

## The Review of Laser Engineering

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## The Review of Laser Engineering

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[\[Image PDF \(673K\)\]](#) [\[References\]](#)**Collision Avoidance Sensor System with Beam Width Selection Method**[Norio TSUDA](#)<sup>1)</sup> and [Jun YAMADA](#)<sup>1)</sup>

1) Department of Electronics, Aichi Institute of Technology

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**Abstract:** A safety area sensor for automatic guided vehicles using a semiconductor laser and a CCD camera has been studied. But this detection system, which depends on the light intensity, has the weak point for disturbance light. A new detection method is proposed which is called beam width selection method. This method is able to select a laser light from the beam width difference between a laser light and a disturbance light. The edge component of the video signal is selected by a differentiation circuit, and the pulse signals are produced from the positive differentiation signal and negative one. The laser light signal can be obtained from the product of these pulse signals. The detected distance is 3 m and the detected width is 1 m under the disturbance light of 10000lx. The repetition error for various color obstacles is below 0.2 percent.

**Key Words:** [Beam width selection method](#), [Safety device](#), [Collision avoidance sensor](#), [Semiconductor laser](#), [CCD camera](#)

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