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, 2024

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: 001-35435

Proto Labs, Inc.

(Exact name of Registrant as specified in its charter)

Minnesota	**41-1939628**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
5540 Pioneer Creek Drive **Maple Plain, Minnesota**	**55359**
(Address of principal executive offices)	(Zip Code)

(763) 479-3680
(Registrant's telephone number, including area code)

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	PRLB	New York Stock Exchange

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 Section 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 Act). Yes ☐ No ☒

As of June 28, 2024 (the last business day of the Registrant's most recently completed second fiscal quarter), the aggregate market value of voting stock held by non-affiliates of the Registrant was approximately $0.8 billion.

As of February 10, 2025, there were 24,233,196 shares of the Registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's definitive proxy statement relating to its 2025 annual meeting of shareholders are incorporated by reference into Part III of this Annual Report on Form 10-K where indicated. Such proxy statement will be filed with the U.S. Securities and Exchange Commission within 120 days after the end of the fiscal year to which this report relates.

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Special Note Regarding Forward Looking Statements

Statements contained in this Annual Report on Form 10-K regarding matters that are not historical or current facts are "forward-looking statements" within the meaning of The Private Securities Litigation Reform Act of 1995. In some cases, you can identify forward-looking statements by the following words: "may," "will," "could," "would," "should," "expect," "intend," "plan," "anticipate," "believe," "estimate," "predict," "project," "potential," "continue," "ongoing" or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. These statements involve known and unknown risks, uncertainties and other factors which may cause our results to be materially different than those expressed or implied in such statements. In particular, some of the risks associated with our business include:

- the level of competition in our industry and our ability to compete;
- our ability to respond to changes in our industry;
- our ability to effectively grow our business and manage our growth;
- our ability to continue to sell to existing and new customers;
- our ability to meet customers' needs and expectations regarding lead time, breadth of manufacturing processes, price and specifications for quality;
- the adoption rate of e-commerce and 3D CAD software by product developers and engineers;
- our ability to process a large volume of designs and identify significant opportunities in our business;
- our ability to maintain and enhance our brand;
- our ability to successfully identify, complete and integrate acquisitions or other strategic transactions;
- our ability to complete and successfully launch updates to our systems;
- the loss of key personnel or failure to attract and retain additional personnel;
- system interruptions at our operating facilities;
- possible unauthorized access to customers' confidential information stored in our systems; and
- our ability to protect our intellectual property and not infringe on others' intellectual property.

Certain of these factors and others are described in the discussion on risk factors that appear in Part I, Item 1A. "Risk Factors" of this Annual Report on Form 10-K and uncertainties are detailed in this and other reports and filings with the Securities and Exchange Commission (SEC). Other unknown or unpredictable factors also could have material adverse effects on our future results. We cannot guarantee future results, levels of activity, performance or achievements. Accordingly, you should not place undue reliance on these forward-looking statements. Finally, except as required by law, we expressly disclaim any intent or obligation to update any forward-looking statements to reflect subsequent events or circumstances.

PART I

Item 1. Business

Overview

Proto Labs, Inc. was incorporated in Minnesota in 1999. The terms "Proto Labs," the "Company," "we," "us," and "our" as used herein refer to the business and operations of Proto Labs, Inc. and its subsidiaries.

We are one of the world's largest, fastest, and most comprehensive digital manufacturers of custom parts. Our vision is accelerating innovation by revolutionizing manufacturing. Our mission is to empower companies to bring new ideas to market by offering the fastest and most comprehensive digital manufacturing service in the world. We accomplish this by offering a variety of manufacturing capabilities fulfilled through a combination of owned manufacturing factories and a worldwide network of premium manufacturing partners. Our automated quoting and manufacturing systems are highly integrated with our manufacturing and fulfillment systems, which allow us to offer a vast array of manufacturing technologies in a variety of materials across a continuum of lead times and prices. Our technology-enabled digital engineering and manufacturing applications enable us to produce commercial-grade plastic, metal, and liquid silicone rubber parts in as fast as one day.

Our customers engage with us throughout the lifecycle of their product, from early-stage prototyping through end-use production to end-of-life replacement and other parts needs that we fulfill through a combination of factories and manufacturing partners. Through our factories, we manufacture prototype and low volume production parts for companies worldwide, who are under increasing pressure to bring their finished products to market faster than their competition. We utilize injection molding, computer numerical control (CNC) machining, 3D printing and sheet metal fabrication to manufacture custom parts for our customers. Since our inception, we have manufactured over 617 million parts for customers. For most of our offerings, our proprietary technology eliminates most of the time-consuming and expensive skilled labor conventionally required to quote and manufacture parts. Using our technology, we have analyzed over 16 million unique part designs since inception.

Through the acquisition of Hubs (formerly 3D Hubs, Inc.) (Hubs) in 2021, we provide our customers access to a global network of premium manufacturing partners who reside across North America, Europe and Asia. The manufacturing partner network, complements our in-house manufacturing, enabling us to significantly increase the size, complexity, breadth of manufacturing processes, lead times and prices of the parts we produce. In January 2024, we rebranded Hubs to the Protolabs Network by Hubs (Protolabs Network).

Our customers conduct nearly all their business with us over the Internet. We target our products to the millions of product developers and engineers who use three-dimensional computer-aided design (3D CAD) software to design products across a diverse range of end-markets, to the procurement and supply chain professionals seeking to easily and efficiently source custom parts on-demand, and to a wide variety of customers seeking to purchase custom parts. We believe our use of advanced technology enables us to offer significant advantages at competitive prices to many customers and is the primary reason we have become a leading supplier of custom parts.

We have established our operations in the United States and Europe. On October 21, 2024, the Company's board of directors approved a plan related to the Company's manufacturing facilities in Germany. The plan includes the closure of the Company's prototype injection molding manufacturing facility in Eschenlohe, Germany, and the discontinuation of Direct Metal Laser Sintering 3D printing services through its 3D printing facility in Putzbrunn, Germany. The Company expects to substantially complete the plan within fiscal year 2025. The Company intends to continue offering all of its manufacturing services to customers across Europe, including injection molding and metal 3D printing. These services will be fulfilled through internal manufacturing facilities and a network of manufacturing partners. Previously, we had established operations in Japan. On May 27, 2022, the Company's board of directors approved a plan for the closure of the Company's manufacturing facility in Japan and announced an intention to cease operations in the region. The Company dissolved its Japan operations in December 2023.

We create time for our customers by providing an efficient way for them to procure high-quality custom parts at competitive prices. We believe prototype and low volume custom parts manufacturing has historically been an underserved market due to the inefficiencies inherent in the quotation, equipment set-up and non-recurring engineering processes required to produce custom parts. We also believe that there are a multitude of factors that are valuable to our customers that our offer uniquely provides, including speed to market, supply chain stability, access to a broad range of

manufacturing capabilities, reduced supply chain waste, and efficient sourcing of custom parts. Our customers typically partner with us for a variety of reasons, including:

- they need a prototype to confirm the form, fit and function of one or more components of a product under development;
- they need an initial supply of parts to support pilot production for testing of a product;
- they need an initial supply of parts to support production while their tools for a high-volume production mold are prepared;
- they need to meet their customers' variable demand for parts in a competitive timeframe;
- their product will only be produced in a limited quantity and/or is highly customized;
- they need to support end-of-life production in a cost-effective manner;
- they want to avoid minimum order quantities or costs related to storing excess inventory;
- they need access to diverse, cost competitive manufacturing capabilities and value the convenience of working with a single supplier to match parts to the best producer; or
- they need low- to mid-volumes of parts on an irregular schedule and prefer to order on-demand.

In each of these instances, we believe our solution provides product developers, engineers, production buyers and other customers with an exceptional combination of speed, quality, competitive pricing, ease of use and reliability that they typically cannot find among conventional custom parts manufacturers or other competitors in our industry. Our technology enables us to ship parts not only with industry-leading speed as soon as the same day after receipt of a customer's design submission, but also provides the flexibility to produce for our customers custom parts in the manufacturing processes and materials they want, with the flexible lead time they choose, at competitive prices.

Our primary manufacturing product lines currently include Injection Molding, CNC Machining, 3D Printing and Sheet Metal. We continually seek to expand the range of size and geometric complexity of the parts we can make or source with these processes, to extend the variety of materials we are able to support, and to identify additional manufacturing processes to which we can apply our technology or incorporate into our manufacturing network in order to better serve the evolving preferences and needs of our customers. With the addition of the Protolabs Network in 2021, our global network of premium manufacturing partners significantly expands the breadth and depth of our manufacturing capabilities, enabling us to offer customers a wider variety of lead times and pricing options, and an expanded envelope of parts (complexity, size, etc.).

Industry Overview

We pioneered the digital manufacturing industry when we were founded in 1999 and have been recognized as a catalyst for the next generation wave of Industry 4.0. Traditional manufacturing exists as a fragmented collage of niche producers operating in disparate capacities along the supply chain. We strive to be the partner of choice for our customers, to meet them in their times of need with a vast array of manufacturing solutions. We do this by providing our customers an eCommerce experience where they can upload their part design and receive a rapid (or instantaneous) quote coupled with design for manufacturability feedback, evaluate the costs and lead times for a variety of manufacturing processes, and easily order parts at quantities 1 to 1 million-plus. From the time they upload their design, we maintain a continuous digital thread of the part, which enables us to be nimble and adapt to the changing needs of our customer.

We believe there are three significant trends disrupting the manufacturing industry today:

- *SKU Proliferation* – The increase in the number of products launched has been dramatic across many sectors.
- *Shorter Product Life Cycles* – New products are launching faster and more frequently than ever before, partially driven by the "internet of things" and other connected device trends, resulting in shorter lives in the market.
- *Shift to E-commerce Sourcing* – The first two trends, SKU proliferation and shorter product life cycles, put pressure on traditional supply chains causing many to adopt digital solutions and begin to invest in digital supply ecosystems.

The impacts of these trends include increased volatility, reduced development time, increased variety to manage, higher pressure on development costs, shorter payback period in the market and reduced capital investment per product. Our digital thread makes us ideally suited to solve these challenges for many manufacturing companies by offering world-class speed, low upfront investment, no minimum order quantities, broad manufacturing capabilities, and flexibility to adapt to demand volatility.

Our Process

Our digital thread, which is the virtual representation of the part created by our proprietary software and mirrors the physical manufacturing process, has enabled us to reinvent manufacturing. Within our factories, our digital thread ties together each aspect of the online ordering and manufacturing processes, including 3D CAD modeling and visualization tools, proprietary design for manufacturability analysis (DFM), computer aided manufacturing, the manufacturing equipment, and the shop floor data collection systems. Digital manufacturing, and the addition of the digital thread, results in automation that reduces manufacturing and labor costs and increases throughput, enabling us to differentiate ourselves as one of the world's fastest and most effective solutions for prototype and low volume production use cases.

Our technology allows us to manufacture a broad range of parts and products, across multiple industries and processes and enables us to serve a diverse set of customers. We currently serve all manufacturing industry verticals, with our top industries being medical and healthcare, computer electronics, industrial machinery and equipment, aerospace and automotive.

Customer Order

The customer order process begins when the customer uploads one or more 3D CAD models representing the desired part geometry through our web-based customer interfaces. Our websites provide a straightforward means for our customers to submit 3D CAD part designs, including managing projects with multi-part orders, across multiple services and capabilities. Our proprietary software uses complex algorithms to analyze the 3D CAD geometry, analyze its DFM and support the creation of an interactive, web-based quotation containing pricing and manufacturability information. The artificial intelligence and machine learning provided by each analysis allows us to continually improve our DFM technology. When the analysis is complete, a link to the quotation is then e-mailed to the customer, who can access the quotation, change a variety of order parameters, and instantly see the effect on price before finalizing the order.

Digital Manufacturing Process

Our internal manufacturing operations produce parts in-house, while our outsourced manufacturing operations automatically route the parts for production by a global network of premium manufacturing partners. Our proprietary software and business process automates the non-recurring manufacturing engineering in many of our services, removing time and cost from the manufacture of the custom part. With the integrated digital thread, data is shared through the continuum of the manufacturing process, from product conception and design upload to manufacturing, inspection and delivery. This ensures consistency, quality, and a high degree of automation. As a result of this automation, we are able to ship parts to customers with industry leading speed at scale. For parts produced by the manufacturing network, our proprietary software automatically routes the parts to the right manufacturing partner within minutes using an AI-infused smart order routing system built on machine learning data of millions of parts produced.

Our Growth Strategy

We currently operate in a global custom contract manufacturing market which is a form of outsourcing where companies enter into an arrangement or formal agreement with another company or individual for the manufacture of complete parts, products, or components. Since our inception, we have focused on areas where we could automate the manufacturing process via our digital model and we positioned ourselves to avoid routine, low margin, high-volume commoditized manufacturing. Our initial focus was on prototypes and simple parts and have added complexity over time. We have added product lines and expanded those product lines to meet the needs of our customers, which has ultimately driven our growth.

Initially, we focused on speed, reliability and quality as key components of our differentiation, and customers used us for production where there was a good fit. We have evolved from serving primarily fast response prototypes to broader customer use cases including higher requirements, such as a tighter tolerance, broader ranges of lead times and price points, and quality and process documentation to support production needs. We have further expanded our offering through the

Protolabs Network to be able to serve our customers more holistically, augmenting our in-house manufacturing capabilities with a network of premium manufacturing partners to serve our customer needs that currently reside outside of our internal manufacturing capabilities. Our goal is to be the fastest, most reliable, and most comprehensive provider of custom parts in our four services. Combining our unprecedented in-house manufacturing with the broad capabilities and wide variety of price and lead time options through our manufacturing network expands our ability to provide value to our customers and differentiates us from competitors.

Competition

The market for custom parts manufacturing is fragmented, highly competitive and subject to rapid and significant technological change. Our potential competitors include:

- Other custom parts manufacturers. There are thousands of alternative manufacturing machine shops, injection molding suppliers, sheet metal fabricators, and 3D printing service bureaus and vendors worldwide. The size and scale of these businesses range from very small specialty shops to large, high-volume production manufacturers.

- Brokers. There are an increasing number of digital brokers that offer a network of manufacturers, generally a subset of the other custom parts manufacturers described above, that can offer a diverse range of capabilities, capacity, competitive pricing and desired lead times to meet customer demand.

- Captive in-house product manufacturing. Many larger companies undertaking product development have established additive rapid prototyping (3D printing), CNC machining, injection molding or sheet metal capabilities internally to support prototyping or manufacturing requirements of their product developers and engineers.

We believe that the key competitive factors in our industry include:

- Quality: dimensional accuracy, surface finish, color and cleanliness;

- Speed: turnaround time for quotations and parts;

- Reliability: highly reliable delivery with predictable lead times;

- Service: overall customer experience, from web interface to post-sales support;

- Capability: range of part sizes and dimensional complexities supported, variety of manufacturing processes offered, materials supported and post-processing provided;

- Scale: ability to support thousands of part designs in parallel;

- Capacity: ability to manage peaks in demand with very short lead times and no minimum order quantities; and

- Price: competitive mold and part pricing, including total cost of ownership.

We believe that our digital end-to-end manufacturing capabilities position us favorably and has enabled us to become a leader in our markets.

Corporate Responsibility and Sustainability

Our corporate responsibility and sustainability practices are built on a foundation of shared fundamental values. In 2024, we updated our value statements to: We are one Team, We are Kind, We are Makers, We Win or We Learn and We Take Ownership. These values help us to deliver strong financial results that create value for our Company and our shareholders in a way that respects our communities and the environments in which we operate.

- **We are one Team** – We are one global team. We're successful when we work together, challenge one and other, and make decisions that support our common goals. We are authentic in our interactions.

- **We are Kind** – We are clear with our words and actions. We seek and give thoughtful and constructive feedback delivered with respect. We're open to other's opinions and support decisions made.

- **We are Makers** – Whether we manufacture a part or provide a customer experience, we demonstrate excitement in our work. We embrace change and create space for experimentation and calculated risks.

- **We Win or We Learn** - We're dedicated to achieving our goals. When we fail, we learn and respond with resiliency. When we win, we share in celebration.

- **We Take Ownership** - We take pride in our work. We are enthusiastic about the impact we make on our employees, our customers, and the communities we serve.

Environmental

- ***Digital Manufacturing Drives Sustainability***

As a digital manufacturer, we are able to assist our customers as they focus on materials management, operational productivity and on-demand solutions. Digital manufacturing is a solution our customers can deploy to reduce product waste by iterating part designs virtually, on a digital twin model before any actual production begins. With on-demand production of parts, there is also reduced reliance on storage facilities since inventory is virtual – the parts you need, when you need them. Our on-demand manufacturing model also helps customers with end-of-life planning for products, reducing the need for ordering excess parts with shifting market demand.

When paired with a robust e-commerce platform, digital manufacturing can also increase efficiencies in material selection and usage, the procurement process, and accelerate innovation. Furthermore, reducing scrap rate requires monitoring systems that enable automated process cycle sheet generation, ensuring run-to-run repeatability and reducing operator error. This kind of monitoring system can improve consistency in part production and reduce scrap costs, especially in injection molding and parts nonconformance. We believe sustainability in product development, and in manufacturing, is the future and we will continue to support our customers in their own sustainability journeys.

- ***Environmental Priorities***

We are committed to having a positive impact on the environment. Our environmental key priorities include: nonrenewable energy use reduction and environmental compliance. In 2024, we devoted resources to manage increasing costs of energy, particularly in the European region, and sought opportunities to reduce our consumption of energy resources. We also embraced opportunities to shift our energy consumption to renewable resources.

In 2024, we again hosted InspirON in Europe, an online knowledge sharing event to focus on what design engineers need to consider when developing sustainable products for manufacturing. The event was designed to provide insight into designing more sustainable products and to explore how design can help make the manufacturing process greener and more efficient. The event covered topics ranging from: manufacturing innovation in the face of adversity, using rapid manufacturing to solve complex development challenges, and practical innovation for production methods.

In 2021, we were awarded a Manufacturing Leadership Award from the National Association of Manufacturers (NAM) in the Sustainability Leadership category. This category recognizes companies embracing manufacturing processes that are non-polluting, conserve energy and natural resources, and are economically sound and safe for employees, communities, and consumers. In 2020, we installed nearly 1,900 solar panels on the roof of our facility in Plymouth, MN, one of our larger manufacturing facilities. The solar array covers nearly 20 percent of our energy use in Plymouth, MN and offsets the equivalent of 1.3 million pounds of CO_2 and preserves 775 acres of forest annually.

We strive to maximize recycling in both our manufacturing and office facilities. In our manufacturing facilities, we recycle metal, plastic and water used throughout the manufacturing processes. Finally, the Green Team, an employee-led organization, educates our employees on how they can positively impact the environment,

both at work and at home. The Green Team also provides opportunities for employees to positively impact the environment, including activities like roadside cleanup and tree planting.

Social

- ***Leadership***

In 2024, our global human resources leadership advanced our initiatives to identify untapped talent as we continue to integrate operations of the factory and network. This work includes engaging employees throughout the global organization to define our values and culture, which we deployed in 2024. We periodically conduct employee engagement surveys to identify and drive improvements in the Protolabs work place where employees are engaged and can do their best work.

- ***Workforce Demographics***

As of December 31, 2024, we had 2,357 full-time employees, including 1,643 full-time employees in the United States and 714 full-time employees in Europe. We also regularly use independent contractors and other temporary employees across the organization to augment our regular staff. We believe that our future success will depend in part on our continued ability to attract, hire and retain qualified, diverse and inclusive personnel.

We believe our employees are critical to our success and continually seek employee feedback to enhance employee engagement. In 2024, our attrition rates were 12.2% and 12.9% in the United States and Europe, respectively, a decline from 2023. Our 2024 attrition rates were impacted by actions we took during the year to reduce our workforce in areas of the business that experienced lower volumes.

- ***Compensation and Benefits***

We believe our success depends in large measure on our ability to attract, retain and motivate a broad range of employees to be successful in a dynamic and changing business environment, and that a competitive compensation program is essential. In determining employee compensation, our executive leadership team reviews and considers several factors, including individual and corporate performance, input from managers, competitive market data from third party compensation surveys, our compensation philosophy and key principles, and the leadership's collective experience and knowledge. Annually, our executive leadership team reviews input from managers throughout our organization, including recommendations as to compensation levels that the managers believe are commensurate with an individual's job performance, skills, experience, qualifications, criticality to our company and development/career opportunities. We also award long-term equity-based compensation to high performing employees and managers who have the greatest impact on the creation of shareholder value to further align the interests of our employees and shareholders.

We provide employee benefits that meet or exceed the requirements of local law. We are committed to providing comprehensive benefits plans including, but not limited to, paid leave, retirement savings, health benefits, dental benefits, maternity leave, parental leave, family care leave, and childcare benefits. All overtime is performed and compensated in accordance with the law and the individual's employment contract or other applicable contract or collective agreement.

- ***Education***

We firmly believe that investing in the education of our employees is critical to our success. Our employees are provided access to a robust learning management system that offers hundreds of courses on various topics ranging from compliance to leadership to job-specific skills. In 2024 and 2023, employees spent an average of 35 hours per employee in training sessions. We provide an Educational Assistance Program for employees, which offers financial assistance for both professional and personal development to inspire employees to continuously enhance their skills and knowledge. We have a customized leadership development program designed for current and aspiring managers in search of developing their leadership skills. The program provides training on topics that are aligned with our Leadership Principles and our Core Values. In 2024, we completed the second year of our mentorship program to provide opportunity for mentors and mentees to accelerate their personal and professional development through a one-on-one guided relationship.

To ensure our industry remains robust, we are committed to supporting Science, Technology, Engineering and Mathematics (STEM) programs in the cities where we have facilities. Through the Protolabs Foundation, we provide STEM education grants to eligible organizations. In addition, we partner with schools, colleges, and universities to provide various outreach opportunities and sponsorships.

- ***Health, Safety and Wellness***

We are committed to providing a safe and healthy working environment that minimizes health and safety risks. Our processes support accident prevention and prioritizes the health and safety of all our employees and all others affected by their activities. We provide and require our employees to use personal protective equipment at all times. To ensure our employees understand the importance of safety, we provide regular, mandatory training.

We strive to continuously improve our employees' health, safety, and wellness. Our "I Am" safety program teaches that safety is the responsibility of every individual in our organization. We believe this program is the basis for our excellent safety compliance record. We believe that our employees are our most valuable asset, and their safety and health is among our top priorities.

In addition to concentrating on employee safety in the workplace, we also focus on the overall wellbeing of our employees. We continue to invest in a variety of employee health and wellness programs, including gym membership discounts, on-site fitness classes at certain facilities, wellness newsletters and learning sessions, and by providing various Employee Assistance Programs.

- ***Charitable Giving***

We pride ourselves in being a responsible corporate citizen through our Protolabs Foundation. We support several charitable causes with our Employee Matching, Good Ideas Grants, and Major Gifts Programs. The Foundation's efforts serve as a sustaining investment in the future of the communities where our employees live and work, and a commitment to build talent to support the future employment needs of the manufacturing industry. Through our Foundation and employee led community involvement team, a wide variety of charitable activities are organized, including blood drives, working for Habitat for Humanity projects, volunteering for Feed My Starving Children, and making financial contributions to charitable causes, many of which are matched through the Protolabs Foundation Employee Giving Program. Our financial support and our community outreach programs are intended to improve the quality of life in the communities where we have facilities.

- ***Human Rights***

We recognize our responsibility to protect human rights and we are committed to fostering an organizational culture which promotes support for internationally recognized human rights and labor standards. We strive to respect and promote human rights in accordance with the UN Guiding Principles on Business and Human Rights in our relationship with our employees, customers, and suppliers. We have established a Human Rights Policy which is available on the Investor Relations section of our website.

