

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT  
UNDER THE SECURITIES ACT OF 1933

**Crown Electrokinetics Corp.**  
(Exact Name of Registrant as Specified in Its Charter)

**Delaware**

**47-5423944**

(State or Other Jurisdiction of  
Incorporation or Organization)

(IRS Employer  
Identification Number)

**1110 NE Circle Blvd.  
Corvallis, Oregon 97330  
(800) 674-3612**

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

**Douglas Croxall  
Chief Executive Officer  
1110 NE Circle Blvd.  
Corvallis, Oregon 97330  
(800) 674-3612**

(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

**Please send copies of all communications to:**

**M. Ali Panjwani, Esq.  
Pryor Cashman LLP  
7 Times Square  
New York, New York 10036  
(212) 421-4100**

**Approximate date of commencement of proposed sale to the public:** As soon as practicable after the effective date of this Registration Statement.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

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 7(a)(2)(B) of the Securities Act.

**The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Commission acting pursuant to said Section 8(a) may determine.**

**The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state or other jurisdiction where the offer or sale is not permitted.**

**PRELIMINARY PROSPECTUS**

**SUBJECT TO COMPLETION**

**DATED JUNE 30, 2023**

**180,881,232 Shares**

**Crown Electrokinetics Corp.**

This prospectus relates to the resale, from time to time, by the selling stockholders named herein (the "Selling Stockholders") of (i) an aggregate of 21,000,000 shares of our common stock issuable upon the conversion of shares of our Series E Convertible Preferred Stock (the "Series E Preferred Stock"); (ii) an aggregate of 35,527,740

shares of our common stock, par value \$0.0001 per share (“common stock”), issuable upon the conversion of shares of our Series F Convertible Preferred Stock (the “Series F Preferred Stock”); (iii) an aggregate of 23,902,602 shares of our common stock issuable upon the conversion of shares of our Series F-1 Convertible Preferred Stock (the “Series F-1 Preferred Stock”); (iv) an aggregate of 7,496,749 shares of our common stock issuable upon the conversion of shares of our Series F-2 Convertible Preferred Stock (the “Series F-2 Preferred Stock”); (v) an aggregate of 35,527,740 shares of common stock issuable upon exercise of certain outstanding warrants issued in connection with the Series F Preferred Stock (the “Series F Warrants”); (vi) an aggregate of 23,902,602 shares of common stock issuable upon exercise of certain outstanding warrants issued in connection with the Series F-1 Preferred Stock (the “Series F-1 Warrants”); (vii) an aggregate of 7,496,749 shares of common stock issuable upon exercise of certain outstanding warrants issued in connection with the Series F-2 Preferred Stock (the “Series F-2 Warrants” and together with the Series F Warrants and the Series F-1 Warrants, collectively, the “Warrants”); and (viii) 26,027,050 shares of our common stock issued in connection with various transactions.

We are not selling any securities under this prospectus and we will not receive proceeds from the sale of the shares of our common stock by the Selling Stockholders. However, we may receive proceeds from the cash exercise of the Warrants, which, if exercised in cash at the current applicable exercise price, with respect to all of the 66,927,091 shares of common stock, would result in gross proceeds to us of approximately \$9,987,000.

We will pay the expenses of registering the shares of common stock offered by this prospectus, but all selling and other expenses incurred by the Selling Stockholders will be paid by the Selling Stockholders. The Selling Stockholders may sell our shares of common stock offered by this prospectus from time to time on terms to be determined at the time of sale through ordinary brokerage transactions or through any other means described in this prospectus under “Plan of Distribution.” The prices at which the Selling Stockholders may sell shares will be determined by the prevailing market price for our common stock or in negotiated transactions.

Our common stock is quoted on The Nasdaq Capital Market, or Nasdaq, under the symbol “CRKN.” On June 29, 2023, the last reported sale price for our common stock on Nasdaq was \$0.14.

**Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page 15 of this prospectus for a discussion of information that should be considered in connection with an investment in our securities.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

The date of this prospectus is , 2023.

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the U.S. Securities and Exchange Commission (the “SEC”). You should read this prospectus and the information and documents incorporated herein by reference carefully. Such documents contain important information you should consider when making your investment decision. See “Where You Can Find Additional Information” and “Incorporation of Certain Documents by Reference” in this prospectus.

**You should rely only on the information contained in or incorporated by reference into this prospectus. Neither we nor the selling stockholders named herein (the “Selling Stockholders”) have authorized anyone to provide you with information different from, or in addition to, that contained in or incorporated by reference into this prospectus. This prospectus is an offer to sell only the securities offered hereby but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in or incorporated by reference into this prospectus is current only as of their respective dates or on the date or dates that are specified in those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.**

The Selling Stockholders are not offering to sell or seeking offers to purchase these securities in any jurisdiction where the offer or sale is not permitted. Neither we nor the Selling Stockholders have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the jurisdiction of the United States who come into possession of this prospectus are required to inform themselves about and to observe any restrictions relating to this Offering and the distribution of this prospectus applicable to that jurisdiction.

If required, each time the Selling Stockholders offer shares of common stock, we will provide you with, in addition to this prospectus, a prospectus supplement that will contain specific information about the terms of that offering. We may also authorize the Selling Stockholders to use one or more free writing prospectuses to be provided to you that may contain material information relating to that offering. We may also use a prospectus supplement and any related free writing prospectus to add, update or change any of the information contained in this prospectus or in documents we have incorporated by reference. This prospectus, together with any applicable prospectus supplements, any related free writing prospectuses and the documents incorporated by reference into this prospectus, includes all material information relating to this offering. To the extent that any statement that we make in a prospectus supplement is inconsistent with statements made in this prospectus, the statements made in this prospectus will be deemed modified or superseded by those made in a prospectus supplement. Please carefully read both this prospectus and any prospectus supplement together with the additional information described below under the section entitled "Incorporation of Certain Documents by Reference" before buying any of the securities offered.

Unless the context otherwise requires, the terms "Crown," "the Company," "we," "us" and "our" refer to Crown Electrokinetics Corp.

Unless otherwise indicated, information contained in this prospectus or incorporated by reference herein concerning our industry and the markets in which we operate is based on information from independent industry and research organizations, other third-party sources (including industry publications, surveys and forecasts), and management estimates. Management estimates are derived from publicly available information released by independent industry analysts and third-party sources, as well as data from our internal research, and are based on assumptions made by us upon reviewing such data and our knowledge of such industry and markets, which we believe to be reasonable. Although we believe the data from these third-party sources is reliable, we have not independently verified any third-party information. In addition, projections, assumptions and estimates of the future performance of the industry in which we operate and our future performance are necessarily subject to uncertainty and risk due to a variety of factors, including those described in "Risk Factors" and "Cautionary Note Regarding Forward-Looking Statements." These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

### CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

When used in this prospectus, including the documents that we have incorporated by reference, in future filings with the SEC or in press releases or other written or oral communications, statements which are not historical in nature, including those containing words such as "believe," "expect," "anticipate," "estimate," "plan," "continue," "intend," "should," "may" or the negative of these words and phrases or similar words or phrases which are predictions of or indicate future events or trends and which do not relate solely to historical matters, are intended to identify "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 (set forth in Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act")). In particular, statements pertaining to our trends, liquidity and capital resources, among others, contain forward-looking statements. You can also identify forward-looking statements by discussions of strategy, plans or intentions. Examples of forward-looking statements include, but are not limited to, statements about the following:

- our prospects, including our future business, revenues, expenses, net income, earnings per share, gross margins, profitability, cash flows, cash position, liquidity, financial condition and results of operations, backlog of orders and revenue, our targeted growth rate, our goals for future revenues and earnings, and our expectations about realizing the revenues in our backlog and in our sales pipeline;
- the potential impact of COVID-19 on our business and results of operations;
- the effects on our business, financial condition and results of operations of current and future economic, business, market and regulatory conditions, including the current economic and market conditions and their effects on our customers and their capital spending and ability to finance purchases of our products, services, technologies and systems;
- the effects of fluctuations in sales on our business, revenues, expenses, net income, earnings per share, margins, profitability, cash flows, capital expenditures, liquidity, financial condition and results of operations;
- our products, services, technologies and systems, including their quality and performance in absolute terms and as compared to competitive alternatives, their benefits to our customers and their ability to meet our customers' requirements, and our ability to successfully develop and market new products, services, technologies and systems;
- our markets, including our market position and our market share;
- our ability to successfully develop, operate, grow and diversify our operations and businesses;
- our business plans, strategies, goals and objectives, and our ability to successfully achieve them;
- the sufficiency of our capital resources, including our cash and cash equivalents, funds generated from operations and other capital resources, to meet our future working capital, capital expenditure and business growth needs;
- the value of our assets and businesses, including the revenues, profits and cash flows they are capable of delivering in the future;
- the effects on our business operations, financial results, and prospects of business acquisitions, combinations, sales, alliances, ventures and other similar business transactions and relationships;
- industry trends and customer preferences and the demand for our products, services, technologies and systems; and
- the nature and intensity of our competition, and our ability to successfully compete in our markets.

These statements are necessarily subjective, are based upon our current plans, intentions, objectives, goals, strategies, beliefs, projections and expectations, and involve known and unknown risks, uncertainties and other important factors that could cause our actual results, performance or achievements, or industry results, to differ materially from any future results, performance or achievements described in or implied by such statements. Actual results may differ materially from expected results described in our forward-looking statements, including with respect to correct measurement and identification of factors affecting our business or the extent of their likely impact, the accuracy and completeness of the publicly-available information with respect to the factors upon which our business strategy is based, or the success of our business.

Forward-looking statements should not be read as a guarantee of future performance or results and will not necessarily be accurate indications of whether, or the times by which, our performance or results may be achieved. Forward-looking statements are based on information available at the time those statements are made and management's belief as of that time with respect to future events and are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in or suggested by the forward-looking statements. Important factors that may cause actual results, our performance or achievements, or industry results to differ materially from those contemplated by such forward-looking statements include, without limitation, those discussed under the caption "Risk Factors" in this prospectus as well as other risks and factors identified from time to time in our SEC filings.

## PROSPECTUS SUPPLEMENT SUMMARY

*This summary highlights information contained elsewhere or incorporated by reference in this prospectus. This summary is not complete and does not contain all of the information that you should consider before investing in our common stock. We urge you to read this entire prospectus and the documents incorporated by reference herein carefully, including the financial statements and notes to those financial statements incorporated by reference herein and therein. Please read the section of this prospectus entitled "Risk Factors" for more information about important risks that you should consider before investing in our common stock.*

### Our Company

#### Business Overview

We develop and sell optical switching film that can be embedded between sheets of glass or applied to the surface of glass, or other rigid substrates such as acrylic, to electronically control opacity ("DynamicTint™"). Originally developed by Hewlett-Packard ("HP"), our technology allows a transition between clear and dark in seconds and can be applied to a wide array of windows, including commercial buildings, automotive sunroofs, and residential skylights and windows. At the core of our proprietary and patent-protected technology is a thin film that is powered by electrically charged pigment which can reduce heat gain replacing common window tints but also providing a more sustainable alternative to blinds and other traditional window treatments. We partner with leading glass and film manufacturers for mass production and distribution of DynamicTint.

#### Electrokinetic Film Technology

Our electrokinetic (EK) technology was derived from proprietary ink and microfluidic technology developed at HP. Electrokinetic refers to the movement of particles within a fluid under the influence of an electric field. Our EK film technology utilizes nanometer-sized pigment particles that are electrically charged and suspended in a liquid that is sandwiched between two clear substrates that are coated with a transparent conductor oxide (TCO) film. *Figure 1*. In a non-energized state, the suspended pigment particles are distributed uniformly between the plastic films, and will absorb, transmit, or reflect light depending on the properties of the suspended pigment (dark state). When the proper electrical signal is applied to the conductive TCO layers, an electrical field is created, and the charged pigment particles collect in micro-embossed holes in a layer of polymer resin covering the transparent conductor surface. As the charged pigment particles are collected, the fluid becomes highly transparent (clear state). By applying a different electrical signal, the pigment can be dispersed back into the fluid to achieve the desired color density or opacity.

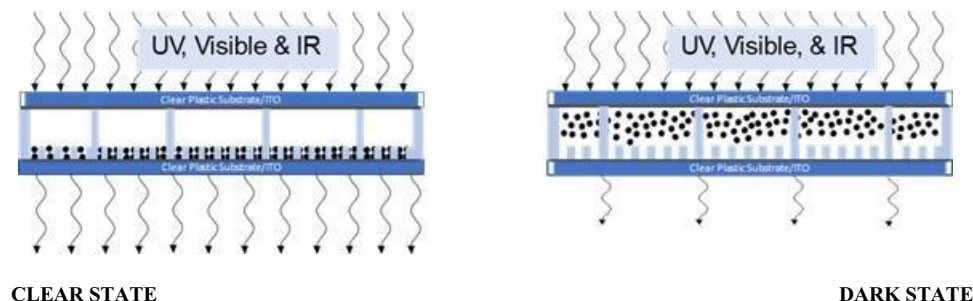


Figure 1. Schematic cross-section of electrokinetic film in clear and dark states.

### Highlights

- **Clear Polyethylene Terephthalate (PET) Substrates** — Same material as window tinting films.
- **Transparent Conductor on PET** — Indium Tin Oxide (ITO) — same as most touch screens.
- **Electronic Ink** — Nanoparticles suspended in a fluid which absorb light.
- **Energy Source** — Nanoparticles are controlled through DC low voltage applied to the ITO conductor material which is powered by a lithium-ion battery that is charged with a solar cell strip, no hard-wiring necessary.

Our plastic films are manufactured using industry standard roll-to-roll (R2R) processing equipment. We believe our R2R processing will have an inherently lower manufacturing cost compared to sheet-based processing methods used for other smart window technologies like electrochromic glass. There are three basic steps to making our film using R2R equipment.

- 1) **Deposition:** R2R TCO deposition on clear polyethylene terephthalate (PET) plastic film using vacuum sputtering of indium-tin oxide (ITO). The ITO on PET film can be provided by a number of suppliers. Millions of square feet of ITO on PET are currently provided for nearly all capacitance-based display touch screens.
- 2) **Embossing:** R2R embossing of UV-curable resin in a proprietary and patent protected 3-D pattern for ink pigment control and containment on one of the two plastic films. An example of the embossed pattern is shown in *Figure 2*. The R2R embossing process can be completed by various plastic film companies. Crown has the capability to accomplish the coating and embossing steps within its current facility in addition to working with manufacturing partners.

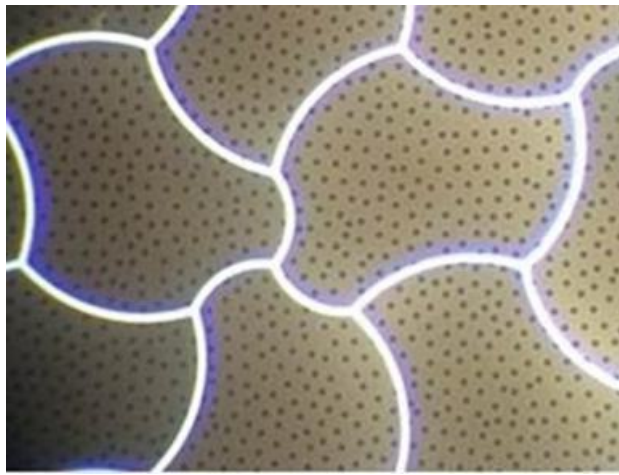


Figure 2. Microscopic Optical Image of Embossed Film

3) **Lamination:** The final R2R process laminates the two layers of PET together with the proprietary and patent protected pigment-containing fluid contained by the wall structure shown by the white areas in *Figure 2*. The wall area has adhesion to the upper layer of PET with ITO film thereby sealing the fluid between the two plastic layers. The fluid contains nanometer-sized pigment particles that are charged electrically and suspended in the fluid.

We believe that DynamicTint™ has the following distinct advantages over existing optical electronic film technologies:

- **Neutral Color** — Pigment is designed to be color neutral and will not affect the hue of what is viewed through the window in any clear, dark or tinted state.
- **Speed** — Transition time is typically a few seconds.
- **Affordability** — Roll-to-Roll film manufacturing using relatively inexpensive materials.
- **Low Energy Requirements** — Film is low voltage and can be powered with a small battery charged by a solar cell strip or wired to an existing electrical infrastructure including a LAN line.
- **Retro-Fit** — Film can be applied in a Smart Window Insert (“Inserts”), which can be placed within existing window frames, eliminating the needs for both window treatments or to replace single pane windows with dual pane windows.
- **Sustainable** — Reduces energy used to heat or cool a room via HVAC systems and can use renewable energy to transition the film.

#### Smart Window Insert powered by DynamicTint™

Our first product will be the Smart Window Insert powered by DynamicTint™ which is specifically designed for retrofitting in the domestic and international commercial real estate install base. Our DynamicTint™ can be laminated to other surfaces like heat-treated glass or acrylic and the laminated sheet can be assembled in Smart Window Inserts that can be placed into the interior side of the window frame providing the dynamic tinting capability as well as additional insulation and sound proofing to the existing windows (*Figure 3*).

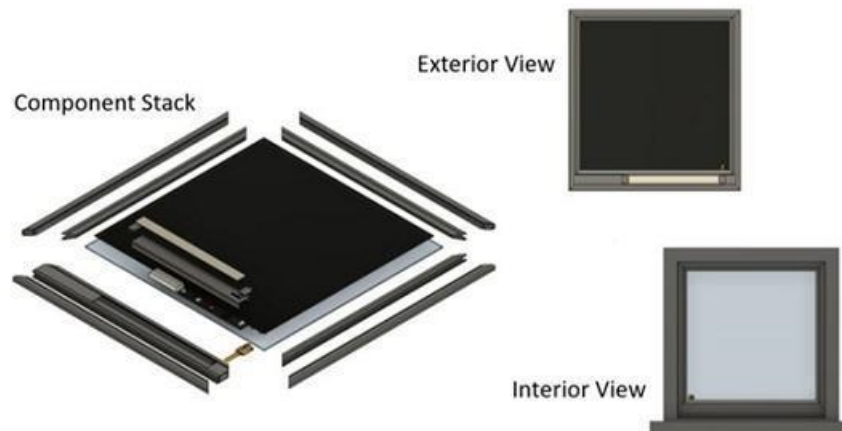


Figure 3. Window Insert with EK Film

The Insert is a custom-sized panel comprised of a rigid substrate (thin glass or acrylic) with a silicon compliant edge seal that allows for the insert to securely fit into the interior side of the window frame.

Some of the Insert’s features include:

- **Solar-powered** — eliminating the need to hardwire it into the building’s electrical system
- **Wirelessly enabled** — facilitating communication with all the other installed inserts and integration with the building’s management software system
- **Sensor equipped** — enabling the Insert to auto-sense the intensity of exterior light and interior ambient light
- **Software enabled** — can be managed via programmed macros, dynamically managed by the building, or user-controlled within an office
- **Data collection** — allowing optimization of the Inserts/curtain wall energy performance.
- **Lease vs Purchase** - Creative and flexible financing allows for customers to lease Inserts on a long-term basis and avoid large capital expenditures

We believe our Smart Window Inserts can be easily installed into commercial buildings, residential windows, skylights, and windows within garage doors. In commercial buildings, our Smart Window Inserts can be used to convert existing single pane windows into dual pane windows. We believe there is a significant opportunity to provide Smart Window Inserts to commercial building owners who are looking to eliminate window blinds, gain energy efficiency, and reduce carbon emissions.

**Sustainability**

Crown is aware that working towards building a sustainable future is a common goal shared by many. Companies such as Walmart (NYSE: WMT), Amazon (NASDAQ: AMZN) and Apple (NASDAQ: AAPL) are now publishing sustainability pledges, and we are seeing a trend of pledging to make their workplaces more environmentally friendly.

