

Diffraction Waveguide Pioneer Dispelix Announces R&D Partnership with Advanced MicroLED Manufacturer JBD for Multiple, Next-Generation AR Glasses Reference Designs

X June, 2022 – Espoo, Finland and Shanghai – Dispelix™ (Espoo) - a pioneer in the design and manufacturing of next-generation diffractive waveguides – today announced it has been in a long-term partnership with respected AR light engine supplier Jade Bird Displays (JBD) to develop a family of new reference designs for Augmented Reality (AR) glasses and headsets across multiple price points.

Developed through an intensive collaboration, the new designs combine JBD's family of cutting-edge MicroLED projectors with the Dispelix LED - an industry-leading pantoscopic waveguide with an advanced nanotech coating. JBD & Dispelix have brought together their respective expertise in MicroLED displays, light engines and diffractive waveguide combiners - including at least one bleeding-edge model combining binocular waveguides and polychrome MicroLED projectors.

The MicroLED engine used in the flagship reference design is JBD's Am μ LED™ MicroLED projectors for smart eyewear, both monochrome and other polychrome projector development kits are also available. These are all designed to aid OEMs and partners in their rapid development, evaluation and prototyping of branded smart eyewear (as well as other Augmented Reality (AR) products & solutions).

The monochrome projector is only 0.35cc in volume, has a FOV of 30°, weighs nominally 0.60 grams and is available in red, green and blue. It can be used for monochrome smart eyeglasses development or it can be used in RGB waveguides with multiple input couplers for polychrome applications.

The polychrome projector is only 1.3cc in volume, has a FOV of 30° & weighs nominally 2.3 grams. In the polychrome module projector, an x-cube prism is used to combine images from three individual monochrome panels attached to the faces of the X-cube prism. Both the monochrome and polychrome projectors are focused at infinity.

“JBD has launched a number of innovative MicroLED display and projector solutions that are designed into end products such as smart glasses, holographic sights and Sports AR goggles,” said Dr. Qiming Li, CEO & Founder of JBD. “We are currently expanding our production facilities to support the unprecedented demand for our MicroLED displays and projectors. Our success has only been made possible with the launch of concurrent innovative solutions by our partners and a stellar example is the Dispelix LED waveguide. Our polychrome projector combined with the LED waveguide will enable OEMs to rapidly turn around small form factor and aesthetically-pleasing AR wearables that are suitable for all day use.”

Leon Baruah, Director Sales & Marketing at JBD further added “As a MicroLED display and light engine manufacturer we have always valued the significance of our Waveguide partners as their inventions complete our offering and are critical to the success of the AR industry. Dispelix's LED waveguide is a truly innovative solution and at first light with our Am μ LED™ polychrome MicroLED projector we knew we had a compelling solution. Dispelix LED is a versatile platform allowing a number of possibilities in terms of possible FOVs and waveguide profiles but what strikes out most is the amazing image quality that can be observed through the waveguide with our polychrome projector.”

“Dispelix is very excited to finally unveil our partnership with JBD – the end result of joint R&D activities that are enabling the next-generation of AR eyewear,” said Jussi Rahomaki, Chief Product Officer for

Dispelix. “Working with a manufacturer of JBD’s reputation for light engine innovation means that a wide range of ODM/OEM manufacturers can at last enter the burgeoning AR eyewear market with an extraordinary and differentiated set of different reference designs. Dispelix LED combined with Am μ LED means that ideal visual fidelity is both achieved and consistently maintained for an exceptional, undistorted and incredibly lightweight reference design.”



Image displayed through Dispelix LED Waveguide with JBD’s polychrome projector

About Dispelix:

Dispelix is an advanced waveguide designer and manufacturer, delivering next-generation visual solutions for both consumer as well as enterprise AR and MR wearables. The company’s patented DPX waveguides bring unmatched image quality, performance and visual fidelity combined with mass manufacturability to scale for even the largest vendors. Led by the world’s most sought-after experts in optics, photonics and manufacturing, Dispelix is headquartered in the technology hub of Espoo, Finland with field offices throughout the United States, China and Taiwan. Learn more at dispelix.com.

About Jade Bird Display:

Founded in 2015, JBD has been focusing on developing the smallest, brightest, and most efficient micro-display panels. With a fab established in Shanghai CHINA, JBD is considered as one of the leaders in microLED display technologies with its portfolio of active matrix microLED displays. For more information, visit JBD’s website, LinkedIn or Twitter pages.

-30-

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Press Contacts:

Jonathan Hirshon, PR Counsel for Dispelix
jh@horizonpr.com

Leon Baruah, Marketing & Sales Director for JBD
leon_baruah@jb-display.com