EMAGIN CORP
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PROSPECTUS

EMAGIN CORPORATION
11,646,723 SHARES OF
COMMON STOCK

NYSE MKT LLC Trading Symbol: EMAN

This prospectus relates to the resale by the selling stockholder of up to 11,646,723 shares of common stock. The selling stockholders may sell common stock from time to time in the principal market on which the stock is traded at the prevailing market price or in negotiated transactions. We will pay the expenses of registering these shares.

Our common stock is listed on the NYSE MKT LLC under the symbol “EMAN”. The last reported sales price per share of our common stock as reported by the NYSE MKT LLC on April 23, 2013 was $3.20 per share.

Investing in these securities involves significant risks. See “Risk Factors” beginning on page 15.

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. You should read this prospectus carefully before you invest.

The date of this prospectus is May 3, 2013

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You should rely only on the information contained or incorporated by reference in this prospectus or any prospectus supplement. We have not authorized anyone to provide you with information different from that contained or incorporated by reference into this prospectus. If any person does provide you with information that differs from what is contained or incorporated by reference in this prospectus, you should not rely on it. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus. You should assume that the information contained in this prospectus or any prospectus supplement is accurate only as of the date on the front of the document and that any information contained in any document we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any prospectus supplement or any sale of a security. These documents are not an offer to sell or a solicitation of an offer to buy these securities in any circumstances under which the offer or solicitation is unlawful.

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ABOUT THIS PROSPECTUS

The following summary highlights selected information contained in this prospectus. This summary does not contain all the information you should consider before investing in the securities. Before making an investment decision, you should read the entire prospectus carefully, including the "risk factors" section, the financial statements and the notes to the financial statements.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

The information contained in this prospectus and the documents and information incorporated by reference in this prospectus include some statements that are not purely historical and that are "forward-looking statements." Such forward-looking statements include, but are not limited to, statements regarding our expectations, hopes, beliefs, intentions or strategies regarding the future, including our financial condition, and results of operations. In addition, any statements that refer to projections, forecasts or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking statements. The words "anticipates," "believes," "continue," "could," "estimates," "expects," "intends," "may," "might," "plans," "possible," "potential," "predicts," "projects," "seeks," "s and similar expressions, or the negatives of such terms, may identify forward-looking statements, but the absence of these words does not mean that a statement is not forward-looking.

The forward-looking statements contained in this prospectus are based on current expectations and beliefs concerning future developments and their potential effects on us. There can be no assurance that future developments actually affecting us will be those anticipated. These forward-looking statements involve a number of risks, uncertainties (some of which are beyond our control) or other assumptions that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements, including the following:

- Our ability to obtain and maintain all necessary government certifications and/or licenses to conduct our business;
- The cost of complying with current and future governmental regulations and the impact of any changes in the regulations on our operations;
- Adverse capital and credit market conditions, and our ability to meet liquidity needs;
- Our ability to obtain additional funding for our continuing operations and to fund our expansion;
- Our ability to meet our financial projections for any financial year;
- Our ability to retain our key executives and to hire additional senior management; and
- Other factors, including those described in this prospectus under the heading "Risk Factors," as well as factors set forth in other filings we make with the Securities and Exchange Commission, including those contained in "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our annual report on Form 10-K and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our 10-Q quarterly reports.

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If one or more of these risks or uncertainties materializes, or if any of our assumptions prove incorrect, actual results may vary in material respects from those projected in these forward-looking statements. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws.

SUMMARY

The following is only a summary, and does not contain all of the information that you need to consider in making your investment decision. We urge you to read this entire prospectus, including the more detailed consolidated financial statements, notes to the consolidated financial statements and other information incorporated by reference into this prospectus under “Where You Can Find More Information” and “Incorporation of Certain Information by Reference” from our other filings with the SEC, as well as any prospectus supplement applicable to an offering of the securities registered pursuant to the registration statement of which this prospectus forms a part. Investing in our securities involves risks. Therefore, please carefully consider the information provided under the heading “Risk Factors” beginning on page 15.

