

MeccoMark® Vanadate Green, Nd:YVO₄ Laser Marking System

Technical Specification



System Overview:

The MeccoMark Vanadate Green Laser Marking systems feature the latest in laser marking technologies. Our diode pumped Vanadate system delivers superior performance and reliability in a compact package. For marking part numbers, 2D Data Matrix, logos and graphics on a variety of plastics, the Vanadate Green series is the ideal laser for your marking applications.

Standard Features:

- 4 Watt of Power, 532nm wavelength
- Windows based software interface
- Integrated Safety Shutter
- Industrial Computer
- Power Control Box
- High Performance Scanhead
- 110mm square mark field
(other field sizes available)
- I/O Interface
- One Year System Warranty
- One Year or 8,000 hr warranty on diode pack (which ever comes first)

Optional Accessories:

- 155mm square mark field
- Class I Safety Enclosure
- Rotary Indexer for cylindrical marking
- XY and Z Class 1 Automated Workstations
- Rotary Workstations

System Benefits:

- Compact design for minimal footprint
- Estimate 10,000 to 20,000 hrs of diode lifetime
- Mount in any orientation
- Air-cooled design (*no water or external chiller required*)
- Zero maintenance
- Low cost of ownership

General Laser Safety:

The MeccoMark Vanadate Green 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 Vanadate Green 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 Vanadate Green Laser Operator Manual for full laser safety information.

Laser Specifications:

Parameter	Value	Notes
Laser type	Diode Pumped Vanadate	
Wavelength	532 nm	
Output Power	4 watts @ 30 kHz freq.	
Beam Quality	TEM ₀₀	
M ²	<1.2	
Operation Mode	Pulsed	
Pulse Rep Rate	20-200 kHz	
Cooling	Air	
Scanning Method	XY galvanometer	
Integral Shutter	Yes	
Rail Weight		

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:

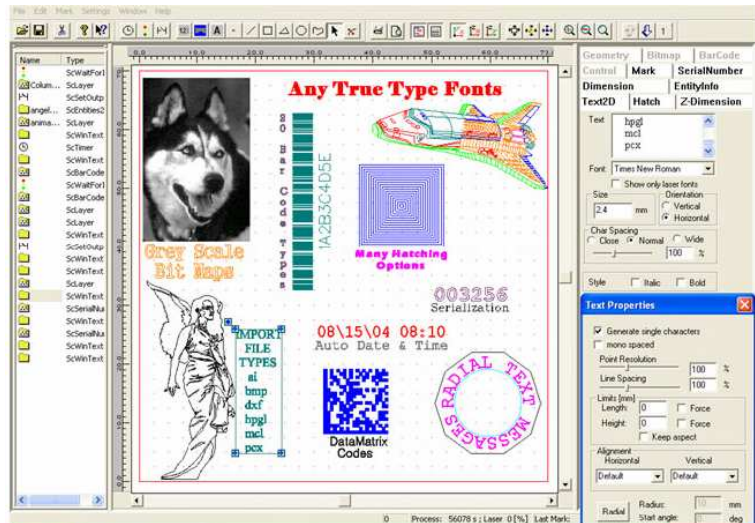
Parameter	Value	Notes
Electrical	120VAC +/-10%, 1 phase 60 Hz, 10A	
	220VAC +/-10%, 1 phase 50/60 Hz, 5A	
Operating Temp.	18°C to 35°C	
Relative Humidity	8 to 90%	
Warm-up time	30 minute for full stability	Laser can be fired after 1 minute of warm up time.

Dimensions and Mounting Features:

See attached drawings

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