Crown’s patented technology provides a solution that helps address many sustainability issues such as:

- **Reducing waste** - as opposed to replacing single pane window units with newly manufactured dual pane windows, Crown allows building owners to install our retrofit DynamicTint Insert into existing single pane window frames thereby creating a dual pane window;
- **Reducing energy** - Crown’s Insert reduces HVAC energy consumption by reducing the need for constantly cooling and heating a room, reducing the customers carbon emissions. Initial field testing suggests HVAC energy savings of up to 26% could potentially result from the installation of Smart Window Inserts. According to FacilitiesNet (<https://www.facilitiesnet.com/windowsexteriorwalls/article/Smart-Window-Benefit-Energy-Savings-Reduced-Glare--17280>), the ability to control the amount of heat entering a building reduces the heat load of the building which in turn reduces your HVAC usage.;
- **Using renewable energy** - Crown’s Smart Window Insert is low voltage and low wattage and can be powered by a solar strip that captures the sun’s energy and is integrated into the Insert itself thereby eliminating the need to hardwire the Insert to the home or building’s electrical system.

Another benefit of DynamicTint is being able to optimize daylight usage, thereby reducing the usage of lights. A study done by Project Drawdown (<https://www.drawdown.org/solutions/dynamic-glass>) projected that if 30-50% of commercial building spaces install dynamic glass, the potential climate-weighted energy efficiency from cooling is estimated at 9% and lighting at 9%—depending on local climate, building location and window orientation. This can result in 0.3-0.5 gigatons of emissions reductions from decreased energy use.

At Crown, we are committed to building a product that can be self-sufficient and does not require an additional power source or hard wiring into the electrical system of a residential home or commercial building. This ensures that as we reduce a building’s energy consumption, we are not adding to it and are working towards being carbon neutral.

**Intellectual Property**

On January 31, 2016, we entered into an IP agreement with HP to acquire a research license to determine the feasibility of incorporating HP’s electrokinetic display technology in our products. On February 4, 2021, Crown and HP entered into a fourth amendment to the agreement. Pursuant to such amendment, among other items, the parties agreed to amend the list of patent and patent applications, which includes two additional patents (the “HP Patents”) that are assignable to us by HP upon the exercise of our option to acquire the HP Patents (the “Option”). In connection with our exercise of the Option, we paid HP an aggregate amount equal to One Million Five Hundred Fifty Thousand Dollars (\$1,550,000) on February 9, 2021. From the date of the exercise of the Option until January 1, 2030, we agreed to pay to HP a royalty fee based on the cumulative gross revenue received by us from the HP Patents as follows:

<b>Time Window</b>	<b>Lifetime Cumulative Gross Revenue</b>	<b>Royalty Rate</b>
Prior to December 31, 2029	\$Less than \$70,000,000	0.00%
	\$70,000,000 - \$500,000,000	1.25%
	\$500,000,000 and beyond	1.00%
January 1, 2030 onward		0.00%

We entered into a Patent Assignment Agreement with International Business Machines Corporation (“IBM”) to acquire an ownership interest in assigned patents. As consideration for the patents, we paid \$264,000 (including legal fees of approximately \$38,000) on July 23, 2021.

In addition, we have current patent applications in the United States and other countries that if granted, would add three additional patents to its portfolio. Our United States patents expire at various dates from March 26, 2028 through March 10, 2036.

A 2022 appraisal of Crown’s intellectual property by one of the preeminent third-party IP-valuation firms indicated a total valuation of approximately \$94 million, consisting of \$35 million relating to patents (limited to the US office building market, supplying its Smart Window Insert) and \$59 million for trade secrets.

We believe that its EK technology is adequately protected by its patent position and by its proprietary technological know-how. However, the validity of our patents has never been contested in any litigation. We also possess know-how and relies on trade secrets and nondisclosure agreements to protect its technology. We require any employee, consultant, or licensee having access to its confidential information to execute an agreement whereby such person agrees to keep such information confidential.

## Crown-Owned Patents

Country	Filing Date	Publication No.	Title
USA	28-Jan-19	11174328	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
China	28-Jan-19	CN111918894A	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
Europe	28-Jan-19	3752867	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
Japan	28-Jan-19	JP 2021514422A	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
Korea	28-Jan-19	KR 20200122333A	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
WO	28-Jan-19	WO 2019/160675	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
USA	16-Feb-18		REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
USA	13-Jan-20	2020-0225552	APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
WO	13-Jan-20	WO2020/150166	APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
USA	16-Jan-19		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
EPO	23-Jun-21		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
CN	8-Jul-21		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
Korea	5-Jul-21		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
JP	15-Jul-21		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
USA	7-Jul-16	10377909	INKS INCLUDING SEGMENT COPOLYMER GRAFTED PIGMENTS VIA AZIDE CHEMISTRY
USA	22-Nov-10	8179590	ELECTRO-OPTICAL DISPLAY
USA	29-Jul-10	8054535	ELECTROPHORETIC DISPLAY DEVICE
USA	23-Aug-17	10852615 *	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS WITH REDUCED DIFFRACTION
EPO	2-Dec-15	3256903 *	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS
EPO	2-Dec-15	3250962 *	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS WITH REDUCED DIFFRACTION
USA	23-Aug-17	10656493 *	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS
USA	30-Nov-20	2021-0108463 *	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS WITH REDUCED DIFFRACTION
WO	2-Dec-15	WO2016/089957 *	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS

WO	2-Dec-15	WO2016/089974 *	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS WITH REDUCED DIFFRACTION
USA	18-Dec-14	9567995	WINDOW OPACITY ATTENUATION USING MICROFLUIDIC CHANNELS
USA	18-Aug-15	9816501	WINDOW OPACITY ATTENUATION USING MICROFLUIDIC CHANNELS
USA	9-Mar-18	10926859	SMART WINDOW ACTIVATION TO PREVENT LASER DISTURBANCE
USA	10-May-18	10935818	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
USA	26-Oct-16	10106018	AUTOMATED WINDSHIELD GLARE ELIMINATION ASSISTANT
USA	2-Sep-16	10144275	ENVIRONMENTAL CONTROL IN VEHICLES
GB	2-May-19	2586760	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
CN	2-May-19	CN111936331A	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
DE	2-May-19	112019000749	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
JP	2-May-19		EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
PCT	2-May-19	WO2019/215544 **	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
USA	11-Oct-21	11578150	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
USA	24-Feb-22		WINDOW SYSTEM AND METHOD UTILIZING A WINDOW PANE ASSEMBLY AND LOCKING SYSTEM FOR EASY INSERTION OF A WINDOW PANE ASSEMBLY WITH ELECTRONICALLY CONTROLLABLE SCALABLE APERTURES FOR ATTENUATING OR OTHERWISE MODULATING LIGHT TRANSMISSION THROUGH SAID ASSEMBLY
USA	24-Feb-22		WINDOW SYSTEM AND METHOD UTILIZING A WINDOW PANE ASSEMBLY AND LOCKING SYSTEM FOR EASY INSERTION OF A WINDOW PANE ASSEMBLY WITH ELECTRONICALLY CONTROLLABLE SCALABLE APERTURES FOR ATTENUATING OR OTHERWISE MODULATING LIGHT TRANSMISSION THROUGH SAID ASSEMBLY
USA	29-Mar-22		SELF-ALIGNING MASTER AREA MULTIPLICATION FOR CONTINUOUS EMBOSsing
USA	11-Sep-22		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
USA	22-Jul-14		INKS INCLUDING SEGMENT COPOLYMER GRAFTED PIGMENTS VIA AZIDE CHEMISTRY (recently assigned to Crown)
USA	10-Feb-23		REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS

\* Co-owned with University of Cincinnati

\* Inactive

In-Licensed Patents

Patent No.	Country	Patent Date	Publication No.	Status	Title
8,183,757	USA	22-May-12		Issued	DISPLAY ELEMENT
8,184,357	USA	22-May-12		Issued	DISPLAY ELEMENT
8,331,014	USA	11-Dec-12		Issued	PIGMENT-BASED INKS
8,384,659	USA	26-Feb-13		Issued	DISPLAY ELEMENT INCLUDING ELECTRODES AND A FLUID WITH COLORANT PARTICLES
8,432,598	USA	30-Apr-13		Issued	TRANSPARENT CONDUCTOR STRUCTURE
8,896,906	USA	25-Nov-14		Issued	INKS INCLUDING BLOCK COPOLYMER GRAFTED PIGMENTS VIA AZIDE CHEMISTRY
8,018,642	USA	13-Sep-2011		Issued	ELECTRO-OPTICAL DISPLAY

**Business Model**

We intend to manufacture our patented EK Technology under the name DynamicTint™. We intend to generate revenue by selling our Smart Window Inserts powered by DynamicTint™ to our customers.

Crown’s first product will be the Smart Window Insert powered by DynamicTint™ for retrofitting in commercial buildings. Crown’s Smart Window Inserts will allow the building owner to quickly convert a single pane window unit to a dual pane window unit. Crown’s Inserts will act as the “second pane” and will allow the building owner to enjoy all the benefits of a dual pane window without having to replace their existing single pane windows.

Crown’s customers will be able to buy and own their Smart Window Inserts but also, at some stage, have the option to enter long-term leases of the Inserts with Crown. Additional applications we are exploring with potential customers of Crown’s DynamicTint include:

- Smart Window Inserts for retrofitting of commercial buildings in markets outside the United States.
- Smart Window Inserts for retrofitting of multi-family buildings.
- Residential homes: residential windows, garage door windows, windows contained in and surrounding residential front doors as well as residential skylights.
- Automotive: sunroofs.

As Crown’s DynamicTint technology requires very little energy to effect that transition from clear to dark state, a rechargeable battery coupled with a built-in solar cell eliminates the need to hardwire the inserts to the building electrical system. Crown believes that the potential retrofit market for its Smart Window Inserts is significantly large. Each unit will have wireless communication capability for control of the film and communication with the building HVAC system.

Crown has also developed a working prototype of an insert for the residential skylight, which allows a homeowner to control the amount of light entering the room. Crown’s DynamicTint Insert does not require the homeowner to replace their skylight as it conveniently fits into the existing frame. Crown’s skylight insert will allow a homeowner (through a Bluetooth connection or RF controller) to adjust the level of desired tint easily and quickly, thereby controlling the amount of light and heat entering the room. The DynamicTint Skylight Insert will be powered by a rechargeable lithium battery and built-in solar cell thereby eliminating the need to wire the insert to the home’s electrical system.

**Partners and Customers**

On March 25, 2022, Crown executed a Master Supply Agreement (the “BDN MSA”) with Brandywine Operating Partnerships L.P. to install its Smart Window Inserts powered by DynamicTint™ in Brandywine office buildings. The BDN MSA provides the master terms and conditions under which purchase orders will be executed for Crown to supply units to retrofit windows at certain locations.

On December 27, 2021, Crown executed a Master Supply Agreement (the “HPP MSA”) with Hudson Pacific Properties L.P. for the installation of Crown’s energy saving Smart Window Inserts in several office properties across its West Coast portfolio. The HPP MSA provides the master terms and conditions under which purchase orders will be executed for Crown to supply units to retrofit windows at certain locations.

Prior to this, on September 27, 2021, Crown had entered into a Master Supply Agreement with MetroSpaces Inc., Crown’s first commercial customer, install its Smart Window Inserts in MetroSpaces’ 70,000 square-foot Houston, Texas office building.

In the future, Crown and its customers may enter into multiple specific transactions by executing purchase orders for additional buildings.

Additionally, discussions with multiple other building owners to buy Crown Smart Window Inserts are progressing as the regulatory and consumer pressure to reduce the level of energy consumption and carbon emissions continues to build.

Purchase Orders



On August 12, 2022, the Company entered into two Purchase Orders (PO's) with Hudson Pacific Properties, L.P. ("Hudson") for the purchase of the Company's Smart Window Inserts™ ("Inserts"). Hudson is a unique provider of end-to-end real estate solutions for tech and media tenants. The PO's have a value of \$85,450 and represent the first orders the Company has received prior to the launch of its Inserts. Delivery and installation are expected to begin in Q4 2023.

On August 12, 2022, as additional consideration for the PO's, the Company issued a warrant to Hudson to purchase 300,000 shares of the Company's common stock at \$0.75 per share. The warrant has a five year life and expires on August 12, 2027.

## Manufacturing

Crown is developing its manufacturing capabilities to meet anticipated demand for the Smart Window Insert at its facilities located in Corvallis, Oregon, for film production, and Salem, Oregon, for Smart Window Insert manufacturing.

Crown plans to produce its EK film at its facilities in Corvallis using its existing roll to roll (the "R2R") embossing equipment. We intend to perform all other film manufacturing processes at our Corvallis facility upon receipt of additional manufacturing equipment currently ordered and awaiting delivery.

Crown's Smart Window Inserts will be produced at our Salem facility, where EK film will be laminated to glass, and then assembled into a frame. The inserts electronic components will also be integrated into the insert and the final assembled inserts will be packaged for shipment from Salem to our customers' buildings.

The completion of Crown's facilities in Corvallis and Salem marks our transition to being completely self-sufficient in manufacturing our products, eliminating any dependency on contract manufacturers or partners.

## Commercial Office Building Market

Commercial buildings have gotten larger in the United States as their floorspace continues to grow faster than the number of commercial buildings, according to preliminary results from the U.S. Energy Information Administration's (EIA) 2018 *Commercial Buildings Energy Consumption Survey* (CBECS). CBECS estimates that 5.9 million U.S. commercial buildings contained a total of 97 billion square feet as of 2018. The number of commercial buildings increased by 6%, and commercial square footage increased by 11% since the CBECS was last conducted in 2012.

## Smart Glass Industry Trends

We believe there are favorable converging global trends in the major near-term markets for "smart glass" products. Key factors driving the growth of the smart glass market are the growing demand for smart glass for energy savings for existing commercial and residential buildings. Added to this trend are government mandates and legislation for energy-efficient construction of both commercial and residential buildings. There is a growing opportunity for smart windows in the transportation industry including automobiles, commercial trucks, buses, and passenger rail cars.

In both public and private sectors across the world, there are substantial efforts targeted toward the promotion and use of energy efficient smart glass materials, including those used in automobiles, windows and other architectural glazings.

In September 2020, Markets and Markets issued *Smart Glass Market with COVID-19 Impact by Technology (Suspended Particle Display, Electrochromic, Liquid Crystal), Application (Architecture, Transportation, Consumer Electronics), and Geography - Global Forecast to 2025*. The smart glass market size is expected to grow from \$3.8 billion in 2020 to \$6.8 billion by 2025, at a CAGR of 12.1% during the forecast period. The growth of the smart glass industry is driven by factors, such as the growing adoption of smart glass in automotive application and, declining prices for electrochromic material. Other major driving factors for smart glass adoption include supportive government mandates and legislation on energy efficiency. Governing bodies of various countries are increasingly encouraging the use of these energy-efficient products.

Smart glass has inherent energy-saving and auto-dimming properties, which reduces its maintenance cost. As a result, the perceived benefits of these glass products are more than the incurred investments.

Crown believes that the smart glass industry is in the initial phase of growth and that DynamicTint™ may have commercial applicability in many products where variable light-control is desired.

## Our Technology

DynamicTint™ combines many of the favorable properties of the other smart window technologies. It has fast-switching time and unlike electrochromic (EC) technology, modulation in light level is not area dependent and the film is neutral in color in all settings. Unlike Suspended Particles Devices (SPD) and Polymer Dispersed Liquid Crystal (PDLC) technology, EK film does not need high voltage alternating current to power the film. Because of the low power requirements, EK films can be powered with batteries or combined with small area solar cells, allowing retrofit to existing windows. Furthermore, in the future, EK film could be made with other colorants and it is possible with modification to the design to use two colorants in the same film, which has been demonstrated in the recent past under a research project at the University of Cincinnati. Below is a table outlining some of the typical properties of each technology.

## Other Smart Glass Technologies

Variable light transmission technologies can be classified into two basic types: "active" technologies that can be controlled electrically by the user either automatically or manually, and "passive" technologies that can only react to ambient environmental conditions such as changes in lighting or temperature. Most of the technologies are "active". One type that is passive is thermochromic technology where a rise in temperature will darken the film applied to glass.

We believe that our DynamicTint has certain performance advantages over other "smart glass" technologies and that pricing and product performance are the two main factors critical to the adoption of smart glass products. Because the non-EK smart glass technologies listed below do not have published, consistent pricing or cost data that can be relied upon, we cannot accurately report our price position relative to these other technologies. In terms of product performance, we believe that DynamicTint offers numerous advantages over other smart glass technologies, as discussed below.

Technology	Can Retrofit	Power Usage	Can Tint to Black	Solar or Battery Powered	Tint Transition Speed	Light Transmission
DynamicTint™ (Electrokinetic)	P	<0.01 W/M2	P	P	approx. 4 sec	3.0% - 70% or 0.4 %-50%

<b>Electrochromic (EC)</b>	×	0.3 – 2 W/M2 (30X EK)	×	×	5-40 min	<1% - 58%
<b>Suspended Polymers in Particles (SPD)<sup>1</sup></b>	×	1.1 W/M2 at 100V/50hz (110X EK)	×	×	<3 sec	0.8% - 55%
<b>Polymer Dispersed Liquid Crystal (PDLC)</b>	×	5 – 20 W/M2 (500X EK)	×	×	1 – 3 sec	~80%

Ref. 1: SPD Film - LCF-1103DHA90 Showa Denko Material Co.

### Electrochromic Glass

Electrochromic (EC) glass technology has been used as a light absorbing technology for rear view mirrors in automobiles for decades, and more recently for large-scale windows. However, the EC technology developed for windows is based on a different set of materials that are directly deposited on the heat-treated glass panels. All of the current EC companies use tungsten oxide as the main component involved in the color transition from clear to blue. Because of the nature of the chemical transition of tungsten oxide, EC film does not absorb as much of the blue light, so remaining light will have a strong blue hue both in the room and when looking through the window. The speed of the switching time from dark to light vice versa is directly related to the size of the window area and the electrode design which brings electrical current to the EC material to start the chemical transition. EC technology is basically a battery-like material that requires “charging and discharging”. The time to charge/discharge the EC material in a large window can take up to 40 minutes to change form the dark state to the clear state at nominal temperatures. Also, during switching of the EC film, there can be non-uniform areas which can vary in level of tint from center to edge. The larger the area of the window, the more non-uniform during the change of state. Longer switching time can minimize the non-uniform areas. The EC materials are typically vacuum deposited directly on “defect-free” glass. The typical investment required for a large window electrochromic factory can run into the hundreds of millions of dollars, due to the large-scale vacuum equipment required, low particulate cleanroom required, and the relatively slow speed of deposition for all the various layers. Halio, formerly Kinestral Technologies, is using a chemical liquid deposition technique to replace some of the vacuum deposition steps to lower the capital investment needed for manufacturing.

### Suspended Particle Glass (SPD)

SPD is a film that has suspended long and narrow particles in an encapsulated liquid polymer film with layers of ITO on either side to allow generation of an alternating current electrical field to twist the particles from a random state to a near vertical state perpendicular to the ITO plane. In the vertical state light passes through the film and in the random state the light is absorbed by the particles. The color of the film is blue since the particles used in the film do not absorb blue light as well as other colors of sunlight. No other types of particles have been created for this type of device. The film responds quickly to the electrical field, however, requires constant high AC voltage to hold the clear state. The film is manufactured on plastic and uses roll-to-roll (R2R) equipment processing. Also, because the particles are aligned when in the clear state, the film has a limited viewing angle much like older liquid-crystal displays. When viewed at a side angle, the film will appear darker. The current market for SPD has been mainly automobile sunroofs where the viewing angle of the passengers is relatively fixed at nearly perpendicular angle to the SPD film.

