

WaveOptics

WaveOptics collaborates with EV Group to drive augmented reality (AR) manufacturing at scale

Mass production solution for waveguides set to bring quality consumer AR wearables to market for \$600

London, 26 April 2018 – WaveOptics, the world leading designer and manufacturer of diffractive waveguides, today announced a collaboration with EV Group (EVG), a leading supplier of wafer bonding and nano-imprint lithography equipment, to bring high-performance augmented reality (AR) waveguides to the mass market at the lowest cost available in the industry today. Waveguides are the key optical component for wearable AR.

David Hayes, WaveOptics CEO commented:

"This partnership marks an AR industry inflexion point and is a critical step in the mass manufacture of high quality AR solutions – a capability that has not been possible to date.

"A combination of EVG's expertise together with our scalable and versatile technology, will allow AR-end user products to be on the market for under \$600 by the end of next year.

"This collaboration is key to unlocking the development of AR wearables; together we are well positioned to bring mass market innovation in AR, opening new paths to scalability at a lower cost than ever before."

Markus Wimplinger, Corporate technology development and IP director at EVG added:

"We develop new technologies and processes to outperform the most complex challenges, helping our customers to successfully commercialise their new product ideas. For the proliferation of our leading edge Nanoimprint Lithography (NIL) technology, we have created our NILPhotonics Competence Center.

"Within this framework, which has strong policies to protect our customers' IP, we support our customers on their product development and commercialisation journey from the feasibility to the production phase. This is exactly what we are doing today with WaveOptics, an established leader in AR, to provide a truly scalable solution to end customers."

The collaborative development efforts within EVG's NILPhotonics® Competence Center framework are aligned to support WaveOptics' commitment to unlocking the mass market adoption of AR across all leading market segments – industrial, enterprise and consumer and follow the launch of the Company's Module Program.

Through the pilot line manufacturing infrastructure offered by the Center, WaveOptics will exceed the projected demand it has seen from its customers for the next quarters, with a proven path to transferring high-volume production processes and equipment to designated facilities capable of producing waveguides at scale for top global OEM brands.

WaveOptics' collaboration with EVG highlights its commitment to help customers bring AR displays to market by offering high performance, commercial waveguides at an attainable price point. Leveraging

EVG's expertise in equipment and process technology for volume manufacturing will allow AR-end user products to hit the market by 2019 for under \$600 – the lowest price point in the industry today.

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About WaveOptics

WaveOptics is the world leading designer and manufacturer of diffractive waveguides, the key optical component in wearable AR devices.

AR wearables, such as smart glasses, enable users to see digital images overlaid on top of the real world. There are two key elements that allow these images to be seen – a light source such as a minute projector and a means of transferring the image from the projector into the user's eyes.

WaveOptics' waveguide technology transfers light waves from the light source and projects them into the user's eye. The technology produces a large eye-box, binocular viewing and a high field of view. The eye-box (the viewing window) is the size of the AR display from which the full image is visible – see graphic below. WaveOptics' waveguides deliver crisp, undistorted text as well as stable imagery.

WaveOptics technology is designed to be used for immersive AR experiences in Industrial, enterprise and consumer markets. The Company aims for its waveguides to be the core optical component used in all AR wearable devices, driven by its unique technology and expertise, which enable unparalleled manufacturing scalability and visual performance as well as versatility for numerous applications.

About EV Group

EV Group (EVG) is a leading supplier of equipment and process solutions for the manufacture of semiconductors, microelectromechanical systems (MEMS), compound semiconductors, power devices and nanotechnology devices. Key products include wafer bonding, thin-wafer processing, lithography/nanoimprint lithography (NIL) and metrology equipment, as well as photoresist coaters, cleaners and inspection systems.

EVG has also created its NILPhotonics Competence Center. Bundling strong policies that ensure the protection of our customer's IP with EVG's expertise in the area of NIL, its world-class infrastructure and EVG's competence as a provider of reliable, high-volume production systems makes the NILPhotonics Competence Center the ideal platform for the development and commercialization of novel photonic devices. Founded in 1980, EV Group services and supports an elaborate network of global customers and partners all over the world. More information about EVG is available at www.EVGroup.com.