

Krypton Argon Ion Lasers



643 series

Air-cooled, compact, and economical, Melles Griot 643-series krypton argon ion lasers are a convenient source of single, fixed multiple, and all-wavelength output. Their footprint and industry standard mounting holes allow platform, breadboard or easy OEM system integration. A selection of beam delivery systems is available.

- ▶ Wavelengths from 467 to 752 nm
- ▶ Powers to 150 mW
- ▶ Forced-air cooling
- ▶ Low noise
- ▶ TEM₀₀ output
- ▶ CE versions available
- ▶ Custom wavelength selections available
- ▶ Wide operating temperature range
- ▶ Light feedback regulated
- ▶ Tunable versions available

MELLES GRIOT

643 series krypton argon lasers — compact, powerful, economical.

The mixed-gas (argon and krypton) ion laser is an ideal source for many applications, because it combines the availability of wavelengths across the visible spectrum with near-diffraction limited output, high stability, low noise, long life, and unit-to-unit repeatability. Due to their small footprint, forced-air cooling, and low cost, Melles Griot 643-series krypton argon lasers are used in a wide variety of OEM applications, in fields ranging from microscopy and process control to digital imaging. They are particularly suited to biotechnology and photoluminescence applications, because their output wavelengths closely match the absorption peaks of a wide range of dyes (see table below for a partial list).

The 643-series lasers produce low-noise TEM₀₀ output in wavelengths that range from 467 nm to 752 nm. Standard multiline configurations include *red/yellow/blue* and *yellow/blue*. Single-color configurations include *red* (two lines), *yellow*, and *infrared*. Prism-tuned, single-wavelength output is also available.

All 643-series lasers can be operated in either light-regulated or current-regulated mode. In light regulation, power drift is reduced to less than one percent over long periods of time; rms output noise is also significantly reduced. Current regulation can be used to increase plasma-tube life, and to control the balance between laser lines in multiline operation.

The industry-standard packaging and mounting configurations permit easy integration into new and existing OEM designs. Custom configurations, and a variety of beam delivery options (e.g., fiber-optics, and collimators), are also available.

Fluorochrome (dye)	Peak Excitation Wavelength (nm)	Laser Wavelength (nm)
Calcium Green	505	488
Cyanine Cy3	575	568
Cyanine Cy5	640	647
Fluo 3	480	488
FITC	490	488
Lucifer Yellow	428	467
Rhodamine	560	568
Texas Red	590	568

Specifications: 643 series

Common to All Models

Mode Spacing (c/2L): 349 MHz

Coherence Length (approx): 10 cm

Linear Polarization: Vertical $\pm 5^\circ$

Extinction Ratio: >250:1

Warmup Time from Cold Start: <15 minutes

Recovery from Standby: 1 second

Beam Pointing Stability: < 30 μ rad/°C

Power Stability over 2 hours: $\pm 0.5\%$

Recommended Power Supply

Model 171B-XXXX or 176B-XXXX

(XXX = 220, 208, 200, 230, 240)

(Y = B for Black, G for Grey)

Environmental Specifications

Cooling: Forced air cooling

Operating Temperature: 5°C to 40°C

Storage Temperature: -30°C to 60°C

Relative Humidity, Operating:

0–90% noncondensing

Laser Head Weight: 25 lbs (11.4 kg)

Shipping Weight w/Cable: 35 lbs (16.0 kg)

Options

- Remote cooling
- Optical table mounting hardware
- Cable configurations
- Beam delivery interface
- Remote RS-232 power supply operation



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

Specifications for single-line 643-series ion lasers

Model	Wavelength	Power (mW)	Beam Diameter (mm)	Beam Divergence (mrad)	M ² (max)	Noise <100 kHz/<1 MHz (max % P-P)
643-Y-A02	568	10	0.7	1.1	1.1	4/5
643-Y-A01	568	20	0.7	1.1	1.1	4/5
643-RS-A01	647	100	0.7	1.3	1.1	5/8
643-IR-A01	752	20	0.7	1.4	1.1	9/12