ABOUT EMAGIN CORPORATION

Introduction

eMagin Corporation (“eMagin, “we,” “our,” or “us,”) is a leader in the manufacture of microdisplays using OLED (organic light emitting diode) technology. We design, develop, manufacture, and market OLED on silicon microdisplays, virtual imaging products which utilize OLED microdisplays, and related products. We also perform research in the OLED field. Our virtual imaging products integrate OLED technology with silicon chips to produce high-resolution microdisplays smaller than one-inch diagonally which, when viewed through a magnifier, create virtual images that appear comparable in size to that of a computer monitor or a large-screen television. Our products enable our original equipment manufacturer (“OEM”) customers to develop and market improved or new electronic products, especially products that are mobile and highly portable so that people have immediate access to information and may experience immersive forms of communications and entertainment.

We believe our OLED microdisplays offer a number of significant advantages over comparable liquid crystal microdisplays (LCDs) including greatly increased power efficiency, less weight, and dramatically higher contrast, with expected lower overall system costs relative to alternative microdisplay technologies. Using our active matrix OLED technology, many computer and electronic system functions can be built directly into the OLED microdisplay silicon backplane, resulting in compact, high resolution, power efficient systems. Already proven in military and commercial systems, our portfolio of OLED microdisplays deliver high-resolution, flicker-free virtual images, working effectively even in extreme temperatures and high-vibration conditions We have developed our own intellectual property and accumulated over 10 years of manufacturing know-how to create high performance OLED microdisplays.

eMagin Corporation was created through the merger of Fashion Dynamics Corporation ("FDC"), which was organized on January 23, 1996 under the laws of the State of Nevada and FED Corporation ("FED"), a developer and manufacturer of optical systems and microdisplays for use in the electronics industry. Simultaneous with this merger, we changed our name to eMagin Corporation. eMagin is incorporated in the state of Delaware.

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We derive the majority of our revenue from sales of our OLED microdisplay products. We also generate revenue from sales of optics, microdisplays combined with optics ("microviewers"), and virtual imaging systems. In addition we earn revenue from both government and commercial development contracts that in some cases complement and support our internal research and development programs.

Our Technology Platforms

Small Molecule, Top-Emitting Active Matrix OLED Technology

There are two basic classes of OLED technology, dubbed single molecule or small molecule (monomer) and polymer. Our microdisplays are currently based upon active matrix small molecule OLED technology, which we refer to as active matrix OLED ("AMOLED") because we build the displays directly onto silicon chips. Our AMOLED technology uniquely permits millions of individual low-voltage light sources to be built on low-cost, silicon computer chips to produce single color, white or full-color display arrays. Using our OLED technology, many computer and video electronic system functions can be built directly into the silicon chip, under the OLED film, resulting in very compact, integrated systems with lower overall system costs relative to alternative technologies.

OLEDs are thin films of stable organic materials that emit light of various colors when a voltage is impressed across them. OLEDs are emissive devices, which mean they create their own light, as opposed to liquid crystal displays, which require a separate light source. As a result, our OLED microdisplays use less power and can be capable of higher brightness and fuller color than liquid crystal microdisplays. Because the light they emit is Lambertian, which means that it appears equally bright from most forward directions, a moderate movement in the eye does not change the image brightness or color as it does in other technologies.

We have developed numerous and significant enhancements to OLED microdisplay technology as well as key silicon circuit designs to effectively incorporate the OLED film on a silicon integrated circuit. For example, we have developed a unique, top-emitting structure for our OLED devices that enables OLED displays to be built on opaque silicon integrated circuits rather than only on glass. Our OLED microdisplays emit full visible spectrum light that is isolated with color filters to create full color images. Our microdisplays have a brightness that can be greater than that of a typical notebook computer and can have a potential useful life of over 50,000 operating hours, in certain applications. New materials and device improvements, such as our recently developed OLED-XL™ technology, offer the potential for even better performance for brightness, efficiency, and lifespan. In addition to our active matrix OLED technology, we have developed compact optic and lens enhancements which, when coupled with the microdisplay, provide the high quality large screen appearance that we believe a large proportion of the marketplace demands.

