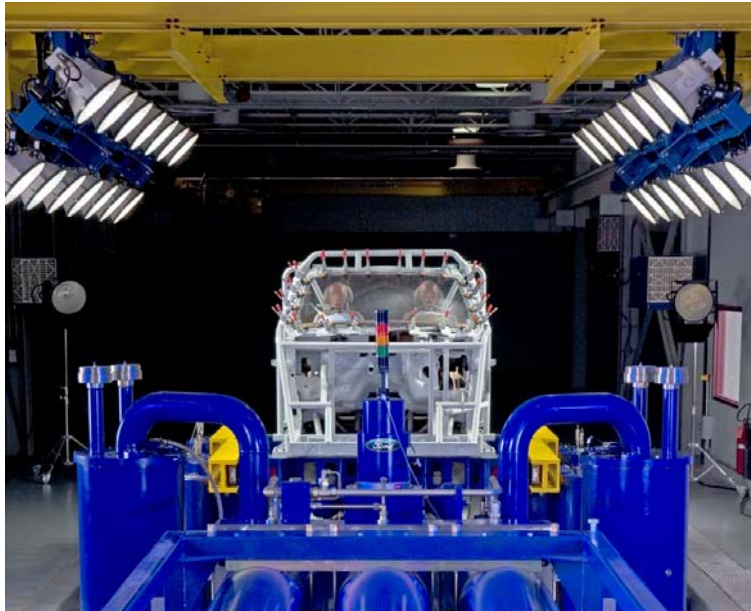


# Advanced Lighting

## Integrated High Speed Photographic Lighting Systems

The mandate for greater safety has stimulated the development of sophisticated, intelligent vehicle systems. This, in turn, has placed an even greater burden on crash testing facilities to provide extensive amounts of high quality data. Modern high-speed digital cameras, developed to meet this challenge, continue to push the resolution and frame rate envelope. These cameras, however, must be integrated with proper lighting to attain their performance potential.

High speed, high resolution digital video dictates the use of new technology lighting systems. The latest CMOS camera technology can deliver significantly higher resolutions and light sensitivity, along with increased color fidelity. To achieve this, it is essential to replicate natural sunlight as closely as possible. EYE Lighting International / Iwasaki short arc metal halide lighting systems were designed specifically for this application. The definitive criteria are color temperature and CRI (color rendering index).



Non-destructive servohydraulic pitching sled illuminated by EYE / Iwasaki Short Arc Metal Halide lighting system

The new EYE / Iwasaki systems meet Class "A" CIE spectrum standards and provide a color temperature of 5500°K vs. approximately 3000°K for halogen systems. A comparison of these systems is illustrated in Figure 1, along with the CIE standard for natural sunlight.

High output metal halide systems are much more efficient than halogen systems, producing about five (5) times the lumens/Watt. Fewer fixtures are required to achieve a desired illuminance level simplifying and reducing the cost of system maintenance. Additionally, the