### Polymer-Dispersed Liquid Crystal (PDLC) Film

PDLC requires an AC electric field like the SPD film described above to achieve a clear state. However, the liquid-crystal based film can only scatter light in the power-off state, therefore, most of the incoming light is transmitted through the film (~80%). Typically, the PDLC film is used for interior windows or doors to create privacy. PDLC has similar manufacturing methods using R2R equipment and plastic film with ITO conductor to the SPD film. The film is available from many Far East manufacturing companies with some able to make ~150 cm width film. The quality of the film can vary based on the manufacturing company. The film was invented at Kent State University in the 1980’s and the patents have expired.

### Competition

Several smart glass competitors have an operating history, including:

- SAGE Electrochromic, Inc., a wholly owned subsidiary of Saint-Gobain, which develops and manufactures electrochromic glass;
- View Glass [NASDAQ: VIEW] and Halio, formerly Kinestral Technologies, manufacture electrochromic glass at their purpose-built manufacturing facilities and both are headquartered in California; and
- Research Frontiers, Inc. [NASDAQ: REFR] licenses an electronically controlled tinted film, utilizing SPD technology, to various companies.

Crown Electrokinetics expects that other competitors will emerge in the future.

### Research and Development

Crown has been using a 6” width R2R equipment capable of handling the deposition, embossing and lamination steps of the manufacturing process for its research and development. Crown will utilize the 12” width film for the first-generation Smart Window Insert. Larger scale manufacturing is planned at a minimum of 36” width film to address markets including appropriately sized commercial building window inserts, larger format skylights inserts, and many automobile sunroofs. Thereafter, Crown will develop capability to manufacture DynamicTint film of at least 72” width capability. This will allow Crown to address the vast majority of window sizes for most applications.

As a result of our research and development efforts, we believe that our EK technology is now, or with additional development will become, usable in a number of commercial products. Such products may include one or more of the following fields: “smart” windows, doors, skylights and partitions; self-dimmable automotive sunroofs, windows, sun visors, and mirrors.

We have devoted most of our financial resources to research and development activities with the goal of producing commercially viable EK products and has developed working samples of our EK technology.

Crown's main goals in its research and development include:

- developing wider ranges of light transmission,
- reducing the voltage required to operate DynamicTint™,
- obtaining data and developing improved materials regarding environmental stability and longevity, and
- quantifying the degree of energy savings expected by users of our technology.

### **Crown Fiber Optics**

On January 3, 2023, we acquired substantially all of the assets (the "Asset Acquisition") of Amerigen 7 LLC ("Amerigen"), which was engaged in the business of construction of 5G fiber optics infrastructure, for cash consideration of approximately \$0.65 million. The Asset Acquisition included approximately 12 employees, customer contracts, and certain operating liabilities. On December 20, 2022, we incorporated our wholly-owned subsidiary Crown Fiber Optics Corp. ("Crown Fiber Optics" or "we") in Delaware, to own and operate the business acquired from Amerigen.

Crown Fiber Optics supplies telecommunications providers with a comprehensive portfolio of specialty services, including program management; planning; engineering and design; aerial, underground, and wireless construction; maintenance; and fulfillment services. Crown Fiber Optics supplies the expertise, labor, equipment, and tools necessary to provide services to our customers.

*Engineering Services.* Crown Fiber Optics provides engineering services to telecommunications providers, including the planning and design of aerial, underground, and buried fiber optic, copper, and coaxial cable systems that extend from the telephone company hub location, or cable operator headend, to a consumer's home or business. Crown Fiber Optics also plans and designs wireless networks in connection with the deployment of new and enhanced macro cell and new small cell sites. Additionally, we obtain rights of way and permits in support of our engineering activities and those of our customers and provide program and project management and inspection personnel in conjunction with engineering services or on a stand-alone basis.

*Construction, Maintenance, and Installation Services.* We provide a range of construction, maintenance, and installation services, including the placement and splicing of fiber, copper, and coaxial cables. We excavate trenches to place these cables; place related structures, such as poles, anchors, conduits, manholes, cabinets, and closures; place drop lines from main distribution lines to a consumer's home or business; and maintain and remove these facilities. We provide these services for both telephone companies and cable multiple system operators in connection with the deployment, expansion, or maintenance of new and existing networks. We also provide tower construction, lines and antenna installation, foundation and equipment pad construction, small cell site placement for wireless carriers, and equipment installation and material fabrication and site testing services. Our underground facility locating services include locating telephone, cable television, power, water, sewer, and gas lines.

*Capitalize on Long-Term Growth Drivers.* We are well-positioned to benefit from the increased demand for network telecommunications bandwidth that is necessary to ensure reliable video, voice, and data services. Developments in consumer and business applications within the telecommunications industry, including advanced digital and video service offerings, continue to increase demand for greater wireline and wireless network capacity and reliability. Telecommunications network operators are increasingly deploying fiber optic cable technology deeper into their networks and closer to consumers and businesses in order to respond to consumer demand, competitive realities, and public policy support. Additionally, wireless carriers are upgrading their networks and contemplating next generation mobile solutions in response to the significant demand for wireless broadband, driven by the proliferation of smart phones, mobile data devices and other advances in technology. Increasing wireless data traffic and emerging wireless technologies are driving wireline deployments in many regions of the United States. Furthermore, significant consolidation and merger activity among telecommunications providers could also provide increased demand for our services as networks are integrated.

*Selectively Increase Market Share.* We believe our reputation for providing high quality services and the ability to provide those services nationally creates opportunities to expand market share. Our operating structure and multiple points of contact within customer organizations positions us favorably to win new opportunities and maintain strong relationships with our customers.

*Pursue Selective Acquisitions.* We pursue acquisitions that are operationally and financially beneficial for the Company as they provide incremental revenue, geographic diversification, and complement existing operations. We generally target companies for acquisition that have defensible leadership positions in their market niches, the opportunity to generate profitability that meets or exceeds industry averages, proven operating histories, sound management and certain clearly identifiable cost synergies.

### *Customer Relationships*

We are establishing relationships with many leading telecommunications providers, including telephone companies, cable multiple system operators, wireless carriers, telecommunication equipment and infrastructure providers. We believe that a substantial portion of our total contract revenues and operating income will continue to be generated from a concentrated group of customers and that the identity and proportion of our contract revenues arising from our work for our top five customers will fluctuate.

We perform a significant amount of our services under master service agreements and other contracts that contain customer-specified service requirements. These agreements include discrete pricing for individual tasks. We generally possess multiple agreements with each of our significant customers. We provide the remainder of our services pursuant to contracts for specific projects. These contracts may be long-term (with terms greater than one year) or short-term (with terms less than one year) and often include customary retainage provisions under which the customer may withhold 5% to 10% of the invoiced amounts pending project completion and closeout.

### *Competition*

The specialty contracting services industry in which we operate is highly fragmented and includes a large number of participants. We compete with several large multinational corporations and numerous regional and privately owned companies. In addition, a portion of our customers directly perform many of the same services that we provide. Relatively few barriers to entry exist in the markets in which we operate. As a result, any organization that has adequate financial resources, access to technical expertise, and the necessary equipment may become a competitor and the degree to which an existing competitor participates in the markets that we operate may increase rapidly. The principal competitive factors for our services include geographic presence, quality of service, worker and general public safety, price, breadth of service offerings, and industry reputation.

### **Employees**

We have 40 employees. 36 of the employees are construction, technical and operational personnel, and the rest perform business development, finance, marketing, investor relations, and administrative functions. Crown's employees have extensive industrial experience in leading technology, ink-based manufacturing and 5G

construction companies. We believe that our success is dependent upon, among other things, the services of our senior management, the loss of which could have a material adverse effect upon our prospects. None of our employees are represented by a labor union or covered by a collective bargaining agreement.

As Crown continues to grow, we will add additional construction, manufacturing engineering, marketing, and administrative personnel.

#### Corporate Information

Our primary business location is the R&D and Manufacturing facility located at 1110 NE Circle Blvd., Corvallis, OR 97330. We also have an office located at 11601 Wilshire Blvd., Suite 2240, Los Angeles, CA 90025. Our telephone number is +1 (800) 674-3612 and our Internet website address is [www.crownec.com](http://www.crownec.com). We were incorporated in the State of Delaware on April 20, 2015.

#### The Offering

##### Securities offered by the Selling Stockholders:

180,881,232 shares of common stock, which includes (i) an aggregate of 21,000,000 shares of our common stock issuable upon the conversion of shares of our Series E Convertible Preferred Stock (the "Series E Preferred Stock"); (ii) an aggregate of 35,527,740 shares of our common stock, par value \$0.0001 per share ("common stock"), issuable upon the conversion of shares of our Series F Convertible Preferred Stock (the "Series F Preferred Stock"); (iii) an aggregate of 23,902,602 shares of our common stock issuable upon the conversion of shares of our Series F-1 Convertible Preferred Stock (the "Series F-1 Preferred Stock"); (iv) an aggregate of 7,496,749 shares of our common stock issuable upon the conversion of shares of our Series F-2 Convertible Preferred Stock (the "Series F-2 Preferred Stock"); (v) an aggregate of 35,527,740 shares of common stock issuable upon exercise of certain outstanding warrants issued in connection with the Series F Preferred Stock (the "Series F Warrants"); (vi) an aggregate of 23,902,602 shares of common stock issuable upon exercise of certain outstanding warrants issued in connection with the Series F-1 Preferred Stock (the "Series F-2 Warrants"); (vii) an aggregate of 7,496,749 shares of common stock issuable upon exercise of certain outstanding warrants issued in connection with the Series F-2 Preferred Stock (the "Series F-2 Warrants" and together with the Series F Warrants and the Series F-1 Warrants, collectively, the "Warrants"); and (viii) 26,027,050 shares of our common stock issued in connection with various transactions.

##### Common stock outstanding:

63,652,003 shares

##### Common stock to be outstanding after the offering assuming conversion of all of the Series E Preferred Stock, Series F Preferred Stock, Series F-1 Preferred Stock, and Series F-2 Preferred Stock, and exercise of all Warrants:

244,533,235 shares

##### Use of Proceeds:

We will not receive any proceeds from the sale by the Selling Stockholders of the shares of common stock being offered by this prospectus. However, we may receive proceeds from the cash exercise of the Warrants, which, if exercised in cash at the current exercise price with respect to all Warrants, would result in gross proceeds to us of approximately \$9,987,000. The proceeds from such Warrant exercises, if any, will be used for working capital and general corporate purposes.

##### Risk Factors:

Investing in our securities is highly speculative and involves a high degree of risk. You should carefully consider the information set forth in the "Risk Factors" section on page 15 before deciding to invest in our securities.

##### Trading Symbol:

Our common stock is currently quoted on The Nasdaq Capital Market under the trading symbol "CRKN".

The shares of common stock outstanding and the shares of common stock to be outstanding after this offering is based on 63,652,003 shares outstanding as of June 29, 2023 and excludes:

- 9,423,486 shares of common stock issuable upon the exercise of options of which 8,521,662 have vested at a weighted average exercise price of \$2.80 per share as of March 31, 2023;
- 36,019,595 shares of common stock issuable upon the exercise of warrants (excluding the Warrants) of which 36,019,595 are exercisable at a weighted average exercise price of \$0.65 per share as of March 31, 2023;
- 628,781 shares of common stock issuable upon the vesting of restricted stock units of which 497,913 have vested;
- 9,884,772 shares of common stock issuable upon the conversion of 251 shares of Series A Preferred Stock and 1,443 shares of Series B Preferred Stock, and 500,576 shares of Series C Preferred Stock, 1,058 shares of Series D Preferred Stock, and 5,000 shares of Series E Preferred Stock;
- 8,991,782 shares of common stock issuable upon the conversion of outstanding convertible promissory notes, based on a conversion price of \$0.495.

#### RISK FACTORS

An investment in our securities involves a number of risks. Before deciding to invest in our securities, you should carefully consider the risks described below and

discussed under the section captioned “*Risk Factors*” contained in our Annual Report on Form 10-K for the year ended December 31, 2022, which is incorporated by reference in this prospectus, the information and documents incorporated by reference herein, and in any prospectus supplement or free writing prospectus that we have authorized for use in connection with an offering. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. The risks described below and in the document referenced above are not the only risks that we face. Additional risks not presently known to us or that we currently deem immaterial may also affect our business.

#### **Risks Related to Financial Performance or General Economic Conditions**

*We derive a significant portion of our revenues from a small number of customers, and the loss of one or more of these customers could adversely affect our revenues, results of operations, and liquidity.*

Our customer base is highly concentrated. Our industry is highly competitive and the revenue we expect from an existing customer in any market could fail to be realized if competitors who offer comparable services to our customers do so on more favorable terms or have a better relationship with a customer. Additionally, the continued consolidation of the telecommunications industry could result in the loss of a customer if, as a result of a merger or acquisition involving one or more of our customers, the surviving entity chooses to use one of our competitors for the services we currently provide.

*The capital and operating expenditure budgets and seasonal spending patterns of our customers affect demand for our services.*

Generally, our customers have no obligation to assign specific amounts of work to us. Customers decide to engage us to provide services based on, among other things, the amount of capital they have available and their spending priorities. Our customers’ capital budgets may change for reasons over which we have no control. These changes may occur quickly and without advance notice. Any fluctuation in the capital or operating expenditure budgets and priorities of our customers could adversely affect our revenues, results of operations, and liquidity.

*Seasonality and adverse weather conditions affect demand for our services.*

Our contract revenues and results of operations exhibit seasonality and are impacted by adverse weather changes as we perform a significant portion of our work outdoors. Consequently, adverse weather, which is more likely to occur with greater frequency, severity, and duration during the winter, as well as reduced daylight hours, impact our operations during the fiscal quarters ending in January and April. Additionally, extreme weather conditions such as major or extended winter storms, droughts and tornados, and natural disasters, such as floods, hurricanes, tropical storms, whether as a result of climate change or otherwise, could also impact the demand for our services, or impact our ability to perform our services.

*We derive a significant portion of our revenues from multi-year master service agreements and other long-term contracts which our customers may cancel at any time or may reschedule or modify previously assigned work.*

The majority of our long-term contracts are cancellable by our customers with little or no advance notice and for any, or no, reason. Our customers may also have the right to cancel or remove assigned work without canceling the contract or to reschedule or modify previously assigned work. In addition, these contracts typically include a fixed term that is subject to renewal or rebid on a periodic basis. We may be unsuccessful in securing contracts when their fixed terms expire. Our projected revenues assume that definitive work orders have been, or will be, issued by our customer, and that the work will be completed. The potential loss of work under master service agreements and other long-term contracts, or the rescheduling or modification of previously assigned work by a customer, could adversely affect our results of operations, cash flows, and liquidity, as well as any projections we provide.

*Our contracts contain provisions that may require us to pay damages or incur costs if we fail to meet our contractual obligations.*

If we do not meet our contractual obligations our customers may look to us to pay damages or pursue other remedies, including, in some instances, the payment of liquidated damages. Additionally, if we fail to meet our contractual obligations, or if our customer anticipates that we cannot meet our contractual obligations, our customers may, in certain circumstances, seek reimbursement from us to cover the incremental cost of having a third party complete or remediate our work. Our results of operations could be adversely affected if we are required to pay damages or incur costs as a result of a failure to meet our contractual obligations.

Generally, our customers are not contractually committed to procure specific volumes of services. Contract revenue estimates reflected in our backlog can be subject to change due to a number of factors, including contract cancellations or changes in the amount of work we expect to be performed. In addition, contract revenues reflected in our backlog may be realized in different periods from those previously anticipated due to these factors as well as project accelerations or delays due to various reasons, including, but not limited to, changes in customer spending priorities, project cancellations, regulatory interruptions, scheduling changes, commercial issues, such as permitting, engineering revisions, job site conditions and adverse weather. The amount or timing of our backlog can also be impacted by the merger or acquisition activity of our customers. Our estimates of our customers’ requirements during a future period may prove to be inaccurate. As a result, our backlog as of any particular date is an uncertain estimate of the amount of, and timing of, future revenues and earnings.

*Our profitability is based on delivering services within the estimated costs established when we price our contracts.*

A significant portion of our services are provided under contracts that have discrete pricing for individual tasks. Due to the fixed price nature of the tasks, our profitability could decline if our actual cost to complete each task exceeds our original estimates, as pricing under these contracts is determined based on estimated costs established when we enter into the contracts. A variety of factors could negatively impact the actual cost we incur in performing our work, such as changes made by our customers to the scope and extent of the services that we are to provide under a contract, delays resulting from weather and the COVID-19 pandemic, conditions at work sites differing materially from those anticipated at the time we bid on the contract, higher than expected costs of materials and labor, delays in obtaining necessary permits, under absorbed costs, and lower than anticipated productivity. An increase in costs due to any of these factors, or for other reasons, could adversely affect our results of operations.

*Our business is labor-intensive, and we may be unable to attract, retain and ensure the productivity of qualified employees or to pass increased labor and training costs to our customers.*

We are highly dependent upon our ability to employ, train, retain, and ensure the productivity of the skilled personnel needed to operate our business. Given the highly specialized work we perform, many of our employees receive training in, and possess, specialized technical skills that are necessary to operate our business and maintain productivity and profitability. We cannot be certain that we will be able to maintain and ensure the productivity of the skilled labor force necessary to operate our business. Our ability to do so depends on a number of factors, such as the general rate of employment, competition for employees possessing the skills we need, the general health and welfare of our employees and the level of compensation required to hire, train and retain qualified employees. In addition, the uncertainty of contract awards and project delays can also present difficulties in appropriately sizing our skilled labor force. Furthermore, due to the fixed price nature of the tasks in our contracts, we may be unable to pass increases in labor and training costs on to our customers. If we are unable to attract or retain qualified employees or incur additional labor and training costs, our results of operations could be adversely affected.

*We may be unable to secure subcontractors to fulfill our obligations, or our subcontractors may fail to satisfy their obligations to us, either of which may adversely*

*affect our relationships with our customers or cause us to incur additional costs.*

We contract with subcontractors to manage fluctuations in work volumes and reduce the amounts that we would otherwise expend on fixed assets and working capital. If we are unable to secure qualified subcontractors who can provide adequate labor resources at a reasonable cost, we may be delayed or unable to complete our work under a contract on a timely basis. In addition, we may have disputes with these subcontractors arising from, among other things, the quality and timeliness of the work they have performed. We may incur additional costs to correct such shortfalls in the work performed by subcontractors. Any of these factors could negatively impact the quality of our service, our ability to perform under certain customer contracts, and our relationships with our customers, which could adversely affect our results of operations.

*Changes in fuel prices may increase our costs, and we may not be able to pass along increased fuel costs to our customers.*

Fuel prices fluctuate based on events outside of our control. Most of our services are provided under contracts that have discrete pricing for individual tasks and do not allow us to adjust our pricing for higher fuel costs during a contract term. In addition, we may be unable to secure prices that reflect rising costs when renewing or bidding contracts. To the extent we enter into hedge transactions in conjunction with our anticipated fuel purchases, declines in fuel prices below the levels established in the hedges we have in place may require us to make payments to our hedge counterparties. As a result, changes in fuel prices may adversely affect our results of operations.