We believe that our AMOLED technology provides significant advantages over other microdisplay technologies in our targeted microdisplay markets. We believe these key advantages include:

- Low power consumption for improved battery life and longer system life;
- High-speed performance resulting in clear video images;
- Wide angle light emission resulting in large apparent screen size;
- Wide operating temperature range;
- Good environmental stability (vibration and humidity);

- Low manufacturing cost; and
- Low cost system solutions.

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Prism Optics

High quality, large view lenses with a wide range for eye positioning are essential for using our displays in near-eye systems. We have developed advanced molded plastic prism lenses which permit our AMOLED microdisplays to provide large field of view images that can be viewed for extended periods with reduced eye-fatigue. We have engaged a firm to manufacture our lenses in order to provide them in larger quantities to our customers and are using them in certain of our own systems.

Our Market Opportunities

The markets we target broadly fall into the categories of military, industrial/medical, and consumer though many products serve multiple markets (“dual use”). Within each of these market sectors, we believe that our OLED microdisplays, when combined with compact optic lenses, will become a key component for a number of mobile electronic products. Many of these products employ head-wearable displays that incorporate microdisplays mounted in or on eyeglasses, goggles, simple headbands, helmets, or hardhats, and are often referred to as head-mounted displays (HMDs) or headsets. Head-wearable displays may block out surroundings for a fully immersive experience, or be designed as "see-through" or "see-around" to the user's surroundings. They may contain one (monocular) or two (binocular) displays. Some of the increased current interest is due to accelerating the timetable to adapt such systems to military applications such as night vision and fire and rescue applications.

Military

Properly implemented, we believe that head-mounted systems incorporating our microdisplays increases the user’s effectiveness by allowing hands-free operation and increasing situational awareness with enough brightness for use in daylight, yet controllable for nighttime light security. As a COTS (commercial off the shelf) component, OLED microdisplays intrinsically demonstrate performance characteristics important to military and other demanding commercial and industrial applications, including high contrast, wide dimming range, shock and vibration resistance and insensitivity to high G-forces. The image does not suffer from flicker or color breakup in vibrating environments, and the microdisplay's wide viewing angle allows ease of viewing for long periods of time. Most importantly, our OLED's very low power consumption reduces battery weight and increases allowed mission length. The OLED's inherent wide temperature tolerance range is of special interest for military applications because the display can turn on instantly at temperatures far below freezing and can operate at very high temperatures in desert conditions. Our microdisplay products provide power advantages over other microdisplay technologies, particularly liquid crystal displays which require backlights and heaters and cannot provide instant-on capabilities at low temperatures.

Our products’ military applications primarily fall into three broad areas: (1) helmet-mounted displays for situational awareness and data, (2) night vision/thermal imaging goggles and viewers, and (3) training and simulation devices. Similar systems are of interest for other military applications as well as for demanding operations such as urban security, homeland defense, fire and rescue.

Situational Awareness. Situational awareness products include head mounted displays that are used to display such things as digital maps or sensor imagery. Handheld imagers also provide improved situational awareness for surveillance and training. In certain situations these products are combined with a weapon system in order to give the user the capability of selecting targets without direct exposure. Our OLED microdisplays have been incorporated into both U.S. and foreign military situational awareness programs.

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Night Vision/Thermal Imaging. Night vision goggles allow the user to see in low light conditions. Most versions include two different technologies: infrared/thermal, and image intensification. Third and fourth generation military devices usually use some combination of the two modes. Thermal imagers detect infrared energy (heat) and convert it into an electronic signal. The resulting signal needs to be presented on a display. Heat sensed by an infrared camera can be very precisely quantified, or measured, allowing the user to not only monitor thermal performance, but also identify and evaluate the relative severity of heat-related problems. Thermal imaging systems can be stand-alone handheld systems or integrated as part of the aiming mechanism for a larger system. Our OLED microdisplays are typically targeted to uncooled systems, as opposed to systems that require external cooling in order to increase their sensitivity. Advances in sensor technology, both in sensitivity and resolution as well as economic efficiency, have been the driving factors in the adoption of thermal technologies for military applications. The power efficiency and environmental ruggedness of our products are strong competitive advantages, particularly in these small hand-held non-cooled systems. Fielded products incorporating eMagin OLED microdisplays include Northrop Grumman's Lightweight Laser Designator Rangefinders (LLDR), Thales SOPHIE™ handheld thermal imagers, and Thales MINIE™, LUCIE™, and MONIE™ night vision goggles.

