

Internal Mirror Argon Ion Lasers

IMA Series



Melles Griot IMA-series air-cooled, argon ion lasers use an integrated, hard-sealed mirror design that is maintenance-free over the life of the laser. IMA-series lasers may be operated in any orientation and still maintain the power stability necessary for long-term, repeatable results. The small footprint and industry-standard mounting holes allow platform and bread-board mounting as well as easy integration into OEM systems. Choose single- or multi-wavelength operation ranging with output ranging from 457 nm to 514 nm. A selection of beam delivery systems is also available.

- ▶ Multiline (457 to 514 nm) up to 65 mW
- ▶ Single-line output up to 30 mW at 488 nm and 25 mW at 514 nm
- ▶ Low noise performance
- ▶ Industry-compatible systems and replacement tubes available
- ▶ Precision bore sighting
- ▶ Automatic power control
- ▶ TEM₀₀ mode
- ▶ Wide operating temperature range

MELLES GRIOT

Specifications: IMA Series

Common to All Models

Mode Spacing (c/2L):
Mode Purity:
Coherence Length (approx):
Polarization:
 Orientation
 Extinction Ratio:
Warmup Time from Cold Start:
Beam Pointing Stability:
Power Stability over 2 hours:
Cooling Configuration:

Cylindrical

587 MHz
>95%
10 cm
*Vertical $\pm 5^\circ$
>250:1
5 minutes
<60 μrad (5–40°C)
 $\pm 1\%$
remote

Rectangular

587 MHz
>95%
10 cm
Vertical $\pm 5^\circ$
>250:1
5 minutes
<60 μrad (5–40°C)
 $\pm 1\%$
integral fan or remote

Electrical Specifications

Tube Voltage: 100 Vdc nominal
Discharge Current: 4 A to 10 A

Recommended Power Supply

Input Voltage:		
120 V (125 V/20 A NEMA 5-20 P)	310-001	300-001
220 V (250 V/20 A Nema 6-20P)	310-002	300-002
230 V (250 V/13 A BS 1363)	310-003	300-003
240 V (250 V/16 A CEE 7/7)	310-004	300-004
120 V (125 V/15 A Nema)	310-005	300-005

Environmental Specifications

Cooling:	Forced air-cooled	Forced air-cooled
Operating Temperature:	+5°C to +40°C	+5°C to +40°C
Storage Temperature:	–30°C to +60°C	–30°C to +60°C
Relative Humidity, Operating:	0 to 90% noncondensing	0 to 90% noncondensing
Shock in shipping container (max):	25 g/11 msec	25 g/11 msec

Options

Beam delivery interface	Beam delivery interface
Custom cable configurations	Custom cable configurations
Precision mounting rings	1" \times 32 TPI accessory mount
1" \times 32 TPI accessory mount	

Physical Specifications

Laser Head with Cable Weight:	3.02 kg (6.64 lbs)	4.1 kg (10.4 lbs)
Remote Fan:	8.9 kg (19.5 lbs)	8.9 kg (19.5 lbs)
300/310 Series Power Supply:	3.02 kg (6.7 lbs)	3.63 kg (7.0 lbs)

* to centerline of electronic enclosure
All output characteristics are based on automatic power control (APC).



Most Melles Griot lasers and instruments are designed, tested, and manufactured for compliance with applicable International electrical and laser safety standards.