- ***Supply Chain***

We are committed to conducting our business in accordance with the highest ethical standards and in compliance with all applicable laws, rules, and regulations. We expect our suppliers to share our principles and uphold our standards and for each to develop policies and programs as appropriate to ensure that all workers understand and adhere to these standards. We have established a Vendor Code of Conduct Policy, including guidance on anti-bribery, privacy, and data protection; responsible sourcing of materials; environmental standards; labor and human rights and anti-tax evasion. Our full policy is available on the Investor Relations section of our website.

Intellectual Property

We regard our patents, trademarks, service marks, trade dress, trade secrets, copyrights, domain names and other intellectual property as valuable to our business and rely on patent, trademark and copyright law, trade secret protection and confidentiality and/or license agreements with our employees, customers, vendors and others to protect our proprietary rights. We register our patents, trademarks and service marks in the United States and other jurisdictions as we deem

appropriate. As of December 31, 2024, we owned and had applications pending for patents relating to various aspects of our quoting and manufacturing processes as follows:

Jurisdiction	Issued Patents	Applications Pending
United States	56	10
United Kingdom	3	0
Netherlands	1	0

Our patents have expiration dates ranging from 2025 to 2044. We also owned approximately 26 registered United States trademarks or service marks as of December 31, 2024, with corresponding registered protection in Europe and Japan for the most important of these marks such as PROTO LABS, HUBS, PROTOMOLD, FIRSTCUT, PROTOQUOTE, FIRSTQUOTE, PROTOFLOW and FINELINE, corresponding approved protection in Canada for PROTO LABS, FIRSTCUT and FINELINE, and corresponding registered protection in Australia, Canada and Mexico for PROTOMOLD. There can be no assurance that the steps we take to protect our proprietary rights will be adequate or that third parties will not infringe or misappropriate such rights. We have been subject to claims and expect to be subject to legal proceedings and claims from time to time in the ordinary course of our business. In particular, we may face claims from third parties that we have infringed their patents, trademarks or other intellectual property rights. Such claims, even if not meritorious, could result in the expenditure of significant financial and managerial resources. Any unauthorized disclosure or use of our intellectual property could make it more expensive to do business and harm our operating results.

Available Information

Our principal executive offices are located at 5540 Pioneer Creek Drive, Maple Plain, Minnesota 55359 and our telephone number is (763) 479-3680. Our website address is www.protolabs.com. Information on our website does not constitute part of this Annual Report on Form 10-K or any other report we file or furnish with the Securities and Exchange Commission (SEC). We provide free access to various reports that we file with or furnish to the SEC through our website as soon as reasonably practicable after they have been filed or furnished. These reports include, but are not limited to, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to these reports. Our SEC reports can be accessed through the investor relations section of our website.

The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers that file information electronically with the SEC. The SEC's website is www.sec.gov.

Information about our Executive Officers

Set forth below are the names of our current executive officers, their ages, titles, the year first appointed as an executive officer, and employment for the past five years. Unless otherwise noted, the positions described are positions held within the Company or its subsidiaries.

Name	Age	Position
Robert Bodor	52	President, Chief Executive Officer and Director
Daniel Schumacher	50	Chief Financial Officer
Oleg Ryaboy	49	Chief Technology Officer
Michael R. Kenison	53	Chief Operations Officer

Executive officers of the Company are elected at the discretion of the board of directors with no fixed terms. There are no family relationships between or among any of the executive officers or directors of the Company. There are no arrangements or understandings between any of the executive officers and any other persons pursuant to which they were selected as an officer.

Robert Bodor. Dr. Bodor has served as our President and Chief Executive Officer since March 2021. Prior to his current position, Dr. Bodor served as Vice President/General Manager - Americas since 2015. From July 2013 to January 2015, Dr. Bodor served as our Chief Technology Officer. From December 2012 to June 2013, Dr. Bodor served as our

Director of Business Development. Prior to joining Proto Labs, from January 2011 to December 2012, Dr. Bodor held several roles at Honeywell, most recently leading SaaS business offerings for Honeywell's Life Safety Division.

Daniel Schumacher. Mr. Schumacher has served as our Chief Financial Officer and principal financial and accounting officer since June 2022. Prior to his current role, Mr. Schumacher served as our Interim Chief Financial Officer since December 2021. Mr. Schumacher also led investor communication, forecasting and planning, and business intelligence for the Company as Vice President of Investor Relations and FP&A from April 2017 to December 2021. From 2015 to 2017, Mr. Schumacher served as finance director in the Americas Finance & Operations organization of Stratasys, Inc, a 3D Printing OEM. From 2001 to 2015, Mr. Schumacher was in finance leadership roles of increasing responsibility for Rockwell Automation, an industrial automation company.

Oleg Ryaboy. Mr. Ryaboy has served as our Chief Technology Officer since September 2022. Prior to joining Proto Labs, Mr. Ryaboy held several roles at Digital River, a global e-commerce platform and software-as-a-service company providing online storefronts, from 2010 to 2022, most recently as Chief Technology Officer and Senior Vice President from 2015 to 2022. Prior to his role of Chief Technology Officer at Digital River, Mr. Ryaboy served as its Vice President of Software Development and Architecture from 2011 to 2015.

Michael Kenison. Mr. Kenison has served as our Chief Operations Officer since July 2024. Prior to his current position, Mr. Kenison led various teams at the Company, including as Vice President/General Manager - Americas, between June 2021 through June 2024, and Vice President of Manufacturing, between 2013 through June 2021. Before his tenure at Protolabs, Mr. Kenison served in several leadership roles within the industry, including as Vice President of Manufacturing at Cardiac Science, Inc. - a medical device provider of defibrillator technology.

Item 1A. Risk Factors

The following are the significant factors that could materially adversely affect our business, financial condition, or operating results, as well as adversely affect the value of an investment in our common stock. The risks described below are not the only risks facing our Company. Risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition and operating results.

Risks Relating to Our Business

We face significant competition and expect to face increasing competition in many aspects of our business, which could cause our operating results to suffer.

The market for custom parts manufacturing is fragmented and highly competitive. We compete for customers with a wide variety of custom parts manufacturers and methods. Some of our current and potential competitors include captive in-house product lines, other custom parts manufacturers, brokers of custom parts and alternative manufacturing vendors such as those utilizing 3D printing processes. Moreover, some of our existing and potential competitors are researching, designing, developing and marketing other types of products and product lines. We also expect that future competition may arise from the development of allied or related techniques for custom parts manufacturing that are not encompassed by our patents, from the issuance of patents to other companies that may inhibit our ability to develop certain products and from improvements to existing technologies. Furthermore, our competitors may attempt to adopt and improve upon key aspects of our business model, such as development of technology that automates much of the manual labor conventionally required to quote and manufacture custom parts, implementation of interactive web-based and automated user interface and quoting systems and/or building scalable operating models specifically designed for efficient custom production. Third-party CAD software companies may develop software that mold-makers, injection molders and CNC machine shops could use to compete with our business model. Additive manufacturers may develop stronger, higher temperature resins or introduce other improvements that could more effectively compete with us on part quality. We may also, from time to time, establish alliances or relationships with other competitors or potential competitors. To the extent companies terminate such relationships and establish alliances and relationships with our competitors, our business could be harmed.

Existing and potential competitors may have substantially greater financial, technical, marketing and sales, manufacturing, distribution and other resources and name recognition than us, as well as experience and expertise in intellectual property rights and operating within certain international locations, any of which may enable them to compete effectively against us.

Though we plan to continue to expend resources to develop new technologies, processes and product lines, we cannot assure you that we will be able to maintain our current position or continue to compete successfully against current and future sources of competition. Our challenge to develop new products manufactured internally is finding product lines for which our automated quotation and manufacturing processes offer an attractive value proposition, and we may not be able to find any new product lines with potential economies of scale similar to our existing product lines. With the acquisition of Hubs in 2021, we are able to expand our products offered through the Protolabs Network, our manufacturing partner network. If we do not keep pace with technological change and introduce new technologies, processes and product lines, the demand for our products and product lines may decline and our operating results may suffer.

We may not timely and effectively scale and adapt our existing technology, processes and infrastructure to meet the needs of our business.

A key element to our continued growth is the ability to quickly and efficiently quote an increasing number of product developer and engineer submissions across geographic regions and to manufacture the related parts. This will require us to timely and effectively scale and adapt our existing technology, processes and infrastructure to meet the needs of our business. With respect to our websites and quoting technology, it may become increasingly difficult to maintain and improve their performance, especially during periods of heavy usage and as our solutions become more complex and our user traffic increases across geographic regions. Similarly, our manufacturing automation technology may not enable us to process the large numbers of unique designs and efficiently manufacture the related parts in a timely fashion to meet the needs of product developers and engineers as our business continues to grow. Any failure in our ability to timely and effectively scale and adapt our existing technology, processes and infrastructure could negatively impact our ability to retain existing customers and attract new customers, damage our reputation and brand, result in lost revenue, and otherwise substantially harm our business and results of operations.

Numerous factors may cause us not to maintain the revenue growth that we have historically experienced.

We believe that our continued revenue growth will depend on many factors, a number of which are out of our control, including among others, our ability to:

- retain and further penetrate existing customer companies, as well as attract new customer companies;
- consistently execute on custom part orders in a manner that satisfies product developers' and engineers' needs and provides them with a superior experience;
- develop new technologies or manufacturing processes and broaden the range of parts we offer;
- successfully execute on our international strategy and expand into new geographic markets;
- capitalize on customer expectations for access to comprehensive, user-friendly e-commerce capabilities 24 hours per day, 7 days per week;
- increase the strength and awareness of our brand across geographic regions;
- respond to changes in customer needs, technology and our industry;
- successfully integrate operations and offerings of acquisitions;
- react to challenges from existing and new competitors;
- continue to attract and retain R&D professionals who will continue to expand our technologies; and
- respond to an economic recession which negatively impacts manufacturers' ability to innovate and bring new products to market.

We cannot assure you that we will be successful in addressing the factors above and continuing to grow our business and revenue.

Interruptions to, or other problems with, our website and interactive user interface, information technology systems, manufacturing processes or other operations could damage our reputation and brand and substantially harm our business and results of operations.

The satisfactory performance, reliability, consistency, security and availability of our websites and interactive user interface, information technology systems, manufacturing processes and other operations are critical to our reputation and brand, and to our ability to effectively serve our customers. Any interruptions or other problems that cause any of our websites, interactive user interface or information technology systems to malfunction or be unavailable, or negatively impact our manufacturing processes or other operations, may damage our reputation and brand, result in lost revenue, cause us to incur significant costs seeking to remedy the problem and otherwise substantially harm our business and results of operations.

We are dependent upon our manufacturing facilities, as well as managerial, customer service, sales, marketing and other similar functions, and we have not identified alternatives to these facilities or established fully redundant systems in multiple locations. However, we have redundant computing systems for each of our United States and European operations. In addition, we are dependent in part on third parties for the implementation and maintenance of certain aspects of our communications and production systems, and therefore preventing, identifying and rectifying problems with these aspects of our systems is to a large extent outside of our control.

Moreover, the business interruption insurance that we carry may not be sufficient to compensate us for the potentially significant losses, including the potential harm to the future growth of our business that may result from interruptions in our product lines as a result of system failures.

We store confidential customer information in our systems that, if breached or otherwise subjected to unauthorized access, may harm our reputation or brand or expose us to liability.

Our system stores, processes and transmits our customers' confidential information, including the intellectual property in their part designs and other sensitive data. We rely on encryption, authentication and other technologies licensed from third parties, as well as administrative and physical safeguards, to secure such confidential information. Any compromise of our information security could damage our reputation and brand and expose us to a risk of loss, costly litigation and liability that would substantially harm our business and operating results. The rapid evolution and increased adoption of Artificial Intelligence (AI) technologies may intensify our cybersecurity risks. We may not have adequately assessed the internal and external risks posed to the security of our company's systems and information and may not have implemented adequate preventive safeguards or take adequate reactionary measures in the event of a security incident. In addition, most states have enacted laws requiring companies to notify individuals and often state authorities of data security breaches involving their personal data. These mandatory disclosures regarding a security breach often lead to widespread negative publicity, which may cause our existing and prospective customers to lose confidence in the effectiveness of our data security measures. Any security breach, whether successful or not, would harm our reputation and brand and could cause the loss of customers.

Aspects of our business are subject to privacy, data use and data security regulations, which may impact the way we use data to target customers.

Privacy and security laws and regulations may limit the use and disclosure of certain information and require us to adopt certain cybersecurity and data handling practices that may affect our ability to effectively market our services to current, past or prospective customers. In many jurisdictions consumers must be notified in the event of a data security breach, and such notification requirements continue to increase in scope and cost. The changing privacy laws in the United States, Europe and elsewhere—including the General Data Protection Regulation (GDPR) in the European Union, which became effective May 25, 2018, and the California Consumer Privacy Act of 2018, which was enacted on June 28, 2018, and became effective on January 1, 2020—create new individual privacy rights and impose increased obligations, including disclosure obligations, on companies handling personal data. The impact of these continuously evolving laws and regulations could have a material adverse effect on the way we use data to digitally market and pursue our customers.

Global economic conditions may harm our ability to do business, increase our costs and negatively affect our stock price.

The prospects for economic growth in regions where we operate remain uncertain and could worsen. Economic concerns and other issues such as reduced access to capital for businesses may cause product developers and engineers to further delay or reduce the product development projects that our business supports. Given the continued uncertainty concerning the global economy, we face risks that may arise from financial difficulties experienced by our suppliers, product developers, and engineers and other related risks to our business.

We operate a global business that exposes us to additional risks.

We have established our operations in the United States and Europe and are seeking to further expand our international operations. Our international revenue accounted for approximately 21% of our total revenue in each of the years ended December 31, 2024, 2023 and 2022. The future growth and profitability of our international business is subject to a variety of risks and uncertainties. Many of the following factors have adversely affected our international operations and sales to customers located outside of the United States and may again in the future:

- difficulties in staffing and managing foreign operations, particularly in new geographic locations;
- challenges in providing solutions across a significant distance, in different languages and among different cultures;
- rapid changes in government, economic and political policies and conditions, political or civil unrest or instability, terrorism or epidemics, and other similar outbreaks or events;
- fluctuations in foreign currency exchange rates;

- compliance with and changes in foreign laws and regulations, as well as U.S. laws affecting the activities of U.S. companies abroad, including those associated with export controls, tariffs and embargoes, other trade restrictions and antitrust and data privacy concerns;
- different, complex and changing laws governing intellectual property rights, sometimes affording companies lesser protection in certain areas;
- seasonal reductions in business activity in certain parts of the world, particularly during the summer months in Europe and holiday season;
- higher costs of doing business internationally;
- interruptions resulting from any events affecting raw material supply or manufacturing capabilities abroad;
- protectionist laws and business practices that favor local producers and service providers;
- taxation;
- energy costs;
- restrictions imposed by local labor practices and laws on our business and operations;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- transportation delays; and
- increased payment risk and higher levels of payment fraud.

Our business depends on customer demand for our product lines, the general economic health of current and prospective customers, and companies' desire or ability to make investments in new products. A deterioration of global, regional or local political, economic or social conditions could affect potential customers in ways that reduce demand for our product lines, disrupt our manufacturing and sales plans and efforts or otherwise negatively impact our business. Acts of terrorism, wars, public health issues and increased energy costs could disrupt commerce in ways that could impair our ability to get products to our customers and increase our manufacturing and delivery costs. We have not undertaken hedging transactions to cover our foreign currency exposure, and changes in foreign currency exchange rates may negatively impact reported revenue and expenses. In addition, our sales are often made on unsecured credit terms, and a deterioration of political, economic or social conditions in a given country or region could reduce or eliminate our ability to collect accounts receivable in that country or region. In any of these events, our results of operations could be materially and adversely affected.

Climate change, or legal, regulatory or market measures to address climate change, may materially adversely affect our financial condition and business operations.

Climate change resulting from increased concentrations of carbon dioxide and other greenhouse gases in the atmosphere could present risks to our future operations from natural disasters and extreme weather conditions, such as hurricanes, tornadoes, earthquakes, wildfires or flooding. Such extreme weather conditions could pose physical risks to our facilities and disrupt operation of our supply chain and may increase operational costs. Concern over climate change could result in new legal or regulatory requirements designed to mitigate the effects of climate change on the environment. If such laws or regulations are more stringent than current legal or regulatory requirements, we may experience increased compliance burdens and costs to meet the regulatory obligations and raw material sourcing, manufacturing operations and the distribution of our products may be affected.

If a natural or man-made disaster strikes any of our manufacturing facilities, we will be unable to manufacture our products for a substantial amount of time and our sales will decline.

All of our in-house manufacturing products are produced in 10 manufacturing facilities, located in Rosemount, Minnesota; Plymouth, Minnesota; Brooklyn Park, Minnesota; Cary, North Carolina (2 facilities); Nashua, New Hampshire (2 facilities); Telford, United Kingdom; Putzbrunn, Germany; and Eschenlohe, Germany. These facilities and the

manufacturing equipment we use would be costly to replace and could require substantial lead time to repair or replace. Our facilities may be harmed by natural or man-made disasters, including, without limitation, earthquakes, floods, tornadoes, fires, hurricanes and nuclear disasters.

In the event any of our facilities are affected by a disaster, we may:

- be unable to meet the shipping deadlines of our customers;
- experience disruptions in our ability to process submissions and generate quotations, manufacture and ship parts, provide marketing and sales support and customer service, and otherwise operate our business, any of which could negatively impact our business;
- be forced to rely on third-party manufacturers;
- need to expend significant capital and other resources to address any damage caused by the disaster; and
- lose customers and be unable to regain those customers.

Although we possess insurance for damage to our property and the disruption of our business from casualties, this insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, or at all.

Any acquisition, strategic relationship, joint venture or investment could disrupt our business and harm our operating results and financial condition.

Our business and our customer base have been built primarily through organic growth. However, from time to time, we may selectively pursue acquisitions, strategic relationships, joint ventures or investments that we believe may allow us to complement our growth strategy, increase market share in our current markets or expand into other markets, or broaden our technology, intellectual property or product line capabilities. For example, in April 2014, we acquired FineLine to enable us to offer our customers 3D printing manufacturing processes; in October 2015, we acquired Alphaform to enable us to expand our 3D printing capabilities in Europe; in November 2017, we acquired RAPID to enable us to offer our customers Sheet Metal and expand our CNC Machining processes; and in 2021 we acquired Hubs to provide our customers with on-demand access to a global network of premium manufacturing partners. We cannot forecast the number, timing or size of any future acquisitions or other similar strategic transactions, or the effect that any such transactions might have on our operating or financial results. Such transactions may be complex, time consuming and expensive, and may present numerous challenges and risks including:

- an acquired company, asset or technology not furthering our business strategy as anticipated;
- difficulties entering and competing in new product or geographic markets and increased competition, including price competition;
- integration challenges;
- challenges in working with strategic partners and resolving any related disagreements or disputes;
- high valuation for a company, asset or technology, or changes in the economic or market conditions or assumptions underlying our decision to acquire;
- significant problems or liabilities associated with acquired businesses, assets or technologies, including increased intellectual property and employment related litigation exposure;
- an acquisition that results in a significant amount of goodwill being recognized, which could result in future impairment charges that would reduce our earnings; and
- requirements to record substantial charges and amortization expenses related to certain purchased intangible assets, deferred stock compensation and other items, as well as other charges or expenses.

Any one of these challenges or risks could impair our ability to realize any benefit from our acquisitions, strategic relationships, joint ventures or investments after we have expended resources on them, as well as divert our management's attention. Any failure to successfully address these challenges or risks could disrupt our business and harm our operating results and financial condition. Moreover, any such transaction may not be viewed favorably by investors or stakeholders.

In addition, from time to time we may enter into negotiations for acquisitions, relationships, joint ventures or investments that are not ultimately consummated. These negotiations could result in significant diversion of management time, as well as substantial out-of-pocket costs.

Our success depends on our ability to deliver products and product lines that meet the needs of customers and to effectively respond to changes in our industry.

Our business has been, and, we believe, will continue to be, affected by changes in customer requirements and preferences, rapid technological change, new product and product line introductions and the emergence of new standards and practices, any of which could render our technology, products and product lines less attractive, uneconomical or obsolete. To the extent that our customers' need for quick-turn parts decreases significantly for any reason, it would likely have a material adverse effect on our business and operating results and harm our competitive position. In addition, CAD simulation and other technologies may reduce the demand for physical prototype parts. Therefore, we believe that to remain competitive, we must continually enhance and improve our technology, product offerings and product lines.

In particular, we plan to increase our research and development efforts and to continue to focus a significant portion of those efforts to further develop our technology in areas such as our interactive user interface and manufacturing processes and broaden the range of parts that we are able to manufacture. We believe successful execution of this part of our business plan is critical for our ability to compete in our industry and grow our business, and there are no guarantees we will be able to do so in a timely fashion, or at all. Failures in this area could adversely impact our operating results and harm our reputation and brand. Even if we are successful in executing in these areas, our industry is subject to rapid and significant technological change, and our competitors may develop new technologies, processes and product lines that are superior to ours. Our research and development costs were approximately $41.3 million, $40.1 million and $38.2 million for the years ended December 31, 2024, 2023 and 2022, respectively, and there is no guarantee that these costs will enable us to maintain or grow our revenue profitability. Refer to Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" in this Annual Report on Form 10-K for additional discussion related to research and development costs.

Our business is also subject to risks from emerging technologies such as AI and Machine Learning (ML) to enhance our internal processes and customer applications. While AI and ML offer significant opportunities, potential risks include unintended release of proprietary information and proprietary data, compliance with emerging AI regulations, and unintended outcomes from AI/ML applications. There is no guarantee that AI/ML will benefit our business operations or produce products and services that are preferred by our customers. Our competitors may be more successful in their use of AI/ML and our failure to properly anticipate and timely respond to AI-related developments could adversely affect our business, financial condition, and results of operations.

Our failure to meet our customers' expectations regarding quick turnaround time would adversely affect our business and results of operations.

We believe many customers are facing increased pressure from global competitors to be first to market with their finished products, often resulting in a need for quick turnaround of custom parts. We believe our ability to quickly quote, manufacture and ship custom parts has been an important factor in our results to date. If we fail to meet our customers' expectations regarding turnaround time in any given period, our business and results of operations will likely suffer.

Our failure to meet our customers' price expectations would adversely affect our business and results of operations.

Demand for our product lines is sensitive to price. We believe our competitive pricing has been an important factor in our results to date. Therefore, changes in our pricing strategies can have a significant impact on our business and ability to generate revenue. Many factors, including our production and personnel costs and our competitors' pricing and marketing strategies, can significantly impact our pricing strategies. If we fail to meet our customers' price expectations in any given period, demand for our products and product lines could be negatively impacted and our business and results of operations could suffer.

Our failure to meet our customers' quality specifications would adversely affect our business and results of operations.

We believe many customers have a need for specific quality of their parts. We believe our ability to create parts within customer specifications is an important factor in our results to date. If we fail to meet our customers' specifications in any given period, demand for our products and product lines could be negatively impacted and our business and results of operations could suffer.

The strength of our brand is important to our business, and any failure to maintain and enhance our brand would hurt our ability to retain and expand our customer base as well as further penetrate existing customers.

Since our products and product lines are sold primarily through our websites, the success of our business depends upon our ability to attract new and repeat customers to our websites in order to increase business and grow our revenue. Customer awareness and the perceived value of our brand will depend largely on the success of our marketing efforts, as well as our ability to consistently provide quality custom parts within the required timeframes and positive customer experiences, which we may not do successfully. A primary component of our business strategy is the continued promotion and strengthening of our brand, and we have incurred and plan to continue to incur substantial expense related to advertising and other marketing efforts directed toward enhancing our brand. We have initiated marketing efforts through social media, but this method of marketing may not be successful and subjects us to a greater risk of inconsistent messaging and bad publicity. We may choose to increase our branding expense materially, but we cannot be sure that this investment will be profitable. If we are unable to successfully maintain and enhance our brand, this could have a negative impact on our business and ability to generate revenue.

Our business depends in part on our ability to process a large volume of new part designs from a diverse group of customers and successfully identify significant opportunities for our business based on those submissions.

