

ARTISAN®
TECHNOLOGY GROUP

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Available in:
✔ **Production Quantities**
✔ **Custom Configurations**

Internal Mirror Ion Laser Systems

- Output power to 40 mW
- May be mounted in any orientation
- No mirror adjustment or cleaning required
- Complete systems including switching power supplies with power factor correction
- CE and CDRH compliant

The new IMA series from Melles Griot represents a significant advance in compact, air-cooled ion-laser technology, providing longer tube life, greater stability, and higher efficiency. The key to the outstanding performance of these new systems is our new internal-mirror plasma-tube design that eliminates the periodic need to realign the laser cavity and to clean mirrors and Brewster's windows. The internal cavity structure maintains optimum mirror position in all orientations. The result is a virtually maintenance free laser with high output power and stability.

In addition to the laser tube, the power supply has been redesigned to improve performance and efficiency. Not only do the IMA-series laser systems have the best power-factor correction of any equivalent system, but they meet all relevant U.S. and European electrical and emission standards and proudly display the CE mark.

IMA series lasers are available in either an all-lines configuration, lasing from 457 nm to 514 nm, or in single-line configurations at 457 nm, 488 nm or 514 nm. In the all-lines configuration, overall output power is guaranteed to 40 mW.

IMA series lasers are cooled by forced air from a fan mounted on the laser cover. In many OEM applications it is convenient to cool the laser remotely. For these applications, Melles Griot can provide the appropriate ducting, hardware, and remote centrifugal fan.

LASER ACCESSORIES

Laser optical and fiber-optic delivery systems can be found in Chapter 47, *Laser Accessories*. Remote control options and an RS 232 interface for these ion lasers can be found on page 43.10.

SPECIFICATIONS: INTERNAL MIRROR ION LASER SYSTEMS

Beam Characteristics

Mode: TEM_{00} (>95%)
Beam Divergence: 0.95 mrad ± 5%
Quality Factor (M^2): <1.1
Optical Noise (% p-p @ <100 kHz/<1 MHz): 1.5/4
Mode Spacing: 587 MHz
Polarization: Linear (vertical) with >250:1 extinction ratio
Pointing Stability: < ± 60 μrad (5°C to 40°C)
Power Stability: ± 1% over a 2-hour period

General Characteristics

Warm-up Time: <5 minutes from cold start
Cooling: Forced air
Operating Temperature: 5°C to 40°C
Storage Temperature: −30°C to 60°C

Electrical Characteristics

Voltage (Specify): 100, 120, 200, 220, 230, 240 Vac ± 10%
Frequency: 47–63 Hz, single phase
Current: 20 A @ 115 Vac or 10 A @ 230 Vac

Safety Classification: CDRH IIIb, IEC Class 3B

Weight

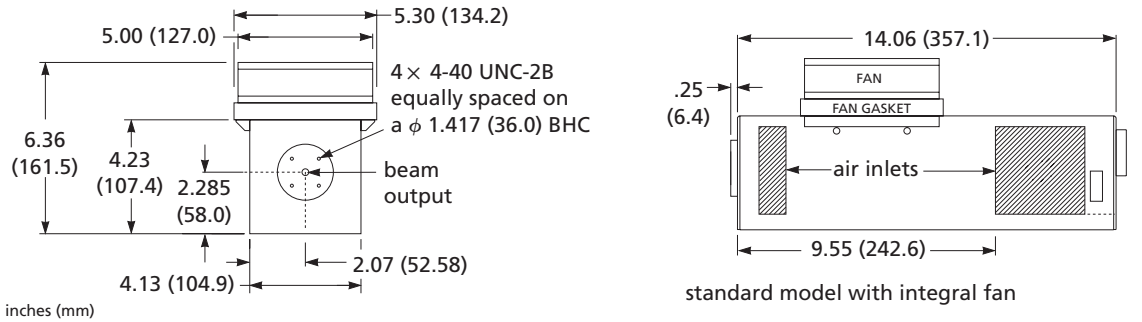
Laser head: 4.31 kg (9.5 lbs)
Power Supply: 2.72 kg (6.0 lbs)