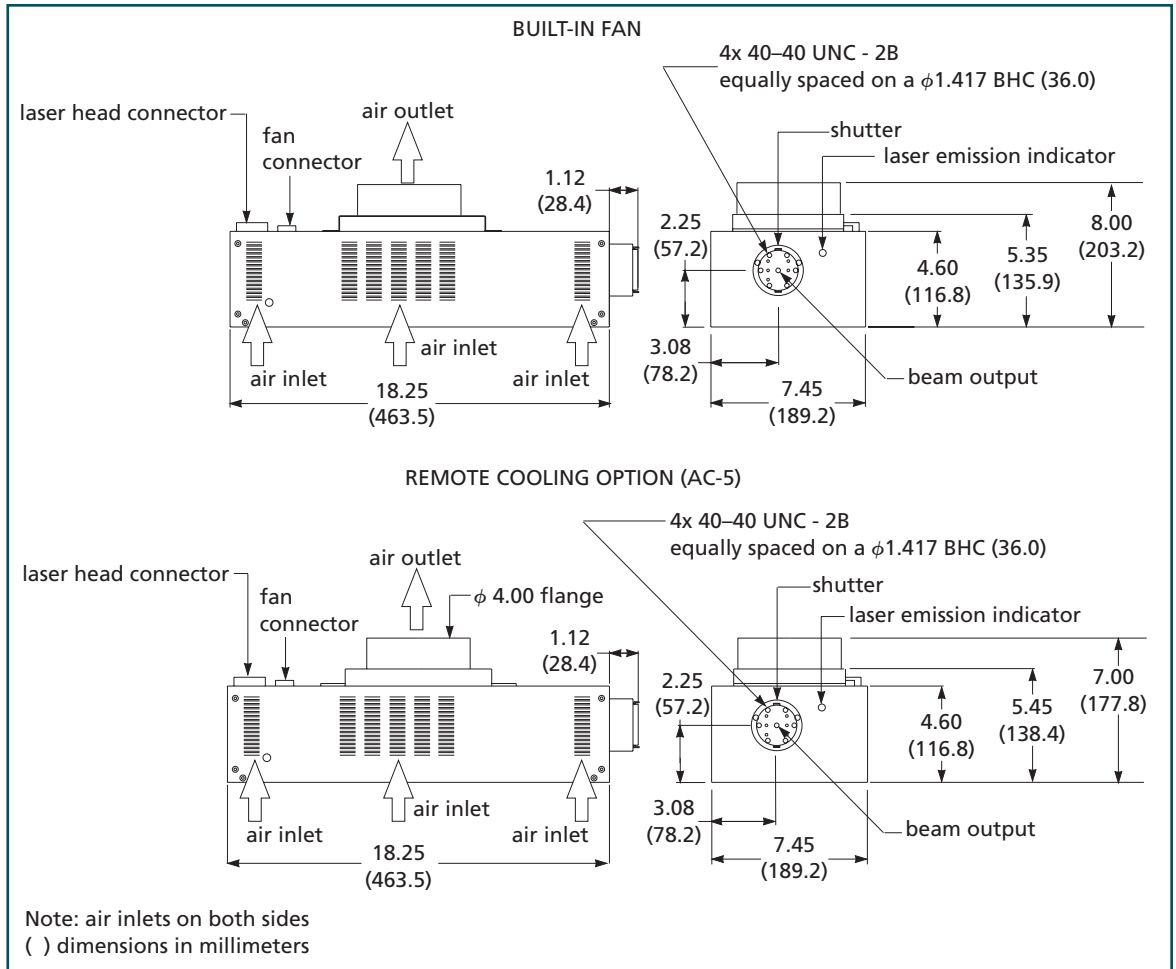
Specifications for multiline 643-series ion lasers