Training and Simulation. Our OLED microdisplays and our Z800 3DVisor are used by OEMs for use with their simulation and training products. The Z800's capability to integrate 360 degree head tracking and stereo vision, as well as its wide field of view are attractive attributes for any simulation or virtual reality system. The companies that incorporate our OLEDs in their training and simulation products include: Quantum 3D, Rockwell Collins, Intevac Vision Systems, and Sensics.

Our displays have been commercialized or prototyped for situational awareness and night vision/thermal imaging applications by military systems integrators including Elbit, L-3 Communications, Intevac Vision Systems, Nivisys, BAE Oasys Technology, Qioptiq, Rockwell Collins, Saab, Sagem DS, and Thales, among many others, as well as for related operations such as urban security, fire and rescue.

Commercial, Industrial, and Medical

We believe that a wide variety of commercial and industrial markets offer significant opportunities for our products due to increasing demand for instant data accessibility in mobile workplaces. Some examples of potential microdisplay applications include: immediate access to inventory such as parts, tools and equipment availability; instant accessibility to maintenance or construction manuals; routine quality assurance inspection; endoscopic surgery; and real-time viewing of images and data for a variety of applications. As one potential example, a user wearing a HMD while using test equipment, such as oscilloscopes, can view technical data while simultaneously probing printed circuit boards. Current commercial products equipped with our OLED microdisplays in these sectors include those produced by Liteye, FLIR Systems, Nordic NeuroLab, VRmagic GmbH, Sensics and Total Fire Group, among others.

The Company is exploring opportunities in the digital cinema Electronic View Finder ("EVF") market. These are similar to those found in consumer video cameras but are of significantly higher performance in the area of resolution and overall image quality.

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Consumer

We believe that the most significant driver of the longer term near-eye virtual imaging microdisplay market is growing consumer demand for mobile access to larger volumes of information and entertainment in smaller packages. This desire for mobility has resulted in the development of mobile video personal viewer products in two general categories: (i) an established market for electronic viewers incorporated in products such as viewfinders for digital cameras and video cameras which may potentially also be developed as personal viewers for cell phones and (ii) an emerging market for headset-application platforms which include accessories for mobile devices, portable DVD systems, electronic games, and other entertainment, and wearable computers.

As our OLED displays are manufactured in increasingly higher volumes at reduced costs, we believe that our OLED microdisplay products will be increasingly well positioned to compete with and displace liquid crystal displays in the rapidly growing consumer market as demand for higher-resolution, and better image quality evolves to meet the wish for more sophisticated Personal Viewers. Examples of potential applications for mobile Personal Viewers include handheld personal computers and mobile devices, like smartphones, whose small, direct view screens are often limitations, but which are now capable of running software applications that would benefit from a larger display accessory and entertainment and gaming video headset systems, which permit individuals to privately view television, including HDTV, video CDs, DVDs and video games on virtual large screens or stereovision.

Our Products

Our first commercial microdisplay was the SVGA+ OLED microdisplay, which was introduced in 2001. In 2008 we introduced engineering samples of our SXGA OLED microdisplays and began selling significant quantities of the SXGA product in 2010. In the fourth quarter of 2011 we began selling pre-production samples of the WUXGA OLED microdisplays. eMagin OLED display products are being applied or considered for near-eye and headset applications in products to be manufactured by OEM customers for a wide variety of military, medical, industrial, and consumer applications. We offer our products to OEMs and other buyers as both separate components, integrated bundles coupled with our own optics, or full systems. We also offer engineering support to enable customers to quickly integrate our products into their own product development programs and offer design of customized displays with resolutions or features to meet special customer requirements.

