
MeccoMark[®] Diode Pumped Marking System

Technical Specification



Rev 1

System Overview:

The MeccoMark Diode Pumped Marking systems feature the latest in laser marking technologies. Our Q-switched diode systems are highly efficient, provide longer laser lifetime and have zero consumables. These lasers are designed to provide superior performance and reliability. For marking part numbers, 2D Data Matrix, logos and graphics, the Diode Pumped series is the ideal laser for your marking applications.

Standard Features:

- 20, 50 and 100 Watt models
- Diode Lifetime between 10,000 to 20,000 hrs
- Q-Switch for peak power
- Variable Beam Expander for spot control
- Internal Chiller
- Windows based software interface
- Integrated Safety Shutter
- High Performance Scanhead
- 110mm square mark field
(Other field sizes available)
- One Year System Warranty
- 5,000 hrs Diode warranty

Optional Accessories:

- Visible Pointer for mark preview
- 175mm, 250mm and 305mm square mark fields
- Class I Safety Enclosure
- Rotary Indexer for cylindrical marking
- XY and Z Class 1 Automated Workstations
- Rotary Workstations

System Benefits:

- No flash lamp consumables
- Minimal maintenance
- Improved efficiency for better cost of ownership than Flash Lamp Systems



General Laser Safety:

The MeccoMark Diode Pumped Laser Marking system can be supplied in either Class IV or Class 1 configuration. The standard system (without enclosure) is a Class IV system. The laser operator is exposed to laser radiation at the work surface. This laser radiation can be harmful to the operator if laser light is scattered or reflected into the eye.

If the system is sold as a Class IV system, it is the responsibility of the integrator to properly safeguard the operator from laser radiation. The MeccoMark Diode Pumped Laser Marking System does comply with the Center of Device and Radiological Health and Safety Act of 1968.

The Class IV system features:

- Spring Loaded mechanical safety shutter
- Emergency Off (EMO) circuitry and pushbuttons
- Remote Interlock (RIC) circuitry for use with external equipment such as Class 1 Enclosures and/or safety guarding.

If the system is sold as a Class 1 system, the operator is properly protected from laser radiation. Mecco has submitted this design to the CDRH to be compliant with all safety regulations per 21 CFR 1040.10.

The Class 1 system features:

- Spring Loaded mechanical safety shutter
- Emergency Off (EMO) circuitry and pushbuttons
- Remote Interlock (RIC) circuitry
- Light-tight safety enclosure with interlocked doors and access panels.

Please consult the Diode Pumped Laser Operator Manual for full laser safety information.

Laser Specifications:

Parameter	Value	Notes
Laser type	Diode Pumped	Nd:YAG
Wavelength	1064 nm	
Output Power	20, 50 & 100W Models	
Beam Quality	Multi-Mode	
Operation Mode	Q-Switch	
Pulse Rep Rate	1 to 100 kHz	
Cooling	Water	Internal Chiller included

Performance Specifications:

Parameter	Value	Notes
Repeatability	+/- 1 part in 4,000	
Max Line Speed	3,000 mm/sec	Using 160 lens
Max Characters	250 character/sec	Using 160 lens, 1mm high characters on mirror