We believe the volume of new part designs we process and the size and diversity of our customer base give us valuable insight into the needs of our prospective customers. We utilize this industry knowledge to determine where we should focus our development resources. If the number of new part designs we process or the size and diversity of our customer base decrease, our ability to successfully identify significant opportunities for our business and meet the needs of product developers and engineers could be negatively impacted. In addition, even if we do continue to process a large number of new part designs and work with a significant and diverse customer base, there are no guarantees that any industry knowledge we extract from those interactions will be successfully utilized to help us identify significant business opportunities or better understand the needs of product developers and engineers.

The loss of one or more key members of our management team or personnel, or our failure to attract, integrate and retain additional personnel in the future, could harm our business and negatively affect our ability to successfully grow our business.

We are highly dependent upon the continued service and performance of the key members of our management team and other personnel. The loss of any of these individuals, each of whom is "at will" and may terminate his or her employment relationship with us at any time, could disrupt our operations and significantly delay or prevent the achievement of our business objectives. We believe that our future success will also depend in part on our continued ability to identify, hire, train and motivate qualified personnel. A possible shortage of qualified individuals in the regions where we operate might require us to pay increased compensation to attract and retain key employees, thereby increasing our costs. In addition, we face intense competition for qualified individuals from numerous companies, many of whom have substantially greater financial and other resources and name recognition than us. We may be unable to attract and retain suitably qualified individuals who are capable of meeting our growing operational, managerial and other requirements, or we may be required to pay increased compensation in order to do so. Our failure to attract, hire, integrate and retain qualified personnel could impair our ability to achieve our business objectives.

If our present single or limited source suppliers become unavailable or inadequate, our customer relationships, results of operations and financial condition may be adversely affected.

We acquire substantially all of the manufacturing equipment and certain of our materials that are critical to the ongoing operation and future growth of our business from several third parties. We do not have long-term supply contracts with any of our suppliers and operate on a purchase-order basis. While most manufacturing equipment and materials for our products are available from multiple suppliers, certain of those items are only available from single or limited sources. Should any of our present single or limited source suppliers for manufacturing equipment or materials become unavailable

or inadequate, or impose terms unacceptable to us such as increased pricing terms, we could be required to spend a significant amount of time and expense to develop alternate sources of supply, and we may not be successful in doing so on terms acceptable to us, or at all. Natural disasters, such as hurricanes, may affect our supply of materials, particularly resins, from time to time, and we may purchase larger amounts of certain materials in anticipation of future shortages or increases in pricing. Global supply chain disruptions may make scarce materials or supplies critical to our product offers and adversely impact our ability to manufacture and deliver products to our customers on time. In addition, if we were unable to find a suitable supplier for a particular type of manufacturing equipment or material, we could be required to modify our existing business processes and offerings to accommodate the situation. As a result, the loss of a single or limited source supplier could adversely affect our relationship with our customers and our results of operations and financial condition.

We may not be able to adequately protect or enforce our intellectual property rights, which could impair our competitive position.

Our success and future revenue growth will depend, in part, on our ability to protect our intellectual property. We rely primarily on patents, licenses, trademarks and trade secrets, as well as non-disclosure agreements and other methods, to protect our proprietary technologies and processes globally. Despite our efforts to protect our proprietary technologies and processes, it is possible that competitors or other unauthorized third parties may obtain, copy, use or disclose our technologies and processes. We cannot assure you that any of our existing or future patents will not be challenged, invalidated or circumvented. As such, any rights granted under these patents may not provide us with meaningful protection. We may not be able to obtain foreign patents corresponding to our United States patents. Even if foreign patents are granted, effective enforcement in foreign countries may not be available. If our patents and other intellectual property do not adequately protect our technology, our competitors may be able to offer product lines similar to ours. Our competitors may also be able to develop similar technology independently or design around our patents. Any of the foregoing events would lead to increased competition and lower revenue or gross margin, which would adversely affect our net income.

We may be subject to infringement claims.

We may be subject to intellectual property infringement claims from individuals, vendors and other companies who have acquired or developed patents in the fields of injection molding, CNC machining, 3D printing, sheet metal fabrication or part production for purposes of developing competing products or for the sole purpose of asserting claims against us. Any claims that our products or processes infringe the intellectual property rights of others, regardless of the merit or resolution of such claims, could cause us to incur significant costs in responding to, defending and resolving such claims, and may prohibit or otherwise impair our ability to commercialize new or existing products. If we are unable to effectively defend our processes, our market share, sales and profitability could be adversely impacted.

Our failure to expand our intellectual property portfolio could adversely affect the growth of our business and results of operations.

Expansion of our intellectual property portfolio is one of the available methods of growing our revenue and our profits. This involves a complex and costly set of activities with uncertain outcomes. Our ability to obtain patents and other intellectual property can be adversely affected by insufficient inventiveness of our employees, by changes in intellectual property laws, treaties, and regulations, and by judicial and administrative interpretations of those laws, treaties and regulations. Our ability to expand our intellectual property portfolio could also be adversely affected by the lack of valuable intellectual property for sale or license at affordable prices. There is no assurance that we will be able to obtain valuable intellectual property in the jurisdictions where we and our competitors operate or that we will be able to use or license that intellectual property.

We may be subject to product liability claims, which could result in material expense, diversion of management time and attention and damage to our business, reputation, and brand.

The parts we manufacture may contain undetected defects or errors that are not discovered until after the products have been installed and used by customers. This could result in claims from customers or others, damage to our business and reputation and brand, or significant costs to correct the defect or error.

We attempt to include provisions in our agreements with customers that are designed to limit our exposure to potential liability for damages arising from defects or errors in our products. However, it is possible that these limitations may not be effective as a result of unfavorable judicial decisions or laws enacted in the future.

The sale and support of our products entails the risk of product liability claims. Any product liability claim brought against us, regardless of its merit, could result in material expense, diversion of management time and attention, damage to our business, reputation, and brand, and cause us to fail to retain existing customers or to fail to attract new customers.

Government regulation of the Internet and e-commerce is evolving, and unfavorable changes or failure by us to comply with these regulations could substantially harm our business and results of operations.

We are subject to general business regulations and laws as well as regulations and laws specifically governing the Internet and e-commerce. Existing and future laws and regulations may impede the growth of the Internet or other online services. These regulations and laws may cover taxation, restrictions on imports and exports, customs, tariffs, user privacy, data protection, pricing, content, copyrights, distribution, electronic contracts and other communications, consumer protection, the provision of online payment services, broadband residential Internet access and the characteristics and quality of products and product lines. It is not clear how existing laws governing issues such as property use and ownership, sales and other taxes, fraud, libel and personal privacy apply to the Internet and e-commerce, especially where these laws were adopted prior to the advent of the Internet and do not contemplate or address the unique issues raised by the Internet or e-commerce. Those laws that do reference the Internet are being interpreted by the courts and their applicability and reach are therefore uncertain. The costs of compliance with these regulations may increase in the future as a result of changes in the regulations or the interpretation of them. Further, any failures on our part to comply with these regulations may subject us to significant liabilities. Those current and future laws and regulations or unfavorable resolution of these issues may substantially harm our business and results of operations.

Changes in, or interpretation of, tax rules and regulations may impact our effective tax rate and future profitability.

We are a multinational company based in the United States and subject to tax in multiple tax jurisdictions, both domestic and abroad. Our future effective tax rates could be adversely affected by changes in statutory tax rates or interpretation of tax rules, and regulations in jurisdictions in which we do business, changes in the amount of revenue or earnings in the countries with varying statutory tax rates, or by changes in the valuation of deferred tax assets and liabilities.

In addition, we are subject to audits and examinations of previously filed income tax returns by the Internal Revenue Service, or IRS, and other domestic and foreign tax authorities. We regularly assess the potential impact of such examinations to determine the adequacy of our provision for income taxes and have reserved for potential adjustments that may result from the current examinations. We believe such estimates to be reasonable; however, there is no assurance that the final determination of any examination will not have an adverse effect on our operating results and financial position.

We may require additional capital to support business growth, and this capital might not be available on acceptable terms, if at all.

We intend to continue to make investments to support our business growth and may require additional funds to respond to business challenges, including the need to complement our growth strategy, increase market share in our current markets or expand into other markets, or broaden our technology, intellectual property or product line capabilities. Accordingly, we may need to engage in equity or debt financings to secure additional funds. If we raise additional funds through future issuances of equity or convertible debt securities, our existing shareholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences and privileges superior to those of holders of our common stock. Any debt financing we secure in the future could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. We may not be able to obtain additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth and to respond to business challenges could be significantly impaired, and our business may be harmed.

Our operating results and financial condition may fluctuate on a quarterly and annual basis.

Our operating results and financial condition may fluctuate from quarter to quarter and year to year, and are likely to continue to vary due to a number of factors, some of which are outside of our control. In addition, our actual or projected operating results may fail to match our past performance. These events could in turn cause the market price of our common stock to fluctuate. If our operating results do not meet the expectations of securities analysts or investors, who may derive their expectations by extrapolating data from recent historical operating results, the market price of our common stock will likely decline.

Due to this and the other risks discussed in this "Risk Factors" section, you should not rely on quarter-to-quarter or year-to-year comparisons of our operating results as an indicator of future performance.

Our business involves the use of hazardous materials, and we and our suppliers must comply with environmental laws and regulations, which can be expensive and restrict how we do business.

Our business involves the controlled storage, use and disposal of hazardous materials. We and our suppliers are subject to federal, state and local as well as foreign laws and regulations governing the use, manufacture, storage, handling and disposal of these hazardous materials. Although we believe that the safety procedures utilized by us and our suppliers for handling and disposing of these materials comply with the standards prescribed by these laws and regulations, we cannot eliminate the risk of accidental contamination or injury from these materials. In the event of an accident, state, federal or foreign authorities may curtail the use of these materials and interrupt our business operations. We do not currently maintain hazardous materials insurance coverage. If we are subject to any liability as a result of activities involving hazardous materials, our business and financial condition may be adversely affected and our reputation and brand may be harmed.

If we are unable to meet quality standards applicable to our manufacturing and quality processes for the parts we manufacture, our business, financial condition or operating results could be harmed.

As a manufacturer of CNC-machined, injection-molded, 3D printed and sheet metal fabricated custom parts, we conform to certain international standards, including International Organization for Standardization, or ISO, for our facilities. The ISO standards to which we comply include the following:

Location	9001:2015	AS9100D	14001:2015	45001:2018
Headquarters, Minnesota, USA	Yes	Yes	No	No
Injection Molding, Minnesota, USA	Yes	No	No	No
CNC Machining, Minnesota, USA	Yes	Yes	No	No
3D Printing, North Carolina, USA	Yes	Yes	No	No
Sheet Metal, New Hampshire, USA	Yes	No	No	No
CNC Machining, New Hampshire, USA	Yes	Yes	No	No
Putzbrunn, DE	Yes	No	Yes	No
Eschenlohe, DE	Yes	No	No	No
Telford, UK	Yes	No	Yes	Yes
Protolabs Network, Chicago, USA and Amsterdam, NL	Yes	No	No	No

If any system inspection reveals that we are not in compliance with applicable standards, registrars may take action against us, including issuing a corrective action request or discontinuing our certifications. If discontinuation of our certifications were to occur, it could harm our reputation as well as our business, financial condition and operating results.

We are subject to payment-related risks.

We accept payments using a variety of methods, including credit card, customer invoicing, physical bank check and payment upon delivery. As we offer new payment options to our customers, we may be subject to additional regulations, compliance requirements and fraud risk. For certain payment methods, including credit and debit cards, we pay interchange and other fees, which may increase over time and raise our operating costs and lower profitability. We rely on third parties

to provide payment processing services, including the processing of credit cards, debit cards or electronic checks, and it could disrupt our business if these companies become unwilling or unable to provide these services to us. We are also subject to payment card association operating rules, certification requirements and rules governing electronic funds transfers, which could change or be reinterpreted to make it difficult or impossible for us to comply. If we fail to comply with these rules or requirements, we may be subject to fines and higher transaction fees and lose our ability to accept credit and debit card payments from our customers, process electronic funds transfers, or facilitate other types of online payments, and our business and operating results could be adversely affected.

Risks Relating to Ownership of Our Common Stock

Our stock price has been and may continue to be volatile.

In the year ended December 31, 2024, our common stock traded as high as $45.15 and as low as $25.76. The market for our common stock may become less active, liquid or orderly, which could depress the trading price of our common stock. Some of the factors, many of which are outside of our control, that may cause the market price of our common stock to fluctuate include:

- the public's response to press releases or other public announcements by us or third parties, including our filings with the Securities and Exchange Commission and announcements relating to litigation;
- the projections we may provide to the public, any changes in these projections or our failure to meet these projections;
- changes in the market valuations of similar companies;
- changes in accounting principles;
- the sustainability of an active trading market for our common stock;
- future sales of our common stock by us or our shareholders, including sales by our officers, directors and significant shareholders; and
- share price and volume fluctuations attributable to inconsistent trading levels of our shares.

Due to the factors above and the other risks discussed in this "Risk Factors" section, our stock is subject to volatility. In addition, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. In the past, shareholders have instituted securities class action litigation following periods of market volatility. If we were to become involved in securities litigation, we could incur substantial costs and our resources and the attention of management could be diverted from our business.

If securities or industry analysts publish inaccurate or unfavorable research or reports about our business, our stock price and trading volume could decline.

The trading market for our common stock depends, 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 one or more of the analysts who covers us downgrades our common stock, changes their opinion of our shares or publishes inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, demand for our common stock could decrease and we could lose visibility in the financial markets, which could cause our stock price and trading volume to decline.

Our failure to maintain proper and effective internal controls over financial reporting and otherwise comply with Section 404 of the Sarbanes-Oxley Act or prevent or detect misstatements in our financial statements in the future could harm our business and cause a decrease in our stock price.

Ensuring that we have internal financial and accounting controls and procedures adequate to produce accurate financial statements on a timely basis is a costly and time-consuming effort that needs to be re-evaluated frequently. The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we are required to perform annual system and process evaluation and

testing of our internal control over financial reporting to allow management and our independent registered public accounting firm to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. If we are not able to comply with the requirements of Section 404 in the future, or if we fail to prevent or detect misstatements in the financial statements we include in our reports filed with the SEC, our business could be harmed and the market price of our common stock could decline.

Anti-takeover provisions in our charter documents and Minnesota law might discourage or delay acquisition attempts for us that you might consider favorable.

Our Third Amended and Restated Articles of Incorporation, as amended, and Third Amended and Restated By-Laws contain provisions that may make the acquisition of our company more difficult without the approval of our board of directors. These provisions:

- permit our board of directors to issue up to 10,000,000 shares of preferred stock, with any rights, preferences and privileges as our board may designate, including the right to approve an acquisition or other change in our control;
- provide that the authorized number of directors may be changed by resolution of the board of directors;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- provide that shareholders seeking to present proposals before a meeting of shareholders or to nominate candidates for election as directors at a meeting of shareholders must provide notice in writing in a timely manner, comply with Rule 14a-9 under the Securities Exchange Act of 1934, as amended, and also specify requirements as to the form and content of a shareholder's notice; and
- do not provide for cumulative voting rights.

We are subject to the provisions of Section 302A.673 of the Minnesota Statutes, which regulates business combinations. Section 302A.673 generally prohibits any business combination by an issuing public corporation, or any of its subsidiaries, with an interested shareholder, which means any shareholder that purchases 10% or more of the corporation's voting shares within four years following the date the person became an interested shareholder, unless the business combination is approved by a committee composed solely of one or more disinterested members of the corporation's board of directors before the date the person became an interested shareholder.

These anti-takeover provisions could discourage, delay or prevent a transaction involving a change in control of our company, even if doing so would benefit our shareholders. These provisions could also discourage proxy contests and make it more difficult for you and other shareholders to elect directors of your choosing and to cause us to take other corporate actions you desire.

We do not expect to pay any cash dividends for the foreseeable future.

We have never declared or paid any cash dividends on our common stock, and we do not anticipate that we will pay any such cash dividends for the foreseeable future. We anticipate that we will retain all of our future earnings for use in the business and for general corporate purposes. Any determination to pay dividends in the future will be at the discretion of our board of directors and will depend upon results of operations, financial condition, contractual restrictions, restrictions imposed by applicable law and other factors our board of directors deems relevant.

Item 1B. Unresolved Staff Comments

None.

Item 1C. Cybersecurity

We have an enterprise-wide information security program designed to identify, protect, detect and respond to and manage reasonably foreseeable cybersecurity risks and threats. To protect our information systems from cybersecurity threats, we use various security tools that help prevent, identify, escalate, investigate, resolve and recover from identified

vulnerabilities and security incidents in a timely manner. These include, but are not limited to, internal reporting, and monitoring and detection tools to allow our information security team members to assist us in identifying vulnerabilities in our systems before they are exploited by malicious threat actors. Our information security activities are overseen by our Chief Technology Officer, who has over 25 years of experience in information technology, including security, encryption, system design, programming and compliance, and leaders from Information Technology, Legal and Finance teams, who have an average of 20 years of experience in information technology, security, compliance and auditing.

We also maintain a third party security program to identify, prioritize, assess, mitigate and remediate third party risks; however, we rely on the third parties we use to implement security programs commensurate with their risk, and we cannot ensure in all circumstances that their efforts will be successful.

As part of our cybersecurity risk management system, our information security team tracks and logs privacy and security incidents across our Company, our vendors, and other third-party service providers to remediate and resolve any such incidents. Significant incidents are reviewed regularly by a cross-functional working group including legal, SEC regulation and information security professionals to determine whether further escalation is appropriate. Any incident assessed as potentially being or potentially becoming material is immediately escalated for further assessment, and then reported to designated members of our senior management. We consult with outside counsel as appropriate, including on materiality analysis and disclosure matters, and our senior management makes the final materiality determinations and disclosure and other compliance decisions.

The board oversees our annual enterprise risk assessment, where we assess key risks within the Company, including security and technology risks and cyber security threats. The audit committee has oversight responsibility for risks and incidents relating to cybersecurity threats, including compliance with disclosure requirements, cooperation with law enforcement, and related effects on financial and other risks, and it reports any findings and recommendations, as appropriate, to the full board for consideration. Our executive leadership team regularly discusses cyber risks and trends and, should they arise, any material incidents with the audit committee.

Our business strategy, results of operations and financial condition have not been materially affected by risks from cybersecurity threats, including as a result of previously identified cybersecurity incidents, but we cannot provide assurance that they will not be materially affected in the future by such risks or any future material incidents. For more information on our cybersecurity related risks, see Item 1A Risk Factors of this Annual Report on Form 10-K.

Item 2. Properties

We believe that our facilities are well maintained and of sufficient capacity to support our current operations. We have facilities in the following regions:

United States

Our corporate headquarters are located in Maple Plain, Minnesota in a facility we own encompassing approximately 95,000 square feet of office space. We own a facility in Rosemount, Minnesota that encompasses approximately 130,000 square feet of manufacturing and office space. We own a facility in Plymouth, Minnesota that encompasses approximately 170,000 square feet of manufacturing and office space. We own a facility in Brooklyn Park, Minnesota that encompasses approximately 215,000 square feet of manufacturing and office space.

We own two facilities in Cary, North Carolina that encompasses approximately 197,000 square feet of manufacturing and office space.

We own a facility in Nashua, New Hampshire and lease a second facility. The lease expires in 2026. The New Hampshire facilities provide a total of approximately 128,000 square feet of manufacturing and office space.

We lease a facility in Chicago, Illinois that encompasses approximately 10,000 square feet of office space utilized to support our outsourced manufacturing operations. The lease expires in 2026.

Europe

Our European operations are headquartered in Telford, United Kingdom in a facility we own encompassing approximately 163,000 square feet of office and manufacturing space.

We own a facility in Putzbrunn, Germany which encompasses approximately 70,000 square feet of office and manufacturing space.

We also lease office space in Mosbach, Germany; Le Bourget du Lac, France; Novara, Italy and Nacka, Sweden for sales, customer service and technical support staff. The leases expire at various times from 2024 to 2025. We also lease a manufacturing and office facility encompassing approximately 21,000 square feet in Eschenlohe, Germany. The lease expires in 2029.

On October 21, 2024, the Company's board of directors approved a plan related to the Company's manufacturing facilities in Germany. The plan includes the closure of the Company's prototype injection molding manufacturing facility in Eschenlohe, Germany, and the discontinuation of Direct Metal Laser Sintering 3D printing services through its 3D printing facility in Putzbrunn, Germany.

We lease a facility in Amsterdam, Netherlands that encompasses approximately 12,000 square feet of office space utilized to support our outsourced manufacturing operations. The lease expires in 2025.

Japan

In December 2023, we dissolved our Japan operations headquartered in Zama, Kanagawa, Japan (southwest of Tokyo), where we operated in a leased facility which encompassed approximately 88,000 square feet of office and manufacturing space. The lease expired in 2023.

Item 3. Legal Proceedings

From time to time, we are subject to various legal proceedings and claims that arise in the ordinary course of our business activities. Although the results of litigation and claims cannot be predicted with certainty, as of the date of this Annual Report on Form 10-K, we do not believe we are party to any litigation the outcome of which, if determined adversely to us, would individually or in the aggregate be reasonably expected to have a material adverse effect on our business.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

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

Market Information

Our common stock has traded on the New York Stock Exchange (NYSE) under the symbol "PRLB" since February 24, 2012. Prior to that date, there was no public market for our common stock.

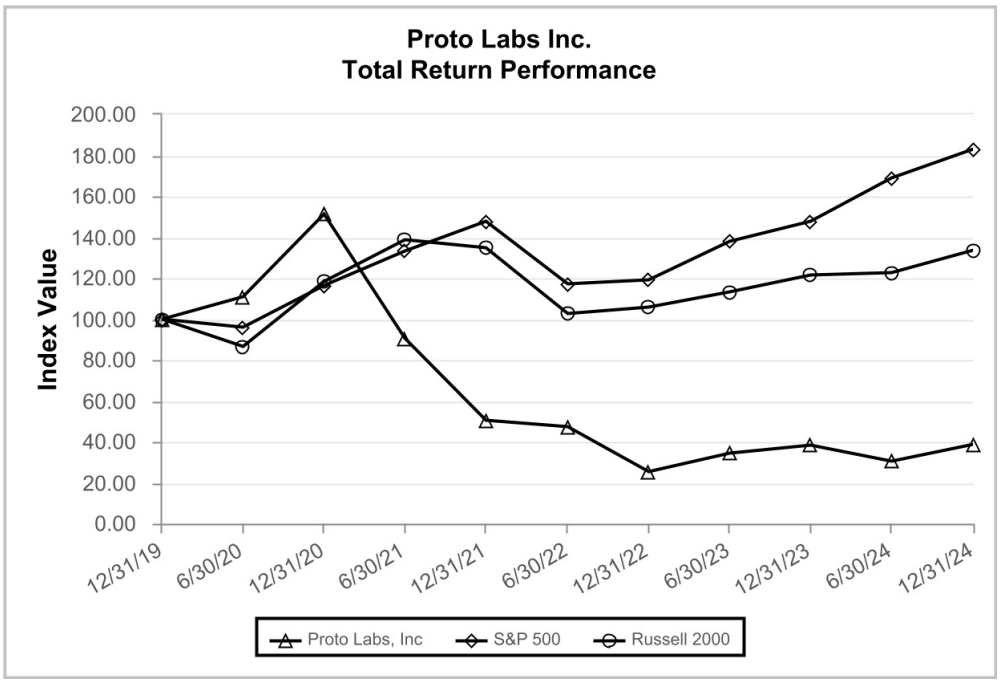
As of February 5, 2025 we had 11 holders of record of our common stock. The actual number of shareholders is greater than this number of record holders, and includes shareholders who are beneficial owners, but whose shares are held in street name by brokers and other nominees.

Dividends

We have never declared or paid any cash dividends on our capital stock and we do not intend to pay cash dividends on our common stock for the foreseeable future. Any future determination related to our dividend policy will be made at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects and other factors our board of directors may deem relevant.