SVGA+ OLED Microdisplay Series (Super Video Graphics Array of 852x600). This 0.62 inch diagonal microdisplay has a resolution of 852x600 triad pixels (1.53 million picture elements). The display also has an internal NTSC monochrome video decoder for low power night vision systems. SVGA+ Rev3 OLED-XL microdisplay is a power efficient OLED display solution for near-eye personal viewer applications which, uses less than 115 mW power in monochrome, such as for thermal imaging applications, and lower than 175 mW at 400 cd/m2 (60Hz video at 70 cd/m2) for full color video. This microdisplay has simpler calibration over temperature and is ideal for demanding binocular luminance and color matching.

SXGA OLED-XL (Super eXtended Graphics Array, 1280 x 1024). Our SXGA OLED microdisplay with a 0.77 inch diagonal active area provides 3,932,160 sub-pixels in an active area. The display’s triad pixel array comprises triads of vertical sub-pixels stacked side by side to make up each 12 x 12mm color pixel. The SXGA OLED-XL microdisplay offers digital signal processing, requiring less than 200mW under typical operation. The supported video formats are SXGA, 720p, DVGA (through 1280 x 960 pixel doubling), and both frame sequential and field sequential stereovision.

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WUXGA OLED-XL (Widescreen Ultra eXtended Graphics Array, 1920 x 1200). Our WUXGA OLED-XL microdisplay provides higher resolution than most HD (High Definition) flat screen televisions. With a triad sub-pixel structure this display is built of 7,138,360 active dots at 3.2 microns each. The WUXGA OLED-XL is built upon the voltage pixel drive approach first developed for the SXGA OLED-XL which provides improved uniformity, ultra-high contrast (measured at greater than 100,000:1) and lower power. The advanced of the WUXGA design features eMagin's proprietary "Deep Black" architecture that ensures that off-pixels are truly black, automatically optimizes contrast under all conditions, and delivers better pixel to pixel uniformity. The WUXGA OLED-XL includes a very low-power, low-voltage-differential-signaling (LVDS) serial interface and the overall display power requirement is typically less than 350 mW running standard video. Also included is eMagin's proprietary motion enhancement technology which smoothes video display and virtually eliminates unwanted artifacts. Like the SXGA, the WUXGA provides a FPGA driver design available on a separate, lower power driver board, or as source code for integration into end product electronics giving OEM developers maximum versatility and flexibility. On-board circuitry ensures consistent color and brightness over a wide range of operating temperatures.

VGA OLED-XL (Video Graphics Array, 640 x 480). The VGA OLED-XL microdisplay was added to eMagin's product line in April 2011 and is our smallest (0.5 inches) and lowest powered (<60 mW monochrome/<100 mW color). The VGA OLED-XL utilizes the same voltage pixel drive architecture and "Deep Black" technology as the SXGA and WUXGA designs and includes motion artifact reduction technology like the WUXGA. Also like the SXGA and WUXGA, the VGA provides a FPGA driver design for maximum flexibility and versatility. The VGA interface is 30-bit digital RGB.

Lens and Design Reference Kits. We offer a WF05 prism optic, with mounting brackets or combined with OLED microdisplays to form an optic-display module. We provide Design Reference Kits, which include a microdisplay and associated electronics to help OEMs evaluate our microdisplay products and to assist their efforts to build and test new products incorporating our microdisplays.

Integrated Modules. We provide near-eye virtual imaging modules that incorporate our OLED-on-silicon microdisplays with our lenses and electronic interfaces for integration into OEM products. We have shipped customized modules to several customers, some of which have incorporated our products into their own commercial products.

Z800 3DVisor™. Our Z800 3DVisors™ give users the ability to work with their hands while simultaneously viewing information or video on the display. The Z800 3DVisor enables more versatile portable computing, using a 0.59-inch diagonal microdisplay (SVGA-3D capable of delivering an image that appears comparable to that of a 19-inch monitor at 22 to 24 inches from the eye, or a 105 inch movie screen at 12 foot distance.) Our systems are currently being used for personal entertainment, electronic gaming, and military training and simulation, among other applications.

Government Contract Funding

We derive a portion of our revenue from funding that we receive pursuant to research contracts or subcontracts funded by various agencies of the United States Government. The revenue that we recognize from these contracts represents reimbursement by various government entities. In 2007, we were awarded a contract for the development of power efficient microdisplays for the United States Army Night Vision and Electronic Sensors Directorate ("NVESD"). In 2008, this agreement was renewed through 2010; it was renewed again though 2011. In 2010 we were awarded a Cooperative Research and Development Agreement by NVESD for the Development, Evaluation and Characterization of Active Matrix Organic Light Emitting Diode (AMOLED) for use in Head Mounted Displays.