### **Risks Related to the Operation of Our Business**

*Our operations involve activities that are often inherently dangerous and are performed at times in complex or sensitive environments. If our activities result in, or if it is alleged that our activities have resulted in, damage or destruction to the real or personal property of others, or in injury or death to others, we could be exposed to significant financial losses and reputational harm, as well as civil and criminal liabilities.*

Our operations involve dangerous activities such as underground drilling and the use of mechanized equipment. These activities and their effects could result in, or be alleged to have resulted in, damage to the real and personal property of others, and cause personal injury or death to third parties or our employees. In many instances, our activities are performed in close proximity to other utilities which, if damaged, may result in the occurrence of catastrophic events. Additionally, we may perform our activities in environmentally sensitive locations or in locations that may be susceptible to catastrophic events, including wildfires. If our activities cause or contribute to, or are alleged to have caused or contributed to, a catastrophic event, we could be exposed to severe financial losses and reputational harm. We procure insurance coverage to cover many of these risks; however, there can be no assurance that these coverages will continue to be available to us on commercially reasonable terms, or at all, or that they are adequate in scope or amount to address financial losses from these risks. As a result, we could incur significant costs to defend any such allegations, defend and indemnify our customers, repair and replace assets, or to compensate third parties; reputational harm could result in the loss of future revenue-generating opportunities; or we may be subject to civil and, in certain situations, criminal liabilities.

### **Risks Related to Laws and Regulations**

*Our failure to comply with occupational health and workplace safety requirements could result in significant liabilities or enforcement actions and adversely impact our ability to perform services for our customers.*

Our operations are subject to strict laws and regulations governing workplace safety. Our workers frequently operate heavy machinery, work on and in the vicinity of electrical and gas lines, perform their work at heights, and engage in other potentially dangerous activities which could subject them and others to injury or death. If, in the course of our operations, it is determined we have violated safety regulations, our operations may be disrupted and we may be subject to penalties, fines or, in extreme cases, criminal sanctions. In addition, if our safety performance were to deteriorate, customers could decide to cancel our contracts or not award us future business. These factors could adversely affect our results of operations and financial position.

*Our failure to comply with environmental laws could result in significant liabilities.*

A significant portion of the work we perform is associated with the underground networks of our customers and we often operate in close proximity to pipelines, sewer lines, or underground storage tanks that may contain hazardous substances. We could be subject to liabilities in the event that we fail to comply with environmental laws or regulations or if we cause or are responsible for the release of hazardous substances or other environmental damages. These liabilities could result in significant costs including remediation costs, fines, third-party claims for property damage, or personal injury, and, in extreme cases, criminal sanctions. These costs, as well as any direct impact to ongoing operations, could adversely affect our results of operations and cash flows. In addition, new laws and regulations, altered enforcement of existing laws and regulations, the discovery of previously unknown contamination or leaks, or the imposition of new remediation requirements could require us to incur significant costs or create new or increased liabilities that could adversely affect our results of operations and financial position.

### **Risks Related to Our Ability to Grow Our Business**

*We may not have access in the future to sufficient capital on favorable terms or at all. We may require additional capital to pursue acquisitions, fund capital expenditures, for working capital needs, or to respond to changing business conditions.*

Our existing debt agreements include restrictions on our ability to incur additional debt at certain levels. In addition, if we seek to incur more debt, we may be required to agree to additional covenants that further limit our operational and financial flexibility. If we pursue additional debt or equity financings, we cannot be certain that such funding will be available on terms acceptable to us, or at all. Our inability to access additional capital could adversely affect our liquidity and may limit our growth and ability to execute our business strategy.

*The specialty contracting services industry in which we operate is highly competitive.*

We compete with other specialty contractors, including numerous local and regional providers, as well as several large corporations that may have financial, technical, and marketing resources exceeding ours. Relatively few barriers to entry exist in the markets in which we operate. Any organization may become a competitor if it has adequate financial resources and access to technical expertise, the ability to engage subcontractors, and the necessary equipment and materials. Additionally, our competitors may develop expertise, experience, and resources to provide services that are equal or superior to our services in price, quality, or availability, and we may be unable to maintain or enhance our competitive position. Furthermore, our customers generally require competitive bidding of our contracts upon the expiration of their terms. If competitors underbid us to procure business, we could be required to lower the prices we charge in order to retain contracts. Our revenues and results of operations could be adversely affected if our customers shift a significant portion of our work to a competitor, if we are unsuccessful in bidding or retaining projects, or if our ability to win projects requires us to provide our services at reduced margins.

*We face competition from the in-house service organizations of our customers.*

We face competition from the in-house service organizations of our customers whose personnel perform the services that we provide. We can offer no assurance that our existing or prospective customers will continue to outsource specialty contracting services in the future. Our revenues and results of operations could be adversely affected if our existing or prospective customers reduce the specialty contracting services that are outsourced to us.

## PRIVATE PLACEMENTS

### *Series E Preferred Stock*

On February 2, 2023, the Company entered into a Line of Credit Agreement (the “Line of Credit”) with a lender (the “LOC Lender”), pursuant to which the LOC Lender extended to the Company a secured line of credit in an amount not to exceed \$100,000,000, to be used to fund expenses related to the fulfillment of contracts with customers of Crown Fiber Optics, the Company’s wholly-owned subsidiary. In connection therewith, the Company issued to the LOC Lender a secured promissory note (the “LOC Note”) in a principal amount equal to \$2,000,000.

On May 15, 2023, the Company entered into that certain Third Amendment to the Convertible Promissory Note (the “LOC Note Amendment”) with the LOC Lender, pursuant to which the LOC Lender agreed to extend the maturity date of the LOC Note until June 7, 2023 in exchange for, subject to stockholder approval, 4,000 shares of the Company’s existing Series E Preferred Stock, which are convertible into 4,000,000 shares of the Company’s common stock.

On May 30, 2023, the Company issued a convertible promissory note (the “May Note”) to the LOC Lender in an aggregate principal amount equal to \$150,000. The May Note was due and payable at any time upon demand by the May Holder after the earlier of (i) the consummation of the Company’s first securities offering after the issuance of the May Note and (ii) June 2, 2023. In connection with the issuance of the May Note, subject to stockholder approval, the Company agreed to issue to the LOC Lender 4,000 shares of the Company’s existing Series E Preferred Stock, which is convertible into 4,000,000 shares of the Company’s common stock.

On June 30, 2023, subject to stockholder approval, the Company agreed to issue an additional 8,000 shares of Series E Preferred Stock, which is convertible into 8,000,000 shares of common stock, to the LOC Lender for failure to comply with a covenant in the Line of Credit, as amended. In addition, on June 30, 2023, the Company and the LOC Lender agreed to extend the maturity of all promissory notes under the Line of Credit until July 16, 2023 in exchange for, subject to stockholder approval, the issuance of 5,000 shares of Series E Preferred Stock, which is convertible into 8,000,000 shares of common stock.

### *Series F Preferred Stock and Exchanges*

On October 19, 2022, the Company entered into a Securities Purchase Agreement (the “October Purchase Agreement”) with certain accredited investors as purchasers (the “October Investors”). Pursuant to the October Purchase Agreement, the Company sold, and the October Investors purchased, approximately \$5.4 million in principal amount of senior secured convertible notes (the “October Notes”) and warrants (the “October Warrants”). On February 28, 2023, the Company entered into waiver agreements (the “Waiver Agreements”) with the October Investors pursuant to which, among other things, the maturity date of the October Notes was extended. In connection with the Waiver Agreements, the Company issued warrants (the “Waiver Warrants”) to the October Investors. The Waiver Warrants were exercisable for five (5) years to purchase an aggregate of 5,813,414 shares of the Company’s common stock at an exercise price of \$0.32 per share, subject to adjustment under certain circumstances described in the Waiver Warrants.

On January 3, 2023, the Company entered into a Securities Purchase Agreement (the “January Purchase Agreement”) with certain accredited investors as purchasers (the “January Investors”). Pursuant to the January Purchase Agreement, the Company sold, and the January Investors purchased, \$1.2 million in principal amount of senior secured notes (the “January Notes”) and 2,500,000 warrants (“January Warrants”), each January Warrant entitling the holder to purchase one share of common stock.

Between May 17, 2023 and May 30, 2023, the Company issued secured demand promissory notes (the “Demand Notes”) to certain investors (the “Demand Noteholders”) in an aggregate principal amount equal to \$570,681.

On July 26, 2022, the Company entered into a Securities Purchase Agreement (the “Series D Purchase Agreement”) with certain accredited investors (the “Series D Purchasers”), pursuant to which the Series D Purchasers purchased an aggregate of 1,058 shares of the Company’s Series D Preferred Stock (“Series D Preferred Stock”) for an aggregate purchase price of approximately \$1.06 million. In addition, in connection with the issuance of the Series D Preferred Stock, the Series D Purchasers received a five-year warrant to purchase an aggregate of 814,102 shares of common stock (the “July Warrants”). The July Warrants were exercisable at an exercise price of \$1.30 per share of common stock, subject to certain adjustments as set forth in the July Warrants.

On June 4, 2023, the Company entered into Exchange Agreements (the “Exchange Agreements”): (i) with the October Investors for the exchange of October Notes in the aggregate principal amount of \$2,616,740 for 2,622 shares of the Company’s newly created Series F Convertible Preferred Stock (“Series F Preferred Stock”), in the aggregate; (ii) with the January Investors for the exchange of January Notes in the aggregate principal amount of \$205,276 for 206 shares of Series F Preferred Stock, in the aggregate; (iii) with the Demand Noteholders for the exchange of Demand Notes in the principal amount of \$570,279 for 576 shares of Series F Preferred Stock, in the aggregate; and (iv) with the Series D Purchasers for the exchange of 1,197 shares of Series D Preferred Stock for 1,847 shares of Series F Preferred Stock, in the aggregate.

In addition, in connection with the Exchange Agreements, the Company issued, subject to stockholder approval, new five-year warrants to purchase an aggregate of 35,527,740 shares of common stock (the “Series F Warrants”) to the October Investors, the January Investors, and the Series D Purchasers. The Series F Warrants are exercisable at an exercise price of \$0.1478 per share of common stock, subject to certain adjustments as set forth in the Series F Warrants. The holders may exercise the Series F Warrants on a cashless basis if the shares of our common stock underlying the Series F Warrants are not then registered pursuant to an effective registration statement.

On June 5, 2023, we filed a Certificate of Designations, Preferences and Rights of the Series F Preferred Stock with the Secretary of State of the State of Delaware (the “Series F COD”). The Series F COD establishes the rights of the shares of Series F Preferred Stock. The following is a summary of the Series F COD and the rights of the holders of Series F Preferred Stock:

**Designation, Amount, and Par Value.** The number of shares of Series F Preferred Stock designated is 9,073. The shares of Series F Preferred Stock have a par value of \$0.0001 per share and a stated value of \$1,000 per share.

**Conversion Price.** The Series F Preferred Stock will be convertible into shares of common stock at an initial conversion price of \$0.1478 (subject to adjustment pursuant to the Certificate of Designation) (the “Conversion Price”).

**Dividends.** The Series F Preferred Stock will accrue dividends at a rate of 10% per annum (the “Series F Dividend Rate”) payable on the first calendar day of each month in shares of common stock, cash, or a combination of the two, at the Company’s option. If any shares of Series F Preferred Stock remain outstanding on the eighteen (18) month anniversary of the Initial Issuance Date (as defined in the Series F COD), the Series F Dividend Rate will increase by thirty percent (30%) on the first calendar day of each quarter until no shares of Series F Preferred Stock remain outstanding.

**Liquidation.** In the event of a Liquidation Event (as defined in the Series F COD), the holders the Series F Preferred Stock shall be entitled to receive in cash out of the assets of the Company, before any amount shall be paid to the holders of any other shares of capital stock of the Company, equal to the sum of (i) the Black Scholes Value (as defined in the Series F Warrants) with respect to the outstanding portion of all warrants held by such holder of Series F Preferred Stock (without regard to any limitations on the exercise thereof) as of the date of such event and (ii) the greater of (A) 125% of the Series F Conversion Amount (as defined below) on the date of such payment and (B) the amount per share such holder of Series F Preferred Stock would receive if they converted such share of Series F Preferred Stock into common stock immediately prior to the date of such payment

**Company Redemption.** The Company may redeem all, or any portion, of the Series F Preferred Stock for cash, at a price per share of Series F Preferred Stock equal to the greater of (i) the sum of the stated value plus any declared and unpaid dividends on such share of Series F Preferred Stock (the “Series F Conversion Amount”), and (ii) solely if an Equity Conditions Failure (as defined in the Series F COD) exists, the product of (1) the Series F Conversion Amount divided by the Series F Conversion Price with respect to the amount being redeemed by the Company multiplied by (2) the greatest Closing Sale Price (as defined in the Series F COD) of the common stock on any trading day during the period commencing on the date immediately preceding the notice given by the Company of such redemption and ending on the trading day immediately prior to the date the Company makes the entire payment required to be made for such redemption.

**Maximum Percentage.** Holders of Series F Preferred Stock are prohibited from converting shares of Series F Preferred Stock into shares of common stock if, as a result of such conversion, such holder, together with its affiliates, would beneficially own more than a specified percentage (to be initially set at 4.99% and thereafter adjusted by the holder to a number between 4.99% and 9.99%) (the “Series F Maximum Percentage”) of the total number of shares of common stock issued and outstanding immediately after giving effect to such conversion.

**Voting Rights.** The holders of Series F Preferred Stock shall have the right to vote with the holders of shares of common stock, voting together as one class, with a number of votes per share of Series F Preferred Stock as is equal to the number of shares of common stock into which it is the Series F Preferred Stock is then convertible (subject to the Series F Maximum Percentage) on all matters in which the holders of Series F Preferred Stock are permitted to vote with the class of shares of common stock pursuant to applicable law. Holders of Series F Preferred Stock are also entitled to vote as a class as expressly provided in the Series F COD and where required pursuant to applicable law.

#### *Series F-1 Preferred Stock and Series F-1 Warrants*

On June 13, 2023, we entered into a Securities Purchase Agreement (the “F-1 Purchase Agreement”) with certain accredited investors (the “F-1 Purchasers”), pursuant to which, at the closing of the transactions contemplated by the F-1 Purchase Agreement (the “F-1 Closing”) the F-1 Purchasers agreed to purchase an aggregate of 3,583 shares of the Company’s newly created Series F-1 Convertible Preferred Stock (“Series F-1 Preferred Stock”) for an aggregate purchase price of approximately \$2,327,760. In addition, in connection with the issuance of the Series F-1 Preferred Stock, the F-1 Purchasers received five-year warrants to purchase an aggregate of 23,902,602 shares of common stock (the “Series F-1 Warrants”). The Series F-1 Warrants are exercisable at an exercise price of \$0.1499 per share of our common stock, subject to certain adjustments as set forth in the Series F-1 Warrants. The holders may exercise the Series F-1 Warrants on a cashless basis if the shares of our common stock underlying the Warrants are not then registered pursuant to an effective registration statement.

On June 13, 2023, we filed a Certificate of Designations, Preferences and Rights of the Series F-1 Preferred Stock with the Secretary of State of the State of Delaware (the “Series F-1 COD”). The Series F-1 COD establishes the rights of the shares of Series F-1 Preferred Stock. The following is a summary of the Series F-1 COD and the rights of the holders of Series F-1 Preferred Stock:

**Designation, Amount, and Par Value.** The number of shares of Series F-1 Preferred Stock designated is 9,052. The shares of Series F-1 Preferred Stock have a par value of \$0.0001 per share and a stated value of \$1,000 per share.

**Conversion Price.** The Series F-1 Preferred Stock will be convertible into shares of common stock at an initial conversion price of \$0.1499 (subject to adjustment pursuant to the Series F-1 COD) (the “F-1 Conversion Price”).

**Dividends.** The Series F-1 Preferred Stock will accrue dividends at a rate of 10% per annum (the “F-1 Dividend Rate”) payable on the first calendar day of each month in shares of common stock, cash, or a combination of the two, at our option. If any shares of Series F-1 Preferred Stock remain outstanding on the eighteen (18) month anniversary of the Initial Issuance Date (as defined in the Series F-1 COD), the F-1 Dividend Rate will increase by thirty percent (30%) on the first calendar day of each quarter until no shares of Series F-1 Preferred Stock remain outstanding.

**Liquidation.** In the event of a Liquidation Event (as defined in the Series F-1 COD), the holders the Series F-1 Preferred Stock shall be entitled to receive in cash out of the assets of the Company, before any amount shall be paid to the holders of any other shares of capital stock of the Company, equal to the sum of (i) the Black Scholes Value (as defined in the Series F-1 Warrants) with respect to the outstanding portion of all Series F-1 Warrants held by such holder of Series F-1 Preferred Stock (without regard to any limitations on the exercise thereof) as of the date of such event and (ii) the greater of (A) 125% of the F-1 Conversion Amount (as defined below) on the date of such payment and (B) the amount per share such holder of Series F-1 Preferred Stock would receive if they converted such share of Series F-1 Preferred Stock into common stock immediately prior to the date of such payment

**Company Redemption.** The Company may redeem all, or any portion, of the Series F-1 Preferred Stock for cash, at a price per share of Series F-1 Preferred Stock equal to the greater of (i) the sum of the stated value plus any declared and unpaid dividends on such share of Series F-1 Preferred Stock (the “F-1 Conversion Amount”), and (ii) solely if an Equity Conditions Failure (as defined in the Series F-1 COD) exists, the product of (1) the F-1 Conversion Amount divided by the F-1 Conversion Price with respect to the amount being redeemed by the Company multiplied by (2) the greatest Closing Sale Price (as defined in the Series F-1 COD) of the common stock on any trading day during the period commencing on the date immediately preceding the notice given by the Company of such redemption and ending on the trading day immediately prior to the date the Company makes the entire payment required to be made for such redemption.

**Maximum Percentage.** Holders of Series F-1 Preferred Stock are prohibited from converting shares of Series F-1 Preferred Stock into shares of common stock if, as a result of such conversion, such holder, together with its affiliates, would beneficially own more than a specified percentage (to be initially set at 4.99% and thereafter adjusted by the holder to a number between 4.99% and 9.99%) (the “F-1 Maximum Percentage”) of the total number of shares of common stock issued and outstanding immediately after giving effect to such conversion.

**Voting Rights.** The holders of Series F-1 Preferred Stock shall have the right to vote with the holders of shares of common stock, voting together as one class, with a number of votes per share of Series F-1 Preferred Stock as is equal to the number of shares of common stock into which it is the Series F-1 Preferred Stock is then convertible (subject to the F-1 Maximum Percentage) on all matters in which the holders of Series F-1 Preferred Stock are permitted to vote with the class of shares of common stock pursuant to applicable law. Holders of Series F-1 Preferred Stock are also entitled to vote as a class as expressly provided in the Series F-1 COD and where required pursuant to applicable law.

#### *Series F-2 Preferred Stock and Series F-2 Warrants*



On June 14, 2023, we entered into a Securities Purchase Agreement (the “F-2 Purchase Agreement”) with certain accredited investors (the “F-2 Purchasers”), pursuant to which, at the closing of the transactions contemplated by the F-2 Purchase Agreement (the “F-2 Closing”) the F-2 Purchasers agreed to purchase an aggregate of 1,153 shares of the Company’s newly created Series F-2 Convertible Preferred Stock (“Series F-2 Preferred Stock”) for an aggregate purchase price of approximately \$748,735. In addition, in connection with the issuance of the Series F-2 Preferred Stock, the F-2 Purchasers received five-year warrants to purchase an aggregate of 7,496,749 shares of common stock (the “Series F-2 Warrants” and together with the Series F Warrants and the Series F-1 Warrants, collectively, the “Warrants”). The Series F-2 Warrants are exercisable at an exercise price of \$0.1538 per share of our common stock, subject to certain adjustments as set forth in the Series F-2 Warrants. The holders may exercise the Series F-2 Warrants on a cashless basis if the shares of our common stock underlying the Warrants are not then registered pursuant to an effective registration statement.