Performance Graph

The following graph shows a comparison from December 31, 2019 through December 31, 2024 of the cumulative total return for our common stock, the S&P 500 Index and the Russell 2000 Index. We have selected the Russell 2000 Index because the Russell 2000 Index measures the performance of the small market capitalization segment of U.S. equity instruments and we are a member company included in the Russell 2000 Index. Such returns are based on historical results and are not intended to suggest future performance. Data for the S&P 500 Index and the Russell 2000 Index assume reinvestment of dividends.



Index	12/31/2019	6/30/2020	12/31/2020	6/30/2021	12/31/2021	6/30/2022	12/31/2022	6/30/2023	12/31/2023	6/30/2024	12/31/2024
Proto Labs, Inc.	100.00	110.75	151.06	90.40	50.57	47.11	25.14	34.43	38.37	30.42	38.49
S&P 500	100.00	95.96	116.26	133.02	147.52	117.17	118.84	137.75	147.64	169.01	182.83
Russell 2000	100.00	86.39	118.36	138.48	134.57	102.37	105.56	113.20	121.49	122.73	133.66

Unregistered Sales of Equity Securities and Issuer Purchases of Equity Securities

On February 7, 2023, our board of directors approved a $50 million increase to our previously authorized stock repurchase program, which increased the total stock repurchase authorized to up to $250 million. Our stock repurchase program was first approved on February 9, 2017 and was extended from time to time at the discretion of our board of directors and expired on December 31, 2024 (the Prior Repurchase Program).

On February 4, 2025, our board of directors authorized a new share repurchase program (February 2025 Program). The February 2025 Program is open-ended and authorizes repurchases of shares of our common stock from time to time on the open market or in privately negotiated purchases, with a total stock repurchase authorized of up to $100 million. The February 2025 Program does not obligate us to acquire any particular amount of shares of our common stock and remains in effect until the total authorized amount is expended or until further action by our board of directors. The actual timing, manner, number and value of shares repurchased under the February 2025 Program will be determined by our management in its discretion and will depend on several factors, including the market price of the Company's common stock, general market and economic conditions, applicable requirements, and other considerations.

During the year ended December 31, 2024, we repurchased 1,774,058 shares at an average price of $33.95 per share for an aggregate purchase price of $60.2 million under the Prior Repurchase Program.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (in thousands)
October 1, 2024 through October 31, 2024	—	$ —	—	$ 42,450
November 1, 2024 through November 30, 2024	243,034	$ 39.30	243,034	$ 32,898
December 1, 2024 through December 31, 2024	112,389	$ 46.76	112,389	$ 27,643
	355,423	$ 41.66	355,423	$ 27,643

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 the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion and analysis contains forward-looking statements that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward- looking statements as a result of various factors, including those set forth under "Risk Factors" and elsewhere in this Annual Report on Form 10-K. This Management's Discussion and Analysis (MD&A) generally discusses fiscal years 2024 and 2023 items and year-to-year comparisons between 2024 and 2023. Discussions of fiscal year 2022 items and year-to-year comparisons between 2023 and 2022 are generally not included in this MD&A, and can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7. of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2023, filed with the SEC on February 16, 2024.

Overview

We are one of the world's largest, fastest, and most comprehensive digital manufacturers of custom parts. We manufacture prototypes and low-volume production parts for companies worldwide that are under increasing pressure to bring their finished products to market faster than their competition. We utilize injection molding, computer numerical control (CNC) machining, 3D printing and sheet metal fabrication to manufacture custom parts for our customers. Our proprietary technology eliminates most of the time-consuming and expensive skilled labor conventionally required to quote and manufacture parts. Through the acquisition of Hubs (formerly 3D Hubs, Inc.) (Hubs) in 2021, we provide our customers access to a global network of premium manufacturing partners who reside across North America, Europe and Asia. In January 2024, we rebranded Hubs to the Protolabs Network by Hubs (Protolabs Network). The Protolabs Network complements our in-house manufacturing, enabling us to significantly increase the size, complexity, breadth of manufacturing processes, lead times and prices of the parts we produce. Our customers conduct nearly all their business with us over the Internet. We target our products at the millions of product developers and engineers who use three-dimensional computer-aided design (3D CAD) software to design products across a diverse range of end-markets, to the procurement and supply chain professionals seeking to easily and efficiently source custom parts on-demand, and to a wide variety of customers seeking to purchase low-volume custom parts.

We currently operate in a global custom contract manufacturing market which is a form of outsourcing where companies enter into an arrangement or formal agreement with another company or individual for the manufacture of complete parts, products, or components. Since our inception, we have focused on areas where we could automate the manufacturing process via our digital model and we positioned ourselves to avoid routine, low margin, high-volume commoditized manufacturing. Our initial focus was on prototypes and simple parts and have added complexity over time. We have added product lines and expanded those product lines to meet the needs of our customers, which has historically driven our growth. In 2022, we launched the first iteration of our integrated offer in Europe and followed with the launch in the United States in early 2023. The integrated offer allows us to offer CNC manufacturing for eligible parts through the combination of our internal digital manufacturing and our digital network of manufacturing partners. We also continually seek to enhance other aspects of our technology and manufacturing processes, including our interactive web-based and automated user interface and quoting system. We intend to continue to invest significantly to enhance our technology and

manufacturing processes and expand the range of our existing capabilities with the aim of meeting the needs of a broader set of customers. As a result of the factors described above, many of our customers tend to return to Proto Labs to meet their ongoing needs.

We have established our operations in the United States and Europe. On October 21, 2024, the Company's board of directors approved a plan related to the Company's manufacturing facilities in Germany. The plan includes the closure of the Company's prototype injection molding manufacturing facility in Eschenlohe, Germany, and the discontinuation of Direct Metal Laser Sintering 3D printing services through its 3D printing facility in Putzbrunn, Germany. The Company expects to substantially complete the plan within fiscal year 2025. The Company will continue offering all its manufacturing services to customers across Europe, including injection molding and metal 3D printing. These services will be fulfilled through internal manufacturing facilities and a network of manufacturing partners. Previously we had established operations in Japan. On May 27, 2022, the Company's board of directors approved a plan for the closure of the Company's manufacturing facility in Japan and announced an intention to cease operations in the region. The Company dissolved its Japan operations in December 2023. Our revenue outside of the United States accounted for approximately 21% of our consolidated revenue in each of the years ended December 31, 2024 and 2023. We intend to continue to expand our international sales efforts and believe opportunities exist to serve the needs of customers in select new geographic regions.

Total revenue decreased to $500.9 million in the year December 31, 2024 from $503.9 million in the year ended December 31, 2023. During this period, our operating expenses increased to $203.3 million in the year ended December 31, 2024 from $193.8 million in the year ended December 31, 2023 primarily due to $5.6 million of costs related to disposal and exit activities in the year ended December 31, 2024 related our decision to exit and close certain operations in Germany. Historically, our growth in revenue has been accompanied by increased cost of revenues and operating expenses. We expect to increase investment in our operations to support anticipated future growth as discussed more fully below.

In addition, we believe that a number of trends affecting our industry have impacted our results of operations, which have increased our revenue and our operating expenses, and may continue to do so. For example, we believe that many of our target customers are facing three mega trends, which are disrupting long-term product growth models. We believe our customers are facing increased pressure to shorten product life-cycles, to embed products with connectivity driven by the "internet of things" technology, and to deliver products that are personalized and customized to unique customer specifications. We believe we continue to be well positioned to benefit from these trends, given our proprietary technology that enables us to automate and integrate the majority of activities involved in procuring custom parts. As a result, the adoption of e-commerce manufacturing has accelerated, which allows opportunity for us to provide valuable solutions to customers looking to build resiliency in their supply chains through fast, on-demand manufacturers. While our business may be positively affected by these trends, our results may also be favorably or unfavorably impacted by other trends that affect customer orders for custom parts, including, among others, economic conditions, changes in customer preferences or needs, developments in our industry and among our competitors, and developments in our customers' industries. For a more complete discussion of the risks facing our business, see Part I, Item 1A. “Risk Factors” of this Annual Report on Form 10-K.

Key Financial Measures and Trends

Revenue

Our operations are comprised of two geographic operating segments in the United States and Europe. On October 21, 2024, the Company's board of directors approved a plan related to the Company's manufacturing facilities in Germany. The plan includes the closure of the Company's prototype injection molding manufacturing facility in Eschenlohe, Germany, and the discontinuation of Direct Metal Laser Sintering 3D printing services through its 3D printing facility in Putzbrunn, Germany. The Company expects to substantially complete the plan within fiscal year 2025. The Company will continue offering all its manufacturing services to customers across Europe, including injection molding and metal 3D printing. These services will be fulfilled through internal manufacturing facilities and a network of manufacturing partners. On May 27, 2022, the Company's board of directors approved a plan for the closure of the Company's manufacturing facility in Japan and announced an intention to cease operations in the region. The Company dissolved its Japan operations in December 2023.

Revenue is derived from our Injection Molding, CNC Machining, 3D Printing and Sheet Metal product lines. Injection Molding revenue consists of sales of custom injection molds and injection-molded parts. CNC Machining

revenue consists of sales of CNC-machined custom parts. 3D Printing revenue consists of sales of custom 3D-printed parts. Sheet Metal revenue consists of sales of fabricated sheet metal custom parts and assemblies.

Our revenue is generated from a diverse customer base and our historical and current efforts to increase revenue have been directed at gaining new customers and selling to our existing customer base by increasing marketing and selling activities, including:

- expanding the breadth and scope of our products by adding more sizes and materials to our offerings;
- the introduction of our 3D Printing product line through our acquisition of FineLine in 2014;
- expanding 3D printing to Europe through our acquisition of Alphaform in October 2015;
- the introduction of our Sheet Metal product line through our acquisition of RAPID in 2017;
- continuously improving the usability of our product lines such as our web-centric applications; and
- providing customers with on-demand access to a global network of premium manufacturing partners through our acquisition of Hubs in January 2021.

The following table summarizes our unique customer contacts and revenue per customer contact:

	Year Ended December 31,		
	2024	2023	2022
Revenue (in thousands)	$ 500,890	$ 503,877	$ 488,398
Customer contacts	51,552	53,464	56,333
Revenue per customer contact[1]	$ 9,716	$ 9,425	$ 8,670

[1] Revenue per customer contact is calculated using the revenue recognized during the respective period divided by the actual number of customer contacts served during the same period. Customer contacts are product developers, engineers, procurement and supply chain professionals and other individuals who place an order, and that order is shipped and invoiced during the period. The Company believes revenue per customer contact is useful to investors in evaluating the underlying business trends and ongoing operating performance of the Company.

During 2024, we served 51,552 unique customer contacts who purchased our products through our web-based customer interface, a decrease of 3.6% over the same period in 2023. Our customer contacts served decreased at a rate greater than our decrease in revenue. This was primarily due to our mix of customers served in 2024 as compared to 2023 and our strategic focus to earn larger orders from our customers as we strive to be their supplier of choice by serving their custom parts needs through the comprehensive offer of our factory and the Protolabs Network. Our revenue per customer contact grew 3.1% as compared to 2023.

During 2023, we served 53,464 unique customer contacts who purchased our products through our web-based customer interface, a decrease of 5.1% over the same period in 2022.

Cost of Revenue, Gross Profit and Gross Margin

Cost of revenue consists primarily of raw materials, equipment depreciation, employee compensation including benefits and stock-based compensation, facilities costs and overhead allocations associated with the manufacturing process for molds and custom parts. We expect our personnel-related costs to increase in order to retain and attract top talent and remain competitive in the market. Overall, we expect cost of revenue to increase in absolute dollars.

Our quick-turn factory business model requires that we invest in our capacity well in advance of demand to ensure we can fulfill the expectations for quick delivery of products manufactured in house to our customers. Therefore, over the last several years, we have made significant investments in additional factory space, equipment and infrastructure across

our geographic segments. We expect to continue to grow in future periods, which will result in the need for additional investments in factory space and equipment. We expect that these additional costs for factory and equipment expansion can be absorbed by revenue growth, and allow gross margins by product line to remain relatively consistent over time. Our addition of Hubs in 2021 provides a complementary opportunity to add revenue growth through the use of premium manufacturing partners, without the significant investments required by our internal manufacturing business model.

We define gross profit as our revenue less our cost of revenue, and we define gross margin as gross profit expressed as a percentage of revenue. Our gross profit and gross margin are affected by many factors, including our mix of revenue by product line, pricing, sales volume, manufacturing costs, the costs associated with increasing production capacity, the mix between domestic and foreign revenue sources, the mix between revenue produced in our internal manufacturing operations and outsourced to our external manufacturing partners, and foreign exchange rates.

Operating Expenses

Operating expenses consist of marketing and sales, research and development and general and administrative expenses. Personnel-related costs are the most significant component in each of these categories.

Our business strategy is to continue to be a leading online and technology-enabled manufacturer of quick-turn, on-demand injection-molded, CNC-machined, 3D-printed and sheet metal custom parts for prototyping and low-volume production. In order to achieve our goals, we anticipate continued substantial investments in technology and personnel, resulting in increased operating expenses in the future.

Marketing and sales. Marketing and sales expense consists primarily of employee compensation, benefits, commissions, stock-based compensation, marketing programs such as electronic, print and pay-per-click advertising, trade shows and other related overhead. We expect sales and marketing expense to increase in the future as we increase the number of marketing and sales professionals and marketing programs targeted to increase our customer base and grow revenue.

Research and development. Research and development expense consists primarily of personnel and outside service costs related to the development of new processes and product lines, enhancement of existing product lines, software developed for internal use, maintenance of internally developed software, quality assurance and testing. Costs for internal use software are evaluated by project and capitalized where appropriate under Accounting Standards Codification (ASC) 350-40, *Intangibles — Goodwill and Other, Internal-Use Software*. We expect research and development expense to increase in the future as we seek to enhance our e-commerce interface technology, internal software and supporting business systems, and continue to expand our product lines.

General and administrative. General and administrative expense consists primarily of employee compensation, benefits, stock-based compensation, professional service fees related to accounting, tax and legal and other related overhead. We expect general and administrative expense to increase in the future as we continue to grow and expand as a global organization.

Goodwill impairment. Goodwill is tested for impairment annually as of the first day of the fourth quarter. An impairment charge for goodwill was recognized for our Europe reporting unit in the fourth quarter of 2022, as it was determined the estimated fair value of the reporting unit, including goodwill, was less than its carrying amount.

Costs related to disposal and exit activities. Costs related to disposal and exit activities is driven by our decision to close certain manufacturing facilities in Germany and Japan and further to exit the Japan market. The expenses consist primarily of operating expenses, including employee severance, write-down of fixed assets, facility-related charges and goodwill impairment charges.

Other Income, Net

Other income, net primarily consists of foreign currency-related gains and losses and interest income on cash balances and investments. Our foreign currency-related gains and losses will vary depending upon movements in underlying exchange rates. Our interest income will vary each reporting period depending on our average cash balances during the period, composition of our marketable security portfolio and the current level of interest rates.

Provision for Income Taxes

Provision for income taxes is comprised of federal, state, local and foreign taxes based on pre-tax income. Overall, our effective tax rate for 2024 and beyond may differ from historical effective tax rates due to changes in losses in foreign operations that are not eligible for tax benefits on account of valuation allowances, as well as any future tax law changes that may impact the effective tax rate.

Results of Operations

The following table summarizes our results of operations and the related changes for the periods indicated. The results below are not necessarily indicative of the results for future periods.

(dollars in thousands)	Year Ended December 31, 2024		Year Ended December 31, 2023		Change $	Change %	Year Ended December 31, 2023		Year Ended December 31, 2022		Change $	Change %
Revenue	$ 500,890	100.0 %	$ 503,877	100.0 %	$ (2,987)	(0.6)	$ 503,877	100.0 %	$ 488,398	100.0 %	$ 15,479	3.2
Cost of revenue	277,690	55.4	281,884	55.9	(4,194)	(1.5)	281,884	55.9	272,933	55.9	8,951	3.3
Gross profit	223,200	44.6	221,993	44.1	1,207	0.5	221,993	44.1	215,465	44.1	6,528	3.0
Operating expenses:												
Marketing and sales	92,073	18.4	87,688	17.4	4,385	5.0	87,688	17.4	82,752	17.0	4,936	6.0
Research and development	41,298	8.2	40,135	8.0	1,163	2.9	40,135	8.0	38,222	7.8	1,913	5.0
General and administrative	64,333	12.8	65,788	13.1	(1,455)	(2.2)	65,788	13.1	67,544	13.8	(1,756)	(2.6)
Goodwill impairment	-	-	-	-	-	-	-	-	118,008	24.2	(118,008)	*
Costs related to disposal and exit activities	5,585	1.1	215	-	5,370	*	215	-	6,922	1.4	(6,707)	*
Total operating expenses	203,289	40.6	193,826	38.5	9,463	4.9	193,826	38.5	313,448	64.2	(119,622)	(38.2)
Income (loss) from operations	19,911	4.0	28,167	5.6	(8,256)	(29.3)	28,167	5.6	(97,983)	(20.1)	126,150	128.7
Other (expense) income, net	4,761	0.9	(215)	(0.1)	4,976	*	(215)	(0.1)	106	-	(321)	(302.8)
Income (loss) before income taxes	24,672	4.9	27,952	5.5	(3,280)	(11.7)	27,952	5.5	(97,877)	(20.1)	125,829	128.6
Provision for income taxes	8,079	1.6	10,732	2.1	(2,653)	(24.7)	10,732	2.1	5,585	1.1	5,147	92.2
Net income (loss)	$ 16,593	3.3 %	$ 17,220	3.4 %	$ (627)	(3.6 %)	$ 17,220	3.4 %	$ (103,462)	(21.2 %)	$ 120,682	116.6 %

* Percentage change not meaningful

Stock-based compensation expense included in the statements of comprehensive income data above is as follows:

(in thousands)	Year Ended December 31, 2024	2023	2022
Stock options and other	$ 15,691	$ 14,550	$ 16,103
Employee stock purchase plan	1,308	1,439	1,442
Total stock-based compensation expense	$ 16,999	$ 15,989	$ 17,545
Cost of revenue	$ 1,935	$ 1,840	$ 2,172
Operating expenses:			
Marketing and sales	3,112	3,426	3,295
Research and development	2,721	2,556	2,189
General and administrative	9,231	8,167	9,889
Total stock-based compensation expense	$ 16,999	$ 15,989	$ 17,545

Comparison of Years Ended December 31, 2024 and 2023

Revenue

Revenue by reportable segment and the related changes for 2024 and 2023 is summarized as follows:

	Year Ended December 31,					
	2024		2023		Change	
(dollars in thousands)	$	% of Total Revenue	$	% of Total Revenue	$	%
Revenue						
United States	$ 396,192	79.1 %	$ 396,821	78.8 %	$ (629)	(0.2 %)
Europe	104,698	20.9	107,056	21.2	(2,358)	(2.2)
Total revenue	$ 500,890	100.0 %	$ 503,877	100.0 %	$ (2,987)	(0.6 %)

Our revenue decreased $3.0 million, or 0.6%, for 2024 compared with 2023. By reportable segment, revenue in the United States decreased $0.6 million, or 0.2%, for 2024 compared with 2023. Revenue in Europe decreased $2.4 million, or 2.2%, for 2024 compared with 2023. International revenue was positively impacted by $1.9 million during 2024 compared to the same period in 2023 as a result of foreign currency movements, primarily the strengthening of the British Pound and Euro relative to the United States Dollar.

During 2024, we served 51,552 unique customer contacts, a decrease of 3.6% over 2023. Our customer contacts served decreased at a rate greater than our decrease in revenue. This was primarily due to our mix of customers served in 2024 as compared to 2023 and our strategic focus to earn larger orders from our customers as we strive to be their supplier of choice by serving their custom parts needs through the comprehensive offer of our factory and the Protolabs Network. Our revenue per customer grew 3.1% as compared to 2023.

Revenue by product line and the related changes for 2024 and 2023 is summarized as follows:

(dollars in thousands)	Year Ended December 31, 2024 $	2024 % of Total Revenue	2023 $	2023 % of Total Revenue	Change $	Change %
Revenue						
Injection Molding	$ 194,215	38.8 %	$ 203,941	40.5 %	$ (9,726)	(4.8 %)
CNC Machining	206,887	41.3	198,222	39.3	8,665	4.4
3D Printing	83,767	16.7	84,291	16.7	(524)	(0.6)
Sheet Metal	15,265	3.0	16,540	3.3	(1,275)	(7.7)
Other Revenue	756	0.2	883	0.2	(127)	(14.4)
Total revenue	$ 500,890	100.0 %	$ 503,877	100.0 %	$ (2,987)	(0.6 %)

By product line, our revenue decrease was driven by a 4.8% decrease in Injection Molding revenue, a 7.7% decrease in Sheet Metal revenue, a 0.6% decrease in 3D Printing revenue and a 14.4% decrease in Other Revenue, which was partially offset by a 4.4% increase in CNC Machining revenue, in each case for 2024 compared with 2023.

Cost of Revenue, Gross Profit and Gross Margin

Cost of Revenue. Cost of revenue decreased $4.2 million, or 1.5%, for 2024 compared to 2023, which was more than the rate of revenue decrease of 0.6% for 2024 compared to 2023. The decrease in the cost of revenue of $4.2 million was driven by reductions in headcount and overtime leading to lower personnel and related costs of $4.1 million in our digital factory business and $0.1 million in other operating costs in 2024 compared with 2023. The cost reductions in our digital manufacturing business were the result of focused management of resources aligned to order volumes, partially supported by increased automation.

Gross Profit and Gross Margin. Gross profit increased to $223.2 million in 2024 from $222.0 million in 2023. Gross margin increased to 44.6% of revenue in 2024 from 44.1% in 2023, primarily due to focused management of resources aligned to order volumes, partially supported by increased automation.

Operating Expenses

Marketing and Sales. Marketing and sales expense increased $4.4 million, or 5.0%, for 2024 compared to 2023, primarily due to increases in personnel and related costs of $2.7 million, marketing demand generation costs increases of $0.7 million and other operating costs of $1.0 million for 2024 compared with 2023.

Research and Development. Our research and development expense increased $1.2 million, or 2.9%, for 2024 compared to 2023 primarily due to increases of $1.1 million in other operating costs, $0.4 million in professional services and $0.3 million in administrative costs, partially offset by decreases in personnel and related costs of $0.6 million for 2024 compared with 2023.

General and Administrative. Our general and administrative expense decreased $1.5 million, or 2.2%, for 2024 compared to 2023 primarily due to a decrease in intangible amortization costs of $2.2 million, other operating costs of $1.7 million and administrative costs of $0.3 million, which were partially offset by an increase in stock-based compensation of $1.1 million, personnel and related costs of $1.0 million and professional services of $0.6 million.

Costs related to disposal and exit activities. Our decision to exit and close certain operations in Germany resulted in $5.6 million in operating expenses during 2024. Operating expenses included $3.3 million of employee severance and $2.3 million related to the write-down of fixed assets. During 2023 we recognized $0.2 million in professional services expenses related to the closure of the Japan business.

Income (Loss) from Operations

Income from operations decreased $8.3 million, or 29.3%, for 2024 compared with 2023. By reportable segment, income from operations for the United States increased $3.6 million for 2024 compared with 2023. Loss from operations for Europe increased $3.0 million for 2024 compared with 2023, which was primarily driven by $5.6 million in operating expenses associated with our decision to exit and close certain operations in Germany. Loss from operations included in Corporate Unallocated and Japan increased $8.9 million for 2024 compared with 2023.

Other (Expense) Income, Net and Provision for Income Taxes

Other (Expense) Income, Net. We recognized other expense, net of $4.8 million in 2024, an increase of $5.0 million compared to other income, net of $0.2 million for 2023. Other expense, net for 2024 primarily consisted of $5.4 million of interest income on investments and other income, partially offset by $0.4 million of foreign currency losses and $0.2 million of interest expense and other expenses. Other income, net for 2023 primarily consisted of $3.9 million foreign currency translation loss from the completion on the closure of our Japan business and $1.1 million of interest expense, which was partially offset by a $3.3 million of interest income on investments and $1.5 of other income and gains on foreign currency.

