potential," "predicts," "projects," "should," "targets," "will," "would" or similar expressions and the negatives of those terms. These forward-looking statements include, among others, statements regarding our future results of operations, financial condition, business strategy and plans, objectives of management for future operations and the anticipated benefits of our acquisition of the assets of Luminex Corporation's flow cytometry and imaging business unit. Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Given these uncertainties, you should not place undue reliance on any forward-looking statements.

Factors that could materially affect future results include, but are not limited to, Cytek's expected future growth; the size and growth potential of the markets for Cytek's products, and its ability to serve those markets; Cytek's ability to accurately forecast demand for its products; the rate and degree of market acceptance of its products; the expected future growth of Cytek's sales and marketing organization; the performance of, and Cytek's reliance on, third parties in connection with the commercialization of its products, including single-source suppliers and, in some cases, sole source suppliers; Cytek's ability to accurately forecast and manufacture appropriate quantities of its products to meet commercial demand; regulatory developments in the United States and foreign countries; Cytek's ability to retain regulatory approval for its products or obtain regulatory approval for new products in the United States and in any foreign countries in which it may seek to do business; Cytek's research and development for existing products and any future products; the development, regulatory approval and commercialization of competing products; Cytek's ability to retain and hire senior management and key personnel; Cytek's ability to develop and maintain its corporate infrastructure, including its ability to remediate its existing material weaknesses and to design and maintain an effective system of internal controls; Cytek's financial performance and capital requirements; Cytek's expectations regarding its ability to obtain and maintain intellectual property protection for its products, as well as its ability to operate its business without infringing the intellectual property rights of others; the possibility that Cytek will not achieve the anticipated benefits from the acquisition of the assets of Luminex Corporation's flow cytometry and imaging business unit or accomplish its stated goals; and the effects of macroeconomic conditions, volatile market conditions, and global events and the actions of U.S. and foreign governments to respond to these events. You should review the more detailed discussions of risks and uncertainties affecting our business described under the caption "Risk factors" in our Annual Report on Form 10-K filed with the Securities and Exchange Commission on March 1, 2023 and supplemented in our subsequent Quarterly Reports on Form 10-Q.

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.


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