On June 14, 2023, we filed a Certificate of Designations, Preferences and Rights of the Series F-2 Preferred Stock with the Secretary of State of the State of Delaware (the “Series F-2 COD”). The Series F-2 COD establishes the rights of the shares of Series F-2 Preferred Stock. The following is a summary of the Series F-2 COD and the rights of the holders of Series F-2 Preferred Stock:

**Designation, Amount, and Par Value.** The number of shares of Series F-2 Preferred Stock designated is 9,052. The shares of Series F-2 Preferred Stock have a par value of \$0.0001 per share and a stated value of \$1,000 per share.

**Conversion Price.** The Series F-2 Preferred Stock will be convertible into shares of common stock at an initial conversion price of \$0.1538 (subject to adjustment pursuant to the Series F-2 COD) (the “F-2 Conversion Price”).

**Dividends.** The Series F-2 Preferred Stock will accrue dividends at a rate of 10% per annum (the “F-2 Dividend Rate”) payable on the first calendar day of each month in shares of common stock, cash, or a combination of the two, at our option. If any shares of Series F-2 Preferred Stock remain outstanding on the eighteen (18) month anniversary of the Initial Issuance Date (as defined in the Series F-2 COD), the F-2 Dividend Rate will increase by thirty percent (30%) on the first calendar day of each quarter until no shares of Series F-2 Preferred Stock remain outstanding.

**Liquidation.** In the event of a Liquidation Event (as defined in the Series F-2 COD), the holders the Series F-2 Preferred Stock shall be entitled to receive in cash out of the assets of the Company, before any amount shall be paid to the holders of any other shares of capital stock of the Company, equal to the sum of (i) the Black Scholes Value (as defined in the Series F-2 Warrants) with respect to the outstanding portion of all Series F-2 Warrants held by such holder of Series F-2 Preferred Stock (without regard to any limitations on the exercise thereof) as of the date of such event and (ii) the greater of (A) 125% of the F-2 Conversion Amount (as defined below) on the date of such payment and (B) the amount per share such holder of Series F-2 Preferred Stock would receive if they converted such share of Series F-2 Preferred Stock into common stock immediately prior to the date of such payment

**Company Redemption.** The Company may redeem all, or any portion, of the Series F-2 Preferred Stock for cash, at a price per share of Series F-2 Preferred Stock equal to the greater of (i) the sum of the stated value plus any declared and unpaid dividends on such share of Series F-2 Preferred Stock (the “F-2 Conversion Amount”), and (ii) solely if an Equity Conditions Failure (as defined in the Series F-2 COD) exists, the product of (1) the F-2 Conversion Amount divided by the F-2 Conversion Price with respect to the amount being redeemed by the Company multiplied by (2) the greatest Closing Sale Price (as defined in the Series F-2 COD) of the common stock on any trading day during the period commencing on the date immediately preceding the notice given by the Company of such redemption and ending on the trading day immediately prior to the date the Company makes the entire payment required to be made for such redemption.

**Maximum Percentage.** Holders of Series F-2 Preferred Stock are prohibited from converting shares of Series F-2 Preferred Stock into shares of common stock if, as a result of such conversion, such holder, together with its affiliates, would beneficially own more than a specified percentage (to be initially set at 4.99% and thereafter adjusted by the holder to a number between 4.99% and 9.99%) (the “F-2 Maximum Percentage”) of the total number of shares of common stock issued and outstanding immediately after giving effect to such conversion.

**Voting Rights.** The holders of Series F-2 Preferred Stock shall have the right to vote with the holders of shares of common stock, voting together as one class, with a number of votes per share of Series F-2 Preferred Stock as is equal to the number of shares of common stock into which it is the Series F-2 Preferred Stock is then convertible (subject to the F-2 Maximum Percentage) on all matters in which the holders of Series F-2 Preferred Stock are permitted to vote with the class of shares of common stock pursuant to applicable law. Holders of Series F-2 Preferred Stock are also entitled to vote as a class as expressly provided in the Series F-2 COD and where required pursuant to applicable law.

#### *Common Stock Issuances*

On March 24, 2023, the Company entered into the waiver agreements with holders of certain convertible promissory notes issued in 2022 to eliminate the minimum pricing covenant as it relates to Company’s At-The-Market facility. As consideration for this agreement, the Company agreed to issue to certain noteholders under the 1,903,429 shares of common stock, subject to shareholder approval.

On May 8, 2023, the lead lender and collateral agent for the January Notes agreed to grant the Company an extension of the maturity date thereof until May 15, 2023 in exchange for the issuance by the Company to the January Investors, on a pro rata basis, of 710,000 shares of the Company’s common stock, subject to approval by the Company’s stockholders. Then, on May 15, 2023, the lead lender and collateral agent for the January Notes agreed to grant the Company an extension of the maturity date thereof until May 23, 2023 in exchange for the issuance by the Company to the January Investors, on a pro rata basis, of 4,000,000 shares of the Company’s common stock, subject to approval by the Company’s stockholders. Subsequently, on May 23, 2023, the lead lender and collateral agent for the January Notes agreed to grant the Company an extension of the maturity date thereof until May 31, 2023 in exchange for the issuance by the Company to the January Investors, on a pro rata basis, of 1,500,000 shares of the Company’s common stock, subject to approval by the Company’s stockholders. Thereafter, on May 31, 2023, the lead lender and collateral agent for the January Notes agreed to grant the Company an extension of the maturity date thereof until June 12, 2023 in exchange for the issuance by the Company to the January Investors, on a pro rata basis, of 6,000,000 shares of the Company’s common stock, subject to approval by the Company’s stockholders. On June 30, 2023, the Company and the remaining January Investors agreed to extend the maturity date of the January Notes until July 31, 2023, in exchange for 2,500,000 shares of common stock, pending stockholder approval.

On May 15, 2023, the Company entered into the LOC Note Amendment with the LOC Lender, pursuant to which the LOC Lender agreed to extend the maturity date of the LOC Note until June 7, 2023 in exchange for, subject to stockholder approval, 2,000,000 shares of the Company’s common stock.

In connection with the issuance of the Demand Notes, subject to stockholder approval, the Company agreed to issue to the Demand Noteholders an aggregate of 7,413,622 shares of the Company’s common stock

The issuances of the Series F Preferred Stock pursuant to the Exchange Agreements were made in reliance on the exemption from registration provided by Section 3(a)

(9) of the Securities Act of 1933, as amended (the “Securities Act”). The issuance of the Series E Preferred Stock, Series F-1 Preferred Stock, the Series F-2 Preferred Stock, the Series F Warrants, the Series F-1 Warrants, the Series F-2 Warrants, and the common stock were made in reliance on the exemption from registration afforded by Section 4(a) (2) under the Securities Act and Regulation D promulgated thereunder and corresponding provisions of state securities laws, which exempt transactions by an issuer not involving any public offering. The purchasers thereof are “accredited investors” as such term is defined in Regulation D promulgated under the Securities Act.

## USE OF PROCEEDS

We are not selling any securities under this prospectus and will not receive any proceeds from the sale of the common stock offered by this prospectus by the Selling Stockholders. However, we may receive proceeds from the cash exercise of the Warrants, which, if exercised in cash at the current exercise price, with respect to all Warrants, would result in gross proceeds to us of approximately \$9,987,000. The proceeds from such Warrant exercises, if any, will be used for working capital and general corporate purposes. We cannot predict when or whether the Warrants will be exercised, and it is possible that some or all of the Warrants may expire unexercised. For information about the Selling Stockholders, see “*Selling Stockholders*.”

The Selling Stockholders will pay any underwriting discounts and commissions and expenses incurred by the Selling Stockholders for brokerage or legal services or any other expenses incurred by the Selling Stockholders in disposing of the shares of common stock offered hereby. We will bear all other costs, fees and expenses incurred in effecting the registration of the shares of common stock covered by this prospectus, including all registration and filing fees and fees and expenses of our counsel and accountants.

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## SECURITIES

Our authorized capital stock consists of 800,000,000 shares of common stock, par value \$0.0001 per share, and 50,000,000 shares of preferred stock, par value \$0.0001 per share, including 300 shares of Series A Preferred Stock, 1,500 shares of Series B Preferred stock, 600,000 shares of Series C Preferred Stock, 7,000 shares of Series D Preferred Stock, 77,000 shares of Series E Preferred Stock, 9,073 shares of Series F Preferred Stock, 9,052 shares of Series F-1 Preferred Stock, and 9.2 of Series F-2 Preferred Stock. As of March 31, 2023, 43,686,523 shares of common stock were issued and outstanding, 251 shares of Series A Preferred Stock were issued and outstanding, 1,443 shares of Series B Preferred Stock were issued and outstanding, 500,756 shares of Series C Preferred Stock were issued and outstanding, 1,058 shares of Series D Preferred Stock were issued and outstanding, 5,000 shares of Series E Preferred Stock were issued and outstanding, 0 shares of Series F Preferred Stock were issued and outstanding, 0 shares of Series F-1 Preferred Stock were issued and outstanding, and 0 shares of Series F-2 Preferred Stock were issued and outstanding.

### Common Stock

*Voting, Dividend and Other Rights.* Each outstanding share of common stock entitles the holder to one vote on all matters presented to the shareholders for a vote. Holders of shares of common stock have no cumulative voting, preemptive, subscription or conversion rights. All shares of common stock to be issued pursuant to this registration statement will be duly authorized, fully paid and non-assessable. Our Board of Directors determines if and when distributions may be paid out of legally available funds to the holders. To date, we have not declared any dividends with respect to our common stock. Our declaration of any cash dividends in the future will depend on our Board of Directors’ determination as to whether, in light of our earnings, financial position, cash requirements and other relevant factors existing at the time, it appears advisable to do so. We do not anticipate paying cash dividends on the common stock in the foreseeable future.

*Rights Upon Liquidation.* Upon liquidation, subject to the right of any holders of the preferred stock to receive preferential distributions, each outstanding share of common stock may participate pro rata in the assets remaining after payment of, or adequate provision for, all our known debts and liabilities.

*Majority Voting.* The holders of a majority of the outstanding shares of common stock constitute a quorum at any meeting of the shareholders. A plurality of the votes cast at a meeting of shareholders elects our directors. The common stock does not have cumulative voting rights. Therefore, the holders of a majority of the outstanding shares of common stock can elect all of our directors. In general, a majority of the votes cast at a meeting of shareholders must authorize shareholder actions other than the election of directors. Most amendments to our certificate of incorporation require the vote of the holders of a majority of all outstanding voting shares.

### Preferred Stock

*Authority of Board of Directors to Create Series and Fix Rights* Under our certificate of incorporation, as amended, our Board of Directors can issue up to 50,000,000 shares of preferred stock from time to time in one or more series. The Board of Directors is authorized to fix by resolution as to any series the designation and number of shares of the series, the voting rights, the dividend rights, the redemption price, the amount payable upon liquidation or dissolution, the conversion rights, and any other designations, preferences or special rights or restrictions as may be permitted by law. Unless the nature of a particular transaction and the rules of law applicable thereto require such approval, our Board of Directors has the authority to issue these shares of preferred stock without shareholder approval.

#### *Series A Preferred Stock and Series B Preferred Stock*

On January 22, 2021, we filed Amended and Restated Certificates of Designation, Preferences and Rights to create our Series A Preferred Stock and Series B Preferred Stock (collectively, “Preferred Stock”). The preferences, rights and terms of the Series A Preferred Stock and Series B Preferred Stock are identical except for the conversion price associated with each.

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*Voluntary Conversion.* The Preferred Stock is convertible at any time at the option of the holder thereof, into that number of shares of common stock determined by dividing the Stated Value of such Preferred Stock (which is \$1,000) by the conversion price. The current conversion price is \$1.3329 for the Series A Preferred Stock and \$0.7149 for the Series B Preferred Stock. The conversion price shall be adjusted in the event that we (i) pay a stock dividend or otherwise make a distribution or distributions payable in shares of our common stock, (ii) subdivide outstanding shares of our common stock into a larger number of shares, (iii) combine (including by way of a reverse stock split) outstanding shares of our common stock into a small number of shares, or (iv) issue, in the event of a reclassification of shares of our common stock, any shares of our capital stock.

*Mandatory Conversion.* If (i) the closing price of our common stock exceeds 300% of the then-current conversion price for five consecutive trading days, (ii) the daily average trading volume during thirty consecutive trading days was in excess of \$100,000 per trading day, (iii) our common stock is DWAC eligible and not subject to a “DTC chill” and (iv) the shares of our common stock are freely tradeable pursuant to Rule 144 of the Securities Act, we have the right to require the holders of Preferred Stock to convert all remaining shares of Preferred Stock into shares of common stock.

*Voting, Dividend and Other Rights.* Holders of Preferred Stock shall have no voting rights. Each outstanding share of Preferred Stock entitles the holder, from and after the second anniversary of the issuance date thereof, to quarterly dividends at an annual rate of 8% of the Stated Value per share of Preferred Stock (subject to adjustment),

payable in either cash or shares of common stock at our discretion.

*Rights Upon Liquidation.* In the event of any liquidation, dissolution or winding-up of the Company, whether voluntary or involuntary, the holders of Preferred Stock shall be entitled to receive out of our assets an amount equal to the Stated Value for each share of Preferred Stock before any distribution or payment shall be made to the holders of our common stock. Thereafter, the holders of Preferred Stock shall be entitled to receive the same amount that a holder of our common stock is entitled to receive if the shares of Preferred Stock were fully converted into shares of our common stock, which amounts are to be paid *pari passu* with holders of our common stock, Series C Preferred Stock and Series D Preferred Stock.

#### *Series C Preferred Stock*

On March 31, 2021, we filed Certificate of Designation, Preferences and Rights to create our Series C Preferred Stock (“Series C Preferred Stock”). The preferences, rights and terms of the Series C Preferred Stock are as follows.

*Voluntary Conversion.* The Series C Preferred Stock is convertible at any time at the option of the holder thereof, into that number of shares of common stock determined by dividing the Stated Value of such Series C Preferred Stock (which is \$1.00) by the conversion price. The conversion price is \$0.893 for the Series C Preferred Stock. The conversion price shall be adjusted in the event that we (i) pay a stock dividend or otherwise make a distribution or distributions payable in shares of our common stock, (ii) subdivide outstanding shares of our common stock into a larger number of shares, (iii) combine (including by way of a reverse stock split) outstanding shares of our common stock into a small number of shares, or (iv) issue, in the event of a reclassification of shares of our common stock, any shares of our capital stock.

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*Mandatory Conversion.* If (i) the closing price of our common stock exceeds 300% of the then-current conversion price for five consecutive trading days, (ii) the daily average trading volume during thirty consecutive trading days was in excess of \$100,000 per trading day, (iii) our common stock is DWAC eligible and not subject to a “DTC chill” and (iv) the shares of our common stock are freely tradeable pursuant to Rule 144 of the Securities Act, we have the right to require the holders of Series C Preferred Stock to convert all remaining shares of Series C Preferred Stock into shares of common stock.

*Voting, Dividend and Other Rights.* Holders of Series C Preferred Stock shall have no voting rights. Each outstanding share of Series C Preferred Stock entitles the holder, from and after the second anniversary of the issuance date thereof, to quarterly dividends at an annual rate of 8% of the Stated Value per share of Series C Preferred Stock (subject to adjustment), payable in either cash or shares of common stock at our discretion.

*Rights Upon Liquidation.* In the event of any liquidation, dissolution or winding-up of the Company, whether voluntary or involuntary, the holders of Series C Preferred Stock shall be entitled to receive out of our assets an amount equal to the Stated Value for each share of Series C Preferred Stock before any distribution or payment shall be made to the holders of our common stock. Thereafter, the holders of Series C Preferred Stock shall be entitled to receive the same amount that a holder of our common stock is entitled to receive if the shares of Series C Preferred Stock were fully converted into shares of our common stock, which amounts are to be paid *pari passu* with holders of our common stock, Series A Preferred Stock, Series B Preferred Stock and Series D Preferred Stock.

#### *Series D Preferred Stock*

On July 8, 2022, we filed the Certificate of Designations, Preferences and Rights (the “Series D Certificate of Designations”) to create our Series D Preferred Stock (“Series D Preferred Stock”). On February 1, 2023, we filed Amendment No. 1 to the Series D Certificate of Designations. The preferences, rights and terms of the Series D Preferred Stock, as amended, are as follows.

*Voluntary Conversion.* The Series D Preferred Stock is convertible at any time at the option of the holder thereof, into that number of shares of common stock determined by dividing the Stated Value of such Series D Preferred Stock (which is \$1,000) by the conversion price. The conversion price is \$0.50 for the Series D Preferred Stock. The conversion price shall be adjusted in the event that we (i) pay a stock dividend or otherwise make a distribution or distributions payable in shares of our common stock, (ii) subdivide outstanding shares of our common stock into a larger number of shares, (iii) combine (including by way of a reverse stock split) outstanding shares of our common stock into a small number of shares, or (iv) issue, in the event of a reclassification of shares of our common stock, any shares of our capital stock.

*Voting, Dividend and Other Rights.* Holders of Series D Preferred Stock shall have no voting rights. Each outstanding share of Series D Preferred Stock entitles the holder to cumulative dividends at an annual rate of 12% of the Stated Value per share of Series D Preferred Stock (subject to adjustment), payable in shares of common stock at our discretion.

*Rights Upon Liquidation.* In the event of any liquidation, dissolution or winding-up of the Company, whether voluntary or involuntary, the holders of Series D Preferred Stock shall be entitled to receive out of our assets an amount equal to the Stated Value for each share of Series D Preferred Stock before any distribution or payment shall be made to the holders of our common stock. Thereafter, the holders of Series D Preferred Stock shall be entitled to receive the same amount that a holder of our common stock is entitled to receive if the shares of Series D Preferred Stock were fully converted into shares of our common stock, which amounts are to be paid *pari passu* with holders of our common stock, Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock.

#### *Series E Preferred Stock*

On February 1, 2023, we filed the Certificate of Designations, Preferences and Rights to create our Series E Preferred Stock. The preferences, rights and terms of the Series E Preferred Stock are as follows.

*Voluntary Conversion.* Each share of Series E Preferred Stock is convertible at any time at the option of the holder thereof into 1,000 shares of common stock, subject to adjustment for stock splits, stock combinations and the like.

*Voting, Dividend and Other Rights.* Holders of Series E Preferred Stock shall have no voting rights. Each outstanding share of Series E Preferred Stock entitles the holder to receive dividends on an as converted basis together with holders of common stock.

*Rights Upon Liquidation.* In the event of any liquidation, dissolution or winding-up of the Company, whether voluntary or involuntary, the holders of Series E Preferred Stock shall be entitled to receive out of our assets the same amount that a holder of common stock would receive if the Series E Preferred Stock were fully converted (disregarding any conversion limitations), which amounts are to be paid *pari passu* with holders of our common stock, Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock and Series D Preferred Stock.

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#### *Series F Preferred Stock*

On June 5, 2023, we filed a Certificate of Designations, Preferences and Rights of the Series F Preferred Stock with the Secretary of State of the State of Delaware (the “Series F COD”). The preferences, rights and terms of the Series F Preferred Stock are as follows.

*Designation, Amount, and Par Value.* The number of shares of Series F Preferred Stock designated is 9,073. The shares of Series F Preferred Stock have a par value of \$0.0001 per share and a stated value of \$1,000 per share.

*Conversion Price.* The Series F Preferred Stock will be convertible into shares of common stock at an initial conversion price of \$0.1478 (subject to adjustment pursuant to the Certificate of Designation) (the “Conversion Price”).