Provision for Income Taxes. Our income tax provision decreased by $2.7 million for 2024 compared to 2023. The decrease in the provision is primarily due to a release of tax reserves arising from a successful audit closure, and a reduction in deferred tax liabilities from being revalued at a lower state tax rate, partially offset by an increase in losses in foreign operations that are not eligible for tax benefits on account of valuation allowances. Our effective tax rate of 32.7% for 2024 decreased 5.7% compared to 38.4% for the same period in 2023, primarily due to a release of tax reserves arising from a successful audit closure, and a reduction in deferred tax liabilities from being revalued at a lower state tax rate, partially offset by an increase in losses in foreign operations that are not eligible for tax benefits on account of valuation allowances.

Comparison of Years Ended December 31, 2023 and 2022

For a comparison of our results of operations for fiscal years ended December 31, 2023 and December 31, 2022, see Part II, Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" of our Annual Report on Form 10-K for the fiscal year ended December 31, 2023, filed with the SEC on February 16, 2024.

Liquidity and Capital Resources

Cash Flows

The following table summarizes our cash flows for the years ended December 31, 2024, 2023 and 2022:

(dollars in thousands)	Year Ended December 31, 2024	2023	2022
Net cash provided by operating activities	$ 77,829	$ 73,274	$ 62,079
Net cash used in investing activities	(13,580)	(4,552)	(43,092)
Net cash used in financing activities	(58,550)	(41,858)	(27,922)
Effect of exchange rates on cash and cash equivalents	(418)	368	(436)
Net (decrease) increase in cash and cash equivalents	$ 5,281	$ 27,232	$ (9,371)

Sources of Liquidity

We finance our operations and capital expenditures through cash flow from operations. We had cash and cash equivalents of $89.1 million as of December 31, 2024, an increase of $5.3 million from December 31, 2023. The increase in our cash was primarily due to cash generated through operations of $77.8 million, which was partially offset by cash used in investing activities of $13.6 million, consisting primarily of net purchases of property, equipment and other capital

assets of $9.1 million and net purchases of marketable securities of $4.4 million, and cash used in financing activities of $58.6 million, primarily for repurchases of common stock of $60.3 million and purchases of shares withheld for tax obligations of $2.0 million, which was partially offset by cash proceeds from the issuance of common stock from equity plans of $4.0 million. We had cash and cash equivalents of $83.8 million as of December 31, 2023, an increase of $27.2 million from December 31, 2022. The increase in our cash was primarily due to cash generated through operations of $73.3 million, which was partially offset by cash used in investing activities $4.6 million, consisting primarily of net purchases of property, equipment and other capital assets of $27.4 million, partially offset by proceeds from the maturity of marketable securities of $23.9 million, and cash used in financing activities of $41.9 million, primarily for repurchases of common stock of $44.0 million.

As of December 31, 2024, the amount of cash and cash equivalents held by foreign subsidiaries was $12.1 million. Our intent is to continue to reinvest these funds outside the U.S. and our current plans do not demonstrate a need to repatriate them to fund our domestic operations. We believe that our existing cash and cash equivalents together with cash generated from operations will be sufficient to meet our working capital expenditure requirements for at least the next 12 months.

Cash Flows from Operating Activities

Cash flow from operating activities of $77.8 million during 2024 primarily consisted of net income of $16.6 million, adjusted for certain non-cash items, including depreciation and amortization of $35.8 million, stock-based compensation expense of $17.0 million, changes in operating assets and liabilities and other items totaling $11.0 million and non-cash fixed asset impairment charges primarily related to the exit of certain operations in Germany $2.6 million, which were partially offset by changes in deferred taxes of $5.2 million. The cash flow from operating activities during 2024 compared to 2023 increased $4.6 million primarily due to changes in operating assets and liabilities of $5.4 million, non-cash fixed impairment charges primarily related to certain operations in Germany of $2.6 million, increases in deferred taxes of $2.5 million, increases in stock-based compensation of $1.0 million and other items of $0.3 million, which were partially offset by decreases in foreign currency translation losses of $3.9 million, depreciation and amortization of $1.7 million, interest on finance lease obligations of $1.0 million and net income of $0.6 million.

Cash flow from operating activities of $73.3 million during 2023 primarily consisted of net income of $17.2 million, adjusted for certain non-cash items, including depreciation and amortization of $37.5 million, stock-based compensation expense of $16.0 million, foreign currency translation losses of $3.9 million, interest on finance lease obligations of $1.1 million and changes in operating asset and liabilities and other items totaling $5.2 million, which were partially offset by changes in deferred taxes of $7.7 million. The cash flow from operating activities during 2023 compared to 2022 increased $11.2 million primarily due to changes in operating assets and liabilities and other items of $7.2 million, increases in deferred taxes of $1.8 million, increases in interest on finance lease obligations of $1.1 million and increases in net income of $120.7 million, which were partially offset by decreases in stock-based compensation of $1.6 million and loss on impairment of goodwill of $118.0 million.

Cash Flows from Investing Activities

Cash used in investing activities was $13.6 million for the year ended December 31, 2024, consisting of $9.1 million for the net purchases of property, equipment and other capital assets and $4.4 million in net purchases of marketable securities.

Cash used in investing activities was $4.6 million for the year ended December 31, 2023, consisting of $27.4 million for the net purchases of property, equipment and other capital assets, $1.0 million in other investing activities, which were partially offset by $23.9 million of net proceeds from maturities of marketable securities.

Cash Flows from Financing Activities

Cash used in financing activities was $58.6 million for the year ended December 31, 2024, consisting of $60.3 million in repurchases of common stock, $2.0 million in shares withheld for tax obligations associated with equity transactions, and $0.3 million for repayments of finance lease obligations, which were partially offset by $4.0 million in proceeds from issuance of common stock from equity plans.

Cash used in financing activities was $41.9 million for the year ended December 31, 2023, consisting of $44.0 million in repurchases of common stock, $1.4 million in shares withheld for tax obligations associated with equity

transactions, and $0.3 million for repayments of finance lease obligations, which were partially offset by $3.8 million in proceeds from issuance of common stock from equity plans.

Operating and Capital Expenditure Requirements

We believe, based on our current operating plan, that our cash balances and cash generated through operations and interest income will be sufficient to meet our anticipated cash requirements through at least the next 12 months. From time to time we may seek to sell equity or convertible debt securities or enter into credit facilities. The sale of equity and convertible debt securities may result in dilution to our shareholders. If we raise additional funds through the issuance of convertible debt securities or enter into credit facilities, these securities and debt holders could have rights senior to those of our common stock, and this debt could contain covenants that would restrict our operations. We may require additional capital beyond our currently forecasted amounts. Any such required additional capital may not be available on terms acceptable to us, or at all.

Our future capital requirements will depend on many factors, including the following:

- the revenue growth in Injection Molding, CNC Machining, 3D Printing and Sheet Metal product lines;
- costs of operations, including costs relating to expansion and growth;
- the emergence of competing or complementary technological developments;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual product rights, or participating in litigation-related activities; and
- the acquisition of businesses, products and technologies, although we currently have no commitments or agreements relating to any of these types of transactions.

Our recent annual capital expenditures have varied between 2% and 7% of annual revenue. We believe future growth capital expenditures, excluding any expenditures for buildings and maintenance capital we might purchase for our operations, are likely to vary between approximately 2% and 7% of annual revenue.

Contractual Obligations

As of December 31, 2024, our contractual obligations are $3.5 million related to current and long-term operating and finance lease liabilities and $8.7 million related to unsatisfied performance obligations for revenue generating contracts with an original expected length of one year or less.

Financing Arrangements

We had no financing arrangements as of December 31, 2024 and 2023.

Critical Accounting Estimates

The discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates, judgments and assumptions that affect the reported amount of assets, liabilities, revenue, expenses and related disclosures. Critical accounting estimates are those estimates made in accordance with GAAP which involve a significant level of estimation uncertainty and have had or are reasonably likely to have a material impact on our financial condition and results of operations. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, goodwill, other intangible assets, stock-based compensation, and income taxes. We base our estimates of the carrying value of certain assets and liabilities on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. In many cases, we could reasonably have used different accounting policies and estimates. In some cases, changes in the accounting estimates are reasonably likely to occur from period to period. Management has discussed the development, selection and disclosure of these estimates with the audit committee of our board of directors. Our actual results may differ significantly from these estimates under different assumptions or conditions.

We believe the following critical accounting policies and estimates affect our more significant judgments used in the preparation of our consolidated financial statements. See the Notes to Consolidated Financial Statements included in Item 8. “Financial Statements and Supplementary Data” in this Annual Report on Form 10-K for additional information about these critical accounting policies and estimates, as well as a description of our other accounting policies and estimates.

Revenue Recognition

We recognize revenue for our internal and outsourced manufacturing operations in accordance with ASC 606, *Revenue from Contracts with Customers*. We manufacture custom parts to specific customer orders that have no alternative use to us, and we believe there is a legally enforceable right to payment for performance completed to date on internally and outsourced manufactured parts. For manufactured parts that meet these two criteria, we will recognize revenue over time. Revenue is recognized over time using the input method based on time in production as a percentage of total estimated production time to measure progress toward satisfying performance obligations using the estimated total time necessary to complete the parts per the customer's order and an estimate of inventory and production costs incurred to date. The majority of our CNC machining, 3D printing, and sheet metal contracts have a single performance obligation. The majority of our injection molding contracts have multiple performance obligations including one obligation to produce the mold and a second obligation to produce parts. For injection molding contracts with multiple performance obligations, we allocate revenue to each performance obligation based on its relative standalone selling price. We generally determine standalone selling price based on the price charged to customers.

Goodwill

We recognize goodwill in accordance with ASC 350, *Intangibles—Goodwill and Other*. Goodwill is the excess of cost of an acquired entity over the amounts assigned to assets acquired and liabilities assumed in a business combination. Goodwill is allocated to our reporting units, which are determined by the discrete financial information available for the component and whether it is regularly reviewed by segment management. Our reporting units are the United States and Europe. Goodwill is not amortized.

Goodwill is tested for impairment annually as of the first day of the fourth quarter, and is tested for impairment between annual tests if an event occurs or circumstances change that would indicate the carrying amount may be impaired. An impairment charge for goodwill is recognized only when the estimated fair value of a reporting unit, including goodwill, is less than its carrying amount. In performing the goodwill impairment assessment, the Company may assess qualitative factors to determine whether it is more likely than not that the fair value of the reporting unit is less than its carrying value. Qualitative factors may include, but are not limited to, economic, market and industry conditions, cost factors and overall financial performance of the reporting unit. If after assessing these qualitative factors, the Company determines it is "more-likely-than not" that the fair value is less than the carrying value, a quantitative assessment of goodwill is required. The quantitative impairment test requires judgment, including the identification of reporting units, the assignment of assets, liabilities and goodwill to reporting units, and the determination of fair value of each reporting unit. The impairment test requires the comparison of the fair value of each reporting unit with its carrying amount, including goodwill. In performing the impairment test, we determined the fair value of our reporting units through the income approach by using discounted cash flow (DCF) analyses. Determining fair value requires us to make judgments about appropriate discount rates, perpetual growth rates and the amount and timing of expected future cash flows. The cash flows employed in the DCF analysis for each reporting unit are based on the reporting unit's budget, long-term business plan and recent operating performance. Discount rate assumptions are based on an assessment of the risk inherent in the future cash flows of the respective reporting unit and market conditions. Given the inherent uncertainty in determining the assumptions underlying a DCF analysis, actual results may differ from those used in our valuations. As a result of the fiscal year 2022 analysis, which used the quantitative assessment, a $118.0 million impairment related to the Europe reporting unit was identified, which represented a write-off of all Europe goodwill, and recorded during the year ended December 31, 2022. As a result of the fiscal years 2024 and 2023 analyses, which used the qualitative assessment, there were no impairments recorded during the years ended December 31, 2024 and 2023.

Other Intangible Assets

We recognize other intangibles assets in accordance with ASC 350, *Intangibles—Goodwill and Other*. Other intangible assets include software technology, customer relationships and other intangible assets acquired from independent parties. We used a multi-period excess earnings method under the income approach to measure the software platform when acquired through an acquisition. The significant assumptions used to estimate the value of the software platform included forecasted annual revenue growth, gross margin rates, operating expenses as a percentage of sales and the weighted-

average cost of capital, which are affected by our business plans and expectations about future market or economic conditions. Other intangible assets with a definite life are amortized over a period ranging from two to 12 years on a straight line basis, and are tested for impairment whenever events or circumstances indicate that the carrying amount of an asset (asset group) may not be recoverable. An impairment loss is recognized when the carrying amount of an asset exceeds the estimated undiscounted cash flows generated by the asset. As of December 31, 2024, no impairment charges for intangible assets have been recognized.

Stock-Based Compensation

We determine our stock-based compensation in accordance with ASC 718, *Compensation—Stock Compensation* (ASC 718), which requires the measurement and recognition of compensation expense for all share-based payment awards made to employees and non-employee directors based on the grant date fair value of the award.

Determining the appropriate fair value model and calculating the fair value of stock option grants requires the input of subjective assumptions. We use the Black-Scholes option pricing model to value our stock option awards. Stock-based compensation expense is significant to our consolidated financial statements and is calculated using our best estimates, which involve inherent uncertainties and the application of management's judgment. Significant estimates include our expected term and stock price volatility. If different estimates and assumptions had been used, our common stock valuations could be significantly different and related stock-based compensation expense may be materially impacted.

The Black-Scholes option pricing model requires inputs such as the risk-free interest rate, expected term, expected volatility and expected dividend yield. We base the risk-free interest rate that we use in the Black-Scholes option pricing model on zero coupon U.S. Treasury instruments with maturities similar to the expected term of the award being valued. The expected term of stock options is estimated from the vesting period of the award and represents the weighted average period that our stock options are expected to be outstanding. We estimated the volatility of our stock price based on the historic volatility of our common stock. We have never paid and do not anticipate paying any cash dividends in the foreseeable future and, therefore, we use an expected dividend yield of zero in the option pricing model. We account for forfeitures as they occur.

The fair value of each new employee option awarded was estimated on the date of grant for the periods below using the Black-Scholes option pricing model with the following assumptions:

	Year Ended December 31,		
	2024	**2023**	**2022**
Risk-free interest rate	4.28 - 4.30%	3.55 - 4.55%	1.94 - 3.40%
Expected life (years)	6.25	2.00 - 6.25	6.25
Expected volatility	50.62 -53.17%	49.23 -55.92%	45.95 - 46.03%
Expected dividend yield	0%	0%	0%
Weighted average grant date fair value	$18.17	$16.36	$23.11

Our 2012 Employee Stock Purchase Plan (ESPP) allows eligible employees to purchase a variable number of shares of our common stock during each offering period at a discount through payroll deductions of up to 15% of their eligible compensation, subject to plan limitations. The ESPP provides for six-month offering periods with a single purchase period. At the end of each offering period, employees are able to purchase shares at 85% of the lower of the fair market value of our common stock on the first trading day of the offering period or on the last trading day of the offering period. We determine the fair value stock-based compensation related to our ESPP in accordance with ASC 718 using the component measurement approach and the Black-Scholes standard option pricing model.

The fair value of each offering period was estimated using the Black-Scholes option pricing model with the following assumptions:

	Year Ended December 31,		
	2024	2023	2022
Risk-free interest rate	4.29 - 5.16%	4.60 - 5.16%	0.17 - 4.60%
Expected life (months)	6.00	6.00	6.00
Expected volatility	30.97 - 65.60%	47.38 - 67.84%	47.05 - 67.84%
Expected dividend yield	0%	0%	0%

There are significant differences among option valuation models, and this may result in a lack of comparability with other companies that use different models, methods and assumptions. If factors change and we employ different assumptions in the application of ASC 718 in future periods, or if we decide to use a different valuation model, such as a lattice model, the stock-based compensation expense that we record in the future under ASC 718 may differ significantly from what we have recorded using the Black-Scholes option pricing model and could materially affect our operating results.

We recognize stock-based compensation expense on a straight-line basis over the requisite service period. We recorded stock-based compensation expense relating to stock options, restricted stock awards, performance stock units and our ESPP of $17.0 million, $16.0 million and $17.5 million during the years ended December 31, 2024, 2023 and 2022, respectively. As of December 31, 2024, we had $3.6 million of unrecognized stock-based compensation costs related to unvested stock options that are expected to be recognized over a weighted average period of 2.5 years. We issued options to purchase 140,405, 186,804 and 118,434 shares of our common stock during the years ended December 31, 2024, 2023 and 2022, respectively. As of December 31, 2024, we had $18.4 million of unrecognized stock-based compensation costs related to unvested restricted stock, which is expected to be recognized over a weighted average period of 2.6 years. We issued restricted stock awards of 377,961, 410,682 and 315,432 shares of our common stock during the years ended December 31, 2024, 2023 and 2022, respectively. As of December 31, 2024, we had $4.2 million of unrecognized stock-based compensation costs related to unvested performance stock, which is expected to be recognized over a weighted average period of 1.7 years. We issued performance stock awards of 79,436, 71,295 and 35,697 shares of our common stock during the years ended December 31, 2024, 2023 and 2022, respectively.

In future periods, our stock-based compensation expense is expected to increase due to our existing unrecognized stock-based compensation and the issuance of additional stock-based awards to continue to attract and retain employees and non-employee directors.

Income Taxes

We account for income taxes in accordance with ASC 740, *Income Taxes* (ASC 740). Under this method, we determine tax assets and liabilities based upon the differences between the financial statement carrying amounts and the tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. The tax consequences of most events recognized in the current year's financial statements are included in determining income taxes currently payable. However, because tax laws and financial accounting standards differ in their recognition and measurement of assets, liabilities and equity, revenues, expenses, gains and losses, differences arise between the amount of taxable income and pretax financial income for a year and between the tax basis of assets or liabilities and their reported amounts in the financial statements. Because we assume that the reported amounts of assets and liabilities will be recovered and settled, respectively, a difference between the tax basis of an asset or liability and its reported amount in the balance sheet will result in a taxable or a deductible amount in some future years when the related liabilities are settled or the reported amounts of the assets are recovered, giving rise to a deferred tax asset or liability. We establish a valuation allowance for any portion of our deferred tax assets that we believe will not be recognized.

ASC 740 also clarifies the accounting for uncertainty in income taxes recognized in an enterprise's financial statements by defining a criterion that an individual tax position must meet for any part of the benefit of that position to be recognized in an enterprise's financial statements. The Company recognizes the effect of income tax positions only if

sustaining those positions is more likely than not. The Company records penalties and interest related to unrecognized tax benefits in income taxes in the Company's Consolidated Statements of Income. Including interest and penalties, we have established a liability for uncertain tax positions of $4.6 million as of December 31, 2024.

The effective tax rate decreased by 5.7% for the year ended December 31, 2024 when compared to 2023 primarily due to a release of tax reserves arising from a successful audit closure, and a reduction in deferred tax liabilities from being revalued at a lower state tax rate, partially offset by an increase in losses in foreign operations that are not eligible for tax benefits on account of valuation allowances.

Recently adopted accounting pronouncements

In November 2023, the Financial Accounting Standards Board (FASB) issued ASU No. 2023-07, Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures, that updates reportable segment disclosure requirements primarily through enhanced disclosures about significant expenses and information used to assess segment performance on an annual and interim basis. The Company adopted this guidance for its annual year ended December 31, 2024 and all interim periods thereafter.

Recently issued accounting pronouncements not yet adopted

In December 2023, the FASB issued Accounting Standards Update (ASU) No. 2023-09, Income Taxes (Topic 740): Improvements to Income Tax Disclosures, that enhances the transparency of income tax disclosures by expanding annual disclosure requirements related to the rate reconciliation and income taxes paid. The Company is required to adopt this guidance for its annual year ending December 31, 2025. Early adoption is permitted. The Company is currently evaluating the impact of this guidance on its disclosures.

In November 2024, the FASB issued ASU No. 2024-03 ("ASU 2024-03"), Income Statement - Reporting Comprehensive Income - Expense Disaggregation Disclosures (Subtopic 220-40): Disaggregation of Income Statement Expenses, which is intended to improve disclosures about a public business entity's expenses, primarily through additional disaggregation of income statement expenses. The Company is required to adopt this guidance for its annual year ending December 15, 2027 and all interim periods thereafter. Early adoption is permitted. The Company is currently evaluating ASU 2024-03 to determine the impact on the Company's disclosures.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Quantitative and Qualitative Disclosure of Market Risks

Our exposure to market risk is confined to our cash and cash equivalent balances and investments. The primary goals of our investment policy are preservation of capital, fulfillment of liquidity needs and fiduciary control of cash and cash equivalent balances. We also seek to maximize income from our investments without assuming significant risk. To achieve our goals, we maintain a portfolio of debt securities with various maturities ranging from one to three years. Due to the nature of our investment portfolio, we are subject to interest rate risks, which we mitigate by generally holding our investments to maturity. In future periods, we will continue to evaluate our investment policy in order to continue our overall goals.

Foreign Currency Risk

As a result of our foreign operations, we have revenue, expenses, assets and liabilities that are denominated in foreign currencies. We generate revenue and incur production costs and operating expenses in British Pound, Euro and Japanese Yen.

Our operating results and cash flows are adversely impacted when the United States dollar appreciates relative to other foreign currencies. Additionally, our operating results and cash flows are adversely impacted when the British Pound appreciates relative to the Euro. As we expand internationally, our results of operations and cash flows will become increasingly subject to changes in foreign currency exchange rates.

We have not used forward contracts or currency borrowings to hedge our exposure to foreign currency risk. Foreign currency risk can be assessed by estimating the change in results of operations or financial position resulting from a hypothetical 10% adverse change in foreign exchange rates. We believe such a change would generally not have a material impact on our financial position, but could have a material impact on our results of operations. During the year ended December 31, 2023, we recognized a foreign currency translation loss of $3.9 million in connection with completing the closure of our Japan business. We recognized net foreign currency losses of $0.4 million and gains of $0.2 million for the years ended December 31, 2024 and 2023, respectively.

Item 8. Financial Statements and Supplementary Data

Proto Labs, Inc.
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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Proto Labs, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Proto Labs, Inc. (the Company) as of December 31, 2024 and 2023, the related consolidated statements of comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2024, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2024 and 2023, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2024, in conformity with U.S. generally accepted accounting principles.

We also have 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, 2024, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 21, 2025 expressed an unqualified opinion thereon.

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 consolidated 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 the critical audit matter does not alter in any way our opinion on the consolidated 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 account or disclosure to which it relates.

Revenue Recognition – Revenue Recognized Over Time

Description of the Matter

As discussed in the notes to the consolidated financial statements, the Company provides quality, quick-turn prototyping and on-demand manufacturing services. The majority of revenue recognized in a reporting period is based on completed, invoiced contracts. The Company manufactures custom parts to specific customer orders that have no alternative use to the Company, and the Company believes that there is a legally enforceable right to payment for performance completed to date on the internally and outsourced manufacturing parts. Revenue is recognized over time for internal and outsourced manufactured parts which meet these two criteria. For revenue recognized over time, management uses the input method based on time in production as a percentage of total estimated production time to measure progress toward satisfying performance obligations using the estimated total time necessary to complete the parts per the customer's order and an estimate of inventory and production costs incurred to date.

Auditing revenue recognized over time was challenging because the relevant accounting standard requires the Company to estimate the progress towards satisfaction of performance obligations, applying a single appropriate method to measure progress. The input method requires an analysis of the incurred time in production and an estimate of the total time necessary to complete the total parts per the customer's order. The Company also estimates inventory and production costs incurred to date. These estimates are based on management's assessment of the current status of production as well as historical results.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's process for recognizing revenue over time. This included testing controls over management's evaluation of contract terms, the estimation of production time incurred to date and total production time used in the input method, estimation of a reasonable profit margin and the completeness and accuracy of the data used in the input method.

