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300-mm SCHOTT RealView™ high-index glass wafers with nanoimprints: SCHOTT and EV Group pave the way for Consumer grade AR/MR glasses

SCHOTT will exhibit the next landmark on the road to consumer grade AR/MR glasses in Hall 9 / Booth # 9E20 at China International Optoelectronic Exposition (CIOE), Shenzhen/China, from September 4-7.

SHENZHEN, China – August 28, 2019 – The future of Augmented Reality (AR) and Mixed Reality (MR) can be discovered in Shenzhen, starting next week: SCHOTT, the international technology group, announced today the latest update to the [SCHOTT RealView™](#) portfolio of high-refractive index glass wafers for Augmented Reality (AR) and Mixed Reality (MR) devices. Partnering with the NILPhotonics® Competence Center at [EV Group](#) (EVG), a leading supplier of wafer bonding and lithography equipment for the MEMS, nanotechnology and semiconductor markets, both companies announced the achievement of a patterned 300-mm (~12-inch) SCHOTT RealView™ glass wafer with nanoimprints. The increased wafer size combined with the capabilities of EVG's SmartNIL® technology are crucial to achieving higher production volumes – while also lowering the cost per piece.

SCHOTT RealView™ glass wafers are key components of next-gen AR/MR headsets. The glass wafers are the basis for customers' multi-layered RGB waveguides, and therefore are a key part of the AR/MR display unit that enables an immersive user experience ([discover the technology here](#)).

The 300-mm wafer size relies on larger AR/MR-grade optical glass bars that have never been manufactured before. This required all-new manufacturing and melting processes. SCHOTT is now capable of producing larger optical glass bars, while maintaining the outstanding wafer quality in the SCHOTT RealView™ end products.

The next milestone on the road to Consumer AR devices

SCHOTT is already providing samples of the 300-mm SCHOTT RealView™ wafers to customers and is prepared to ramp up production for the larger wafer diameter processing in its facilities. Simultaneously, SCHOTT scientists and glass experts are constantly improving the quality of AR/MR-grade optical glass in its German optical glass competence centers.

The successful cooperation between SCHOTT and EVG demonstrates the supply chain readiness for 300-mm high-refractive index glass wafers while maintaining the stringent specifications and highest quality products, reaching the next milestone in AR/MR technology development.

A glass innovation that inspires a whole industry

SCHOTT introduced its first generation of SCHOTT RealView™ during SID Display Week 2018. Just one year later, the key component for the full immersion experience received the [2019 Display Industry Award for Display Component of the Year](#) from the Society of Information Display, SID. The winners included products from Apple, Samsung, Sony, Dexerials, Japan Display, and Lenovo along with SCHOTT's AR innovation. The SCHOTT RealView™ portfolio offers high-refractive indices up to 1.9, which enables a Field of View (FOV) of up to 53° horizontally and up to 65° diagonally. This is far superior to any AR device that is currently on sale (as of August 2019). SCHOTT is proud to present its latest innovation during CIOE, one of Asia's most important exhibitions related to Optics for Augmented Reality.

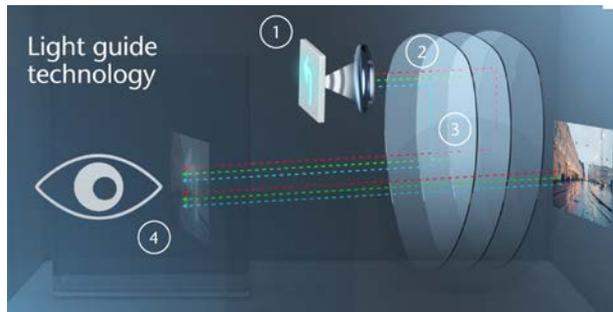
Images



SCHOTT RealView™ high-index glass wafers bring Augmented and Mixed Reality to life. Image: SCHOTT



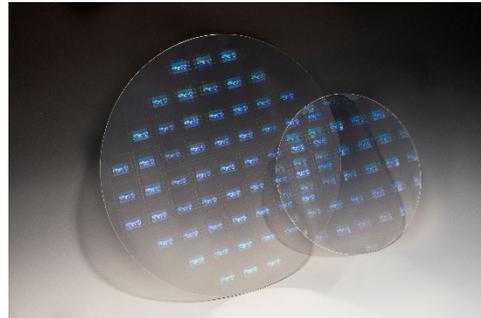
SCHOTT RealView™ glass wafers are made from optical glass with very high refractive index, enabling a wider Field of View (FoV) in AR/MR devices. Image: SCHOTT



Leading AR/MR devices [are based on the light guide technology](#). SCHOTT RealView™ high-index glass wafers are a key component for this groundbreaking technology. But how does it work?

- (1) Projector emits the light waves of the digital image in the direction of the light guides (SCHOTT RealView™)
- (2) The projector's light waves are coupled into the light guide at a defined position with the help of a grating.
- (3) Light waves of each color are coupled out n times in the defined grating area.
- (4) The mobile, unfixed human eye perceives both the digital and the real image. This creates the impression of a mixed reality.

Image: SCHOTT



300-mm and 200-mm SCHOTT RealView™ Glass substrates imprinted in an EVG® HERCULES® NIL system utilizing SmartNIL® UV-NIL technology.

Image: EVG

About SCHOTT

SCHOTT is a leading international technology group in the areas of specialty glass, glass-ceramics and related high-tech materials. With over 130 years of experience, the company is an innovative partner to many industries, including the home appliance, pharma, electronics, optics, life sciences, automotive and aviation industries. SCHOTT has a global presence with production sites and sales offices in 34 countries. In the 2017/2018 fiscal year, the group generated sales of EUR 2.08 billion with over 15,500 employees. SCHOTT AG has its headquarters in Mainz (Germany) and is solely owned by the Carl Zeiss Foundation. This is one of the oldest private and largest science-promoting foundations in Germany. As a foundation company, SCHOTT assumes special responsibility for its employees, society and the environment.

About EV Group (EVG)

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. 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.

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