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KYOCERA Corporation

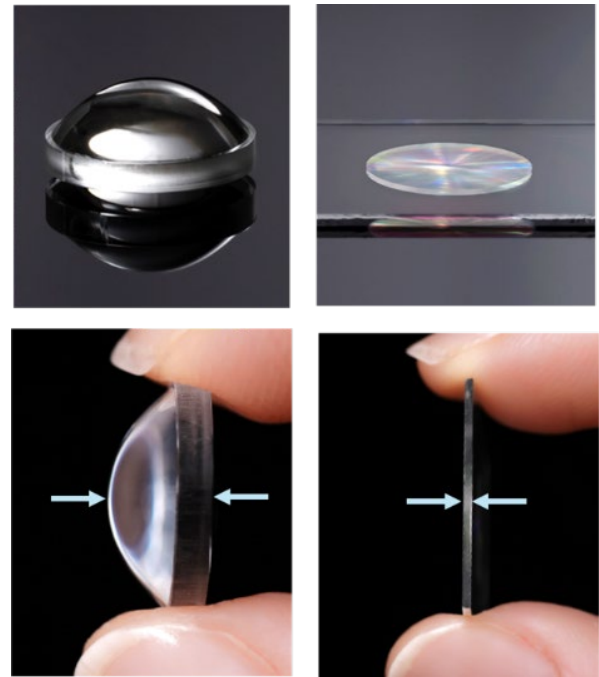
Kyocera Develops Meta-Lens Enabling Wavelength-Controlled Focusing

Allows smaller, lighter optical systems, including wearable aerial display prototype to debut at CES 2026

Kyocera Corporation (President: Hideo Tanimoto; “Kyocera”) announced that it has developed a new meta-lens that uses metasurface-based optical control technology to precisely manipulate focal positions depending on the wavelength of light. Applying this technology, Kyocera has created a prototype Wearable Aerial Display that achieves both a highly compact optical system and the ability to reproduce images with natural depth perception. The device will make its world premiere at CES 2026, January 6–9, 2026 in Las Vegas, Nevada, USA.



Wearable Aerial Display



Conventional refractive lens (left) and Kyocera's newly developed meta-lens (right)

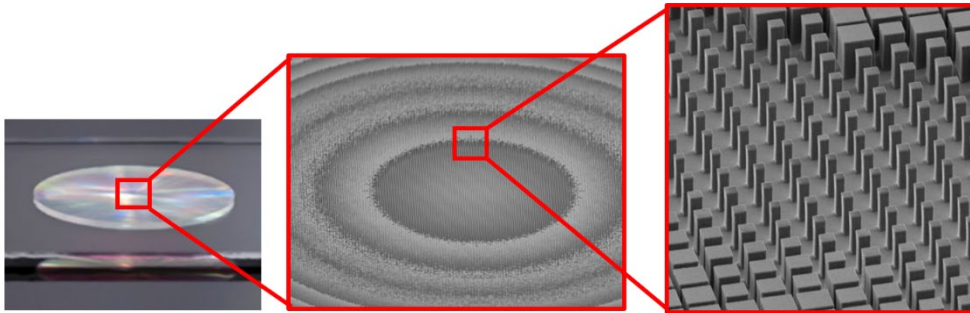
Key Features of Kyocera's Meta-Lens

1. Enables Smaller, Lighter Optical Devices

A meta-lens is an ultra-thin optical component incorporating a metasurface — a dense arrangement of pillar-shaped meta-atoms smaller than the wavelength of light — to control light propagation. This structure allows Kyocera to manufacture a meta-lens less than 1mm thick, compared with conventional optical lenses that typically require more than 1cm of thickness.

Additionally, by precisely designing the meta-atoms, multiple optical functions — such as wavelength control

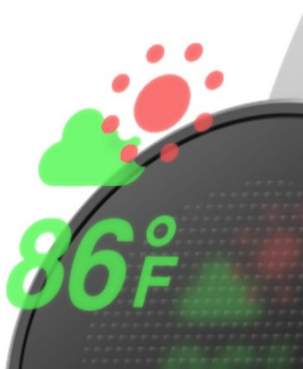
and phase modulation — can be integrated into a single meta-lens. This significantly reduces the number of optical components traditionally required. As a result, both the optical system and the final device can be made dramatically smaller and lighter.



Meta-atom structures (far right).

2. Enables Image Displays with Natural Depth Perception

Using its proprietary meta-atom design technology, Kyocera developed a meta-lens featuring a focal position that shifts depending on the color (wavelength) of light. Using this lens, images of different colors can be formed at different heights — for example, green images appear farther from the viewer, while red images appear closer. By generating images at varying depths, the system produces three-dimensional aerial visuals with rich depth cues, even within a wearable-sized optical module. This innovation provides natural depth expression without the need for bulky multi-layer optical assemblies.



Wearable Aerial Display Prototype

By combining the newly developed meta-lens with Kyocera's existing aerial imaging technologies — cultivated through its research into high-resolution aerial displays — the company succeeded in creating a compact, lightweight wearable display capable of projecting floating images with realistic depth. This marks a major step toward next-generation visual interfaces that integrate high-quality optics into small, body-worn devices.

Future Potential



Currently, Kyocera's technology enables aerial images whose focal positions vary by color. In the future, increasing the degree of wavelength control could allow full-color, high-resolution aerial images, and advances in meta-atom design may enable the projection of smooth 3D visuals into mid-air.

The thin and lightweight nature of meta-lenses makes them highly suitable for applications such as:

- More miniaturized and wearable VR/AR glasses
- Slimmer, space-saving designs for cameras and projectors
- Other optical devices where compactness is essential

Kyocera will continue enhancing its proprietary meta-lens technologies to contribute to the advancement of optical solutions across consumer electronics, industrial equipment, and a wide range of emerging fields.

For comprehensive information about these featured technologies and other exhibits, please visit our official CES 2026 website:

<https://global.kyocera.com/ces/2026/?press>

About KYOCERA

Kyocera Corporation (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, 2025, the company's consolidated sales revenue totaled 2 trillion yen (approx. US\$13.5 billion*). Kyocera is ranked #1,123 on *Forbes* magazine's 2025 “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*.

*Conversion is provided based on TTM rate as of March 31, 2025

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