

# Press Release



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Volume holographic optical elements in car

## **Innovative windshield displays on the way to volume production**

### **Covestro and Ceres Holographics strengthen their partnership**

Looking out of the car onto the road and seeing the speed and navigation instructions displayed on the windshield as if on a screen: this is made possible by a new generation of transparent displays. The technology offers a particularly wide range of design freedom and excellent imaging. In addition, the necessary projection system requires less installation space in the dashboard. In the innovative displays, a volume holographic film is integrated into the windshield or side window.

[Covestro](#) and [Ceres Holographics](#), Scotland, are now expanding their collaboration to make transparent displays with volume holographic optical elements fit for application readiness in the automotive industry in particular. The opening of Ceres Holographics' new digital mastering and replication facility in Livingston is another important step for both companies to build and scale this technology.

The technical collaboration will focus on optimizing Covestro's Bayfol® HX film and Ceres' HoloFlekt® mastering and replication equipment with respect to the system geometry of various vehicle classes, imaging performance, as well as integration requirements. "By expanding our relationship with our long-time partner Ceres, we are significantly advancing forward-looking display solutions. The interest and exchange with OEMs shows us that a new generation of displays for mobility applications are important," says Moritz Winterstein, Head of Growth Ventures Specialty Films at Covestro.



Ceres' holography system and design capabilities enable the development of vehicle-specific master designs, which can then be produced in replicas as large-format HoloFlekt® films and integrated into glass. The system efficiently directs the projector light into the user's eye-box and maintains the high transparency of the screen. "Bayfol® HX films from Covestro are key to our ability to provide high-volume transparent films with light-guiding optical functions for volume holographic display solutions," said Andy Travers, chief executive officer of Ceres.

Transparent displays with volume holographic elements are attractive not only for automotive applications, but also, for example, for applications in buses, trains, industrial vehicles, and aircraft, as well as in architectural glazing.

**About Covestro:**

With sales of EUR 10.7 billion in 2020, Covestro is among the world's largest polymer companies. Business activities are focused on the manufacture of high-tech polymer materials and the development of innovative, sustainable solutions for products used in many areas of everyday life. In doing so, Covestro is becoming fully circular. Its main customers are the automotive and transport industries, the construction industry, the furniture and wood processing industries, and the electrical, electronics, and household appliance industries. Other sectors include sports and leisure, cosmetics, healthcare and the chemical industry itself. As of the end of 2020, Covestro produces at 33 sites worldwide and employs around 16,500 people (converted to full-time positions).

**Forward-looking statements**

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