To test the Company's revenue recognition over time, we performed audit procedures that included, among others, inspecting a sample of contracts to evaluate the existence of an enforceable right to payment for performance completed to-date, evaluating the progress towards completion of orders in process through examination of a sample of product shipments subsequent to the end of the reporting period, evaluating the reasonableness of management's estimate of profit margins based on a comparison to historical margins, testing the appropriateness of the timing and amount of revenue recognized over time based on the underlying inputs, and performing an independent sensitivity analysis to evaluate the impact on revenues of changes in significant assumptions.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2011.

Minneapolis, Minnesota
February 21, 2025

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Proto Labs, Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Proto Labs, Inc.'s internal control over financial reporting as of December 31, 2024, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Proto Labs, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2024, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2024 and 2023, the related consolidated statements of comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2024, and the related notes and our report dated February 21, 2025 expressed an unqualified opinion thereon.

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.

/s/ Ernst & Young LLP

Minneapolis, Minnesota
February 21, 2025

Proto Labs, Inc.
Consolidated Balance Sheets
(In thousands, except share and per share amounts)

	December 31, 2024	December 31, 2023
Assets		
Current assets		
Cash and cash equivalents	$ 89,071	$ 83,790
Short-term marketable securities	14,019	19,013
Accounts receivable, net of allowance for doubtful accounts of $1,975 and $2,499 as of December 31, 2024 and December 31, 2023, respectively	66,504	72,848
Inventory	12,305	13,657
Prepaid expenses and other current assets	10,049	9,124
Income taxes receivable	2,906	2,228
Total current assets	194,854	200,660
Property and equipment, net	227,263	253,655
Goodwill	273,991	273,991
Other intangible assets, net	21,422	25,584
Long-term marketable securities	17,773	8,019
Operating lease assets	2,993	4,628
Finance lease assets	692	960
Other long-term assets	4,524	4,856
Total assets	$ 743,512	$ 772,353
Liabilities and shareholders' equity		
Current liabilities		
Accounts payable	$ 15,504	$ 15,636
Accrued compensation	16,550	15,292
Accrued liabilities and other	19,621	16,872
Current operating lease liabilities	1,287	1,585
Current finance lease liabilities	309	296
Total current liabilities	53,271	49,681
Long-term operating lease liabilities	1,633	3,008
Long-term finance lease liabilities	287	595
Long-term deferred tax liabilities	13,565	18,742
Other long-term liabilities	4,605	5,032
Total liabilities	73,361	77,058
Shareholders' equity		
Preferred stock, $0.001 par value, authorized 10,000,000 shares; issued and outstanding 0 shares as of December 31, 2024 and December 31, 2023, respectively	-	-
Common stock, $0.001 par value, authorized 150,000,000 shares; issued and outstanding 24,226,088 and 25,721,957 shares as of December 31, 2024 and December 31, 2023, respectively	24	26
Additional paid-in capital	453,705	466,884
Retained earnings	244,406	256,398
Accumulated other comprehensive loss	(27,984)	(28,013)
Total shareholders' equity	670,151	695,295
Total liabilities and shareholders' equity	$ 743,512	$ 772,353

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

Proto Labs, Inc.
Consolidated Statements of Comprehensive Income
(In thousands, except share and per share amounts)

	Year Ended December 31,		
	2024	**2023**	**2022**
Statements of Operations:			
Revenue	$ 500,890	$ 503,877	$ 488,398
Cost of revenue	277,690	281,884	272,933
Gross profit	223,200	221,993	215,465
Operating expenses			
Marketing and sales	92,073	87,688	82,752
Research and development	41,298	40,135	38,222
General and administrative	64,333	65,788	67,544
Goodwill impairment	—	—	118,008
Costs related to disposal and exit activities	5,585	215	6,922
Total operating expenses	203,289	193,826	313,448
Income (loss) from operations	19,911	28,167	(97,983)
Other income (expense), net	4,761	(215)	106
Income (loss) before income taxes	24,672	27,952	(97,877)
Provision for income taxes	8,079	10,732	5,585
Net income (loss)	$ 16,593	$ 17,220	$ (103,462)
Net income (loss) per share:			
Basic	$ 0.66	$ 0.66	$ (3.77)
Diluted	$ 0.66	$ 0.66	$ (3.77)
Shares used to compute net income (loss) per share:			
Basic	25,096,117	26,186,533	27,409,838
Diluted	25,212,178	26,223,498	27,409,838
Other Comprehensive Income (Loss), net of tax			
Foreign currency translation adjustments	$ (228)	$ 5,365	$ (16,278)
Net unrealized gains (losses) on investments in securities	257	977	(1,260)
Comprehensive income (loss)	$ 16,622	$ 23,562	$ (121,000)

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

Proto Labs, Inc.
Consolidated Statements of Shareholders' Equity
(In thousands, except share amounts)

	Common Stock		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total
	Shares	Amount				
Balance at December 31, 2021	27,465,945	28	468,548	376,734	(16,817)	828,493
Common shares issued on exercise of options and other, net of shares withheld for tax obligations	279,603	—	2,269	—	—	2,269
Stock-based compensation expense	—	—	17,545	—	—	17,545
Repurchases of Common Stock	(857,123)	(1)	(14,622)	(15,036)	—	(29,659)
Net loss			—	(103,462)	—	(103,462)
Other comprehensive loss						
Foreign currency translation adjustment			—	—	(16,278)	(16,278)
Net unrealized gains (losses) on investments in securities			—	—	(1,260)	(1,260)
Comprehensive loss						(121,000)
Balance at December 31, 2022	26,888,425	$ 27	$ 473,740	$ 258,236	$ (34,355)	$ 697,648
Common shares issued on exercise of options and other, net of shares withheld for tax obligations	266,453	—	2,399	—	—	2,399
Stock-based compensation expense	—	—	15,989	—	—	15,989
Repurchases of Common Stock	(1,432,921)	(1)	(25,244)	(19,058)	—	(44,303)
Net income			—	17,220	—	17,220
Other comprehensive income						
Foreign currency translation adjustment			—	—	5,365	5,365
Net unrealized gains (losses) on investments in securities			—	—	977	977
Comprehensive income						23,562
Balance at December 31, 2023	25,721,957	$ 26	$ 466,884	$ 256,398	$ (28,013)	$ 695,295
Common shares issued on exercise of options and other, net of shares withheld for tax obligations	278,189	—	2,020	—	—	2,020
Stock-based compensation expense	—	—	16,999	—	—	16,999
Repurchases of Common Stock	(1,774,058)	(2)	(32,198)	(28,585)	—	(60,785)
Net income			—	16,593	—	16,593
Other comprehensive income (loss)						
Foreign currency translation adjustment			—	—	(228)	(228)
Net unrealized gains (losses) on investments in securities			—	—	257	257
Comprehensive income						16,622
Balance at December 31, 2024	24,226,088	$ 24	$ 453,705	$ 244,406	$ (27,984)	$ 670,151

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

Proto Labs, Inc.
Consolidated Statements of Cash Flows
(In thousands)

	Year Ended December 31,		
	2024	**2023**	**2022**
Operating activities			
Net income (loss)	$ 16,593	$ 17,220	$ (103,462)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation and amortization	35,808	37,528	39,425
Stock-based compensation expense	16,999	15,989	17,545
Deferred taxes	(5,153)	(7,656)	(9,499)
Interest on finance lease obligations	33	1,055	—
Loss on impairment of goodwill	—	—	118,008
Loss on foreign currency translation	—	3,906	—
Loss on impairment of equipment	256	—	—
Impairments related to exit and closure of Germany and Japan businesses	2,333	—	2,842
Gain on disposal of property and equipment	(13)	(498)	(1,211)
Other	1	154	35
Changes in operating assets and liabilities, net of acquisitions:			
Accounts receivable	9,650	2,727	1,632
Inventories	1,258	112	(310)
Prepaid expenses and other	(560)	4,203	(2,081)
Income taxes	(691)	1,823	(2,681)
Accounts payable	480	(1,838)	1,375
Accrued liabilities and other	835	(1,451)	461
Net cash provided by operating activities	77,829	73,274	62,079
Investing activities			
Purchases of property, equipment and other capital assets	(9,169)	(28,116)	(21,686)
Proceeds from sales of property, equipment and other capital assets	34	699	4,108
Purchases of other assets and investments	—	(1,000)	—
Purchases of marketable securities	(25,070)	—	(46,872)
Proceeds from sales of marketable securities	1,416	—	1,998
Proceeds from maturities of marketable securities	19,209	23,865	19,360
Net cash used in investing activities	(13,580)	(4,552)	(43,092)
Financing activities			
Proceeds from issuance of common stock from equity plans	4,019	3,835	3,950
Purchases of shares withheld for tax obligations	(1,995)	(1,436)	(1,682)
Repurchases of common stock and other	(60,278)	(43,951)	(29,659)
Principal repayments of finance lease obligations	(296)	(306)	(531)
Net cash used in financing activities	(58,550)	(41,858)	(27,922)
Effect of exchange rate changes on cash and cash equivalents	(418)	368	(436)
Net increase (decrease) in cash and cash equivalents	5,281	27,232	(9,371)
Cash and cash equivalents, beginning of period	83,790	56,558	65,929
Cash and cash equivalents, end of period	$ 89,071	$ 83,790	$ 56,558
Supplemental cash flow disclosure			
Cash paid for interest	$ 136	$ 1,055	$ 101
Cash paid for taxes	$ 13,913	$ 15,892	$ 19,160

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

Proto Labs, Inc.
Notes to Consolidated Financial Statements

Note 1 — Nature of Business

Organization and business

Proto Labs, Inc. and its subsidiaries (Proto Labs, the Company, we, us, or our) is a digital manufacturer of parts. The Company utilizes injection molding, computer numerical control (CNC) machining, 3D printing and sheet metal fabrication to manufacture custom parts for its customers. The Company's customers conduct nearly all their business over the internet. The Company targets its products to the millions of product developers and engineers who use three-dimensional computer-aided design (3D CAD) software to design products across a diverse range of end-markets, to the procurement and supply chain professionals seeking to easily and efficiently source custom parts on-demand, and to a wide variety of customers seeking to purchase low-volume custom parts. The Company has established operations in the United States and Europe. On October 21, 2024, the Company's board of directors approved a plan related to the Company's manufacturing facilities in Germany. The plan included the closure of the Company's injection molding manufacturing facility in Eschenlohe, Germany, and the discontinuation of Direct Metal Laser Sintering 3D printing services through its 3D printing facility in Putzbrunn, Germany. The Company will continue offering all its manufacturing services to customers across Europe, including injection molding and metal 3D printing. These services will be fulfilled through internal manufacturing facilities and a network of manufacturing partners. The Company expects to substantially complete the plan within fiscal year 2025. Previously we had established operations in Japan. On May 27, 2022, the Company's board of directors approved a plan for the closure of the Company's manufacturing facility in Japan and announced an intention to cease operations in the region. The Company dissolved its Japan operations in December 2023. Through the acquisition of Hubs in 2021, the Company provides its customers access to a global network of premium manufacturing partners who reside across North America, Europe and Asia, complementing its in-house manufacturing. Proto Labs, Inc. is headquartered in Maple Plain, Minnesota. The Company's subsidiaries are:

Name	Location
PL-US International LLC	United States
Hubs Manufacturing Inc.	United States
3D Hubs Manufacturing LLC	United States
Proto Labs Ltd.	United Kingdom
PL International Holdings, UK, Ltd.	United Kingdom
PL Euro Services Limited	United Kingdom
Proto Labs GmbH	Germany
Proto Labs Tooling GmbH	Germany
3D Hubs B.V.	Netherlands

Note 2 — Summary of Significant Accounting Policies

Principles of consolidation

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries, as listed within "Organization and business" above. All intercompany accounts and transactions have been eliminated in consolidation.

Comprehensive income (loss)

Components of comprehensive income (loss) include net income (loss), foreign currency translation adjustments and net unrealized gains and losses on investments in securities. Comprehensive income (loss) is disclosed in the accompanying Consolidated Statements of Comprehensive Income and Consolidated Statements of Shareholders' Equity.

Accounting estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (U.S. GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and related disclosures at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and cash equivalents

Cash and cash equivalents include cash and other investments, including marketable securities, with maturities of three months or less at the date of purchase. The Company maintains its cash in bank deposit accounts, which, at times, may exceed federally insured limits. The Company has not experienced any losses on such accounts.

Marketable securities

Marketable securities are categorized as available-for-sale and are recorded at fair value. Management determines the appropriate classification of debt securities at the time of purchase and reevaluates such designation as of each balance sheet date. The classification of marketable securities as current or non-current is dependent upon the security's maturity date. Securities with maturities of three months or less at the time of purchase are categorized as cash equivalents as described above.

Accounts receivable and allowance for doubtful accounts

Accounts receivable are reported at the invoiced amount less an allowance for doubtful accounts. As of each balance sheet date, the Company evaluates its accounts receivable and establishes an allowance for doubtful accounts based on a combination of specific customer circumstances and credit conditions taking into account the history of write-offs and collections. A receivable is considered past due if payment has not been received within the period agreed upon in the invoice. Accounts receivable are written off after all collection efforts have been exhausted. Recoveries of trade receivables previously written off are recorded when received.

Inventory

Inventory consists primarily of raw materials, which are recorded at the lower of cost and net realizable value using the standard cost method, which approximates first-in, first-out (FIFO) cost. The Company periodically reviews its inventory for slow-moving, damaged and discontinued items and provides allowances to reduce such items identified to their recoverable amounts.

Property, equipment and leasehold improvements

Property, equipment and leasehold improvements are stated at cost. Major improvements that substantially extend an asset's useful life are capitalized. Repairs, maintenance and minor improvements are charged to operations as incurred. Depreciation, including amortization of leasehold improvements and assets recorded under capital leases, is calculated using the straight-line method over the estimated useful lives of the individual assets and ranges from 3 to 39 years. Manufacturing equipment is depreciated over 3 to 15 years, office furniture and equipment are depreciated over 3 to 7 years, computer hardware and software are depreciated over 3 to 5 years, building costs are depreciated over 39 years, leasehold improvements are depreciated over the estimated lives of the related assets or the life of the lease, whichever is shorter, and building and land improvements are depreciated over 10 to 39 years. Assets not in service are not depreciated until the asset is put into use.

The Company follows ASC 350-40, *Internal-Use Software*, in accounting for internally developed software.

Goodwill

The Company recognizes goodwill in accordance with ASC 350, *Intangibles—Goodwill and Other*. Goodwill is the excess of cost of an acquired entity over the amounts assigned to assets acquired and liabilities assumed in a business combination. Goodwill is allocated to the Company's reporting units, which are determined by the discrete financial information available for the component and whether it is regularly reviewed by segment management. The Company's reporting units are the United States and Europe. Goodwill is not amortized.

Goodwill is tested for impairment annually as of the first day of the fourth quarter, and is tested for impairment between annual tests if an event occurs or circumstances change that would indicate the carrying amount may be impaired. An impairment charge for goodwill is recognized only when the estimated fair value of a reporting unit, including goodwill, is less than its carrying amount. In performing the goodwill impairment assessment, the Company may assess qualitative factors to determine whether it is more likely than not that the fair value of the reporting unit is less than its carrying value. Qualitative factors may include, but are not limited to, economic, market and industry conditions, cost factors and overall financial performance of the reporting unit. If after assessing these qualitative factors, the Company determines it is "more-likely-than-not" that the fair value is less than the carrying value, a quantitative assessment of goodwill is required. The quantitative impairment test requires judgment, including the identification of reporting units, the assignment of assets, liabilities and goodwill to reporting units, and the determination of fair value of each reporting unit. The impairment test requires the comparison of the fair value of each reporting unit with its carrying amount, including goodwill. In performing an impairment test, the Company determines the fair value of its reporting units through the income approach by using discounted cash flow (DCF) analyses. Determining fair value requires the Company to make judgments about appropriate discount rates, perpetual growth rates and the amount and timing of expected future cash flows. The cash flows employed in the DCF analysis for each reporting unit are based on the reporting unit's budget, long-term business plan and recent operating performance. Discount rate assumptions are based on an assessment of the risk inherent in the future cash flows of the respective reporting unit and market conditions. Given the inherent uncertainty in determining the assumptions underlying a DCF analysis, actual results may differ from those used in the Company's valuations. As a result of the fiscal year 2022 analysis, which used the quantitative assessment, a $118.0 million impairment related to the Europe reporting unit was identified, which represented a write-off of all Europe goodwill, and recorded during the year ended December 31, 2022. As a result of the fiscal years 2024 and 2023 analyses, which used the qualitative assessment, there were no impairments recorded during the years ended December 31, 2024 and 2023.

Other Intangible Assets

Other intangible assets include software technology, customer relationships and other intangible assets acquired from other independent parties. Other intangible assets with a definite life are amortized over a period ranging from two to 12 years on a straight line basis, and are tested for impairment whenever events or circumstances indicate that the carrying amount of an asset (asset group) may not be recoverable. An impairment loss is recognized when the carrying amount of an asset exceeds the estimated undiscounted cash flows generated by the asset. The amount of the impairment loss recorded is calculated by the excess of the asset's carrying value over its fair value.

Accounting for long-lived assets

The Company periodically reviews the carrying amount of its property, equipment and leasehold improvements to determine if circumstances exist indicating an impairment or if depreciation periods should be modified. If facts or circumstances indicate that an impairment may exist, the Company will prepare a projection of the undiscounted future cash flows of the specific assets to determine if the assets are recoverable. If impairment exists based on these projections, an adjustment will be made to reduce the carrying amount of the specific assets to fair value. During the years ended December 31, 2024 and 2022, the Company recognized $2.3 million and $2.8 million, respectively, related to write-down of fixed assets for certain manufacturing operations in Germany and Japan manufacturing operations.

Revenue recognition

The Company recognizes revenue for its internal and outsourced manufacturing operations in accordance with ASC 606, *Revenue from Contracts with Customers*. The Company manufactures custom parts to specific customer orders that have no alternative use to the Company, and the Company believes there is a legally enforceable right to payment for performance completed to date on internally and outsourced manufactured parts. For manufactured parts that meet these two criteria, the Company will recognize revenue over time. Revenue is recognized over time using the input method based on time in production as a percentage of total estimated production time to measure progress toward satisfying performance obligations using the estimated total time necessary to complete the parts per the customer's order and an estimate of inventory and production costs incurred to date. The majority of the Company's injection molding contracts have multiple performance obligations including one obligation to produce the mold and a second obligation to produce parts. For injection molding contracts with multiple performance obligations, the Company allocates revenue to each performance obligation based on its relative standalone selling price. The Company generally determines standalone selling price based on the price charged to customers.

Leases

The Company accounts for leases in accordance with ASC 842, *Leases*, which requires the balance sheet recognition of lease assets and lease liabilities by lessees for those leases classified as operating and finance leases. The Company determines if an arrangement is a lease at inception. Operating leases are included in operating lease assets, current operating lease liabilities and long-term operating lease liabilities in the Consolidated Balance Sheets and are recognized based on the present value of lease payments over the lease term at the commencement date. Finance leases are included in finance lease assets, current finance lease liabilities and long-term finance lease liabilities in the Consolidated Balance Sheets and are recognized based on the present value of lease payments over the lease term at commencement date. The majority of the Company's leases do not provide an implicit rate of return, therefore, the Company uses its incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments. Lease agreements that contain non-lease components, with the exception of certain real estate leases, are accounted for as a single lease component.

The Company has operating leases for office space, manufacturing facilities and certain company vehicles and equipment and finance leases for certain company equipment and manufacturing facilities. The leases have remaining lease terms of less than one year to five years. Leases with an initial term of 12 months or less are not recorded on the balance sheet; we recognize lease expense for these leases on a straight-line basis over the lease term. For purposes of calculating operating lease liabilities, lease terms may be deemed to include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. As of December 31, 2024, the operating lease liability does not include any options to extend or terminate leases.

Income taxes

The Company accounts for income taxes in accordance with ASC 740, *Income Taxes* (ASC 740). Under this method, the Company determines tax assets and liabilities based upon the differences between the financial statement carrying amounts and the tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. The tax consequences of most events recognized in the financial statements are included in determining income taxes currently payable. However, because tax laws and financial accounting standards differ in their recognition and measurement of assets, liabilities and equity, revenues, expenses, gains and losses, differences arise between the amount of taxable income and pretax financial income for a year and between the tax basis of assets or liabilities and their reported amounts in the financial statements. Because the Company assumes that the reported amounts of assets and liabilities will be recovered and settled, respectively, a difference between the tax basis of an asset or liability and its reported amount in the balance sheet will result in a taxable or a deductible amount in some future years when the related liabilities are settled or the reported amounts of the assets are recovered, giving rise to a deferred tax asset or liability. The Company establishes a valuation allowance for any portion of its deferred tax assets that are not at a level of "more-likely-than-not" to be recognized.

ASC 740 also clarifies the accounting for uncertainty in income taxes recognized in an enterprise's financial statements by requiring that individual tax positions are recorded only when they meet a "more-likely-than-not" criterion. The Company recognizes the effect of income tax positions only if sustaining those positions is "more-likely-than-not". The Company records penalties and interest related to unrecognized tax benefits in income taxes in the Company's Consolidated Statements of Income.

Stock-based compensation

The Company accounts for stock-based compensation in accordance with ASC 718, *Compensation—Stock Compensation* (ASC 718). Under the fair value recognition provisions of ASC 718, the Company measures stock-based compensation cost at the grant date fair value and recognizes the compensation expense over the requisite service period, which is the vesting period, using a straight-line attribution method. The amount of stock-based compensation expense recognized during a period is based on the portion of the awards that are ultimately expected to vest. The Company accounts for forfeitures as they occur. Ultimately, the total expense recognized over the vesting period will only be for those awards that vest. The Company's awards are not eligible to vest early in the event of retirement, however, the awards vest early in the event of a change in control.

In determining the compensation cost of the options granted, the fair value of options granted has been estimated on the date of grant using the Black-Scholes option-pricing model.

Advertising costs

Advertising is expensed as incurred and was approximately $14.3 million, $13.8 million and $13.2 million for the years ended December 31, 2024, 2023 and 2022, respectively.

Research and development

Research and development expenses consist primarily of personnel and outside service costs related to the development of new processes and product lines, enhancements of existing product lines, development of software for internal use, maintenance of internally developed software, quality assurance and testing. Costs for internal use software are evaluated by project and capitalized where appropriate under ASC 350-40, *Intangibles - Goodwill and Other, Internal-Use Software*. Research and development costs were approximately $41.3 million, $40.1 million and $38.2 million for the years ended December 31, 2024, 2023 and 2022, respectively.

Foreign currency translation/transactions

The Company translated the balance sheets of its foreign subsidiaries at period-end exchange rates and the income statement at the average exchange rates in effect throughout the period. The Company has recorded the translation adjustment as a separate component of consolidated shareholders' equity. Foreign currency transaction gains and losses are recognized in the Consolidated Statements of Comprehensive Income.

Recently adopted accounting pronouncements

In November 2023, the FASB issued ASU No. 2023-07, Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures, that updates reportable segment disclosure requirements primarily through enhanced disclosures about significant expenses and information used to assess segment performance on an annual and interim basis. The Company adopted this guidance for its annual year ended December 31, 2024 and all interim periods thereafter.

Recently issued accounting pronouncements not yet adopted

In December 2023, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2023-09, Income Taxes (Topic 740): Improvements to Income Tax Disclosures, that enhances the transparency of income tax disclosures by expanding annual disclosure requirements related to the rate reconciliation and income taxes paid. The Company is required to adopt this guidance for its annual year ending December 31, 2025. Early adoption is permitted. The Company is currently evaluating the impact of this guidance on its disclosures.