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In 2007, we were awarded a contract for the development of an ultra-high resolution display for United States Army Telemedicine and Advanced Technology Research Center ("TATRC"). In 2008 and 2009, this agreement was renewed through the first quarter of 2012. In February of 2012, we were awarded a Small Business Innovation Research contract by the United States Special Operations Command to optimize our WUXGA (1920x1200) microdisplay for mass production for dual use applications.

The U.S. Navy awarded eMagin a contract in 2011 for research and development of microdisplays using Silicon on Insulator technology. In 2012, we were awarded a follow-on contract for development of a high-brightness, high resolution microdisplay to be used for head-mounted avionics applications. Work on this contract will continue in 2013.

Our government contracts require us to conduct the research effort described in the statement of work section of the contract. These contracts may be modified or terminated at the discretion of the government and are subject to authorization, appropriation and allocation of the required funding on an annual basis. On contracts for which we are the prime contractor, we subcontract portions of the work to various entities and institutions. Approximately 13% of 2012 revenue was related to research contracts funded by the U.S. Government as compared to 14% in 2011.

Our strategy is to strengthen our leadership position as a worldwide supplier of microdisplays and virtual imaging technology solutions for applications in high growth segments of the electronics industry by capitalizing on our experience and expertise in active matrix OLED technology. We aim to provide microdisplays and complementary accessories to enable OEM customers to develop and manufacture new and enhanced electronic products. Some key elements of our strategy to achieve these objectives include the following:

- Strengthen our technology leadership. As the first to exploit AMOLED microdisplays, we believe that we enjoy a significant advantage in bringing this technology to market. By continuing to invest in research and development, and protecting our intellectual property, we expect to further develop performance improvements and provide a competitive edge for our customers who integrate our displays into their end products.

- Optimize microdisplay manufacturing efficiencies while protecting proprietary processes. We intend to reduce our production costs primarily through increasing manufacturing yield and lowering fixed costs through reduced cycle time and increased automation, as well as equipment upgrades. We outsource certain portions of microdisplay production, such as chip fabrication, to minimize both our costs and time to market. We intend to retain the OLED-related processes in-house, where we have a core competency and manufacturing expertise. We also believe that by keeping these processes under tight control we can better protect our proprietary technology and process know-how. We believe that this strategy will also enhance our ability to continue to optimize and customize processes and devices to meet customer needs.

- Build and maintain strong design capabilities. We employ in-house design capabilities supplemented by outsourced design services. Building and maintaining this capability will allow us to reduce engineering costs, accelerate the design process and enhance design accuracy to respond to our customers' needs as new markets develop. In addition, we intend to maintain a product design staff capable of rapidly developing prototype products for our customers and strategic partners. Contracting third party design support to meet demand and for specialized design

skills may also remain a part of our overall long term strategy. Given these capabilities the company continues to look for opportunities to add value to our displays to increase revenue.

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- Leverage strategic relationships. External relationships play an important role in our research and development efforts. Suppliers, equipment vendors, government organizations, contract research groups, external design companies, customer and corporate partners, consortia, and university relationships all enhance the overall research and development effort and bring us new ideas and solutions. In addition, we participate in industry associations such as Society Information Display ("SID"), FlexTech Alliance (formerly known as United States Display Consortium), OLED Association, Consumer Electronics Association, and the Association of the United States Army, among others. Furthermore, we have established a CRADA (Cooperative Research and Development Agreement) with the US Army/RDECOM/NVESD as of August 2010 for the purpose of evaluating and characterizing new and existing AMOLED microdisplay configurations. This agreement expires in 2015. We believe that strategic relationships allow us to better determine the demands of the marketplace and, as a result, allow us to focus our future research and development activities to satisfy our customers' evolving requirements.