Internal Mirror Ion Lasers

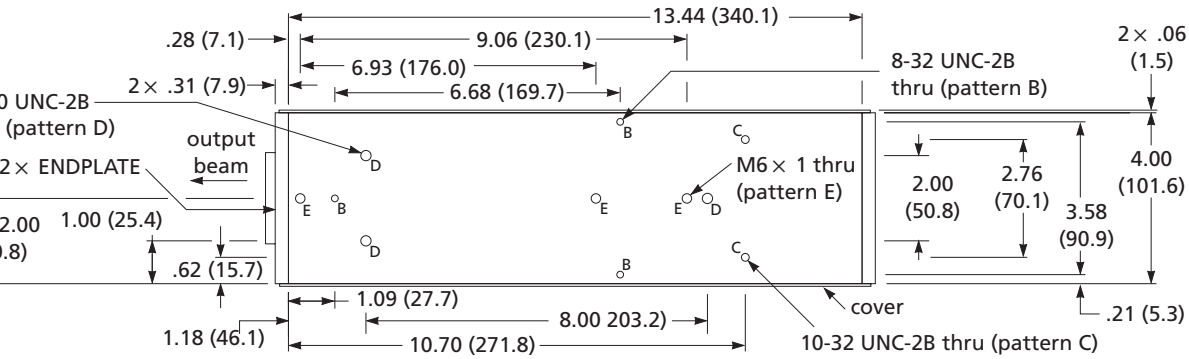
Wavelength(s) (nm)	Output Power (mW)	Beam Diameter (mW)	PRODUCT NUMBER*
Single Wavelength			
457	4	0.67 ± 5%	35 IMA 304
488	10	0.67 ± 5%	35 IMA 410
	15	0.67 ± 5%	35 IMA 415
	20	0.69 ± 5%	35 IMA 420
514	10	0.69 ± 5%	35 IMA 510
	15	0.69 ± 5%	35 IMA 515
	20	0.69 ± 5%	35 IMA 520
Multiwavelength			
457-514	25	0.67 ± 5%	35 IMA 025
	40	0.67 ± 5%	35 IMA 040

**Append the appropriate suffix to the product number to specify input voltage: -100 for 100 Vac, -120 for 120 Vac, -200 for 200 Vac, -208 for 208 Vac, -220 for 220 Vac, -230 for 230 Vac, or -240 for 240 Vac.*

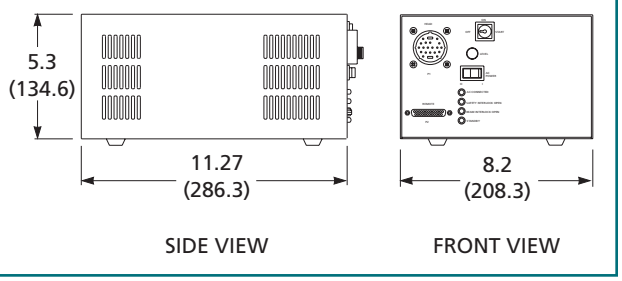
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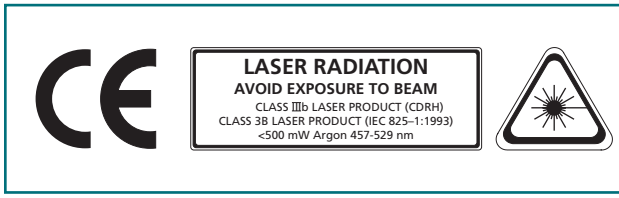
Internal mirror ion laser head



Base plate mounting configuration



Power and control unit for internal mirror ion lasers



Artisan Technology Group is an independent supplier of quality pre-owned equipment

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