In November 2024, the FASB issued ASU No. 2024-03 ("ASU 2024-03"), Income Statement - Reporting Comprehensive Income - Expense Disaggregation Disclosures (Subtopic 220-40): Disaggregation of Income Statement Expenses, which is intended to improve disclosures about a public business entity's expenses, primarily through additional disaggregation of income statement expenses. ASU 2024-03 is effective for annual periods beginning after December 15, 2026, and interim periods beginning after December 15, 2027, with early adoption permitted. The Company is currently evaluating ASU 2024-03 to determine the impact on the Company's disclosures.

Note 3 – Revenue

The Company accounts for revenue in accordance with ASC 606, *Revenue from Contracts with Customers*. The Company provides quality, quick-turn prototyping and on-demand manufacturing services. As a result, the majority of revenue recognized in a reporting period is based on completed, invoiced contracts.

The Company manufactures parts that have no alternative use to the Company since the parts are custom made to specific customer orders, and the Company believes there is a legally enforceable right to payment for performance completed to date on these manufactured parts. For manufactured parts that meet these two criteria, the Company will recognize revenue over time. Revenue is recognized over time using the input method based on time in production as a percentage of total estimated production time to measure progress toward satisfying performance obligations using the estimated total time necessary to complete the parts per the customer's order and an estimate of inventory and production costs incurred to date. The value of unbilled receivables related to the performance on manufactured parts not yet completed as of December 31, 2024 and 2023 was $10.1 million and $10.1 million, respectively, recorded within accounts receivable, net of allowance for doubtful accounts. The value of unsatisfied performance obligations for contracts with an

original expected length of one year or less as of December 31, 2024 and 2023 was $8.7 million and $9.8 million, respectively, recorded within accrued liabilities.

Revenue by geographic region for the years ended December 31, 2024, 2023 and 2022 was as follows:

	Year Ended December 31,		
(in thousands)	2024	2023	2022
Revenue:			
United States	$ 396,192	$ 396,821	$ 387,399
Europe	104,698	107,056	92,770
Japan	—	—	8,229
Total revenue	$ 500,890	$ 503,877	$ 488,398

Revenue by product line for the years ended December 31, 2024, 2023 and 2022 was as follows:

	Year Ended December 31,		
(in thousands)	2024	2023	2022
Revenue:			
Injection Molding	$ 194,215	$ 203,941	$ 200,578
CNC Machining	206,887	198,222	188,372
3D Printing	83,767	84,291	78,988
Sheet Metal	15,265	16,540	19,498
Other Revenue	756	883	962
Total revenue	$ 500,890	$ 503,877	$ 488,398

The Company generally expenses sales commissions when incurred because the amortization period would have been one year or less. These costs are recorded within marketing and sales expenses.

Note 4 – Net Income (Loss) Per Common Share

Basic net income (loss) per share is computed based on the weighted average number of common shares outstanding. Diluted net income (loss) per share is computed based on the weighted average number of common shares outstanding, increased by the number of additional shares that would have been outstanding had the potentially dilutive common shares been issued and reduced by the number of shares the Company could have repurchased from the proceeds from issuance of the potentially dilutive shares. Potentially dilutive shares of common stock include stock options and other stock-based awards granted under stock-based compensation plans and shares committed to be purchased under the employee stock purchase plan. For the years ended December 31, 2024, 2023 and 2022 respectively, 451,029, 263,992 and 197,827 anti-dilutive options were excluded from the calculation of diluted weighted average shares outstanding.

The following table presents the calculation of net income (loss) per basic and diluted share attributable to common shareholders:

(in thousands, except share and per share amounts)	Year Ended December 31, 2024	2023	2022
Net income (loss)	$ 16,593	$ 17,220	$ (103,462)
Basic - weighted-average shares outstanding:	25,096,117	26,186,533	27,409,838
Effect of dilutive securities:			
Employee stock options and other	116,061	36,965	—
Diluted - weighted-average shares outstanding:	25,212,178	26,223,498	27,409,838
Net income (loss) per share attributable to common shareholders:			
Basic	$ 0.66	$ 0.66	$ (3.77)
Diluted	$ 0.66	$ 0.66	$ (3.77)

Note 5 – Goodwill and Other Intangible Assets

There were no changes in the carrying amount of goodwill for the years ended December 31, 2024 and 2023.

Goodwill decreased $126.6 million for the year ended December 31, 2022 as a result of impairments related to our Europe and Japan reporting units. The Euro denominated goodwill had been translated at the end of each period using the current exchange rates resulting in a foreign currency translation adjustment that was recorded as a component of Other Comprehensive Income.

Intangible assets other than goodwill for the years ended December 31, 2024 and 2023 were as follows:

(in thousands)	Year Ended December 31, 2024 Gross	Accumulated Amortization	Net	Year Ended December 31, 2023 Gross	Accumulated Amortization	Net	Useful Life (in years)	Weighted Average Useful Life Remaining (in years)
Marketing assets	$ 930	$ (930)	$ —	$ 930	$ (900)	$ 30	10.0	0.0
Non-compete agreement	819	(703)	116	835	(603)	232	2.0 - 5.0	0.7
Software technology	13,229	(9,123)	4,106	13,229	(7,752)	5,477	10.0	3.0
Software platform	25,657	(8,457)	17,200	26,373	(6,575)	19,798	12.0	8.1
Tradenames	344	(344)	—	354	(347)	7	3.0	0.0
Customer relationships	12,165	(12,165)	—	12,223	(12,183)	40	3.0 - 9.0	0.0
Total intangible assets	$ 53,144	$ (31,722)	$ 21,422	$ 53,944	$ (28,360)	$ 25,584		

Amortization expense for intangible assets for the years ended December 31, 2024, 2023 and 2022 was $3.7 million, $5.9 million and $6.0 million, respectively. The Euro denominated intangible assets are translated at the end of each period using the current exchange rates resulting in a foreign currency translation adjustment that is recorded as a component of Other Comprehensive Income. For the years ended December 31, 2024, 2023 and 2022 the foreign currency translation adjustment was $2.2 million, $1.3 million and $1.7 million, respectively.

Estimated aggregated amortization expense based on the current carrying value of the amortizable intangible assets is as follows:

(in thousands)	Estimated Amortization Expense
2025	$ 3,605
2026	3,505
2027	3,496
2028	2,128
2029	2,128
Thereafter	6,560
Total estimated amortization expense	$ 21,422

Note 6 – Fair Value Measurements

ASC 820, *Fair Value Measurement* (ASC 820), defines fair value 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. ASC 820 also establishes a fair value hierarchy which requires classification based on observable and unobservable inputs when measuring fair value. There are three levels of inputs that may be used to measure fair value:

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

Level 2—Observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The Company's assets and liabilities that are required to be measured or disclosed at fair value on a recurring basis include cash and cash equivalents and marketable securities. The Company’s cash consists of bank deposits. The Company’s cash equivalents measured at fair value consist of money market mutual funds. The Company determines the fair value of these investments using Level 1 inputs. The Company's marketable securities consist of short-term and long-term agency, municipal, corporate and other debt securities. Fair value for the corporate debt securities is primarily determined based on quoted market prices (Level 1). Fair values for the U.S. municipal securities, U.S. government agency securities, certificates of deposit and U.S. treasury securities are primarily determined using dealer quotes or quoted market prices for similar securities (Level 2).

The following tables summarizes financial assets as of December 31, 2024 and 2023 measured at fair value on a recurring basis:

(in thousands)	December 31, 2024			December 31, 2023		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Financial Assets:						
Cash and cash equivalents, excluding money market mutual fund	$ 86,366	$ —	$ —	$ 77,423	$ —	$ —
Money market mutual fund	2,705	—	—	6,367	$ —	$ —
Marketable securities	17,261	14,531	—	4,482	22,550	—
Total	$ 106,332	$ 14,531	$ —	$ 88,272	$ 22,550	$ —

Note 7 – Marketable Securities

The Company invests in short-term and long-term agency, municipal, corporate and other debt securities. As of December 31, 2024 and 2023, the securities are categorized as available-for-sale and are recorded at fair value.

Information regarding the Company's short-term and long-term marketable securities as of December 31, 2024 and 2023 is as follows:

(in thousands)	December 31, 2024			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
U.S. government agency securities	$ 8,323	—	$ (22)	$ 8,301
Corporate debt securities	15,852	—	(82)	15,770
U.S. municipal securities	6,762	—	(38)	6,724
U.S. treasury bonds	1,000	—	(3)	997
Total marketable securities	$ 31,937	$ —	$ (145)	$ 31,792

(in thousands)	December 31, 2023			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
U.S. government agency securities	$ 16,798	—	$ (278)	$ 16,520
Corporate debt securities	2,511	—	(19)	2,492
U.S. municipal securities	7,876	—	(105)	7,771
Certificates of deposit/time deposits	249	—	-	249
Total marketable securities	$ 27,434	$ —	$ (402)	$ 27,032

Fair values for the corporate debt securities are primarily determined based on quoted market prices (Level 1). Fair values for the U.S. government agency securities, U.S. municipal securities, commercial paper and certificates of deposit are primarily determined using dealer quotes or quoted market prices for similar securities (Level 2).

Classification of marketable securities as current or non-current is based upon the security's maturity date as of the date of these financial statements.

The December 31, 2024 balance of available-for-sale debt securities by contractual maturity is shown in the following table at fair value. Actual maturities may differ from contractual maturities because the issuers of the securities may have the right to prepay obligations without prepayment penalties.

(in thousands)	December 31, 2024
Due in one year or less	$ 14,019
Due after one year through five years	17,773
Total marketable securities	$ 31,792

Note 8 – Property and Equipment

Property and equipment consists of the following:

(in thousands)	December 31, 2024	December 31, 2023
Land	$ 15,596	$ 15,596
Buildings and improvements	137,461	133,033
Machinery and equipment	236,675	235,527
Computer hardware and software	89,699	86,659
Leasehold improvements	4,528	4,609
Construction in progress	5,632	8,410
Total	489,591	483,834
Accumulated depreciation and amortization	(262,328)	(230,179)
Property and equipment, net	$ 227,263	$ 253,655

Depreciation expense for the years ended December 31, 2024, 2023 and 2022 was $32.1 million, $31.6 million and $33.4 million, respectively.

Note 9 – Inventory

Inventory consists primarily of raw materials, which are recorded at the lower of cost and net realizable value using the standard cost method, which approximates first-in, first-out (FIFO) cost. The Company periodically reviews its inventory for slow-moving, damaged and discontinued items and provides allowances to reduce such items identified to their recoverable amounts.

The Company's inventory consists of the following:

(in thousands)	December 31, 2024	December 31, 2023
Total inventory	$ 12,989	$ 14,319
Allowance for obsolescence	(684)	(662)
Inventory, net of allowance	$ 12,305	$ 13,657

Note 10 – Financing Obligations

The Company had no financing obligations as of December 31, 2024 and 2023.

Note 11 – Employee Benefit Plans

The Company maintains a 401(k) retirement plan that covers employees in the United States. Under the plan, a full-time or regular part-time (over 20 hours/week) employee becomes a participant after completing three months of employment. Employees may elect to contribute up to 50 percent of regular gross pay, subject to federal law limits on the dollar amount that participants may contribute to the plan, each calendar year. The Company matches part of the employee contributions and may make a discretionary contribution to the plan. Total employer contributions were approximately $4.3 million, $4.6 million and $3.9 million for the years ended December 31, 2024, 2023 and 2022, respectively.

The Company also sponsors defined contribution retirement plans that covers the employees in the United Kingdom and the Netherlands. Total employer contributions in the United Kingdom were approximately $0.5 million in each of the years ended December 31, 2024, 2023 and 2022, respectively. Total employer contributions in the Netherlands were approximately $0.6 million in each of the years ended December 31, 2024 and 2023, respectively. There were no employer contributions in the Netherlands in the year ended December 31, 2022.

Note 12 – Stock-Based Compensation

On July 8, 2022, the board of directors approved the Proto Labs, Inc. 2022 Long-Term Incentive Plan, which was approved by the Company's shareholders at a Special Meeting of Shareholders on August 29, 2022, and subsequently amended and restated by the Company's shareholders at the Annual Meeting of Shareholders on May 23, 2024 (as amended and restated, the "2022 Plan") to increase the number of shares available for issuance pursuant to awards under the 2022 Plan by an additional 430,000 shares, add a minimum vesting requirement, and extend the expiration date so that the term of the 2022 Plan runs for ten years from the date of the shareholder approval. Under the 2022 Plan, the Company has the ability to grant stock options, stock appreciation rights (SARs), restricted stock, restricted stock units, other stock-based awards and cash incentive awards. Awards under the 2022 Plan have a maximum term of ten years from the date of grant. The compensation and talent committee may provide that the vesting or payment of any award will be subject to the attainment of specified performance measures in addition to the satisfaction of any continued service requirements and the compensation and talent committee will determine whether such measures have been achieved. The per-share exercise price of stock options and SARs granted under the 2022 Plan generally may not be less than the fair market value of a share of our common stock on the date of the grant.

The Company also has outstanding awards under the 2012 Long-Term Incentive Plan, as amended (the 2012 Plan), although the plan expired in February 2022 and no additional awards have since been or will be made under the 2012 Plan. The 2012 Plan provided the Company the ability to grant stock options, SARs, restricted stock, restricted stock units, other stock-based awards and cash incentive awards. Awards under the 2012 Plan that subsequently expired, were forfeited or cancelled, or settled in cash after August 29, 2022 became available for awards under the 2022 Plan.

The Company's 2012 Employee Stock Purchase Plan (ESPP) allows eligible employees to purchase a variable number of shares of the Company's common stock at a discount through payroll deductions of up to 15 percent of their eligible compensation, subject to plan limitations. The ESPP provides for six-month offering periods with a single purchase

period, and at the end of each offering period, employees are able to purchase shares at 85 percent of the lower of the fair market value of the Company's common stock on the first trading day of the offering period or on the last trading day of the offering period. The Company determines the fair value stock-based compensation related to its ESPP in accordance with ASC 718 using the component measurement approach and the Black-Scholes standard option pricing model.

Employees purchased 141,743 and 171,991 shares of common stock under the ESPP at an average exercise price of $27.91 and $22.30 during 2024 and 2023, respectively. As of December 31, 2024, 602,150 shares remained available for future issuance under the ESPP.

The Company determines its stock-based compensation in accordance with ASC 718, which requires the measurement and recognition of compensation expense for all share-based payment awards made to employees and non-employee directors based on fair value.

Determining the appropriate fair value model and calculating the fair value of stock option grants requires the input of subjective assumptions. The Company uses the Black-Scholes option pricing model to value its stock option awards. Stock-based compensation expense is calculated using the Company's best estimates, which involve inherent uncertainties and the application of management's judgment. Significant estimates include its expected term and stock price volatility.

The expected term of stock options is estimated from the vesting period of the award and represents the weighted average period that the Company's stock options are expected to be outstanding. The Company estimates the volatility of its stock price based on the historic volatility of its common stock. The Company bases the risk-free interest rate that it uses in the Black-Scholes option pricing model on U.S. Treasury instruments with maturities similar to the expected term of the award being valued. The Company has never paid, and does not anticipate paying, any cash dividends in the foreseeable future and, therefore, the Company uses an expected dividend yield of zero in the option pricing model. The Company accounts for forfeitures as they occur. The Company recognizes stock-based compensation expense on a straight-line basis over the requisite service period.

The following table summarizes stock-based compensation expense for the years ended December 31, 2024, 2023 and 2022, respectively:

	Year Ended December 31,		
(in thousands)	2024	2023	2022
Stock options and other	$ 15,691	$ 14,550	$ 16,103
Employee stock purchase plan	1,308	1,439	1,442
Total stock-based compensation expense	$ 16,999	$ 15,989	$ 17,545
Cost of revenue	$ 1,935	$ 1,840	$ 2,172
Operating expenses:			
Marketing and sales	3,112	3,426	3,295
Research and development	2,721	2,556	2,189
General and administrative	9,231	8,167	9,889
Total stock-based compensation expense	$ 16,999	$ 15,989	$ 17,545

Stock Options

The following table provides the assumptions used in the Black-Scholes option pricing model for the years ended December 31, 2024, 2023 and 2022:

	Year Ended December 31,		
	2024	2023	2022
Risk-free interest rate	4.28 - 4.30%	3.55 - 4.55%	1.94 - 3.40%
Expected life (years)	6.25	2 - 6.25	6.25
Expected volatility	50.62 - 53.17%	49.23 - 55.92%	45.95 - 46.03%
Expected dividend yield	0%	0%	0%
Weighted average grant date fair value	$18.17	$16.36	$23.11

The following table summarizes stock option activity and the weighted average exercise price for the years ended December 31, 2024, 2023 and 2022:

	Stock Options	Weighted-Average Exercise Price
Options outstanding at January 1, 2022	233,384	$ 97.78
Granted	118,434	48.24
Exercised	(3,114)	30.58
Cancelled	(84,712)	89.32
Options outstanding at December 31, 2022	263,992	79.07
Granted	186,804	33.36
Exercised	—	—
Cancelled	(63,635)	62.44
Expired	(15,848)	55.67
Options outstanding at December 31, 2023	371,313	59.92
Granted	140,405	33.44
Exercised	(1,936)	32.13
Cancelled	(59,552)	61.83
Expired	(5,094)	67.78
Options outstanding at December 31, 2024	445,136	$ 51.34
Exercisable at December 31, 2024	183,942	$ 70.06

The outstanding options have a term of 10 years. For employees, options that have been granted become exercisable ratably over the vesting period, which is generally a four-year period, beginning on the first anniversary of the grant date, subject to the employee's continuing service to the Company. For directors, options generally become exercisable in full on the first anniversary of the grant date.

The total intrinsic value of options exercised during the years ended December 31, 2024 and 2022, was less than $0.1 million for each period respectively. There were no options exercised during the year ended December 31, 2023. The

aggregate intrinsic value represents the cumulative difference between the fair market value of the underlying common stock and the option exercise prices.

For options outstanding at December 31, 2024, the weighted-average remaining contractual term was 6.9 years and the aggregate intrinsic value was $1.6 million. For options exercisable at December 31, 2024, the weighted-average remaining contractual term was 4.7 years and the aggregate intrinsic value was $0.3 million. Refer to the table below for additional information.

The following table summarizes information about stock options outstanding at December 31, 2024:

	Options Outstanding, Vested and Expected to Vest			Options Exercisable	
Range of Exercise Prices	Number Outstanding	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price ($)	Number Exercisable	Weighted Average Exercise Price ($)
$32.13 to $33.68	163,427	8.95	33.14	8,883	32.32
$33.69 to $39.59	145,977	6.53	35.00	67,050	35.07
$39.60 to $180.46	135,732	4.97	90.84	108,009	94.88

The fair value of share-based payment transactions is recognized in the Consolidated Statements of Comprehensive Income. As of December 31, 2024, there was $3.6 million of total unrecognized compensation cost related to unvested stock options, which is expected to be recognized over a weighted average period of 2.5 years. The total fair value of options vested was $2.3 million, $1.8 million and $2.3 million for the years ended December 31, 2024, 2023 and 2022, respectively.

Restricted Stock

The 2012 Plan provides for the award of restricted stock or restricted stock units. Restricted stock awards are share settled and restrictions lapse ratably over the vesting period, which is generally a four-year period, beginning on the first anniversary of the grant date, subject to the employee's continuing service to the Company. For directors, restrictions generally lapse in full on the first anniversary of the grant date.

The following table summarizes restricted stock activity for the years ended December 31, 2024, 2023 and 2022:

	Restricted Stock Awards	Weighted-Average Grant Date Fair Value Per Share
Restricted stock at January 1, 2022	343,782	$ 111.79
Granted	315,432	42.03
Restrictions lapsed	(130,452)	101.32
Forfeited	(50,166)	96.48
Restricted stock at December 31, 2022	478,596	70.36
Granted	410,682	32.46
Restrictions lapsed	(137,053)	79.61
Forfeited	(98,760)	61.25
Restricted stock at December 31, 2023	653,465	45.89
Granted	377,961	33.50
Restrictions lapsed	(195,831)	54.52
Forfeited	(72,334)	38.40
Restricted stock at December 31, 2024	763,261	$ 38.25

As of December 31, 2024, there was $18.4 million of unrecognized compensation expense related to unvested restricted stock, which is expected to be recognized over a weighted-average period of 2.6 years.

Performance Stock

Performance stock units (PSUs) are expressed in terms of a target number of PSUs, with anywhere between 0 percent and 200 percent of that target number capable of being earned and vesting at the end of a three-year performance period depending on the Company's performance in the final year of the performance period and the award recipient's continued employment. The Company's outstanding PSUs at December 31, 2024 are based on market conditions and the related compensation cost is based on the fair value at grant date calculated using a Monte Carlo pricing model.

The following table summarizes performance stock activity for the years ended December 31, 2024, 2023 and 2022:

	Performance Stock Awards	Weighted-Average Grant Date Fair Value Per Share
Performance stock at January 1, 2022	16,839	$ 115.56
Granted	35,697	96.71
Restrictions lapsed	—	—
Performance change	(13,156)	99.59
Forfeited	(3,578)	121.79
Performance stock at December 31, 2022	35,802	77.91
Granted	71,295	57.79
Restrictions lapsed	—	—
Performance change	—	—
Forfeited	—	—
Performance stock at December 31, 2023	107,097	74.08
Granted	79,436	48.20
Restrictions lapsed	—	—
Performance change	(2,772)	227.14
Forfeited	(3,588)	52.18
Performance stock at December 31, 2024	180,173	$ 60.75

As of December 31, 2024, there was $4.2 million of unrecognized compensation expense related to unvested performance stock, which is expected to be recognized over a weighted-average period of 1.7 years.

Employee Stock Purchase Plan

The following table presents the assumptions used to estimate the fair value of the ESPP during the years ended December 31, 2024, 2023 and 2022:

	Year Ended December 31,		
	2024	2023	2022
Risk-free interest rate	4.29 - 5.16%	4.60 - 5.16%	0.17 - 4.60%
Expected life (months)	6.00	6.00	6.00
Expected volatility	30.97 - 65.60%	47.38 - 67.84%	47.05 - 67.84%
Expected dividend yield	0%	0%	0%

Note 13 – Leases

Supplemental balance sheet information related to leases was as follows:

(in thousands)	December 31, 2024	December 31, 2023
Operating lease assets	$ 2,993	$ 4,628
Current operating lease liabilities	$ 1,287	$ 1,585
Long-term operating lease liabilities	1,633	3,008
Total operating lease liabilities	$ 2,920	$ 4,593
Finance lease assets	$ 692	$ 960
Current finance lease liabilities	$ 309	$ 296
Long-term finance lease liabilities	287	595
Total finance lease liabilities	$ 596	$ 891

Lease expense is recognized on a straight-line basis over the lease term, with variable payments recognized in the period those payments are incurred. The components of lease expense for the periods reported were as follows:

(in thousands)	Twelve Months Ended December 31, 2024	Twelve Months Ended December 31, 2023
Operating lease cost	$ 1,762	$ 1,965
Finance lease cost:		
Amortization of right-of-use assets	$ 329	$ 732
Interest on lease obligations	33	1,055
Variable lease cost	$ 382	$ 371
Total lease cost	$ 2,506	$ 4,123

Maturities of operating and finance lease liabilities as of December 31, 2024 were as follows:

(in thousands)	Operating Leases	Finance Leases
Year Ending December 31,		
2025	$ 1,363	$ 329
2026	790	292
2027	422	-
2028	373	-
2029	104	-
After 2029	2	-
Total future minimum lease payments	3,054	621
Less interest	(134)	(25)
Present value of lease liabilities	$ 2,920	$ 596

As of December 31, 2024, we have no operating or finance leases that have not yet commenced.

