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Development of a Compact 3D Laser Scanner Capable of Integration - High Accuracy in a Compact, Lightweight Unit -

RICOH Industrial Solutions Inc. (President: Katsunori Nakata) has developed and added to the lineup a new compact 3D laser scanner capable of integration as 3D vision sensors such as industrial stereo cameras.

This compact 3D laser scanner is compact size and light weight and yet provides highly accurate 3D shape measurements in the near-field. Consisting of a newly developed monocular camera and laser scanner, enabling the acquisition of 3D data by imaging striped patterns projected onto the object based on the principle of triangulation.

We developed a laser scanning technology consisting of a new optical system combining RICOH Group's unique uniaxial MEMS^{*1} mirror device and a VCSEL^{*2} array that emits light in multiple wavelengths via 50 channels. This technology realizes a depth accuracy of 100 μm (approximately three times improves in comparison with when using a general laser^{*3} lighting) in a compact, lightweight design (approx. 75 (w) x 40 (d) x 36 (h) mm and 150g).

With these features, we are able to provide a compact, integrated system such as robot picking, downsizing of shape inspection system, and mounted on the internal production equipment with difficulties by space and weight.

RICOH Industrial Solutions Inc. will continue to anticipate the growth of the 3D sensing market and conduct R&D in collaboration with RICOH Group companies.

* The specifications contained herein is subject to change for provisional specifications under development.

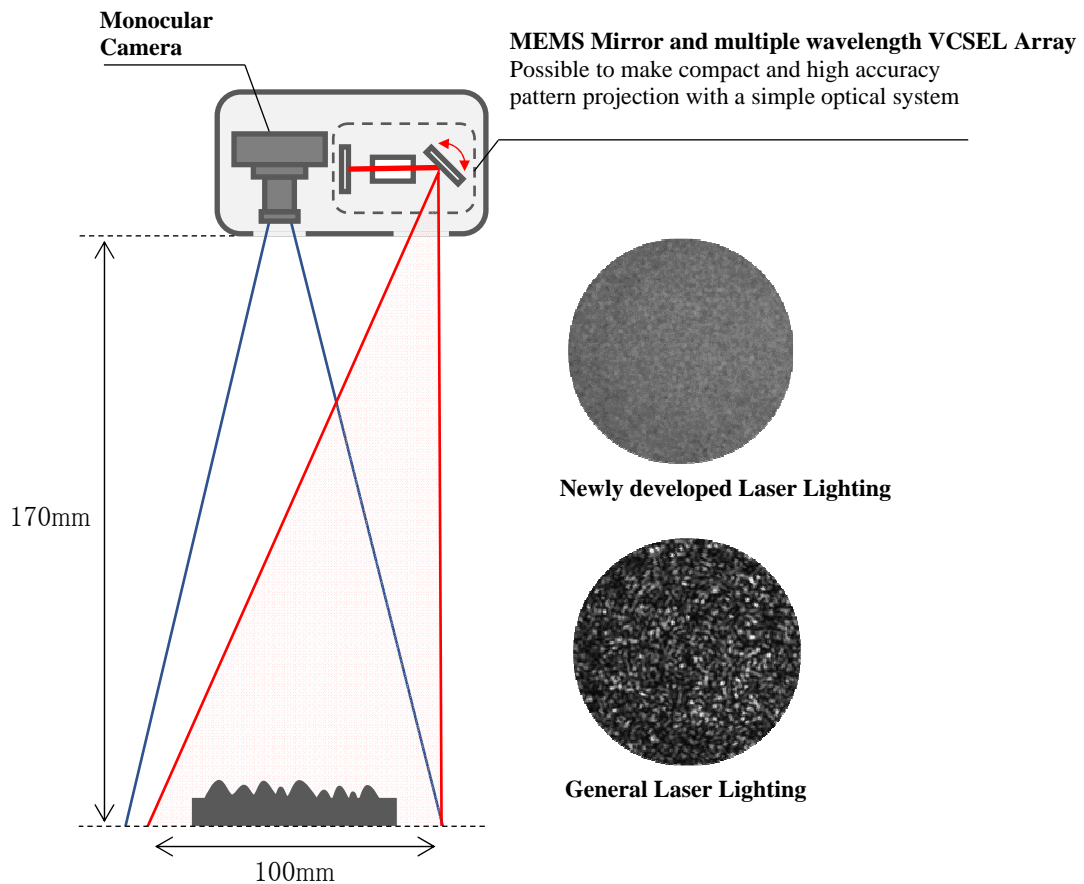
*1 Micro Electro Mechanical Systems

*2 Vertical Cavity Surface Emitting LASER

*3 Single semiconductor laser diode



Compact 3D Laser Scanner (Prototype image)



Configuration Diagram (Image)

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Ricoh is empowering digital workplaces using innovative technologies and services, enabling individuals to work smarter. For more than 80 years, Ricoh has been driving innovation and is a leading provider of document management solutions, IT services, commercial and industrial printing, digital cameras, and industrial systems.

Headquartered in Tokyo, Ricoh Group operates in approximately 200 countries and regions. In the financial year ended March 2018, Ricoh Group had worldwide sales of 2,063 billion yen.

For further information, please visit www.ricoh.com

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