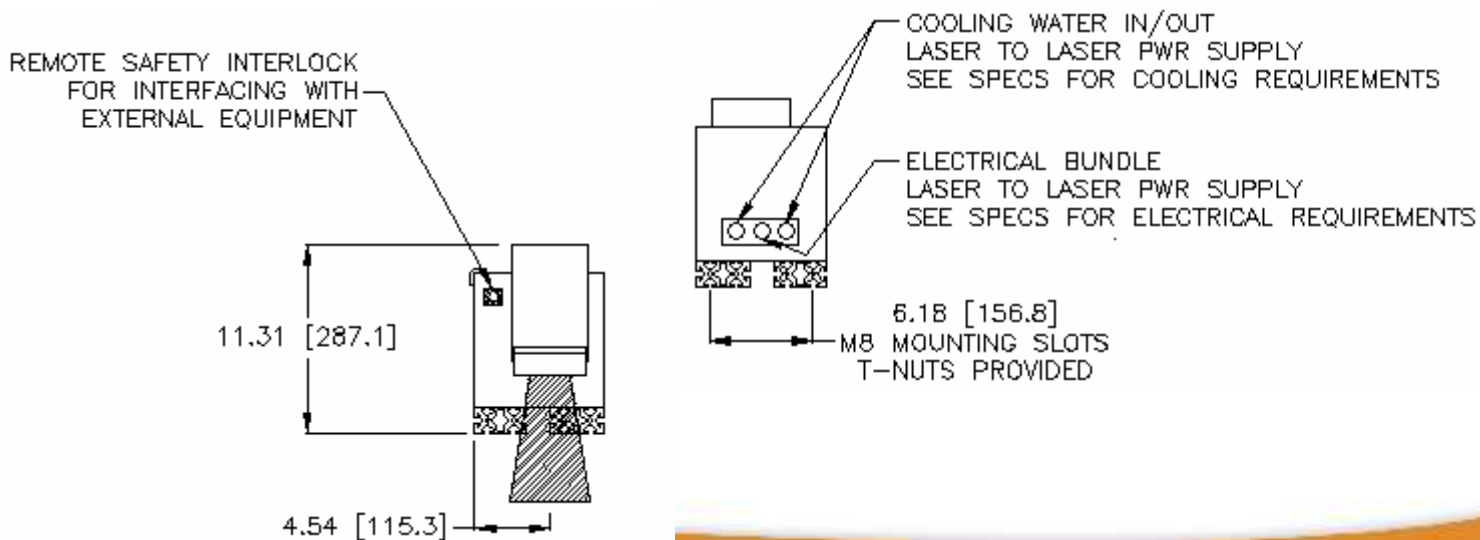
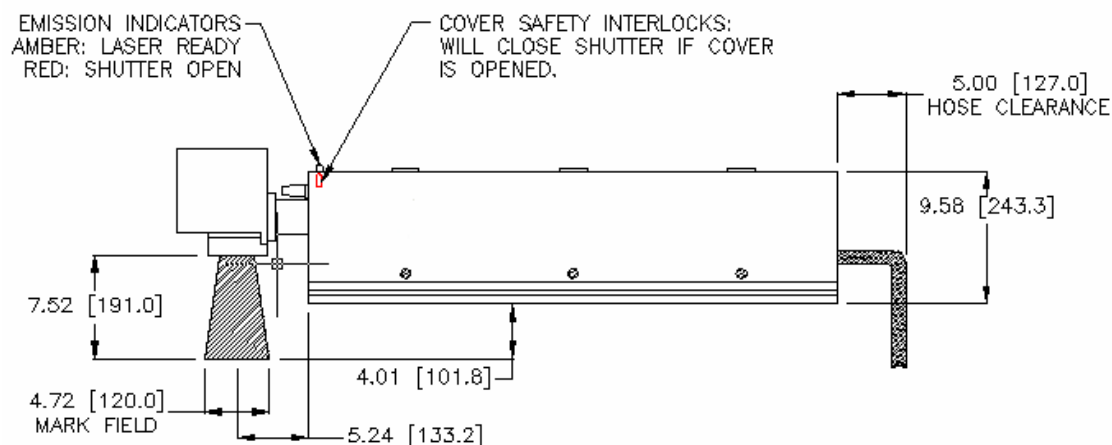
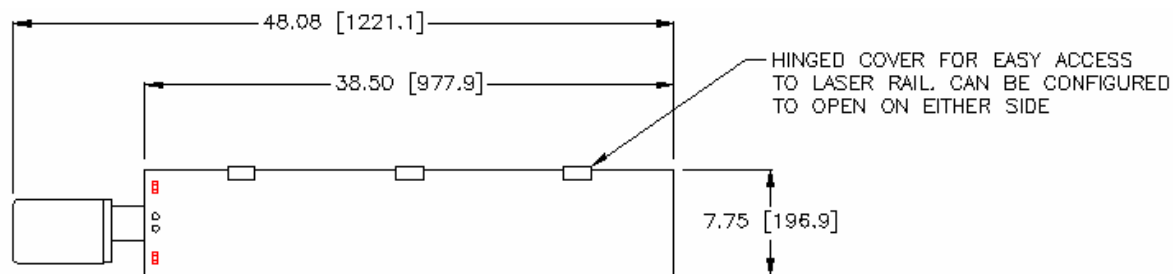
Computer Specifications:

Parameter	Value	Notes
Operating System	Windows 2000 or XP	
Processor	Pentium or better	
Processor Speed	500 MHz min.	
RAM	128 MB min.	
Hard Disk	4.3 GB min.	
Screen Display	1024 x 768 resolution min	

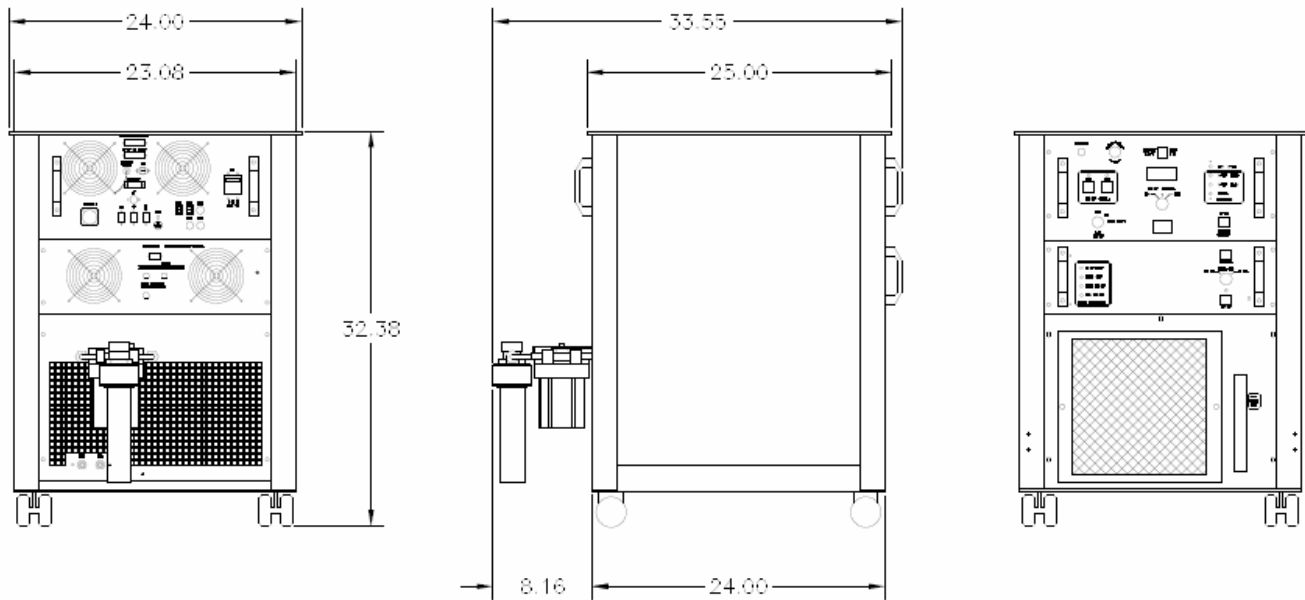
Environmental Specifications:

Parameter	Value	Notes
Electrical	220 10% VAC, 1-phase, 50/60 Hz, 15A	
Operating Temp.	15°C to 35°C	
Relative Humidity	20 to 90%	
Warm-up time	30 minute for full stability	Laser can be fired after 1 minute of warm up time.

Dimensions and Mounting Features: Laser Rail



Dimensions and Mounting Features: Laser Power Supply



Lee Laser Diode Pumped Repair and Warranty Policy:

Repair/Return: Aged or defective pump modules may be returned to Lee Laser for replacement of the laser diodes. Lee Laser will reuse the existing YAG laser rod and all other components that do not require replacement. If some of the original laser diodes are still in useable condition, they will be retained, and the cost of repair will be reduced accordingly. Expected turn-around time at Lee Laser will be about one week after receipt of the defective diode module.