Sales and Marketing

We primarily provide our OLED display and optics components for OEMs to incorporate into their branded products and sell through their own well-established distribution channels. We have traditionally marketed and sold our products to customers through targeted selling, promotions, select advertising and attendance at trade shows. We identify companies with end products and applications for which we believe our products will provide a key differentiator. Marketing efforts focus on identifying prospects and communicating the product performance attributes foremost in the minds of purchasing decision-makers. We believe that this approach positions us to achieve the highest possible return on investment for our marketing expense.

We market our products in North America, Asia, and Europe directly from our sales office located in our Bellevue, Washington facility. We also have distributors in China and Korea.

An OEM design cycle typically requires between 6 and 36 months, depending on the uniqueness of the market, the complexity of the end product, or in the case of military OEM customers, government procurement schedules. Because our microdisplays are the main functional component that defines many of our customers' end products, we work closely with customers to provide technical assistance throughout the product evaluation and integration process.

Customers

Customers for our products include both large multinational and smaller OEMs. We maintain relationships with OEMs in a diverse range of industries encompassing the military, industrial, medical, and consumer market sectors. During 2012, we estimate 16% of our net product revenues were to firms in the commercial market, 61% to firms in the military market, and 23% to firms in both military and commercial markets as compared to 2011, where 13% were to firms in the commercial market, 54% to firms in the military market, and 33% to firms in both military and commercial markets. During 2012, 67% of our net revenue was to firms based in the United States and 33% was to international firms as compared to 63% domestic revenue and 37% international revenue during 2011. In 2012, we had 10 customers that accounted for approximately 53% of our total revenue as compared to 10 customers that accounted for approximately 48% of our total revenue in 2011. In 2012, we had 1 customer that accounted for more than 10% of our total revenue and in 2011, we did not have any customer that accounted for more than 10% of our total revenue.

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Backlog

As of January 31, 2013, we had a backlog of approximately $13.4 million for purchases through December 2013. This backlog primarily consists of non-binding purchase orders and purchase agreements but does not include expected revenue from R&D contracts or expected NRE (non-recurring engineering) programs under development. The majority of our backlog consists of non-binding purchase orders or purchase agreements for delivery over the next six months. Most purchase orders are subject to rescheduling or cancellation by the customer with no or limited penalties. We believe that the backlog metric is of limited utility in predicting future sales because many of our OEM customers operate on a ship-to-order basis. Variations in the magnitude and duration of purchase orders and customer delivery requirements may result in substantial fluctuations in backlog from period to period.

Manufacturing Facilities

Our manufacturing facilities are located at IBM's Microelectronics Division facility, known as the Hudson Valley Research Park, located about 70 miles north of New York City in Hopewell Junction, New York. We lease approximately 37,000 square feet of space which houses our own equipment for OLED microdisplay fabrication and research and development, includes a 16,300 square foot class 10 clean room space, additional lower level clean room space, assembly space and administrative offices.

Facilities services provided by IBM include our clean room, pure gases, high purity de-ionized water, compressed air, chilled water systems, and waste disposal support. This infrastructure provided by our lease with IBM provides us with many of the resources of a larger corporation without the added overhead costs. It further allows us to focus our resources more efficiently on our product development and manufacturing goals.

We believe manufacturing efficiency is an important factor for success, especially in the consumer markets. Although, we currently have the equipment needed for profitable production in place, we purchased $2.5 million and $2.9 million in 2012 and 2011, respectively, of additional equipment mainly related to manufacturing and we plan to add $3.2 million of equipment in 2013 to increase capacity and yield and to meet expected demand for our microdisplays.

Competition

The industry in which we operate is highly competitive. We face competition from legacy technologies such as transmissive liquid crystal microdisplays (LCDs) as well as from alternative flat panel display technologies such as virtual scanning retinal displays. There are many large and small companies that manufacture or have in development products based on these technologies. Kopin Corporation manufactures both transmissive and reflective LCDs and is currently our principal competitor.

There are a few manufacturers of high resolution OLED microdisplays that produce microdisplays that compete with our microdisplay products. They are Yunnan North OLEiD Opto-Electronic Technology Co., Ltd., in China (also known as Olightek), and MicroOLED, in France. Both are shipping OLED microdisplays into the market. Sony Mobile Display Corp., in Japan, produces OLED microdisplays for integration into Sony’s own higher-level systems such as digital cameras and HMDs. In the near-term we do not expect these companies to affect our military business however we anticipate some affect from this competition on our international and commercial business.

