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Maxell, Ltd.

## **Development of an Ultrasonic Cleaning Lens Unit for Automotive Applications Capable of Atomizing Rain Droplets and Melting Snow**

Low energy consumption below 5W even in snowmelt mode, starting sample shipment in December 2023



Developed ultrasonic cleaning lens unit for automobile (left) and image of water atomization by ultrasonic (right)

Maxell, Ltd. (President and Representative Director: Keiji Nakamura/hereinafter "Maxell") has developed an ultrasonic cleaning lens unit (hereinafter "UCLU" \*1) that combines In-Car Camera Lens Unit and ultrasonic techniques.

In recent years, as autonomous driving functions in the automotive industry are developing, the cameras and sensors for automotive vehicles have required higher resolution as well as high sensitivity. However, in adverse weather conditions such as rain or snow, there are problems such as the inaccuracy of the sensor and the difficulty in viewing images, and therefore the development of a lens unit which performs with high environmental resistance is required. UCLU developed by Maxell combines both the optical design technology and ultrasonic technology and is capable of atomizing raindrops and melting snow.

UCLU can atomize raindrops and melt snow in one unit by changing the band of ultrasonic wave. The product is equipped with a mode that atomizes raindrops by vibration of the vibrating body inside the enclosure, and a mode that melts snow by thermal energy generated by the vibrations.

Samples will be available to be shipped in order from early December 2023. We plan to start mass production in late 2026.

### **Product Features**

1. This device can handle foreign objects such as raindrops, ice/snow, and mist (dirt) in one unit.
2. Low energy consumption below 5W even in snow melting mode.
3. Less than 1 second rain atomization time.

Maxell will continue to contribute to society's safety and security by developing reliable products that meet the needs of our customers, taking advantage of our long-developed optical design technologies.

\*1 UCLU: Ultrasonic Cleaning Lens Unit

**Product information webpage**

[https://biz.maxell.com/en/lens\\_unit/uclu.html](https://biz.maxell.com/en/lens_unit/uclu.html)

**Contacts**

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[https://biz.maxell.com/en/lens\\_unit/inquiry\\_form\\_input.html](https://biz.maxell.com/en/lens_unit/inquiry_form_input.html)