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Development of a Speckle Reduction Module

- Combines Optical Elements with RICOH's Uniquely Developed Biaxial Driven MEMS*¹ -

RICOH Industrial Solutions Inc. (President: Katsunori Nakata) has developed a speckle reduction module for the projector industry, which is seeing a transition to laser light sources.

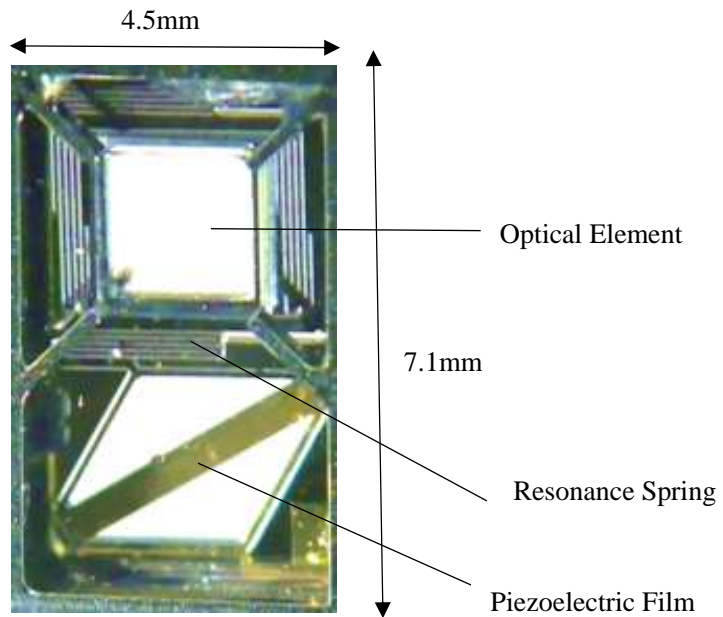
Lasers have been adopted for use in a wide range of applications such as projectors and automotive products in recent years because of their high brightness, high efficiency and long life. However, the occurrence of flicker (speckles) caused by the coherence of the light source has become a technical obstacle to deployment expansion. This module combines optical elements with RICOH's uniquely developed biaxial driven MEMS for high-speed pulsation, that reduces speckles.

Previously, conventional speckle reduction systems suffered from being either too large or more compact simple systems had insufficient speckle reduction. Therefore, based on research by Professor Shuji Tanaka of Tohoku University's Graduate School of Engineering*², RICOH Industrial Solutions Inc. developed a new MEMS capable of biaxial resonance drive with a single actuator. By combining this with our unique optical elements, we are able to provide a compact system (5 x 10 x 3mm) with a high level of speckle reduction (speckle contrast 0.1).

RICOH Industrial Solutions Inc. will continue to collaborate with RICOH Group companies and accelerate our research and development to further expand business in the laser light source projector field, where needs are growing.

*1 Micro Electro Mechanical Systems

*2 Commissioned by A-STEP (Adaptable and Seamless Technology Transfer Program) through target driven R&D (Stage III NexTEP-B Type) sponsored by the Japan Science and Technology Agency to support the practical development of technological seeds from R&D type companies based on university research



The Internal Structure of MEMS in a Speckle Reduction Module Image

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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.

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