*Dividends.* The Series F Preferred Stock will accrue dividends at a rate of 10% per annum (the “Series F Dividend Rate”) payable on the first calendar day of each month in shares of common stock, cash, or a combination of the two, at the Company’s option. If any shares of Series F Preferred Stock remain outstanding on the eighteen (18) month anniversary of the Initial Issuance Date (as defined in the Series F COD), the Series F Dividend Rate will increase by thirty percent (30%) on the first calendar day of each quarter until no shares of Series F Preferred Stock remain outstanding.

*Liquidation.* In the event of a Liquidation Event (as defined in the Series F COD), the holders the Series F Preferred Stock shall be entitled to receive in cash out of the assets of the Company, before any amount shall be paid to the holders of any other shares of capital stock of the Company, equal to the sum of (i) the Black Scholes Value (as defined in the Series F Warrants) with respect to the outstanding portion of all warrants held by such holder of Series F Preferred Stock (without regard to any limitations on the exercise thereof) as of the date of such event and (ii) the greater of (A) 125% of the Series F Conversion Amount (as defined below) on the date of such payment and (B) the amount per share such holder of Series F Preferred Stock would receive if they converted such share of Series F Preferred Stock into common stock immediately prior to the date of such payment

*Company Redemption.* The Company may redeem all, or any portion, of the Series F Preferred Stock for cash, at a price per share of Series F Preferred Stock equal to the greater of (i) the sum of the stated value plus any declared and unpaid dividends on such share of Series F Preferred Stock (the “Series F Conversion Amount”), and (ii) solely if an Equity Conditions Failure (as defined in the Series F COD) exists, the product of (1) the Series F Conversion Amount divided by the Series F Conversion Price with respect to the amount being redeemed by the Company multiplied by (2) the greatest Closing Sale Price (as defined in the Series F COD) of the common stock on any trading day during the period commencing on the date immediately preceding the notice given by the Company of such redemption and ending on the trading day immediately prior to the date the Company makes the entire payment required to be made for such redemption.

*Maximum Percentage.* Holders of Series F Preferred Stock are prohibited from converting shares of Series F Preferred Stock into shares of common stock if, as a result of such conversion, such holder, together with its affiliates, would beneficially own more than a specified percentage (to be initially set at 4.99% and thereafter adjusted by the holder to a number between 4.99% and 9.99%) (the “Series F Maximum Percentage”) of the total number of shares of common stock issued and outstanding immediately after giving effect to such conversion.

*Voting Rights.* The holders of Series F Preferred Stock shall have the right to vote with the holders of shares of common stock, voting together as one class, with a number of votes per share of Series F Preferred Stock as is equal to the number of shares of common stock into which it is the Series F Preferred Stock is then convertible (subject to the Series F Maximum Percentage) on all matters in which the holders of Series F Preferred Stock are permitted to vote with the class of shares of common stock pursuant to applicable law. Holders of Series F Preferred Stock are also entitled to vote as a class as expressly provided in the Series F COD and where required pursuant to applicable law.

#### *Series F Preferred Stock*

On June 13, 2023, we filed a Certificate of Designations, Preferences and Rights of the Series F-1 Preferred Stock with the Secretary of State of the State of Delaware (the “Series F-1 COD”). The preferences, rights and terms of the Series F-1 Preferred Stock are as follows.

*Designation, Amount, and Par Value.* The number of shares of Series F-1 Preferred Stock designated is 9,052. The shares of Series F-1 Preferred Stock have a par value of \$0.0001 per share and a stated value of \$1,000 per share.

*Conversion Price.* The Series F-1 Preferred Stock will be convertible into shares of common stock at an initial conversion price of \$0.1499 (subject to adjustment pursuant to the Series F-1 COD) (the “F-1 Conversion Price”).

*Dividends.* The Series F-1 Preferred Stock will accrue dividends at a rate of 10% per annum (the “F-1 Dividend Rate”) payable on the first calendar day of each month in shares of common stock, cash, or a combination of the two, at our option. If any shares of Series F-1 Preferred Stock remain outstanding on the eighteen (18) month anniversary of the Initial Issuance Date (as defined in the Series F-1 COD), the F-1 Dividend Rate will increase by thirty percent (30%) on the first calendar day of each quarter until no shares of Series F-1 Preferred Stock remain outstanding.

*Liquidation.* In the event of a Liquidation Event (as defined in the Series F-1 COD), the holders the Series F-1 Preferred Stock shall be entitled to receive in cash out of the assets of the Company, before any amount shall be paid to the holders of any other shares of capital stock of the Company, equal to the sum of (i) the Black Scholes Value (as defined in the Series F-1 Warrants) with respect to the outstanding portion of all Series F-1 Warrants held by such holder of Series F-1 Preferred Stock (without regard to any limitations on the exercise thereof) as of the date of such event and (ii) the greater of (A) 125% of the F-1 Conversion Amount (as defined below) on the date of such payment and (B) the amount per share such holder of Series F-1 Preferred Stock would receive if they converted such share of Series F-1 Preferred Stock into common stock immediately prior to the date of such payment

*Company Redemption.* The Company may redeem all, or any portion, of the Series F-1 Preferred Stock for cash, at a price per share of Series F-1 Preferred Stock equal to the greater of (i) the sum of the stated value plus any declared and unpaid dividends on such share of Series F-1 Preferred Stock (the “F-1 Conversion Amount”), and (ii) solely if an Equity Conditions Failure (as defined in the Series F-1 COD) exists, the product of (1) the F-1 Conversion Amount divided by the F-1 Conversion Price with respect to the amount being redeemed by the Company multiplied by (2) the greatest Closing Sale Price (as defined in the Series F-1 COD) of the common stock on any trading day during the period commencing on the date immediately preceding the notice given by the Company of such redemption and ending on the trading day immediately prior to the date the Company makes the entire payment required to be made for such redemption.

*Maximum Percentage.* Holders of Series F-1 Preferred Stock are prohibited from converting shares of Series F-1 Preferred Stock into shares of common stock if, as a result of such conversion, such holder, together with its affiliates, would beneficially own more than a specified percentage (to be initially set at 4.99% and thereafter adjusted by the holder to a number between 4.99% and 9.99%) (the “F-1 Maximum Percentage”) of the total number of shares of common stock issued and outstanding immediately after giving effect to such conversion.

*Voting Rights.* The holders of Series F-1 Preferred Stock shall have the right to vote with the holders of shares of common stock, voting together as one class, with a number of votes per share of Series F-1 Preferred Stock as is equal to the number of shares of common stock into which it is the Series F-1 Preferred Stock is then convertible (subject to the F-1 Maximum Percentage) on all matters in which the holders of Series F-1 Preferred Stock are permitted to vote with the class of shares of common stock pursuant to applicable law. Holders of Series F-1 Preferred Stock are also entitled to vote as a class as expressly provided in the Series F-1 COD and where required pursuant to

applicable law.

#### Series F-2 Preferred Stock

On June 14, 2023, we filed a Certificate of Designations, Preferences and Rights of the Series F-2 Preferred Stock with the Secretary of State of the State of Delaware (the “Series F-2 COD”). The preferences, rights and terms of the Series F-2 Preferred Stock are as follows.

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*Designation, Amount, and Par Value.* The number of shares of Series F-2 Preferred Stock designated is 9,052. The shares of Series F-2 Preferred Stock have a par value of \$0.0001 per share and a stated value of \$1,000 per share.

*Conversion Price.* The Series F-2 Preferred Stock will be convertible into shares of common stock at an initial conversion price of \$0.1538 (subject to adjustment pursuant to the Series F-2 COD) (the “F-2 Conversion Price”).

*Dividends.* The Series F-2 Preferred Stock will accrue dividends at a rate of 10% per annum (the “F-2 Dividend Rate”) payable on the first calendar day of each month in shares of common stock, cash, or a combination of the two, at our option. If any shares of Series F-2 Preferred Stock remain outstanding on the eighteen (18) month anniversary of the Initial Issuance Date (as defined in the Series F-2 COD), the F-2 Dividend Rate will increase by thirty percent (30%) on the first calendar day of each quarter until no shares of Series F-2 Preferred Stock remain outstanding.

*Liquidation.* In the event of a Liquidation Event (as defined in the Series F-2 COD), the holders the Series F-2 Preferred Stock shall be entitled to receive in cash out of the assets of the Company, before any amount shall be paid to the holders of any other shares of capital stock of the Company, equal to the sum of (i) the Black Scholes Value (as defined in the Series F-2 Warrants) with respect to the outstanding portion of all Series F-2 Warrants held by such holder of Series F-2 Preferred Stock (without regard to any limitations on the exercise thereof) as of the date of such event and (ii) the greater of (A) 125% of the F-2 Conversion Amount (as defined below) on the date of such payment and (B) the amount per share such holder of Series F-2 Preferred Stock would receive if they converted such share of Series F-2 Preferred Stock into common stock immediately prior to the date of such payment

*Company Redemption.* The Company may redeem all, or any portion, of the Series F-2 Preferred Stock for cash, at a price per share of Series F-2 Preferred Stock equal to the greater of (i) the sum of the stated value plus any declared and unpaid dividends on such share of Series F-2 Preferred Stock (the “F-2 Conversion Amount”), and (ii) solely if an Equity Conditions Failure (as defined in the Series F-2 COD) exists, the product of (1) the F-2 Conversion Amount divided by the F-2 Conversion Price with respect to the amount being redeemed by the Company multiplied by (2) the greatest Closing Sale Price (as defined in the Series F-2 COD) of the common stock on any trading day during the period commencing on the date immediately preceding the notice given by the Company of such redemption and ending on the trading day immediately prior to the date the Company makes the entire payment required to be made for such redemption.

*Maximum Percentage.* Holders of Series F-2 Preferred Stock are prohibited from converting shares of Series F-2 Preferred Stock into shares of common stock if, as a result of such conversion, such holder, together with its affiliates, would beneficially own more than a specified percentage (to be initially set at 4.99% and thereafter adjusted by the holder to a number between 4.99% and 9.99%) (the “F-2 Maximum Percentage”) of the total number of shares of common stock issued and outstanding immediately after giving effect to such conversion.

*Voting Rights.* The holders of Series F-2 Preferred Stock shall have the right to vote with the holders of shares of common stock, voting together as one class, with a number of votes per share of Series F-2 Preferred Stock as is equal to the number of shares of common stock into which it is the Series F-2 Preferred Stock is then convertible (subject to the F-2 Maximum Percentage) on all matters in which the holders of Series F-2 Preferred Stock are permitted to vote with the class of shares of common stock pursuant to applicable law. Holders of Series F-2 Preferred Stock are also entitled to vote as a class as expressly provided in the Series F-2 COD and where required pursuant to applicable law.

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#### Outstanding Warrants

At June 30, 2023, the following warrants were outstanding:

Underlying Shares of Common Stock	Expiration Date	Initial Exercise Price (1)
55,835	November 15, 2023	\$ 3.38
115,446	May 9, 2024	\$ 1.26
166,667	July 3, 2024	\$ 0.03
470,578	June 4, 2025	\$ 1.12
208,000	July 8, 2025	\$ 3.39
265,267	September 12, 2025	\$ 3.75
532,304	October 2, 2025	\$ 3.38
99,955	December 1, 2025	\$ 4.65
940,730	January 26, 2026	\$ 0.39
355,485	January 26, 2026	\$ 3.39
235,183	January 27, 2026	\$ 0.39
88,871	January 27, 2026	\$ 3.39
248,170	January 27, 2026	\$ 5.63
133,630	January 29, 2026	\$ 5.63
100,724	September 16, 2026	\$ 1.26
300,000	September 25, 2026	\$ 5.00
150,000	September 28, 2026	\$ 4.08
75,000	October 29, 2026	\$ 4.07
50,000	November 6, 2026	\$ 4.13

100,000	December 22, 2026	\$	3.04
200,000	March 18, 2027	\$	2.00
230,769	July 26, 2027	\$	1.30
76,923	July 26, 2027	\$	1.30
19,231	July 26, 2027	\$	1.30
230,769	July 26, 2027	\$	1.30
256,410	July 26, 2027	\$	1.30
62,500	July 22, 2027	\$	0.80
300,000	August 12, 2027	\$	0.75
15,353,559	October 19, 2027	\$	0.32
2,500,000	January 4, 2028	\$	0.32
6,405,844	February 1, 2028	\$	0.32
5,813,414	February 28, 2028	\$	0.32
45,000,000	February 4, 2028	\$	0.50

(1) Pursuant to the terms of such warrants, the exercise price is subject to adjustment in the event of stock splits, combinations or the like of our common stock.

#### Anti-Takeover Effects of Certain Provisions of Our Articles of Incorporation, as Amended, and Our Bylaws

Our certificate of incorporation and our Bylaws contain certain provisions that could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions and certain provisions of Delaware law, which are summarized below, may discourage coercive takeover practices and inadequate takeover bids. These provisions also may encourage persons seeking to acquire control of us to first negotiate with our Board of Directors. We believe that the benefits of increased protection of our potential ability to negotiate with an unfriendly or unsolicited acquirer outweigh the disadvantages of discouraging a proposal to acquire us because negotiation of these proposals could result in an improvement of their terms.

*Undesignated Preferred Stock.* As discussed above, our Board of Directors has the ability to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of us. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in our control or management.

*Delaware Anti-Takeover Statute.* We are subject to the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. In general, Section 203 prohibits a publicly held Delaware corporation from engaging, under certain circumstances, in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

- Prior to the date of the transaction, the Board of Directors of the corporation approved either the business combination or the transaction that resulted in the stockholder's becoming an interested stockholder;
- Upon completion of the transaction that resulted in the stockholder's becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, but not the outstanding voting stock owned by the interested stockholder, (1) shares owned by persons who are directors and also officers and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- At or subsequent to the date of the transaction, the business combination is approved by the Board of Directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66-2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation's outstanding voting stock. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our Board of Directors does not approve in advance. We also anticipate that Section 203 may discourage attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

The provisions of Delaware law and the provisions of our certificate of incorporation and Bylaws, as amended, could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

#### Transfer Agent and Registrar

The registrar and transfer agent for our common stock is VStock Transfer, LLC, located at 18 Lafayette Place Woodmere, New York 11598.

#### SELLING STOCKHOLDERS

The common stock being offered by the Selling Stockholders is that common stock issued to the Selling Stockholders as described in above in the section titled "Private Placements" and those shares of common stock issuable to the Selling Stockholders upon conversion of the Series E Preferred Stock, conversion of the Series F Preferred Stock, conversion of the Series F-1 Preferred Stock, conversion of the Series F-2 Preferred Stock, or exercise of the Warrants. For additional information regarding the issuances of those shares of common stock, Series E Preferred Stock, Series F Preferred Stock, Series F-1 Preferred Stock, Series F-2 Preferred Stock, and the Warrants, see "Private Placements" above. We are registering the shares of common stock in order to permit the Selling Stockholders to offer the shares for resale from time to time. Except for the following, the Selling Stockholders have not had any material relationship with us within the past three years:

- On February 2, 2023, we entered into a Line of Credit Agreement (the “Line of Credit”) with Eleven Advisors, LLC, pursuant to which Eleven Advisors, LLC extended to us a secured line of credit in an amount not to exceed \$100,000,000, to be used to fund expenses related to the fulfillment of contracts with customers of Crown Fiber Optics. Eleven Advisors, LLC will consider requests for advances under the Line of Credit until February 2, 2024, unless the Line of Credit is extended for one or two additional years in accordance with its terms. Simultaneously with entering into the Line of Credit, we drew \$2,000,000 under such Line of Credit.
- Ownership of the Company’s Series D Preferred Stock and July Warrants.
- Ownership of the Company’s Series E Preferred Stock.
- Ownership of the October Notes, October Warrants, and Waiver Warrants.
- Ownership of the January Notes and the January Warrants.
- Ownership of the Demand Notes.
- Ownership of the Series F Preferred Stock and Series F Warrants.
- Ownership of the Series F-1 Preferred Stock and Series F-1 Warrants.
- Ownership of the Series F-2 Preferred Stock and Series F-2 Warrants.

The table below lists the Selling Stockholders and other information regarding the beneficial ownership (as determined under Section 13(d) of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder) of the shares of common stock held by each of the Selling Stockholders. The second column lists the number of shares of common stock beneficially owned by each Selling Stockholder, based on its ownership of shares of common stock, the Series E Preferred Stock, the Series F Preferred Stock, the Series F-1 Preferred Stock, the Series F-2 Preferred Stock, and the Warrants, assuming the conversion of such shares of the Series E Preferred Stock, Series F Preferred Stock, the Series F-1 Preferred Stock, and the Series F-2 Preferred Stock, and the exercise of the Warrants, held by the Selling Stockholders on that date.

The third column lists the shares of common stock being offered by this prospectus by the Selling Stockholders. The fourth column assumes the sale of all of the shares offered by the Selling Stockholders pursuant to this prospectus.

Under the terms of the Series E Preferred Stock, the Series F Preferred Stock, the Series F-1 Preferred Stock, the Series F-2 Preferred Stock, and the Warrants, a Selling Stockholder may not convert such shares of the Series E Preferred Stock, Series F Preferred Stock, the Series F-1 Preferred Stock, the Series F-2 Preferred Stock or exercise the Warrants to the extent such conversion or exercise would cause such Selling Stockholder, together with its affiliates and attribution parties, to beneficially own a number of shares of common stock which would exceed 4.99% (and thereafter may be adjusted by the holder to a number between 4.99% and 9.99%) of our then-outstanding common stock (the “Maximum Percentage”) following such conversion or exercise, excluding for purposes of such determination shares of common stock issuable upon conversion of such shares of the Series E Preferred Stock, Series F Preferred Stock, the Series F-1 Preferred Stock, the Series F-2 Preferred Stock or exercise the Warrants that have not been exercised. The number of shares in the second column does not reflect this limitation. The Selling Stockholders may sell all, some or none of their shares in this offering. See “*Plan of Distribution.*”

Name of Selling Stockholder	Common Stock Owned Prior to Offering		Maximum Number of shares of Common Stock to be Sold (32)	Shares Owned After Offering	
	Shares	Percent (1)		Shares (33)	Percent (1)
Cavalry Fund I, LP (2)	3,350,105 (17)	4.99%	30,791,565	3,350,105	4.99%
Cedarview Opportunities Master Fund, LP (3)	3,350,105 (18)	4.99%	23,510,496	3,350,105	4.99%
Long Grove Partners LLC (4)	3,350,105 (19)	4.99%	7,194,231	3,350,105	4.99%
Deschutes I, LP (5)	3,350,105 (20)	4.99%	6,160,273	1,160,133	1.78%
First Fire Global Opportunities Fund LLC (6)	3,350,105 (21)	4.99%	7,862,042	3,350,105	4.99%
Seven Knots LLC (7)	3,350,105 (22)	4.99%	4,754,484	1,569,127	2.40%
Keystone Capital Partners LLC (8)	3,350,105 (23)	4.99%	6,323,014	1,074,234	1.65%
Mercer Street Global Opportunity Fund, LLC (9)	3,350,105 (24)	4.99%	8,674,945	3,350,105	4.99%
Pinz Capital Special Opportunities Fund LP (10)	3,350,105 (25)	4.99%	5,234,765	1,652,668	2.52%
Christopher J Ball Irrevocable Trust UTA 12/12/2020 (11)	3,350,105 (26)	4.99%	4,387,608	1,011,990	1.55%
The Rohlinger Family Living Trust 2/14/08 (12)	857,437 (27)	1.27%	717,185	84,268	0.12%
Eleven Advisors, LLC (13)	3,350,105 (28)	4.99%	65,148,099	3,350,105	4.99%
Marion Ball Irrevocable Trust (UTA 12/12/2020) (14)	1,925,592 (29)	2.86%	1,772,666	165,343	0.25%
Fisher Living Trust (15)	2,583,361 (30)	3.85%	2,368,065	231,883	0.17%
WVP Emerging Manager Onshore Fund LLC (16)	3,350,105 (31)	4.99%	5,981,795	-	0.00%

- (1) The percentages in the table have been calculated on the basis of treating as outstanding for a particular person, all shares of our capital stock outstanding on June 30, 2023. On June 30, 2023, there were 63,652,003 shares of our common stock outstanding. To calculate a stockholder's percentage of beneficial ownership, we include in the numerator and denominator the common stock outstanding and all shares of our common stock issuable to that person in the event of the exercise of outstanding warrants owned by that person which are exercisable within 60 days of June 30, 2023, subject to any contractual restrictions on exercise. Warrants held by other stockholders are disregarded in this calculation. Therefore, the denominator used in calculating beneficial ownership among our stockholders may differ. Unless we have indicated otherwise, each person named in the table has sole voting power and sole investment power for the shares listed opposite such person's name.

