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KYOCERA Corporation

Kyocera Showcases Aerial Display, AI-Based Depth Sensor, Camera-LIDAR Fusion Sensor, and More at CES 2025

Pioneering the Future of Mobility with Cutting-Edge Solutions, Booth #4816

Kyocera Corporation (President: Hideo Tanimoto, "Kyocera") today announced the technologies Kyocera Group companies will exhibit at [CES 2025](#), the world's largest and most significant technology trade show, in Las Vegas, Nevada, January 7-10, 2025. Kyocera's latest innovations in Aerial Display technology, AI-Based Depth Sensor, Underwater Wireless Optical Communication, Millimeter-Wave Sensor, Camera-LIDAR Fusion Sensor, Bifocal Mirror, and more solutions to further safe, autonomous driving will be showcased at booth #4816 in the Vehicle Tech & Advanced Mobility Zone, West Hall.

High-Definition Aerial Display Transforms Car Interiors

Kyocera's Aerial Display, a blend of miniaturization, high resolution, and next-generation image quality, can project highly realistic, floating images. Curved mirrors maximize light efficiency, producing a high-resolution display with low power consumption. The interactive display utilizes various sensors for non-contact operation, unlike any current display. Kyocera's booth will showcase a futuristic automotive navigation demonstration utilizing this cutting-edge aerial display technology.



AI-Based High-Res Depth Sensor for Close Imaging

10x More Accurate with Tiny, Transparent Objects, Towards Automation Functionality

Kyocera's AI-Based Depth Sensor camera, offering world-record resolution in measuring extremely small¹ and shiny/semi-transparent objects², is a versatile tool for a wide range of needs. It enables accurate measurement of objects that are difficult to measure with conventional methods, achieving 10 times greater accuracy than traditional monocular measurement. The sensor is a breakthrough for a variety of industries including manufacturing, helping robots sort tiny parts; medical, offering accurate human body measurements and recognition of shiny metallic surgical instruments; and logistics, enabling peripheral monitoring of



¹ Stereo camera capable of measuring very small objects with a resolution of 100 μm , surveyed by Kyocera in October 2024.

² As a stereo camera capable of measuring glossy (highly reflective) objects and translucent products; surveyed by Kyocera in October 2024.

transport robots at logistics and retail sites. This versatility makes it an asset in addressing labor shortages and improving productivity.

Underwater Wireless Optical Communication– Fast, Reliable, Highly Secure

Kyocera's Underwater Wireless Optical Communication technology using GaN lasers stands out for its ability to enhance data communication by expanding optical bandwidth. In a groundbreaking demonstration, Kyocera achieved the world's fastest communication speed underwater, reaching up to 2 Gbps. Kyocera aims to achieve 10 Gbps or more in the future using blue lasers. The unique beam shape propagation characteristics of this technology and the fast response of semi-polar GaN lasers enable

targeted transmission to specific receivers, and high-speed communication is also possible underwater, while being resistant to external light such as sunlight. This next-generation communication technology provides speed, reliability, and security for highly sensitive data transmission.



Contactless Intelligent Millimeter-Wave Sensing System for Autonomous Driving and Vital Sensing Applications

Kyocera developed a Millimeter-Wave Sensor that can accurately detect minute vibrations without contact. This technology helps improve healthcare by accurately measuring heart rate and other changes in vital conditions from almost anywhere, such as in a car or the bathroom, while respecting the user's privacy. In addition, Kyocera developed a millimeter-wave Simultaneous Localization and Mapping (SLAM) technology that can replace mechanical-based LIDAR using 4D imaging radar. As demand for driver assistance increases, this technology will enable more accurate and safer driving through sensing, even in bad weather conditions, at an ultra-low cost.



Camera-LIDAR Fusion Sensor – World's Highest Resolution, High Durability

LIDAR is an indispensable technology for mobility, including autonomous driving. Kyocera's Camera-LIDAR Fusion Sensor, the world's first³ LIDAR in which a camera and optical axis, are integrated into a single unit, enabling real-time superimposition of camera image data and LIDAR distance data for advanced object recognition. Its uniquely designed MEMS mirror delivers the world's highest resolution and high durability. This enables the system to be used



³ In the development of a sensor in which the optical axes of the camera and LIDAR are aligned and integrated into a single unit; October 2024, based on Kyocera research.

for obstacle detection in-vehicle driver assistance, ships, and heavy machinery, and other applications, showcasing its versatility and adaptability.

Bifocal Mirror Improves Visual Awareness for Drivers

Electronic automotive rearview mirrors are growing in popularity, but drivers with age-related farsightedness (presbyopia) often struggle to focus on them due to differences in distance and field of view. Like a heads-up display, Kyocera's Bifocal Mirror displays an enlarged image in the distance, making it easier for drivers to adjust their focus and instantly see the image clearly. AR technology also supports safe driving by instantly displaying information recognized by the rearview camera in the mirror.



Kyocera Group's CES 2025 booth #4816, West Hall

[Click here](#) for details of Kyocera's complete CES exhibit.

About KYOCERA

[Kyocera Corporation](https://global.kyocera.com/) (TOKYO:6971, <https://global.kyocera.com/>), the parent and global headquarters of the Kyocera Group, was founded in 1959 as a producer of fine ceramics (also known as "advanced ceramics"). By combining these engineered materials with metals and integrating them with other technologies, Kyocera has become a leading supplier of industrial and automotive components, semiconductor packages, electronic devices, smart energy systems, printers, copiers, and mobile phones. During the year ended March



31, 2024, the company's consolidated sales revenue totaled 2.0 trillion yen (approx. US\$13.3 billion). Kyocera is ranked #874 on *Forbes* magazine's 2024 "Global 2000" list of the world's largest publicly traded companies, and has been named among "The World's 100 Most Sustainably Managed Companies" by *The Wall Street Journal*.

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