ARCHER

Nd:YVO_4 Laser Marking System

RMI

*Complete System Shown

Fast, Clean, Permanent Marks

The Archer delivers precision, non-impact marks on a variety of materials including metals and plastics. With the ability to mark linear and elliptical text, barcodes, 2D data matrices, QR codes, serial numbers, logos, and even photo-quality graphics, the Archer has the versatility to meet almost any marking application.

Compact, Space Saving Design

The Archer precision laser marker is an ultra-compact, turnkey system that can fit into tight workspaces, or can easily be moved to different production areas. The system requires only a standard 110V/220V outlet to operate and eliminates the use of bulky external chillers and power supplies that take up extra space.

Simple Operation and Maintenance

The Archer is designed to be user friendly. Through the fully computerized interface, operators can easily program complex marking instructions and accurately control the placement of their marks. Also, the Archer eliminates the cost and hassle of consumables such as replacement pins, messy inks, toxic chemicals and delicate stencils.

YVO_4 TECHNOLOGY

All RMI laser markers utilize Nd:YVO_4 (Vanadate) technology. Nd:YVO_4 lasers feature several inherent advantages over other types of laser systems. When compared to traditional CO_2 and Nd:YAG lasers, Nd:YVO_4 lasers are more energy efficient. This means that RMI's laser marker can achieve a more precise mark while consuming less power. Lower power consumption eliminates the need for external power supplies and large cooling systems, making the RMI laser marker far smaller than comparable systems. Also, Nd:YVO_4 lasers can achieve a smaller spot size and higher energy density than most competing systems, making it ideal for marking on highly reflective surfaces like gold, silver, aluminum and other metals. Vanadate technology is also key in extending the life of our laser diodes to more than 30,000 hours!

SIZING UP THE COMPETITION

	Nd:YVO_4 (RMI)	CO_2	Nd:YAG (Flash-lamp)	Nd:YAG (Diode-pumped, side)
Wavelength	1064nm	10.6µm	1064nm	1064nm
Power (W)	5 or 15	10 - 100	50 ~ 100+	3 ~ 20+
Spot Size (micron)	30-60	800	50-100	50-100
Marking Resolution	High	Low	Medium	Medium
Energy Efficiency	High	Medium	Low	Medium
Cooling Efficiency	High	Medium	Low	High
Peak Power	High	Low	High	High
Operating Cost	Low	Medium	High	Low
Maintenance Intervals (Hrs.)	30,000+	Up to 5,000	300 ~ 1,000	10,000+

THE ARCHER, WITH 5 or 15 WATTS OF YVO_4 POWER, IS THE VERSATILE SOLUTION FOR YOUR PART MARKING AND IDENTIFICATION APPLICATIONS.

Markable Substrates:
- > All metals
- > Plastics
- > Ceramics
- > Composites
- > Jewelry

Mark Types:
- > Alphanumerics
- > True Type fonts
- > 2D data matrix codes
- > Barcodes
- > Graphics / Logos
- > Photo-quality images

ARCHER | Nd:YVO_4 LASER MARKING SYSTEM

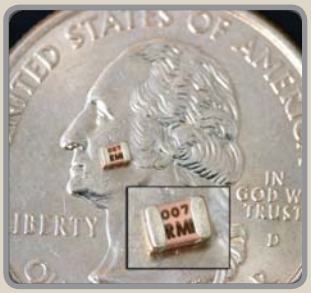
MARKED SAMPLES

Engraved A2 Hardened Steel Gear

Engraved Steel

Color-changed plastic

Pin-stamp vs. Laser mark



Ceramic Resistor

Engraved Gold

Engraved Titanium


Color-changed plastic

Engraved Steel Tool

ARCHER Specifications

LASER

Wavelength:	1064nm
Pulse Peak Power:	40 kW (5W) / 120kW (15W)
Crystal:	Yttrium Vanadate (YVO_4)
Pulse Width:	Less than 10ns
Beam Quality:	Mode: TEM_{00} Quality: $M^2 < 1.2$
Q-Switch Frequency:	0-100kHz
Spot Size:	30-60 micron
Aiming Diode:	660nm (red)

SYSTEM

Power:	< 600W, AC 100-240V, 50/60Hz
Cooling:	Thermoelectric (TE) / Air (no fluids or external chiller)
Installation:	Horizontal / Vertical
Operating Environment:	46-95°F (10-35°C)
Marker Head (20lbs / 9kg):	> 416mm(L) x 158mm(W) x 277mm(H) > 16.4" (L) x 6.2" (W) x 10.8" (H)
Laser Controller(29lbs / 13kg):	> 463mm(L) x 432mm(W) x 191mm(H) > 18.2" (L) x 17.0" (W) x 7.5" (H)

Class 1 Operation Available | CDRH Compliant

INTEGRATION

Communications: > Serial (RS232) / WinSockets / Digital I/O

Marker:

Inputs	Outputs
> Start Mark	> Ready
> Stop Mark	> Busy
> Skip Mark	
> Mark Element	

Controller:

Inputs	Outputs
> Laser Run / Recovery	> Laser On
	> External Light
	> Error

MARKING

Software Development Kit Available

Mark types:
> Raster (Vertical, Horizontal, Contour)
> Linear / Elliptical text
> Simple shapes
> Serial Numbers / Date stamp
> Barcodes
> 2D data matrix
> Logos
> Photo-quality graphics

Marking Area:

100mm f-Theta Lens	2.4" x 2.4" (60mm x 60mm)
160mm f-Theta Lens	4" x 4" (100mm x 100mm)
254mm f-Theta Lens	6" x 6" (150mm x 150mm)

RMI

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