- (2) Cavalry Fund I GP LLC, the General Partner of Cavalry Fund I, LP, has discretionary authority to vote and dispose of the shares held by Cavalry Fund I, LP and may be deemed to be the beneficial owner of these shares. Thomas Walsh, in his capacity as CEO of Cavalry Fund I GP LLC, may also be deemed to have investment discretion and voting power over the shares held by Cavalry Fund I, LP. Cavalry Fund I GP LLC and Mr. Walsh each disclaim any beneficial ownership of these shares. The address of this selling stockholder is 82 E. Allendale Road, Suite 5B, Saddle River, NJ 07458.
- (3) Cedarview Capital Management, LP, the Investment Manager of Cedarview Opportunities Master Fund, LP, has discretionary authority to vote and dispose of the shares held by Cedarview Capital Management, LP and may be deemed to be the beneficial owner of these shares. Burton Weinstein, in his capacity as Managing Partner of Cedarview Capital Management, LP, may also be deemed to have investment discretion and voting power over the shares held by Cedarview Opportunities Master Fund, LP. Cedarview Capital Management, LP and Mr. Weinstein each disclaim any beneficial ownership of these shares. The address of the selling stockholder is 1067 Broadway, Woodmere, NY 11598.
- (4) Scott W. Brickman, the Managing Member of this selling stockholder, holds voting and dispositive power over the shares of common stock held by this selling stockholder. Mr. Brickman disclaims any beneficial ownership of these shares. The address of this selling stockholder is 165 Township Line Road, Ste 3000, Jenkintown, PA 19046.
- (5) Robert J. Levitt, the Manager of this selling stockholder, holds voting and dispositive power over the shares of common stock held by this selling stockholder. Mr. Levitt disclaims any beneficial ownership of these shares. The address of this selling stockholder is 5660 Kelvin Avenue, Woodland Hills, CA 91367.
- (6) Eli Fireman, the Managing Member of this selling stockholder, holds voting and dispositive power over the shares of common stock held by this selling stockholder. Mr. Fireman disclaims any beneficial ownership of these shares. The address of this selling stockholder is 1040 1st Ave, Suite 190, New York, NY 10022.
- (7) Marissa Welner, the Manager of this selling stockholder, holds voting and dispositive power over the shares of common stock held by this selling stockholder. Ms. Welner disclaims any beneficial ownership of these shares. The address of this selling stockholder is 7 Rose Avenue, Great Neck, NY 11021.
- (8) Keystone Capital Partners LLC is managed by RANZ Group LLC. Frederic Zaino, the Managing Member of RANZ Group LLC, may be deemed to have investment discretion and voting power over the shares held by Keystone Capital Partners LLC. RANZ Group LLC and Mr. Zaino each disclaim any beneficial ownership of these shares. The address of the selling stockholder is 139 Fulton Street, Suite 412, New York, NY 10038.
- (9) Mercer Street Global Opportunity Fund, LLC is managed by Mercer Street Capital Partners LLC, which is managed by Jonathan Juchno. Mercer Street Capital Partners LLC and Mr. Juchno, may be deemed to have investment discretion and voting power over the shares held by Mercer Street Global Opportunity Fund, LLC. Mercer Street Capital Partners LLC and Mr. Juchno each disclaim any beneficial ownership of these shares. The address of the selling stockholder is 1111 Brickell Avenue, Suite 2920, Miami, FL 33131.
- (10) Matthew Pinz, the General Partner of this selling stockholder, holds voting and dispositive power over the shares of common stock held by this selling stockholder. Mr. Pinz disclaims any beneficial ownership of these shares. The address of this selling stockholder is 25 West 45th Street, New York, NY 10036.

- (11) Eileen Marion Ball, the Trustee of this selling stockholder, holds voting and dispositive power over the shares of common stock held by this selling stockholder. Ms. Ball disclaims any beneficial ownership of these shares. The address of this selling stockholder is 1321 Las Pulgas Road, Pacific Palisades, CA 90272.
- (12) George J. Rohlinger, the Trustee of this selling stockholder, holds voting and dispositive power over the shares of common stock held by this selling stockholder. Mr. Rohlinger disclaims any beneficial ownership of these shares. The address of this selling stockholder is 4895 W. Mill River Court, Coeur D'Alene, ID 83814.
- (13) Eleven Advisors LLC, the Manager of The Eleven Advisors LLC, holds voting and dispositive power over the shares of common stock held by the selling stockholder. Hartley Wasko, the CEO of the selling stockholder and the Managing Member/CEO of Eleven Advisors LLC, may also be deemed to have investment discretion and voting power over the shares held by The Eleven Advisors LLC. The address of the selling stockholder is 463 Adams Street, Denver, CO 80206.
- (14) Christopher Ball, the Trustee of this selling stockholder, holds voting and dispositive power over the shares of common stock held by this selling stockholder. Mr. Ball disclaims any beneficial ownership of these shares. The address of this selling stockholder is 1321 Las Pulgas Road, Pacific Palisades, CA 90272.
- (15) Howard Andrew Fisher, the Trustee of this selling stockholder, holds voting and dispositive power over the shares of common stock held by this selling stockholder. Mr. Fisher disclaims any beneficial ownership of these shares. The address of this selling stockholder is 155 Bear Gulch Drive, Portola Valley, CA 94028.
- (16) WVP Management, LLC, the Managing Member of WVP Emerging Manager Onshore Fund LLC - Structured Small Cap Lending Series (the "Selling Stockholder"), has discretionary authority to vote and dispose of the shares held by the Selling Stockholder and may be deemed to be the beneficial owner of these shares. Cavalry Fund I Management LLC and Worth Venture Partners, LLC, in their capacity as advisors to the Selling Stockholder, may also be deemed to have investment discretion and voting power of the shares held by the Selling Stockholder. Thomas Walsh, in his capacity as General Partner, CEO, and CIO of Cavalry Fund I Management LLC, may also be deemed to have investment discretion and voting power over the shares held by the Selling Stockholder. Abby Flamholz, in her capacity as Managing Member of WVP Management, LLC and in her capacity as Managing Member of Worth Venture Partners, LLC, may also be deemed to have investment discretion and voting power of the shares held by the Selling Stockholder. WVP Management, LLC, Cavalry Fund I Management LLC, Worth Venture Partners, LLC, Mr. Walsh and Ms. Flamholz each disclaim any beneficial ownership of these shares. The address of this selling stockholder is 82 E. Allendale Road, Suite 5B, Saddle River, NJ 07458.





- (25) This column lists the number of shares of common stock beneficially owned by this selling stockholder, as of June 30, 2023, after giving effect to the Maximum Percentage (as defined in the paragraph above the table above). Without regard to the Maximum Percentage, as of June 30, 2023, the selling stockholder would beneficially own an aggregate number of 6,887,433 shares of our common stock, consisting of (i) 1,652,668 shares of common stock acquired by this selling stockholder in a transaction unrelated to the transactions contemplated above in the section titled “*Private Placements*”, none of which shares are being registered for resale under this prospectus; (ii) up to 1,876,691 shares of common stock underlying shares of Series F Preferred Stock and Series F-2 Preferred Stock held by this selling stockholder, all of which are being registered under this prospectus; (iii) up to 1,876,691 shares of common stock underlying the Warrants, all of which are being registered under this prospectus; and (iv) 1,481,383 shares of common stock held by this selling stockholder acquired in a transaction contemplated above in the section titled “*Private Placements*”, all of which are being registered under this prospectus.
- (26) This column lists the number of shares of common stock beneficially owned by this selling stockholder, as of June 30, 2023, after giving effect to the Maximum Percentage (as defined in the paragraph above the table above). Without regard to the Maximum Percentage, as of June 30, 2023, the selling stockholder would beneficially own an aggregate number of 5,399,598 shares of our common stock, consisting of (i) 1,011,990 shares of common stock acquired by this selling stockholder in a transaction unrelated to the transactions contemplated above in the section titled “*Private Placements*”, none of which shares are being registered for resale under this prospectus; (ii) up to 1,813,261 shares of common stock underlying shares of Series F Preferred Stock held by this selling stockholder, all of which are being registered under this prospectus; (iii) up to 1,813,261 shares of common stock underlying the Warrants, all of which are being registered under this prospectus; and (iv) 761,085 shares of common stock held by this selling stockholder acquired in a transaction contemplated above in the section titled “*Private Placements*”, all of which are being registered under this prospectus.
- (27) This column lists the number of shares of common stock beneficially owned by this selling stockholder, as of June 30, 2023, after giving effect to the Maximum Percentage (as defined in the paragraph above the table above). Without regard to the Maximum Percentage, as of June 30, 2023, the selling stockholder would beneficially own an aggregate number of 862,460 shares of our common stock, consisting of (i) 145,275 shares of common stock acquired by this selling stockholder in a transaction unrelated to the transactions contemplated above in the section titled “*Private Placements*”, none of which shares are being registered for resale under this prospectus; (ii) up to 358,593 shares of common stock underlying shares of Series F Preferred Stock held by this selling stockholder, all of which are being registered under this prospectus; (iii) up to 358,593 shares of common stock underlying the Warrants, all of which are being registered under this prospectus.
- (28) This column lists the number of shares of common stock beneficially owned by this selling stockholder, as of June 30, 2023, after giving effect to the Maximum Percentage (as defined in the paragraph above the table above). Without regard to the Maximum Percentage, as of June 30, 2023, the selling stockholder would beneficially own an aggregate number of 110,148,099 shares of our common stock, consisting of (i) 45,000,000 shares of common stock acquired by this selling stockholder in a transaction unrelated to the transactions contemplated above in the section titled “*Private Placements*”, none of which shares are being registered for resale under this prospectus; (ii) up to 21,074,049 shares of common stock underlying shares of Series F-1 Preferred Stock held by this selling stockholder, all of which are being registered under this prospectus; (iii) up to 21,074,049 shares of common stock underlying the Warrants, all of which are being registered under this prospectus; (iv) up to 21,000,000 shares of common stock underlying shares of Series E Preferred Stock held by this selling stockholder, all of which are being registered under this prospectus; and (v) 2,000,000 shares of common stock held by this selling stockholder acquired in a transaction contemplated above in the section titled “*Private Placements*”, all of which are being registered under this prospectus.

- (29) This column lists the number of shares of common stock beneficially owned by this selling stockholder, as of June 30, 2023, after giving effect to the Maximum Percentage (as defined in the paragraph above the table above). Without regard to the Maximum Percentage, as of June 30, 2023, the selling stockholder would beneficially own an aggregate number of 1,938,009 shares of our common stock, consisting of (i) 165,343 shares of common stock acquired by this selling stockholder in a transaction unrelated to the transactions contemplated above in the section titled “*Private Placements*”, none of which shares are being registered for resale under this prospectus; (ii) up to 886,333 shares of common stock underlying shares of Series F Preferred Stock held by this selling stockholder, all of which are being registered under this prospectus; (iii) up to 886,333 shares of common stock underlying the Warrants, all of which are being registered under this prospectus.
- (30) This column lists the number of shares of common stock beneficially owned by this selling stockholder, as of June 30, 2023, after giving effect to the Maximum Percentage (as defined in the paragraph above the table above). Without regard to the Maximum Percentage, as of June 30, 2023, the selling stockholder would beneficially own an aggregate number of 2,599,948 shares of our common stock, consisting of (i) 231,883 shares of common stock acquired by this selling stockholder in a transaction unrelated to the transactions contemplated above in the section titled “*Private Placements*”, none of which shares are being registered for resale under this prospectus; (ii) up to 1,184,032 shares of common stock underlying shares of Series F Preferred Stock held by this selling stockholder, all of which are being registered under this prospectus; (iii) up to 1,184,032 shares of common stock underlying the Warrants, all of which are being registered under this prospectus.
- (31) This column lists the number of shares of common stock beneficially owned by this selling stockholder, as of June 30, 2023, after giving effect to the Maximum Percentage (as defined in the paragraph above the table above). Without regard to the Maximum Percentage, as of June 30, 2023, the selling stockholder would beneficially own an aggregate number of 5,981,795 shares of our common stock, consisting of (i) up to 2,990,897 shares of common stock underlying Series F-2 Preferred Stock held by this selling stockholder, all of which are being registered under this prospectus; (iii) up to 2,990,897 shares of common stock underlying the Warrants, all of which are being registered under this prospectus.
- (32) This column represents the amount of shares that will be held by the Selling Stockholders after completion of this offering based on the assumptions that (a) all securities registered for sale by the registration statement of which this prospectus is part of will be sold, and (b) no other shares of common stock are acquired or sold by the Selling Stockholders prior to completion of this offering. However, the Selling Stockholders are not obligated to sell all or any portion of the shares of our common stock offered pursuant to this prospectus.
- (33) For the purposes of the calculations of common stock to be sold pursuant to the prospectus we are assuming (i) the exercise of 100% of all of the Warrants held by the selling stockholders, and (ii) the issuance of 100% of the shares of common stock underlying all of the Series E Preferred Stock, Series F Preferred Stock, Series F-1 Preferred Stock, and Series F-2 Preferred Stock without regard to any limitations set forth therein.

#### PLAN OF DISTRIBUTION

We are registering the shares of common stock issued to the Selling Stockholders as described in above in the section titled “*Private Placements*” and the shares of common stock issuable upon conversion of the Series E Preferred Stock, Series F Preferred Stock, the Series F-1 Preferred Stock, and the Series F-2 Preferred Stock and exercise of the Warrants to permit the resale of these shares of common stock by the holders of the common stock, Series E Preferred Stock, Series F Preferred Stock, the Series F-1 Preferred Stock, the Series F-2 Preferred Stock, and the Warrants from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of common stock, although we will receive the exercise price of any Warrants not exercised by the selling stockholders on a cashless exercise basis. We will bear all fees and expenses incident to our obligation to register the shares of common stock.

The selling stockholders may sell all or a portion of the shares of common stock held by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of common stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of common stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions, pursuant to one or more of the following methods:

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing or settlement of options, whether such options are listed on an options exchange or otherwise;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales made after the date the Registration Statement is declared effective by the SEC;
- broker-dealers may agree with a selling security holder to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell shares of common stock under Rule 144 promulgated under the Securities Act of 1933, as amended, if available, rather than under this prospectus. In addition, the selling stockholders may transfer the shares of common stock by other means not described in this prospectus. If the selling stockholders effect such transactions by selling shares of common stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of common stock for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the shares of common stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the shares of common stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of common stock short and deliver shares of common stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of common stock to broker-dealers that in turn may sell such shares.

The selling stockholders may pledge or grant a security interest in some or all of the Series E Preferred Stock, Series F Preferred Stock, the Series F-1 Preferred Stock, the Series F-2 Preferred Stock, the Warrants, or shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the shares of common stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

To the extent required by the Securities Act and the rules and regulations thereunder, the selling stockholders and any broker-dealer participating in the distribution of the shares of common stock may be deemed to be "underwriters" within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the shares of common stock is made, a prospectus supplement, if required, will be distributed, which will set forth the aggregate amount of shares of common stock being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the selling stockholders and any discounts, commissions or concessions allowed or re-allowed or paid to broker-dealers.

Under the securities laws of some states, the shares of common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any selling stockholder will sell any or all of the shares of common stock registered pursuant to the registration statement, of which this prospectus forms a part.

The selling stockholders and any other person participating in such distribution will be subject to applicable provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder, including, without limitation, to the extent applicable, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of common stock by the selling stockholders and any other participating person. To the extent applicable, Regulation M may also restrict the ability of any person engaged in the distribution of the shares of common stock to engage in market-making activities with respect to the shares of common stock. All of the foregoing may affect the marketability of the shares of common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of common stock.

We will pay all expenses of the registration of the shares of common stock pursuant to the registration rights agreement, estimated to be \$15,000 in total, including, without limitation, Securities and Exchange Commission filing fees and expenses of compliance with state securities or "blue sky" laws; provided, however, a selling stockholder will pay all underwriting discounts and selling commissions, if any. We will indemnify the selling stockholders against liabilities, including some liabilities under the Securities Act in accordance with the registration rights agreements or the selling stockholders will be entitled to contribution. We may be indemnified by the selling stockholders against civil liabilities, including liabilities under the Securities Act that may arise from any written information furnished to us by the selling stockholder specifically for use in this prospectus, in accordance with the related registration rights agreements or we may be entitled to contribution.

Once sold under the registration statement, of which this prospectus forms a part, the shares of common stock will be freely tradable in the hands of persons other than our affiliates.

## LEGAL MATTERS

The validity of the securities offered in this prospectus will be passed upon for us by Pryor Cashman LLP. Additional legal matters may be passed upon for us, the selling stockholder or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement. As appropriate, legal counsel representing the underwriters, dealers or agents will be named in the accompanying prospectus supplement and may opine to certain legal matters.

## EXPERTS

Marcum LLP, an independent registered public accounting firm, has audited our financial statements at and for the year ended December 31, 2022 and the nine-month period ended December 31, 2021 as set forth in its report included in our annual report on Form 10-K and transition report on Form 10-KT for the twelve and nine months ended December 31, 2022 and 2021, respectively, which are incorporated by reference into this prospectus and elsewhere in the registration statement of which this prospectus is a part. Our financial statements are incorporated by reference in reliance on Marcum LLP's reports, given on their authority as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the securities being offered by this prospectus. This prospectus does not contain all of the information in the registration statement of which this prospectus is a part and the exhibits to such registration statement. For further information with respect to us and the securities offered by this prospectus, we refer you to the registration statement of which this prospectus is a part and the exhibits to such registration statement. Statements contained in this prospectus as to the contents of any contract or any other document are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement of which this prospectus is a part. Each of these statements is qualified in all respects by this reference.

The registration statement of which this prospectus is a part is available at the SEC's website at <http://www.sec.gov>. You may also request a copy of these filings, at no cost, by writing us at 1110 NE Circle Blvd., Corvallis, Oregon 97330, Attention: Chief Financial Officer or telephoning us at (800) 674-3612.

We are subject to the information and reporting requirements of the Exchange Act and, in accordance with this law, file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information are available at the SEC's website referred to above. We also maintain a website at [www.crownec.com](http://www.crownec.com). You may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on our website is not a part of this prospectus and the inclusion of our website address in this prospectus is an inactive textual reference only.

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## INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to those documents and that the information in this prospectus is not complete and you should read the information incorporated by reference for more detail. We incorporate by reference in two ways. First, we list certain documents that we have already filed with the SEC. The information in these documents is considered part of this prospectus. Second, the information in documents that we file with the SEC in the future will update and supersede the current information in, and incorporated by reference in, this prospectus until we file a post-effective amendment that indicates the termination of the offering of the common stock made by this prospectus.