Package Configurations for Air-Cooled Ion Laser

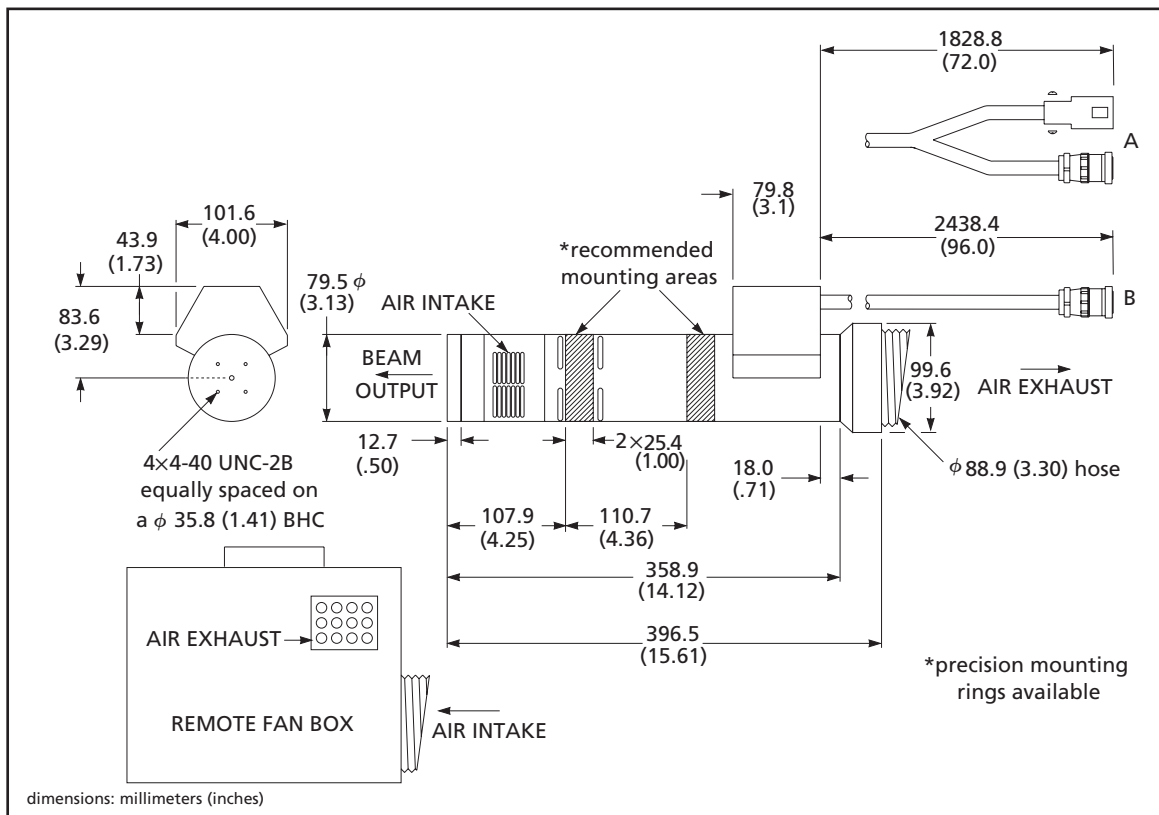
Model Number	Rectangular Package	Cylindrical Package	Attached Cooling	Remote Cooling	Termination Type*
IMA101 XXX XXX	✓		✓		B
IMA106 XXX XXX		✓		✓	A

*A = JDS Uniphase compatible. For use with power supply model 310
 B = Melles Griot model. For use with power supply models 300

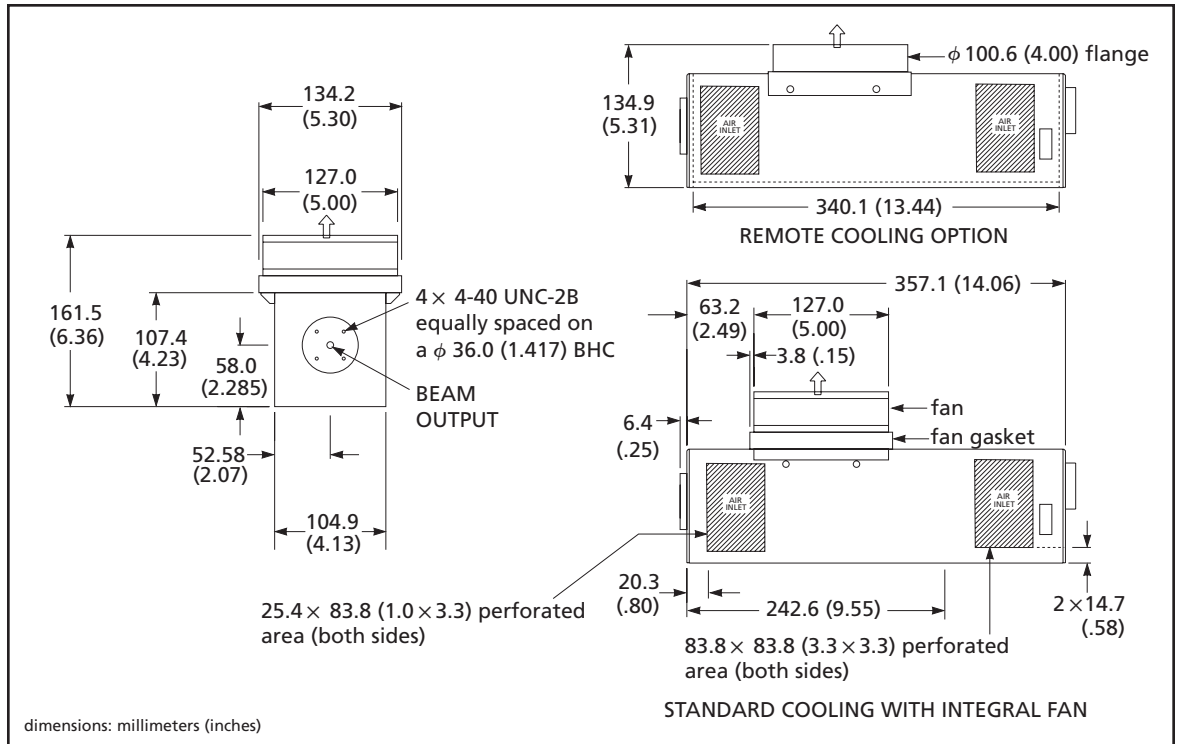
Specifications for Air-Cooled Ion Laser (IMA 1YY XXX XXX)*