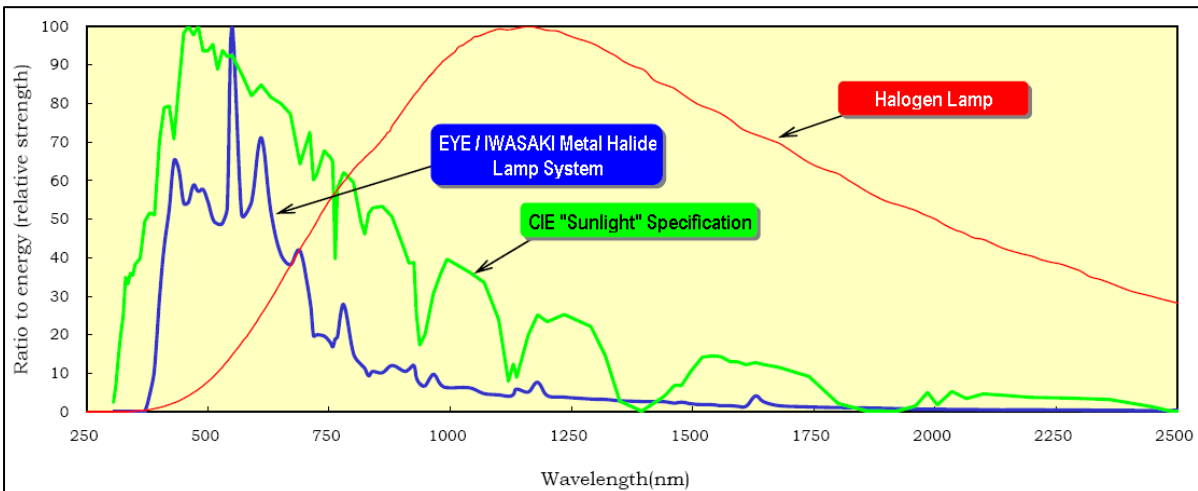


Figure 1: Spectral Distribution Comparison

lower energy consumption and lower heat output protect against test dummy heat up and reduce the demand on facility HVAC.

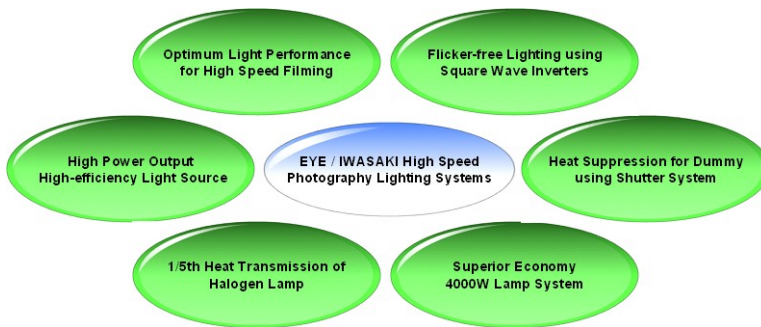
As frame rates have increased, it is more important than ever to ensure stable lighting. EYE / Iwasaki proprietary electronic inverters were developed to provide flicker free light. It is just as critical that the illumination in the target area is uniform. In facilities where many kinds of testing, such as frontal and side impact, must be performed using the same

equipment, system flexibility is essential. The lighting system needs to be properly positioned to ensure uniform illumination for each different test setup. What's more, there must be a provision for this to be programmed so that the lighting position and light setup are repeatable. EYE / Iwasaki mechanical systems are custom designed for each facility and test specification. Three axis lighting array movement, along with angular rotation, guarantees optimum illumination profiles with the minimum fixture configuration.

The MS-Windows based PC lighting control system can be easily integrated into the test system control process.

EYE / Iwasaki is a vertically integrated lighting company, uniquely equipped to design and manufacture application specific lamps, fixtures, electronics and control systems. EYE / Iwasaki's innovative designs are a culmination of years of global crash test application experience. Engineering, installation and service / maintenance personnel, located at the company's manufacturing operations in Mentor, OH, ensure a trouble free project.

Crash testing is time consuming and costly, yet, the need for more testing and for new kinds of testing will only increase. A properly integrated lighting system will significantly increase your productivity while decreasing your operational and maintenance costs.



EYE / Iwasaki integrated lighting systems

**Further Information**

Contact EYE Lighting International:

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EYE Lighting International of North America is located near Cleveland, Ohio, a manufacturer and distributor of state-of-the-art High Intensity Discharge and Halogen lighting products to serve commercial, industrial, utility and retail markets around the globe.

EYE Lighting International of North America is a subsidiary of Iwasaki Electric Co. Ltd., a Tokyo based, technology driven lighting conglomerate, that manufactures more than 3,000 lighting products that include HID and Halogen lamps, lighting fixtures, electronics, communication equipment, ultraviolet and electron beam systems.

The shared culture of Iwasaki Electric Company and EYE Lighting of North America represents a world class manufacturing operation, global technology, and commitment to quality, new product development, and the goal of complete customer satisfaction. At Iwasaki, we are inspired by light, and the light we create tells our story.