*The Young's experiment on lasers

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When the coherent light such as lasers is scattered on the screen diffuser, the scattered lights are interfered each other to generate the random light intensity pattern, which is called speckle. We have precisely measured speckle imaged on the cooled CCD camera, of which contrast is dependent upon the pin hole diameter located in front of the objective lens of the camera. Throughout this research, it is expected that we can better understand speckle phenomena of the laser projector, which will lead us to find away to reduce it efficiently.

- 2010/Autumn Precise measurement of speckle in the micro laser projectors.
- 2011/Jan Collaboration with OXIDE to co develop speckle measurement tool.
- 2011/Mar Exhibition of prototype at Laser Display Technology Research Meeting.
- 2011/Apr Spatial coherence measurement of laser sources

Fig.1 Speckle measurement tool prototype

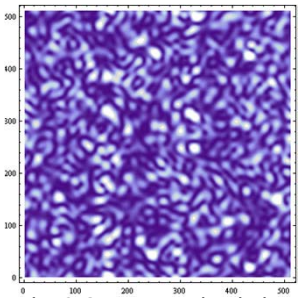

Fig .2 Computer simulation of the fully developed speckle

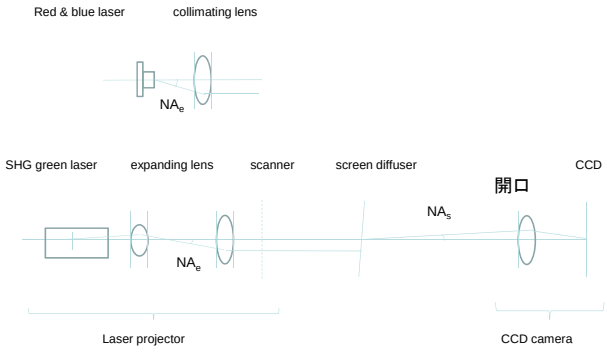

Fig.3 Parameters to determine speckle contrast

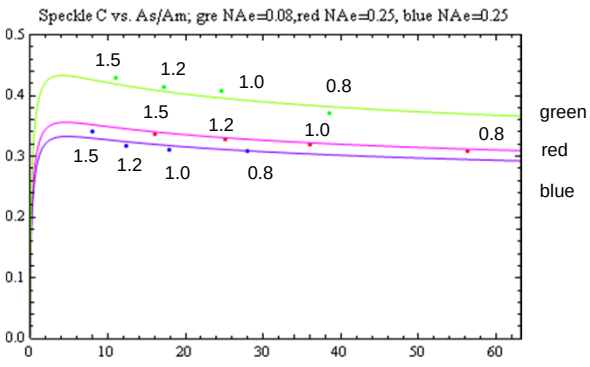

Fig.4 Speckle contrast measurement result
Parameters: pin hole diameter (mm)