XXX XXX	Output Type	Wavelength (nm)	Output Power (mW)	Mode Purity	Beam Diameter (mm)	Beam Divergence (mrad)	M ² (max)	Noise <100 kHz/<1 MHz (Max % P-P)
002-V05	violet, single line	457	>2	>95%	0.70 ± 5%	0.95 ± 5%	1.2	6/8
004-V05	violet, single line	457	>4	>95%	0.70 ± 5%	0.95 ± 5%	1.2	6/8
025-ALS	all lines	457-514	>25	>95%	0.69 ± 5%	0.95 ± 5%	1.1	2/4
040-ALS	all lines	457-514	>40	>95%	0.69 ± 5%	0.95 ± 5%	1.1	2/4
065-ALS	all lines	457-514	>65	>95%	0.69 ± 5%	0.95 ± 5%	1.1	2/4
010-B05	blue, single line	488	>10	>95%	0.69 ± 5%	0.95 ± 5%	1.1	3/4
015-B05	blue, single line	488	>15	>95%	0.69 ± 5%	0.95 ± 5%	1.1	3/4
020-B05	blue, single line	488	>20	>95%	0.69 ± 5%	0.95 ± 5%	1.1	3/4
030-B05	blue, single line	488	>30	>95%	0.69 ± 5%	0.95 ± 5%	1.1	3/4
010-G05	green, single line	514	>10	>95%	0.69 ± 5%	0.95 ± 5%	1.1	3/4
015-G05	green, single line	514	>15	>95%	0.69 ± 5%	0.95 ± 5%	1.1	3/4
020-G05	green, single line	514	>20	>95%	0.69 ± 5%	0.95 ± 5%	1.1	3/4
030-BLS	blue, multiline	457-488	>30	>95%	0.69 ± 5%	0.95 ± 5%	1.1	3/4

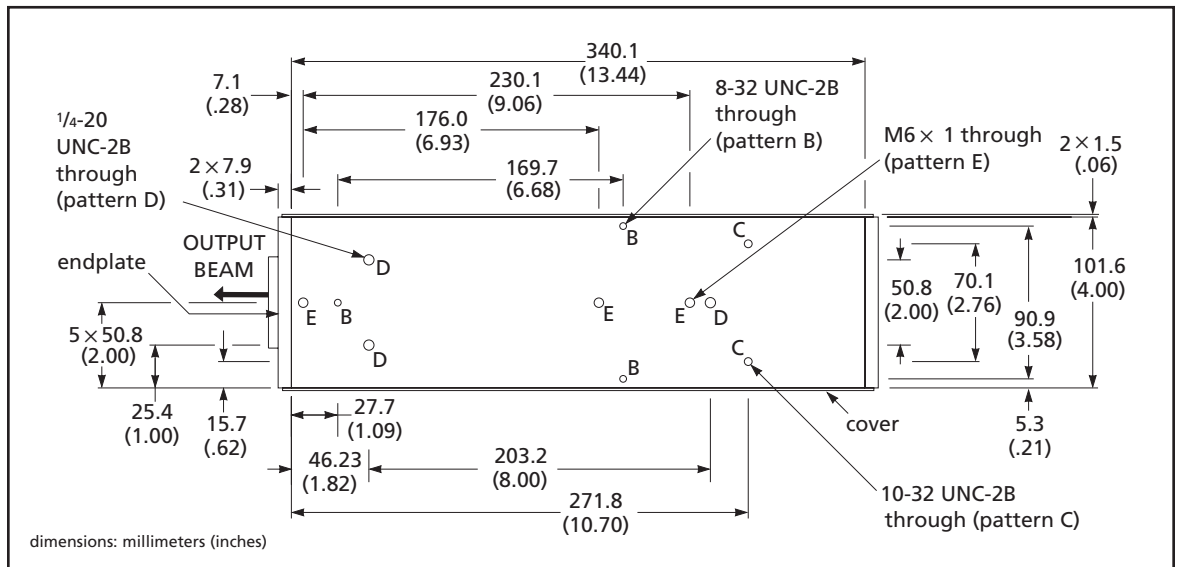
*When operated with 300 and 310 power supplies.
 YY = 01, 06, as designated in table at top of page



Cylindrical IMA laser outline and mounting drawing



Rectangular IMA laser outline drawing



Rectangular IMA mounting plate (bottom view)

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