



The Laser Revolution

A quiet revolution has occurred in laser display technology. Traditionally, laser displays have involved large, expensive and exotic equipment that only highly qualified specialists could set up. New technology has improved nearly all aspects of this process, allowing non-specialists to have access to the power of laser displays.

History

Laser Lightshows started with the use of gas lasers, with Helium Neon and Helium Cadmium lasers on the low end, and Argon ion and Krypton ion lasers on the high power end. These lasers were made with fragile glass tubes, and were substantially expensive.

The high power Argon and Krypton lasers required big electrical services and were generally water cooled. They were physically large and heavy. A typical small frame Argon laser would cost about \$25,000.

The laser is just the light source which a laser projector uses to create a display. As important as this is, a laser by itself is not particularly exciting. The laser projector allows the laserist to perform a variety of visual effects with the goal of an artistic display.

Early laser projectors were awkward and often scary. Poor optical, electronic, and mechanical design made the device unsafe, unreliable, and unfriendly. Again, a specialist was needed to setup and align such systems, often at significant risk to the technician. Open projectors, where the beam is fully accessible, pose severe hazards of eye and skin injuries, and even potential audience exposures.

As a result, laser displays are often considered as an undesirable technology, since it is too unreliable, costly, and dangerous.

The New Technology

About 10 years ago, a new development in laser technology, called DPSS, arrived. The Diode Pumped Solid State lasers offered a source of high power laser light. These DPSS laser were compact, efficient, and rugged. They operate from standard wall outlets, are fan cooled, and can provide watts of power.

The first DPSS lasers provided green light at 532 nanometers (lime green), and quickly became popular in the laser display community. Purely by luck, this wavelength is at about the peak visibility for the human eye, and is brighter, watt for watt, than any other laser. However, people like color, and just green got old pretty quickly.

The very newest technology is DPSS RGB technology. In addition to the green DPSS laser, a Blue DPSS laser and a Red Diode laser is added, providing R, G, B wavelengths simultaneously. These lasers can be directly modulated.

Putting it all Together

Lighting Systems Design, Inc. is pleased to announce a fully integrated RGB DPSS laser projector. This system provides up to 750 mW of color balanced laser light, complete with scanning hardware. The optical components are in a hermetically sealed chassis.

Advantages

- Compact and Fully Integrated - lasers, power supplies, and scanning hardware in a single chassis.
- Full color capability - Red, Green, and Blue lasers with direct analog modulation.
- Hermetically sealed optical chassis - lasers, optics, and scanners are in a dust and contamination free environment.
- ILDA compatible control connector - Industry standard DB-25 connector and control signals.
- CDRH compliant - CDRH required features for a Class 4 laser included.
- External Adjustments - Adjusting convergence of discrete lasers is done without opening chassis or exposure to hazardous laser radiation.
- Fully Portable - operates from standard wall outlet power (90-250 VAC), truss or base mountable. Air cooled operation with minimal noise.
- Serious power - Capable of large images, in medium ambient light levels. Full color atmospheric beam effects with suitable haze or fog.
- ILDA 30K speed compatible - allows use of existing shows and animations.
- Remote Control operation available.

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