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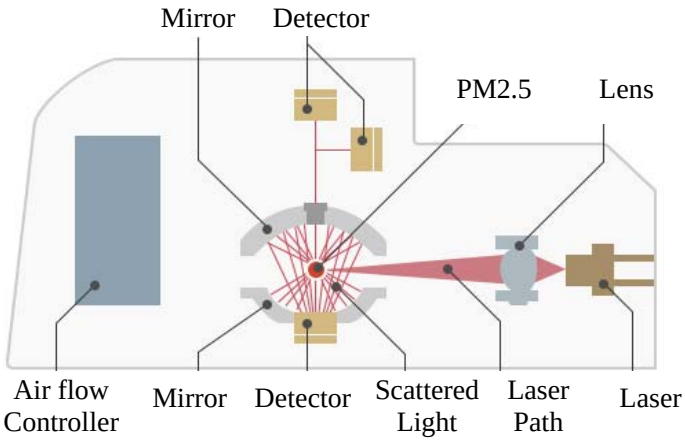
# Mitsubishi Electric Develops High-precision Air-quality Sensor for PM2.5

*World's first air quality sensor can distinguish PM2.5, pollen and dust*

**TOKYO, February 8, 2016** – Mitsubishi Electric Corporation (TOKYO: 6503) announced today that it has developed a small, high-precision air-quality sensor, the world first to detect all fine particles measuring no more than 2.5 micrometers in diameter, called PM2.5, as well as pollen and dust. It also senses the density of particles precisely.

Prototype of Mitsubishi Electric's new air-quality sensor

Scattered light from PM2.5 particles is measured with Mitsubishi Electric's unique double-sided mirror design, which collects about 1.8 times more scattered light than conventional single-sided designs. An air flow controller provides stable airflow. Components were optimally designed to achieve a small form factor and were carefully aligned to avoid obstructing the airflow and laser beams. Mitsubishi Electric's original shape-discrimination algorithm distinguishes between pollen and dust based on the respective differences in the optical characteristics of their scattered light, resulting in the world's first sensor capable of detecting all PM2.5, pollen and dust particles.




Structure of Air Quality Sensor (vertical cross-sectional view)

The air-quality sensor prototype consists of a laser diode, aspheric lens, light-collecting mirror, photodetector and airflow controller. The prototype measures 67mm (W) x 49mm (D) x 35mm (H). The minimum size of a detectable particle is just 0.3 micrometer.

PM2.5 has posed a serious problem, causing air pollution and health-related issues in countries such as China, India and Japan. The trend has raised public concerns and increased the demand for high-precision air-quality sensors to detect PM2.5. At present, however, high-precision sensors for PM2.5 are large and expensive, limiting their applications to commercial use only.

**Patents**

Pending patents for the technology announced in this news release number five in Japan and one abroad in six countries.

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**About Mitsubishi Electric Corporation**

With over 90 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 4,323.0 billion yen (US$ 36.0 billion*) in the fiscal year ended March 31, 2015. For more information visit:
http://www.MitsubishiElectric.com
*At an exchange rate of 120 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2015