DigiLens, Inc.

Founded in 2005, DigiLens has become a leader in waveguide head-up displays (HUDs) used for augmented and virtual reality applications and wearable eyeglass devices.

Based on its breakthrough optical platform and nanomaterials technology, the company delivers best-in-class solutions using a unique, low cost photopolymer and contact-copy manufacturing process. Product applications exist in many high CAGR segments where DigiLens' near term strategy is focused on head-up displays (HUDs) solutions for avionics, automotive and consumer telematics applications, to prove efficacy and manufacturing scalability.

DigiLens is supported by venture and corporate strategic investors. In 2017 concluded a $22M Series B equity and debt financing, that included participation from several strategic investors and go-to-market partners including Panasonic, Continental, Sony and Foxconn.

As wireless bandwidths increase and mobile applications seamlessly connect to cloud-based compute power, the opportunities for hands-free mobile computing on wearable HUDs are expanding into virtually every field of endeavour. Bulky wearable displays using classical refractive optics are giving way to compact eyeglass-style waveguide technology with the capability to deliver efficient lightweight mass manufactural products which can be worn for several hours.

DigiLens' diffractive waveguide technology is a breakthrough improvement over other AR displays. The company has developed waveguide displays using switchable bragg gratings, which are fundamentally more efficient, have a wider field of view and a lower cost to manufacture. (see comparison table below) DigiLens is using its technology to develop augmented reality products to address more sophisticated AR and mixed reality (MR) applications, including those intended for enterprise and consumer gaming.

To exploit the escalating market demand, DigiLens is licensing its platform to a "who's who" of Tier 1 Manufacturers and OEMs. Access is provided through the licensing of DigiLens' application reference designs and manufacturing process, enabled by its optical materials and contact-copy printing machines. This is appealing to many OEM's and contract manufacturers, as many are currently developing headsets and glasses alongside advanced applications for next generation devices and don't have waveguide optics experience or technology. Licensees purchase nanomaterial and printing equipment and thereafter pay a volume based royalty during manufacture.

	DigiLens Switchable Bragg Grating Waveguide	**Surface Relief Grating Waveguides (MagicLeap, Microsoft HoloLens, Vuzix)**
Field of View	Wide, up to 160° diagonal	Limited, ~25° diagonal (monochrome)
Material	Proprietary nano-composite photopolymer Glass/Plastic substrates	Glass substrates Can't be replicated in plastic
Process/Cost	Industry standard printing process	Complex wafer etching process
Efficiency/Brightness	High potential due to high index	LImited by grating physics
Power Consumption	Low	High
Transparent	Yes	Yes
Thin	Yes	Yes, but lamination limitions
Electrical Switching	Yes, switched and passive modes available	No
Multiplexing	Full-color, no FOV limitations	Demonstrated, limited FOV
Angle/Wavelength Selectivity	Inherently angle and wavelength selective Effect of higher orders minimal	Higher orders and dispersion at high angles
Stacking Capability	Grating layers can be liminated in production Sealess integration of display and eye tracker	Impossible to laminate as airgap needed Limited by higher orders and dispersion

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