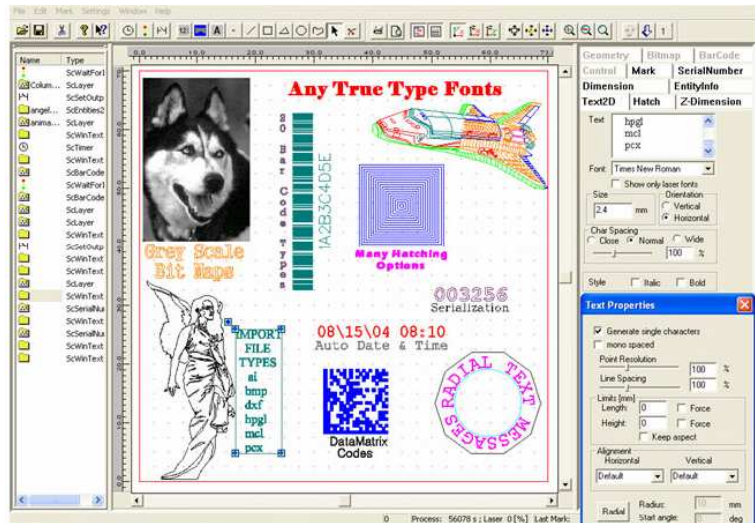
Diode modules are warranted against defects in materials and workmanship for a period of one (1) year (up to 15 months for Series LDP lasers that are purchased by OEM customers) or 5000 hours from the date of delivery of the Series LDP Nd:YAG Laser to the original purchaser, whichever occurs first. During the warranty period, the Series LDP Nd:YAG Lasers should be expected to maintain an output beam power level not less than 90 % of the lasers' specified output power capability solely from diode laser aging or failure.

The decision for replacement of the Diode Module, either under warranty or not under warranty, should not be based solely on the output beam power level of the Series LDP Nd:YAG Laser. There are many defect conditions that can result in reduced laser beam power output, only one of which is diode laser damage or failure. Customers that suspect damage or failure of a Diode Module should contact Lee Laser, and report all details. Lee Laser may request more information before we make a preliminary determination that the Diode Module may be at fault. Final determination about replacement of the Diode Module may require return to Lee Laser and inspection for damage.

In any case, Lee Laser will be the sole judge as to whether the Diode Module requires replacement and what constitutes warrantable damage.

MeccoMark Laser Marking Software:

The power, ease and flexibility of MeccoMark's User Interface is the most advanced and professional package in industry. MeccoMark[®] laser scanning control software offers a robust and flexible solution to make your scanning control project a success. MeccoMark[®] control software is a fully featured, professional Windows based software package for laser marking, cutting, drilling, coding, perforating, and many other laser scanning applications. When combined with the Surf Board-USB board, a 2 or 3-axis scan head and a laser, the laser processing possibilities are endless.



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The software allows graphics job editing that enables you to assemble images, text, and barcodes and quickly arrange them into marking jobs. With a simple point and click, you can graphically edit marking objects, precisely control laser parameters, and build automation scripts within a single interface. You will be able to define and run jobs within a few minutes.

This high performance, laser scanning control solution is designed specifically to run on Windows 98, 2000 or XP. And with the built in Active-X Server, real time machine performance can be managed and monitored over an Ethernet network.

Features and Highlights

- USB 1.1 or 2.0 Interface
- For Win. 98/2000/XP
- Intuitive, Easy to Learn Graphical Interface
- Serialization & Text Merge
- Radial & Vertical Text
- Import Many Vector and Graphic File Types
- Scale, Rotate, and Mirror

- External Control Capable
- Mark Any Installed True Type Fonts and Barcodes
- Additional I/O Control for Material Handling
- Stepper/Servo Motion Control X/Y, Z, & Rotary
- Controls Any Laser Type
- Built In Lens Correction
- Remote Access & Control