Sony has developed and released a 3D consumer HMD that utilizes their OLED microdisplays and was specifically designed for the consumer with their typical electrical interfaces. We do not expect the introduction of this product to significantly affect sales of our Z800 in our historical markets. The Z800 has an established OEM base and has more flexible interfaces for ease of integration into the training and simulation market (largest market segment), where the Sony HMD was specifically designed for the consumer. However, even though the Z800 represents a very small part

of our business, we have experienced a decline in Z800 sales. We believe that the Z800 needs to be updated. We plan on updating a version of the product to digital from analog and increasing the resolution.

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We may also compete with potential licensees of Universal Display Corporation or Global OLED Technology LLC among others, each of which potentially can license OLED technology portfolios. If other new OLED-based companies enter our markets with directly relevant display designs and without manufacturing and reliability issues, we will face additional competition, though we believe that our progress to date in this area gives us a significant head start.

In the future, we believe that competition will come from LCOS ("liquid crystal on silicon"), small transmissive LCDs, and OLED microdisplays manufactured by competitors. While we believe that OLED technology is technically superior providing higher quality images, greater environmental ruggedness, reduced electronics cost and complexity, and improved power efficiency microdisplays, there is no assurance that we will continue to be the dominant OLED microdisplay supplier.

Intellectual Property

We believe we have developed a substantial intellectual property portfolio of patents, trade secrets and manufacturing know-how. It is important to protect our investment in technology by obtaining and enforcing intellectual property rights, including rights under patent, trademark, trade secret and copyright laws. We seek to protect inventions we consider significant by applying for patents in the United States and other countries when appropriate. The U.S. Government holds licenses to much of our technology as a result of their funding a significant portion of our research and development.

Our intellectual property covers a wide range of materials, device structures, processes, and fabrication techniques, primarily concentrated in the following areas:

- OLED Devices, Architecture, Structures, and Processes;
- Display Color Processing and Sealing;
- Active Matrix Circuit Methodologies and Designs;
- Lenses and Tracking (Eye and Head);
- Ergonomics and Industrial Design;
- Wearable Computer Interface Methodology; and
- Legacy Field Emission and General Display Technologies.

We believe that, in addition to patent protection, our success is dependent upon non-patentable trade secrets and technical expertise. To protect this information and know-how from unauthorized use or disclosure, we use nondisclosure agreements and other measures to protect our proprietary rights, and we require all employees, and where appropriate, contractors, consultants, advisors and collaborators to enter into confidentiality and non-competition agreements. We believe that our intellectual property portfolio, coupled with our strategic relationships and accumulated manufacturing know-how in OLED, gives us a significant advantage over potential competitors.

Employees

As of January 31, 2013, we had a total of 101 full time and part time staff. None of our employees are represented by a labor union. We have not experienced any work stoppages and consider our relations with our employees to be good.

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The Offering

Common stock offered by selling stockholders	Up to 11,646,723 shares, consisting of the following:
·	up to 1,000,000 shares of common stock issuable upon the exercise of common stock purchase warrants at an exercise price of $1.03 per share and 663,294 shares of common stock issued upon the cashless exercise of common stock purchase warrants*;
·	1,000,000 shares of common stock issued upon the exercise of common stock purchase warrants at an exercise price of $0.48 per share**;
·	1,438,096 shares of common stock, consisting of (i) 1,428,572 shares issued upon conversion of the note (“Stillwater Note”) issued to Stillwater Holdings LLC (f/k/a Stillwater LLC) (“Stillwater”) representing $500,000 of the principal amount of the Stillwater Note and (ii) 9,524 shares issued for accrued and unpaid interest under the Stillwater Note***; and
·	up to 7,545,333 shares of common stock issuable upon the conversion of Series B Convertible Preferred Stock.
Common Stock to be outstanding after the offering	32,232,529 shares assuming the full exercise of the warrants and full conversion of Series B Convertible Preferred Stock underlying shares which are included in this prospectus.****