We incorporate by reference the documents listed below and any future filings we will make with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (other than information furnished in Current Reports on Form 8-K filed under Item 2.02 or 7.01 of such form unless such form expressly provides to the contrary), including those made after the date of the initial filing of the registration statement of which this prospectus is a part and prior to effectiveness of such registration statement:

- our Annual Report on [Form 10-K](#) for the year ended December 31, 2022, filed with the Securities and Exchange Commission on March 31, 2023; and
- our Transitional Report on [Form 10-K](#) for the nine months ended December 31, 2021, filed with the Securities and Exchange Commission on March 31, 2022; and
- our Quarterly Report on [Form 10-Q](#) for the three months ended March 31, 2023, filed with the Securities and Exchange Commission on May 22, 2023; and
- our Current Reports on Form 8-K filed with the Securities and Exchange Commission on [January 4, 2023](#), [February 3, 2023](#), [March 6, 2023](#), [March 27, 2023](#), [April 6, 2023](#), [May 18, 2023](#), [May 30, 2023](#), [June 6, 2023](#), [June 15, 2023](#), and June 30, 2023 (other than information "furnished" under Items 2.02 or 7.01, or corresponding information furnished under Item 9.01 or included as an exhibit); and
- the description of our common stock contained in the registration statement on [Form 8-A](#), dated January 22, 2021, File No. 001-39924, and any other amendment or report filed for the purpose of updating such description.

The documents incorporated by reference into this prospectus are also available on our corporate website at [www.crownec.com](http://www.crownec.com). We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the information that has been incorporated by reference in this prospectus but not delivered with this prospectus. You may request a copy of this information at no cost, by writing or telephoning us at the following address or telephone number:

Crown Electrokinetic Corp.  
Attention: Chief Financial Officer  
1110 NE Circle Blvd.  
Corvallis, Oregon 97330  
(800) 674-3612

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180,881,232 Shares

# Crown Electrokinetics Corp.

## Common Stock

### PROSPECTUS

, 2023

## PART II

### INFORMATION NOT REQUIRED IN PROSPECTUS

#### Item 14. *Other Expenses of Issuance and Distribution*

The following table sets forth the expenses expected to be incurred by us in connection with the issuance and distribution of the Securities registered hereby, all of which expenses, except for the Securities and Exchange Commission registration fee, are estimates:

<b>Description</b>	<b>Amount</b>
SEC Filing Fee	\$ 2,760.32
Printing Expenses	500.00
Accounting Fees and Expenses	15,000.00
Legal Fees and Expenses	25,000.00
Miscellaneous	1,000.00
Total	<u>\$ 44,260.32</u>

#### Item 15. *Indemnification of Directors and Officers*

Under Delaware law, a Delaware corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than one by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, against judgments, fines, amounts paid in settlement and reasonable expenses, including attorneys' fees actually and necessarily incurred as a result of such action or proceeding, if such director or officer acted, in good faith, for a purpose which such person reasonably believed to be, in, or not opposed to, the best interests of the corporation and, in criminal actions or proceedings, in addition, had no reasonable cause to believe that such conduct was unlawful.

In the case of a derivative action, a Delaware corporation may indemnify any such person against expense, including attorneys' fees actually and necessarily incurred by such person in connection with the defense or settlement of such action or suit if such director or officer if such director or officer acted, in good faith, for a purpose which such person reasonably believed to be, in or not opposed to, the best interests of the corporation, except that no indemnification will be made in respect on any claim, issue or matter as to which such person will have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery of the State of Delaware or any other court in which such action was brought determines such person is fairly and reasonably entitled to indemnity for such expense.

Delaware Law permits a corporation to include in its certificate of incorporation a provision eliminating or limiting a director's liability to a corporation or its stockholders for monetary damages for breaches of fiduciary duty. Delaware Law provides, however, that liability for breaches of the duty of loyalty, acts or omissions not in good faith or involving intentional misconduct, or knowing violation of the law, and the unlawful purchase or redemption of stock or payment of unlawful purchase or redemption of stock or payment of unlawful dividends or the receipt of improper personal benefits cannot be eliminated or limited in this manner.

Our Certificate of Incorporation and Bylaws provide that we will indemnify our directors to the fullest extent permitted by Delaware law and may, if and to the extent authorized by the Board of Directors, indemnify our officers and any other person whom we have the power to indemnify against any liability, reasonable expense or other matter whatsoever.

Any amendment, modification or repeal of the foregoing provisions shall be prospective only, and shall not affect any rights or protections of any of our directors existing as of the time of such amendment, modification or repeal.

We may also, at the discretion of the Board of Directors, purchase and maintain insurance to the fullest extent permitted by Delaware law on behalf of any of our directors, officers, employees or agents against any liability asserted against such person and incurred by such person in any such capacity.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling the Registrant pursuant to the foregoing, the Registrant has been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

**Item 16. Exhibits and Financial Statement Schedules.**

(a)

(3) Exhibits:

- 3.1 [Series E Certificate of Designation \(incorporated herein by reference to Exhibit 3.2 to our Current Report on Form 8-K filed on February 3, 2023\).](#)
- 3.2 [Series F Certificate of Designation \(incorporated herein by reference to Exhibit 3.1 to our Current Report on Form 8-K filed on June 6, 2023\).](#)
- 3.3 [Series F-1 Certificate of Designation \(incorporated herein by reference to Exhibit 3.2 to our Current Report on Form 8-K filed on June 15, 2023\).](#)
- 3.4 [Series F-2 Certificate of Designation \(incorporated herein by reference to Exhibit 3.3 to our Current Report on Form 8-K filed on June 15, 2023\).](#)
- 4.1 [Form of Series F Warrant \(incorporated herein by reference to Exhibit 4.1 to our Current Report on Form 8-K filed on June 6, 2023\).](#)
- 4.2 [Form of Series F-1 Warrant \(incorporated herein by reference to Exhibit 4.1 to our Current Report on Form 8-K filed on June 15, 2022\).](#)
- 4.3 [Form of Series F-2 Warrant \(incorporated herein by reference to Exhibit 4.2 to our Current Report on Form 8-K filed on June 15, 2022\).](#)
- 5.1 [Opinion of Pryor Cashman LLP, regarding legality of shares being registered.](#)
- 23.1 [Consent of Marcum LLP](#)
- 23.2 [Consent of Pryor Cashman LLP \(included in their opinion filed as Exhibit 5.1\).](#)
- 24.1 [Powers of Attorney](#)
- 107 [Filing Fee Table](#)

**Item 17. Undertakings**

(a) The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
  - (i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
  - (ii) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) that, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
  - (iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

*provided, however*, that paragraphs (a)(1)(i), (a)(1)(ii), and (a)(1)(iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is a part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered that remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
  - (i) each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
  - (ii) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(i) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the Corvallis, Oregon, on June 30, 2023.

**Crown Electrokinetics Corp.**

By: /s/ Doug Croxall  
 Doug Croxall  
 Chief Executive Officer

**POWER OF ATTORNEY**

Each person whose signature appears below constitutes and appoints Doug Croxall and Joel Krutz as his true and lawful attorneys-in-fact and agents, each acting alone, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement on Form S-3 and any subsequent registration statement the Registrant may hereafter file with the Securities and Exchange Commission pursuant to Rule 462 under the Securities Act to register additional securities in connection with this registration statement, and to file this registration statement, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in order to effectuate the same as fully, to all intents and purposes, as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<b>Signature</b>	<b>Title</b>	<b>Date</b>
<u>/s/ Doug Croxall</u> Doug Croxall	Chairman and Chief Executive Officer (Principal Executive Officer)	June 30, 2023
<u>/s/ Joel Krutz</u> Joel Krutz	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	June 30, 2023
<u>/s/ Daniel Marcus</u> Daniel Marcus	Director	June 30, 2023
<u>/s/ Dr. DJ Nag</u> Dr. DJ Nag	Director	June 30, 2023

June 30, 2023

Board of Directors  
Crown Electrokinetics Corp.  
1110 NE Circle Blvd.  
Corvallis, OR 97330

**Re: Resale Registration Statement on Form S-3 of Crown Electrokinetics Corp.**

Ladies and Gentlemen:

We have acted as counsel to Crown Electrokinetics Corp., a Delaware corporation (the "Company"), in connection with the Registration Statement on Form S-3 (the "Registration Statement") filed by the Company on the date hereof with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), relating to the offering for resale of up to (i) an aggregate of 21,000,000 shares of common stock, par value \$0.0001 per share (Common Stock), issuable upon the conversion of shares of the Company's Series E Convertible Preferred Stock ("Series E Preferred Stock"); (ii) an aggregate of 35,527,740 shares of Common Stock issuable upon the conversion of shares of the Company's Series F Convertible Preferred Stock (the "Series F Preferred Stock"); (iii) an aggregate of 23,902,602 shares of Common Stock issuable upon the conversion of shares of the Company's Series F-1 Convertible Preferred Stock (the "Series F-1 Preferred Stock"); (iv) an aggregate of 7,496,749 shares of Common Stock issuable upon the conversion of shares of the Company's Series F-2 Convertible Preferred Stock (the "Series F-2 Preferred Stock"); (v) an aggregate of 35,527,740 shares of Common Stock issuable upon exercise of certain outstanding warrants issued by the Company in connection with the Series F Preferred Stock (the "Series F Warrants"); (vi) an aggregate of 23,902,602 shares of Common Stock issuable upon exercise of certain outstanding warrants issued by the Company in connection with the Series F-1 Preferred Stock (the "Series F-1 Warrants"); (vii) an aggregate of 7,496,749 shares of Common Stock issuable upon exercise of certain outstanding warrants issued by the Company in connection with the Series F-2 Preferred Stock (the "Series F-2 Warrants") and together with the Series F Warrants and the Series F-1 Warrants, collectively, the "Warrants"; (viii) 1,903,429 shares of the Company's Common Stock in connection with waiver agreements (the "Waiver Agreement and Amendments") with holders of certain convertible promissory notes issued in 2022 to eliminate the minimum pricing covenant as it relates to Company's At-The-Market facility (the "Waiver Agreement Shares"); (ix) 14,710,000 shares of the Company's Common Stock in connection with extensions of the maturity date of certain senior secured notes issued on June 3, 2023 (the "January Notes", and such shares, the "January Note Extension Shares"); (x) 2,000,000 shares of the Company's Common Stock in connection with extensions of the maturity date of certain secured promissory notes under a Line of Credit Agreement with a lender (the "Line of Credit", and such shares, the "Line of Credit Extension Shares"); and (xi) 7,413,622 shares of the Company's Common Stock in connection with certain secured demand promissory notes issued between May 17, 2023 and May 30, 2023 (the "Demand Notes", and such shares, the "Demand Note Shares"), for the account of the selling stockholders identified in the Registration Statement (the "Selling Stockholders"). This opinion letter is furnished to you at your request to enable you to fulfill the requirements of Item 601(b)(5) of Regulation S-K, 17 C.F.R. § 229.601(b)(5), in connection with the Registration Statement.

In our capacity as corporate counsel to the Company and for the purposes of this opinion, we have examined originals, or copies certified or otherwise identified to our satisfaction, of the following documents:

1. the Registration Statement (including the prospectus contained therein);
2. the Certificate of Incorporation of the Company;
3. the Series E Certificate of Designation;
4. the Series F Certificate of Designation;
5. the Series F-1 Certificate of Designation;
6. the Series F-2 Certificate of Designation;

7. the Bylaws of the Company;
8. the forms of Warrants;
9. a Certificate of Good Standing issued by the Secretary of State of the State of Delaware, dated June 9, 2023, certifying that the Company is in existence and in good standing in the State of Delaware;
10. the form of Exchange Agreements entered into on June 4, 2023 (the "Exchange Agreements") among the Company and certain of the Selling Stockholders, the Registration Rights Agreement entered into on October 19, 2022 and the Security Agreement entered into on October 19, 2022;
11. the Securities Purchase Agreement entered into on June 13, 2023 (the "Series F-1 Purchase Agreement") among the Company and certain of the Selling Stockholders and the Registration Rights Agreement entered into on June 14, 2023;
12. the Securities Purchase Agreement entered into on June 14, 2023 (the "Series F-2 Purchase Agreement") among the Company and certain of the Selling Stockholders and the Registration Rights Agreement entered into on June 15, 2023;
13. the form of Waiver Agreement and Amendment entered into on March 24, 2023 among the Company and certain of the Selling Stockholders;



14. the form of January Note entered into on January 3, 2023 among the Company and certain of the Selling Stockholders;
15. the Line of Credit Agreement, as amended, entered into on February 2, 2023 between the Company and one of the Selling Stockholders;
16. the form of Demand Note entered into between May 17, 2023 and May 30, 2023 among the Company and certain of the Selling Stockholders;
17. a certain Unanimous Written Consent of the Board of Directors of the Company, dated June 2, 2023 authorizing the transactions relating to the Exchange Agreements and the issuances of Common Stock pursuant to the Waiver Agreements, the extensions of the January Notes, the extensions of debt under the Line of Credit Agreement, and the Demand Notes; and
18. a certain Unanimous Written Consent of the Board of Directors of the Company, dated June 9, 2023 authorizing the transactions relating to the Series F-1 Purchase Agreement;
19. a certain Unanimous Written Consent of the Board of Directors of the Company, dated June 13, 2023 authorizing the transactions relating to the Series F-2 Purchase Agreement; and
20. a certain Unanimous Written Consent of the Board of Directors of the Company, dated June 26, 2023 authorizing further extensions of the January Notes and debt under the Line of Credit Agreement.

In rendering the opinion expressed below, we have assumed without verification the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals, the conformity to the originals of all documents submitted to us as copies and the authenticity of the originals of such copies, and the due authorization, execution and delivery of all documents by all parties and the validity, binding effect and enforceability thereof (other than the authorization, execution and delivery of documents by the Company and the validity, binding effect and enforceability thereof upon the Company). In addition, we have assumed and not verified the accuracy as to the factual matters of each document we have reviewed and the accuracy of, and each applicable party's full compliance with, any representations and warranties contained therein. As to questions of fact material to this opinion, we have, to the extent deemed appropriate, relied upon certain representations of certain officers of the Company. Accordingly, we are relying upon (without any independent investigation thereof) the truth and accuracy of the statements, covenants, representations and warranties set forth in the documents we have reviewed.



Crown Electrokinetics Corp.  
June 30, 2023  
Page 3

Based upon the foregoing and subject to the assumptions, exceptions, limitations and qualifications set forth herein, we are of the opinion that:

1. The Company is a corporation validly existing and in good standing under the laws of the state of Delaware. Our opinion in this paragraph has been rendered with your understanding that we have relied solely as to the valid existence and good standing of the Company in the State of Delaware on a certificate of good standing dated June 9, 2023.
2. The shares of Common Stock issuable upon conversion of the Series E Preferred Stock, the Series F Preferred Stock, the Series F-1 Preferred Stock and the Series F-2 Preferred Stock have been duly authorized for issuance by all necessary corporate action on the part of the Company and, when issued and delivered against payment therefor upon conversion of the Series E Preferred Stock in accordance with the Series E Certificate of Designation, conversion of the Series F Preferred Stock in accordance with the Series F Certificate of Designation, conversion of the Series F-1 Preferred Stock in accordance with the Series F-1 Certificate of Designation, and conversion of the Series F-2 Preferred Stock in accordance with the Series F-2 Certificate of Designation, will be validly issued, fully paid and non-assessable.
3. The shares of Common Stock issuable upon the exercise of the Warrants have been duly authorized for issuance by all necessary corporate action on the part of the Company and, when issued and delivered against payment therefor upon exercise of the Warrants in accordance with the terms of the Warrants, will be validly issued, fully paid and non-assessable.
4. The Waiver Agreement Shares, January Note Extension Shares, Line of Credit Extension Shares and Demand Note Shares are validly issued, fully paid and non-assessable.

Our opinion is limited to applicable statutory provisions of the Delaware General Corporation Law and the reported judicial decisions interpreting those laws, and federal laws of the United States of America to the extent referred to specifically herein. We are generally familiar with the Delaware General Corporation Law as currently in effect and the judicial decisions thereunder and have made such inquiries and review of matters of fact and law as we determined necessary to render the opinions contained herein. We assume no obligation to revise or supplement this opinion letter in the event of future changes in such laws or the interpretations thereof or such facts. We express no opinion regarding the Securities Act, or any other federal or state laws or regulations.

This opinion letter is issued as of the date hereof and is necessarily limited to laws now in effect and facts and circumstances presently existing and brought to our attention. We assume no obligation to supplement this opinion letter if any applicable laws change after the date hereof, or if we become aware of any facts or circumstances that now exist or that occur or arise in the future and may change the opinions expressed herein after the date hereof.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement and to the use of our name under the caption "Legal Matters" in the Registration Statement and the prospectus that forms a part thereof. In giving the foregoing consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act, or the rules and regulations of the Commission.

Very truly yours,

/s/ PRYOR CASHMAN LLP

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INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in this Registration Statement of Crown Electrokinetics Corp. on Form S-3 of our report, which includes an explanatory paragraph as to the Company's ability to continue as going concern dated March 31, 2023, with respect to our audits of the consolidated financial statements of Crown Electrokinetics Corp. as of December 31, 2022 and 2021, and for the years ended December 31, 2022 and 2021 appearing in the Annual Report on Form 10-K of Crown Electrokinetics Corp. for the year ended December 31, 2022. We also consent to the reference to our firm under the heading "Experts" in the Prospectus, which is part of this Registration Statement.

/s/ Marcum llp

Marcum llp  
Costa Mesa, CA  
June 30, 2023

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## Calculation of Filing Fee Tables

S-3  
(Form Type)Crown Electrokinetics Corp.  
(Exact Name of Registrant as Specified in its Charter)Not Applicable  
(Translation of Registrant's Name into English)

Table 1: Newly Registered and Carry Forward Securities

Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered(1)	Proposed Maximum Offering Price Per Share(2)	Maximum Aggregate Offering Price(2)	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial effective date	Filing Fee Previously Paid In Connection with Unsold Securities to be Carried Forward	
<b>Newly Registered Securities</b>												
Fees to Be Paid	Equity	Common Stock, \$0.0001 par value per share, issuable upon exercise of warrants	Rule 457(c) (2)	66,900,091	\$ 0.1385	\$ 9,265,662.60	0.0001102	\$ 1,021.08	N/A	N/A	N/A	N/A
	Equity	Common Stock, \$0.0001 par value per share, issuable upon conversion of Preferred Stock	Rule 457(c) (2)	87,927,091	\$ 0.1385	\$ 12,177,902.10	0.0001102	\$ 1,342.00	N/A	N/A	N/A	N/A
	Equity	Common Stock, \$0.0001 par value per share	Rule 457(c) (2)	26,027,051	\$ 0.1385	\$ 3,604,746.56	0.0001102	\$ 397.24	N/A	N/A	N/A	N/A
Fees Previously Paid								N/A	N/A	N/A	N/A	
<b>Carry Forward Securities</b>												
Carry Forward Securities												
		<b>Total Offering Amounts</b>				\$ 25,048,311.27		\$ 2,760.32				
		<b>Total Fees Previously Paid</b>										
		<b>Total Fee Offsets</b>										
		<b>Net Fee Due</b>						\$ 2,760.32				

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement shall also cover any additional shares of common stock, par value \$0.0001 per share (the "Common Stock") of Crown Electrokinetics Corp. (the "Company") that may become issuable upon any share split, share dividend, recapitalization or other similar transaction effected without the Company's receipt of consideration which results in an increase in the number of the outstanding shares of Common Stock.
- (2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rules 457(c) under the Securities Act of 1933, as amended, based on the average of the high and low prices of the Company's common stock on June 28, 2023.