Model	Wavelength	Power (mW)	Beam Diameter (mm)	Beam Divergence (mrad)	M ² (max)	Noise <100 kHz/<1 MHz (max % P-P)
643-RYB-A02	467	<4				
	472	<2				
	476	<8				
	483	<4				
	488	15	0.8	1.1	1.4	4/5
	496	<4				
	502	*				
	568	15	0.7	1.0	1.2	10/14
	647	25	0.7	1.1	1.1	7/12
676	*					
643-RYB-A01	467	<4				
	472	<1				
	476	<8				
	483	<4				
	488	10	0.8	1.1	1.4	4/5
	496	<4				
	502	*				
	568	10	0.7	1.0	1.2	10/14
	647	15	0.7	1.1	1.1	8/12
676	*					
643-YB-A01	467	<4				
	472	*				
	476	<8				
	483	<4				
	488	20	0.8	1.1	1.4	4/5
	496	<4				
	502	*				
568	20	0.7	1.0	1.2	7/12	
643-YB-A02	467	<4				
	472	*				
	476	<8				
	483	<4				
	488	20	0.8	0.9	1.1	4/5
	496	<4				
	502	*				
568	20	0.7	0.9	1.1	6/8	

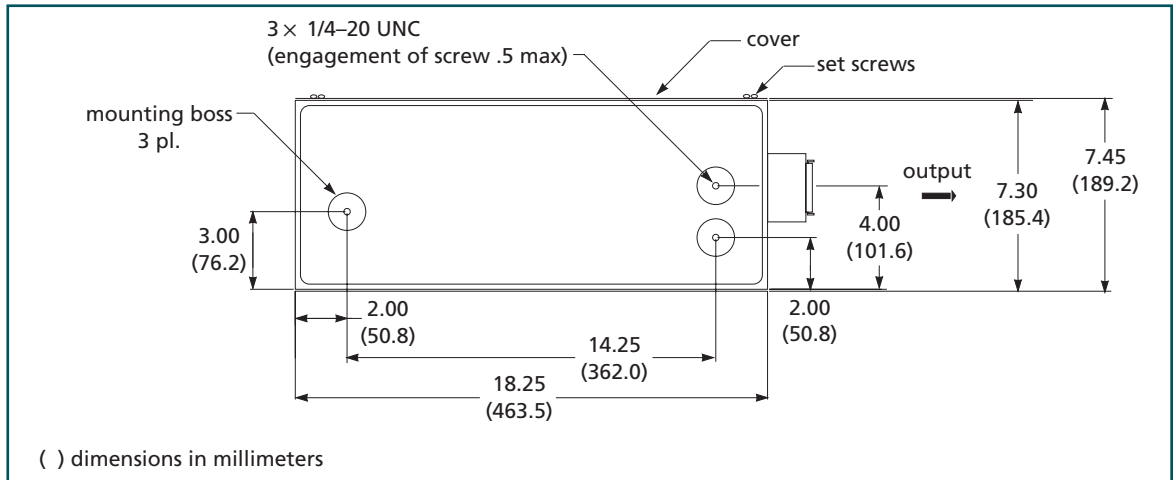
*May be present, power unspecified.

Note: Performance characteristics obtained by using Melles Griot 176B-XXXB supply.

All-wavelength and tunable krypton argon ion lasers available upon request.



Outline drawing



Mounting plate (bottom view)

MELLES GRIOT

www.mellesgriot.com

Laser Group 2051 Palomar Airport Road, #200 • Carlsbad, CA 92009 • 1-800-645-2737 • (760) 438-2131 • FAX (760) 438-5208 • E-mail: sales@carlsbad.mellesgriot.com

Canada (613) 226-5880 Denmark 5761 5049 France (01) 3012-0680 Germany (06251) 84060

Japan (03) 3407-3614 Netherlands (0316) 333041 Singapore 392-5368 Sweden (08) 630-8950 United Kingdom (01223) 203300

MELLES GRIOT® is a registered trademark of Melles Griot Inc. in the United States and certain other countries. In France, Germany, Italy, Belgium, The Netherlands, and Luxembourg, MELLES GRIOT® is a registered trademark of Melles Griot B.V. Melles Griot follows a policy of continuous product development. For this reason, specifications are subject to change without notice.

PRINTED IN USA

©1999 MELLES GRIOT
2621 R2 8/99