Weighted average remaining lease term and discount rate was as follows:

	December 31,	
	2024	2023
Weighted Average Remaining Lease Term - operating leases (years)	3.0	3.6
Weighted Average Remaining Lease Term - finance leases (years)	1.6	2.6
Weighted Average Discount Rate - operating leases	2.6%	2.5%
Weighted Average Discount Rate - finance leases	4.4%	4.4%

Supplemental cash flow information related to leases was as follows:

	Twelve Months Ended December 31,	
(in thousands)	2024	2023
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 2,093	$ 2,288
Operating cash flows from finance leases	$ 33	$ 1,055
Financing cash flows from finance leases	$ 296	$ 306
Lease assets obtained in exchange for new operating lease liabilities	$ —	$ 2,324
Lease assets obtained in exchange for new financing lease liabilities	$ —	$ 240

Note 14 – Accumulated Other Comprehensive Loss

Other comprehensive loss is comprised of foreign currency translation adjustments and net unrealized gains (losses) on investments in securities. During the year ended December 31, 2023 we recognized a $3.9 million foreign currency translation loss from the completion on the closure of our Japan business.

The following table presents the changes in accumulated other comprehensive loss balances for the years ended December 31, 2024, 2023 and 2022, respectively:

(in thousands)	Year Ended December 31, 2024	2023	2022
Balance at beginning of period	$ (28,013)	$ (34,355)	$ (16,817)
Foreign currency translation adjustments			
Other comprehensive income (loss) before reclassifications	(228)	1,459	(16,278)
Amounts reclassified from accumulated other comprehensive income (loss)	—	3,906	—
Net current-period other comprehensive income (loss)	(228)	5,365	(16,278)
Net unrealized gains (losses) on investments in securities			
Other comprehensive income (loss) before reclassifications	257	977	(1,260)
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	—
Net current-period other comprehensive income (loss)	257	977	(1,260)
Balance at end of period	$ (27,984)	$ (28,013)	$ (34,355)

Note 15 – Income Taxes

The Company is subject to income tax in multiple jurisdictions and the use of estimates is required to determine the provision for income taxes. For the years ended December 31, 2024, 2023 and 2022, the Company recorded an income tax provision of $8.1 million, $10.7 million and $5.6 million, respectively. The effective income tax rate for the years ended December 31, 2024, 2023 and 2022 was 32.7 percent, 38.4 percent and (5.7) percent, respectively.

The effective tax rate decreased by 5.7 percent for the year ended December 31, 2024 when compared to 2023 primarily due to a release of tax reserves arising from a successful audit closure, and a reduction in deferred tax liabilities from being revalued at a lower state tax rate, partially offset by an increase in losses in foreign operations that are not eligible for tax benefits on account of valuation allowances.

The provision for income taxes is based on income before income taxes reported for financial statement purposes. The components of income before income taxes are as follows:

(in thousands)	Year Ended December 31, 2024	2023	2022
Domestic	$ 39,386	$ 38,099	$ 33,731
Foreign	(14,714)	(10,147)	(131,608)
Total	$ 24,672	$ 27,952	$ (97,877)

Significant components of the provision for income taxes for the following periods are as follows:

(in thousands)	Year Ended December 31, 2024	2023	2022
Current:			
Federal	$ 11,970	$ 15,717	$ 15,366
State	1,451	2,418	(393)
Foreign	(165)	34	(99)
Deferred			
Federal	(4,606)	(8,202)	(9,159)
State	(1,291)	(385)	(723)
Foreign	(3,736)	1,379	(4,641)
Valuation Allowance	4,456	(229)	5,234
Total	$ 8,079	$ 10,732	$ 5,585

A reconciliation of the federal statutory income tax rate to the effective tax rate is as follows:

	Year Ended December 31, 2024	2023	2022
Federal tax statutory rate	21.0 %	21.0 %	21.0 %
State tax (net of federal benefit)	2.5	3.5	(0.8)
Share based compensation	4.7	6.0	(2.1)
Valuation allowance against deferred tax assets	16.6	(2.4)	(5.0)
Goodwill impairment	—	—	(24.4)
Research and development credit	(4.1)	(3.8)	1.2
Foreign rate differential	(3.7)	(1.6)	2.9
Tax reserves	(0.2)	1.9	1.0
Provision to return difference	(0.2)	(0.2)	—
Unrealized foreign exchange losses	—	2.9	—
Revaluation of deferred tax liability	(3.2)	1.1	—
Closure of Japan branch net operating loss reversal	—	11.1	—
Miscellaneous	(0.7)	(1.1)	0.5
Total	32.7 %	38.4 %	(5.7 %)

Significant components of deferred tax assets and liabilities are as follows:

(in thousands)	December 31, 2024	December 31, 2023
Deferred tax assets:		
Accrued expenses	$ 1,658	$ 2,155
Section 174 expenses	15,058	13,084
Leases	897	1,186
Stock options and other equity	5,402	4,588
Inventories	216	275
Research and development credit	2,760	2,327
Other assets	1,212	1,094
Net operating loss	19,738	16,237
Less valuation allowance	(21,782)	(17,667)
Total deferred tax assets	25,159	23,279
Deferred tax liabilities:		
Depreciation	(21,505)	(25,552)
Goodwill	(14,449)	(12,921)
Intangible assets	(1,873)	(2,362)
Leases	(897)	(1,186)
Total deferred tax liabilities	(38,724)	(42,021)
Net deferred tax liability	$ (13,565)	$ (18,742)

The Company has recorded no U.S. deferred taxes related to the undistributed earnings of its non-U.S. subsidiaries as of December 31, 2024. Such amounts are intended to be reinvested outside of the United States indefinitely. It is not practicable to estimate the amount of additional tax that might be payable on the foreign earnings. As of December 31, 2024, the Company had accumulated undistributed earnings in non-U.S. subsidiaries of $2.0 million.

As of December 31, 2024, the Company had estimated net operating loss carry forwards of $19.7 million for tax purposes. The net operating losses relate to operations in the United Kingdom, Germany and Netherlands. The United Kingdom net operating losses may be carried forward without any time limitations, but are limited to £5 million, plus 50 percent of taxable income exceeding £5 million. Germany net operating losses may be carried forward without any time limitations but are limited to €1 million, plus 60 percent of taxable income exceeding €1 million. Netherlands net operating losses may be carried forward without any time limitations, but are limited to €1 million, plus 50 percent of taxable income exceeding €1 million.

The Company establishes valuation allowances for deferred tax assets when, after consideration of all positive and negative evidence, it is considered "more-likely-than-not" that a portion of the deferred tax assets will not be realized. The Company's valuation allowances of $21.8 million and $17.7 million at December 31, 2024 and 2023, respectively, reduce the carrying value of deferred tax assets associated with certain net operating loss carry forwards and other assets with insufficient positive evidence for recognition. The increase in the valuation allowance is primarily attributable to additional net operating losses generated in 2024.

The Company files a U.S. federal income tax return and income tax returns in various states and foreign jurisdictions. With a few exceptions, the Company is no longer subject to U.S. federal, state, or foreign income tax examinations by tax authorities for years before 2020.

The Company has liabilities related to unrecognized tax benefits totaling $3.4 million and $3.6 million at December 31, 2024 and 2023, respectively, that if recognized would result in a reduction of the Company’s effective tax rate. The liabilities are classified as other long-term liabilities in the accompanying consolidated balance sheets. The

Company recognizes interest and penalties related to income tax matters in income tax expense and reports the liability in current or long-term income taxes payable as appropriate.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

	Year Ended December 31,	
	2024	2023
Balance at beginning of period	$ 3,616	$ 3,236
Additions for tax positions of current year	533	632
Additions for tax positions of prior years	—	86
Decrease related to the expiration of statutes of limitations	(395)	(338)
Reduction for tax positions of prior years	(384)	—
Balance at period end	$ 3,370	$ 3,616

Note 16 – Litigation

From time to time, the Company may be subject to various legal proceedings and claims that arise in the ordinary course of its business. Although the results of litigation and claims cannot be predicted with certainty, the Company does not believe it is a party to any litigation the outcome of which, if determined adversely, would individually or in the aggregate be reasonably expected to have a material adverse effect on its business.

Note 17 – Segment Reporting

The Company's reportable segments are based on the internal reporting used by the Company's CEO, who is the chief operating decision maker (CODM), to assess operating performance and make decisions about the allocation of resources. The Company's reportable segments are based upon geographic region, consisting of the United States and Europe. The Corporate Unallocated and Japan category includes non-reportable segments, as well as research and development and general and administrative costs that are global in nature and that the Company does not allocate directly to its operating segments.

Revenue in the United States and Europe is derived primarily from Injection Molding, CNC Machining, 3D Printing and Sheet Metal product lines. Revenue in Japan was derived from Injection Molding and CNC Machining product lines. Injection Molding revenue consists of sales of custom injection molds and injection-molded parts. CNC Machining revenue consists of sales of CNC-machined and lathe-turned customer parts. 3D Printing revenue consists of sales of 3D-printed parts. Sheet Metal revenue consists of sales of fabricated sheet metal parts.

The accounting policies of the reportable segments are the same as those described in Note 2 – Summary of Significant Accounting Policies. Intercompany transactions primarily relate to intercontinental activity and have been eliminated and are excluded from the reported amounts. The difference between income (loss) from operations and pre-tax income relates to foreign currency-related gains and losses and interest income on cash balances and investments, which are not allocated to business segments.

The following table summarizes selected financial information by reportable segments:

Year Ended December 31 2024, (in thousands)	United States	Europe	Corporate Unallocated and Japan	Total
Revenue	$ 396,192	$ 104,698	$ —	$ 500,890
Segment expense[1]	297,902	114,654	62,838	475,394
Exit, Disposal and Goodwill impairment costs	—	5,585	—	5,585
Income (Loss) from Operations	$ 98,290	$ (15,541)	$ (62,838)	$ 19,911

Year Ended December 31 2023, (in thousands)	United States	Europe	Corporate Unallocated and Japan	Total
Revenue	$ 396,821	$ 107,056	$ —	$ 503,877
Segment expense[1]	302,139	119,584	53,772	475,495
Exit, Disposal and Goodwill impairment costs	—	—	215	215
Income (Loss) from Operations	$ 94,682	$ (12,528)	$ (53,987)	$ 28,167

Year Ended December 31 2022, (in thousands)	United States	Europe	Corporate Unallocated and Japan	Total
Revenue	$ 387,399	$ 92,770	$ 8,229	$ 488,398
Segment expense[1]	294,223	105,148	62,080	461,451
Exit, Disposal and Goodwill impairment costs	—	118,008	6,922	124,930
Income (Loss) from Operations	$ 93,176	$ (130,386)	$ (60,773)	$ (97,983)

[1] Segment expenses consist primarily of raw materials, equipment depreciation, employee compensation including benefits, commissions and stock-based compensation, facilities costs and overhead allocations associated with the manufacturing process for molds and custom parts, marketing programs such as electronic, print and pay-per-click advertising and trade shows and other related costs for our United States and Europe reportable segments. Segment expenses for our Corporate Unallocated and Japan reportable segment consist primarily of personnel and outside service costs related to the development of new processes and product lines, enhancements of existing product lines, software developed for internal use, maintenance of internally developed software, quality assurance and testing and employee compensation including benefits, stock-based compensation, professional service fees related to accounting, tax and legal and other related overhead costs.

Total long-lived assets, expenditures for additions to long-lived assets and depreciation and amortization expense are as follows:

(in thousands)	December 31, 2024	December 31, 2023	December 31, 2022
Long-lived assets:			
United States	$ 181,291	$ 201,388	$ 203,816
Europe	45,972	52,267	53,835
Japan	—	—	134
Total long-lived assets	$ 227,263	$ 253,655	$ 257,785

	Year Ended December 31,		
(in thousands)	2024	2023	2022
Expenditures for additions to long-lived assets:			
United States	$ 6,372	$ 24,553	$ 17,538
Europe	2,797	3,563	4,137
Japan	—	—	11
Total expenditures for additions to long-lived assets	$ 9,169	$ 28,116	$ 21,686

	Year Ended December 31,		
(in thousands)	2024	2023	2022
Depreciation and Amortization:			
United States	$ 28,930	$ 30,667	$ 31,666
Europe	6,878	6,861	6,770
Japan	—	—	989
Total depreciation and amortization	$ 35,808	$ 37,528	$ 39,425

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, has evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934 (Exchange Act)) as of the end of the period covered by this report. Based upon that evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that, as of the end of the period covered by this Annual Report on Form 10-K, our disclosure controls and procedures were effective and provided reasonable assurance that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported accurately and within the timeframes specified in the SEC's rules and forms and accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining an adequate system of internal control over financial reporting, as defined in the Exchange Act Rule 13a-15(f). Management conducted an assessment of the Company's internal control over financial reporting based on the framework established by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control – Integrated Framework* (2013 framework). Based on the assessment, management concluded that, as of December 31, 2024, the Company's internal control over financial reporting is effective. The Company's registered public accounting firm's attestation report on the Company's internal control over financial reporting is provided in Part II, Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting (as such term is defined in Rule 13a-15(f) under the Exchange Act) during the period covered by this report that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

During the three months ended December 31, 2024, none of our directors or officers (as defined in Rule 16a-1(f) of the Exchange Act) adopted, modified or terminated any contract, instruction or written plan for the purchase or sale of our securities that was intended to satisfy the affirmative defense conditions of Rule 10b5-1(c) of the Exchange Act or any non-Rule 10b5-1 trading arrangement (as defined in Item 408(c) of Regulation S-K).

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item with respect to Item 401 relating to executive officers is contained in Part I, Item 1 of this Annual Report on Form 10-K under the heading "Information about our Executive Officers" and with respect to other information relating to our directors will be set forth in our 2025 Proxy Statement under the caption "Proposal 1 — Election of Directors," which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K, and is incorporated herein by reference.

We have adopted a Code of Ethics and Business Conduct that applies to all of our directors, officers and employees, including our principal executive officer and principal financial officer. A copy of our current Code of Ethics and Business Conduct is available on our website at www.protolabs.com under the Investors Relations section. We plan to post to our website at the address described above any future amendments or waivers of our Code of Ethics and Business Conduct.

The additional information required by this item is incorporated herein by reference to the section titled "Corporate Governance" of our 2025 Proxy Statement, which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 11. Executive Compensation

The information required by this item is incorporated herein by reference to the sections titled "Compensation Discussion and Analysis," "Executive Compensation Tables," "Director Compensation" "Compensation and Talent Committee Interlocks and Insider Participation," and "Compensation and Talent Committee Report" of our 2025 Proxy Statement, which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Shareholder Matters

The information required by this item is incorporated herein by reference to the sections titled "Security Ownership of Certain Beneficial Owners and Management" and "Equity Compensation Plan Information" of our 2025 Proxy Statement, which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated herein by reference to the sections titled "Corporate Governance — Certain Relationships and Related Party Transactions" and "Corporate Governance — Director Independence" of our 2025 Proxy Statement, which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 14. Principal Accountant Fees and Services

The information required by this item is incorporated herein by reference to the section titled "Fees Paid to Independent Registered Public Accounting Firm" of our 2025 Proxy Statement, which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this report:

1. Consolidated Financial Statements

See Index to Consolidated Financial Statement at Item 8 herein.

2. Financial Statement Schedules

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statement or notes herein.

3. Exhibits

See the Exhibit Index immediately following the signature page of this Annual Report on Form 10-K.

Exhibit Number	Description of Exhibit
3.1	Third Amended and Restated Articles of Incorporation of Proto Labs, Inc. (incorporated by reference to Exhibit 3.2 to the Company's Registration Statement on Form S-1/A, filed on February 13, 2012.)
3.2	Articles of Amendment to Third Amended and Restated Articles of Incorporation of Proto Labs, Inc. dated May 20, 2015 (incorporated by reference to Exhibit 3.1 to the Company's Form 8-K, filed with the Commission on May 21, 2015).
3.3	Third Amended and Restated By-Laws of Proto Labs, Inc, as amended through November 15, 2022 (incorporated by reference to Exhibit 3.2 to the Company's Form 8-K, filed on November 15, 2022).
4.1	Form of certificate representing common shares of Proto Labs, Inc. (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-1/A, filed on February 1, 2012).
4.2	Description of Securities of Registrant
10.1#	2012 Long-Term Incentive Plan, as amended as of August 5, 2015 (incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q, filed on November 3, 2015).
10.2#	Form of Incentive Stock Option Agreement under 2012 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.14 to the Company's Registration Statement on Form S-1/A, filed on February 13, 2012).
10.3#	Form of Non-Statutory Stock Option Agreement (Directors) under 2012 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.15 to the Company's Registration Statement on Form S-1/A, filed on February 13, 2012).
10.4#	Form of Non-Statutory Stock Option Agreement (U.S. Employees) under 2012 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.16 to the Company's Registration Statement on Form S-1/A, filed on February 13, 2012).
10.5#	Form of Non-Statutory Stock Option Agreement (U.K. Employees) under 2012 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.17 to the Company's Registration Statement on Form S-1/A, filed on February 13, 2012).
10.6#	Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.18 to the Company's Registration Statement on Form S-1/A, filed on February 13, 2012).
10.7#	Amended and Restated Credit Agreement, dated as of September 30, 2011, between Proto Labs, Inc. and Wells Fargo Bank, N.A. (incorporated by reference to Exhibit 10.19 to the Company's Registration Statement on Form S-1/A, filed on October 26, 2011).
10.8#	Credit Agreement, dated November 27, 2017, by and among Proto Labs and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed on December 1, 2017).
10.9#	Form of U.S. Severance Agreement (incorporated by reference to Exhibit 99.1 to the Company's Form 8-K, filed on March 1, 2013).

10.10#	Form of UK Severance Agreement (incorporated by reference to Exhibit 10.2 to the Company's Form 10-Q, filed on May 8, 2013).
10.11#	Amended and Restated Executive Employment Agreement, dated August 1, 2019, by and between Proto Labs, Inc. and Victoria M. Holt (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed on August 2, 2019).
10.12#	Form of Restricted Stock Agreement under 2012 Long-Term Incentive Plan for the initial grant to Victoria M. Holt (incorporated by reference to Exhibit 10.2 to the Company's Form 8-K, filed on February 6, 2014).
10.13#	Form of Restricted Stock Unit Agreement under 2012 Long-Term Incentive Plan (U.S. Employees) (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed on February 12, 2014).
10.14#	Form of Restricted Stock Unit Agreement under 2012 Long-Term Incentive Plan (U.K. Employees) (incorporated by reference to Exhibit 10.2 to the Company's Form 8-K, filed on February 12, 2014).
10.15#	Form of Restricted Stock Unit Agreement under 2012 Long-Term Incentive Plan (Directors) (incorporated by reference to Exhibit 99.6 to the Company's Registration Statement on Form S-8, filed on March 3, 2014).
10.16	Consulting Agreement, dated February 4, 2021, by and between Proto Labs, Inc. and Victoria M. Holt (incorporated by reference to Exhibit 10.2 to the Company's Form 8-K, filed on February 4, 2021).
10.17#	Form of Performance Stock Unit Agreement under 2012 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed on February 17, 2017).
10.18#	Form of Deferred Stock Unit Agreement under 2012 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q, filed on August 1, 2018).
10.19#	Form of Executive Severance Agreement (incorporated by reference to Exhibit 99.2 to the Company's Form 8-K, filed on June 6, 2022).
10.20#	Executive Employment Agreement, dated January 29, 2021, by and between Proto Labs, Inc. and Robert Bodor (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed on February 4, 2021).
10.21#	Amended and Restated Proto Labs, Inc. 2022 Long-Term Incentive Plan (as amended on May 23, 2024) (incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q filed on August 2, 2024)
10.22#	Form of Incentive Stock Option Agreement under the 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.2 to the Company's Form 8-K, filed on August 30, 2022).
10.23#	Form of Non-Statutory Stock Option Agreement (Directors) under the 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.3 to the Company's Form 8-K, filed on August 30, 2022).
10.24#	Form of Non-Statutory Stock Option Agreement (U.S. Employees) under the 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.4 to the Company's Form 8-K, filed on August 30, 2022).
10.25#	Form of Non-Statutory Stock Option Agreement (U.K. Employees) under the 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.5 to the Company's Form 8-K, filed on August 30, 2022).
10.26#	Form of Restricted Stock Unit Award Agreement under the 2022 Long-Term Incentive Plan (U.S. Employees) (incorporated by reference to Exhibit 10.6 to the Company's Form 8-K, filed on August 30, 2022).
10.27#	Form of Restricted Stock Unit Award Agreement under the 2022 Long-Term Incentive Plan (U.K. Employees) (incorporated by reference to Exhibit 10.7 to the Company's Form 8-K, filed on August 30, 2022).
10.28#	Form of Restricted Stock Unit Award Agreement under the 2022 Long-Term Incentive Plan (Directors) (incorporated by reference to Exhibit 10.8 to the Company's Form 8-K, filed on August 30, 2022).
10.29#	Form of Performance Stock Unit Award Agreement under the 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.9 to the Company's Form 8-K, filed on August 30, 2022).
10.30#	Form of Deferred Stock Unit Award Agreement under the 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.10 to the Company's Form 8-K, filed on August 30, 2022).

10.31#	Form of Restricted Stock Unit Agreement Grant Notice under the Amended and Restated 2022 Long-Term Incentive Plan (Non-employee Director) (incorporated by reference to Exhibit 10.2 to the Company's Form 10-Q, filed on August 2, 2024).
10.32#	Form of Deferred Stock Unit Agreement Grant Notice under the Amended and Restated 2022 Long-Term Incentive Plan (Non-Employee Director) (incorporated by reference to Exhibit 10.3 to the Company's Form 10-Q, filed on August 2, 2024).
10.33#	Settlement Agreement, fully executed on October 1, 2024 between Proto Labs, Inc., Proto Labs Germany GmbH and Bjoern Klaas (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed on October 7, 2024).
19.1	Proto Labs, Inc. Insider Trading Policy
19.2	Proto Labs, Inc. Supplement to Insider Trading Policy
21.1	Subsidiaries of Proto Labs, Inc.
23.1	Consent of Ernst & Young LLP
24.1	Powers of Attorney
31.1	Certification of the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act
31.2	Certification of the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act
32.1*	Certification of the Chief Executive Officer and the Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act
97	Proto Labs, Inc. Required Compensation Recovery Policy (incorporated by reference to Exhibit 97 to the Company's Form 10-K, filed on February 16, 2024)
101.INS**	XBRL Instance Document- the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH**	Inline XBRL Taxonomy Extension Schema Document
101.CAL**	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF**	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB**	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE**	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101

# Indicates management contract or compensatory plan or arrangement.

* The certifications furnished in Exhibit 32.1 hereto are deemed to accompany this Annual Report on Form 10-K and will not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended. Such certifications will not be deemed to be incorporated by reference into any filings under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent that the registrant specifically incorporates it by reference.

** Users of this data are advised that, pursuant to Rule 406T of Regulation S-T, these interactive data files are deemed not filed or part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933 or Section 18 of the Securities Exchange Act of 1934 and otherwise are not subject to liability under these sections.

SIGNATURE

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.

Proto Labs, Inc.

Date: February 21, 2025

/s/ Robert Bodor

Robert Bodor

President and Chief Executive Officer
(Principal Executive Officer)

Date: February 21, 2025

/s/ Daniel Schumacher

Daniel Schumacher

Chief Financial Officer
(Principal Financial and Accounting Officer)

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 in the capacities and on the dates indicated.

Date: February 21, 2025

/s/ Robert Bodor

Robert Bodor

President and Chief Executive Officer and Director
(Principal Executive Officer)

Date: February 21, 2025

/s/ Daniel Schumacher

Daniel Schumacher

Chief Financial Officer
(Principal Financial and Accounting Officer)

Chairman of the Board of Directors:
Rainer Gawlick*

Directors:
Archie C. Black*
Sujeet Chand*
Moonhie Chin*
Stacy Greiner*
Donald G. Krantz*
Sven A. Wehrwein*

* Robert Bodor, by signing his name hereto, does hereby sign this document on behalf of each of the above named directors of the registrant pursuant to powers of attorney duly executed by such persons and filed as an exhibit hereto.

Date: February 21, 2025

/s/ Robert Bodor

Robert Bodor

Attorney-in-Fact