Blue Solid-State Laser System 457 nm, 100 to 300 mW

Melles Griot single frequency diode-pumped solid-state blue lasers provide high power output at 457 nm in a compact, air-cooled package. They are ideal for use in semiconductor, biomedical, spectroscopic, interferometric, holographic instrumentation; laser display devices, photo-plotters, PC-board, wafer, and surface inspection equipment, and particle characterization instrumentation. Their single longitudinal mode and long coherence length make them an indispensable tool for holographic applications.

Key Attributes

- Up to 300 mW at 457 nm
- Single transverse and longitudinal mode
- Coherence length up to 5 m
- Low power consumption
- Universal input voltage power supply
- RS-232 interface
- Automatic power control
- CDRH and CE compliant

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Specifications

Beam Characteristics:

Output Wavelength: 457.5 ± 0.5 nm

$M^2 \leq 1.2$

Transverse Mode: TEM_{00}

Longitudinal Mode: Single

Coherence Length: Up to 5 m (ACC mode)

Polarization: Linear (horizontal ±5°) > 100:1

Exit Angle:
4° ± 1° (horizontal)
0° ± 1° (vertical)

Stability Characteristics:

Long-Term Power Drift:
±2.5% in APC Mode (8 hrs)
(ambient ± 2°C)

±7% in ACC mode (20 min)
(ambient ± 2°C after 15 min warmup)

Pointing Stability: < 25 µrad (ambient ±1°C)
< 7 µrad (ambient ±1°C with optional beam expander)

Amplitude Noise:
rms < 2% (20 Hz to 2 MHz)

Operating Characteristics:

Operating Mode:
Automatic Current Control (ACC)
Automatic Power Control (APC)

Warm-up Time: < 15 minutes

Cooling: Forced air with heat sink

Environmental Requirements:

Temperature (ambient):

Operating: 10°C to +35°C

Nonoperating: -10°C to +60°C

Operating Humidity: 0 to 95%, noncondensing

Electrical Characteristics:

Input Voltage: 100 to 240 Vac ±10%

Input Frequency: 50 to 60 Hz, single phase

Input Power: 150 W (typical)

Computer Interface: RS-232

Options:

Beam expander: 58-ASB-001

Laser head fan shut off switch

Weight:

Laser Head: 3.9 kg (8.6 lb)

Power Supply: 3.7 kg (8.1 lb)

Safety and Regulatory Compliance:

CDRH Class IIIb

IEC Class 3B

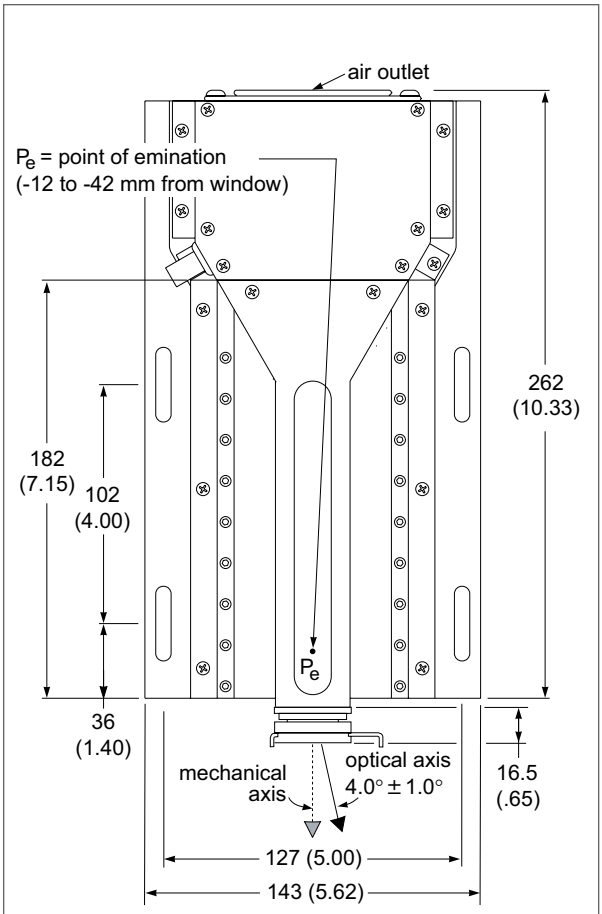
CE Compliant

Specifications are valid at 100% of specified output power.

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

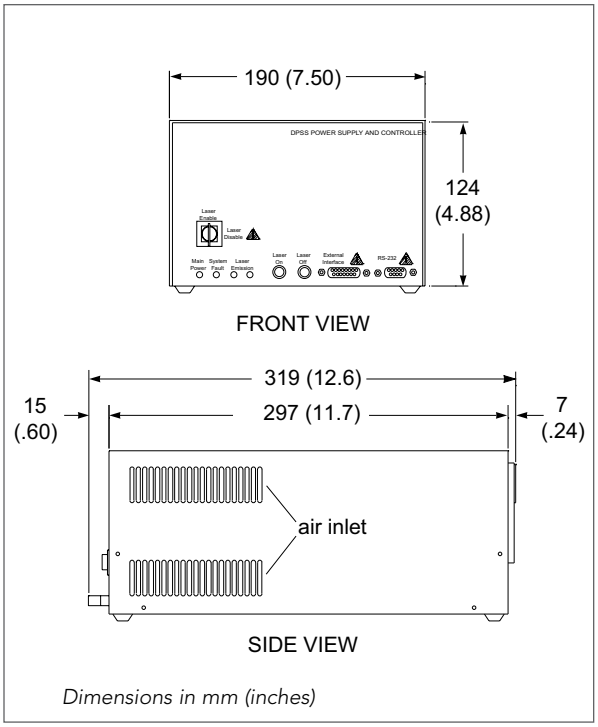
Output Power (mW)	Beam Dimension ($1/e^2$) (mm) vertical x horizontal	Beam Shape	Beam Divergence ($1/e^2$) (mrad) vertical x horizontal	Part Number
100	0.125 – 0.155	Round	< 5.0	85 BLS 301
200	(0.105 – 0.165) x (0.200 – 0.350)	Elliptical (horizontal)	< 5.5 x 3.0	85 BLS 305
300	(0.105 – 0.165) x (0.200 – 0.350)	Elliptical (horizontal)	< 5.5 x 3.0	85 BLS 601

MELLES GRIOT



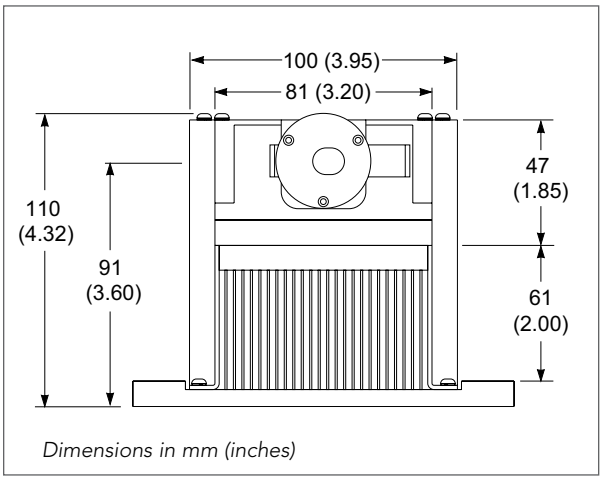
Dimensions in mm (inches)

85 BLS series laser, top view



Dimensions in mm (inches)

85 BLS series power supply and controller



Dimensions in mm (inches)

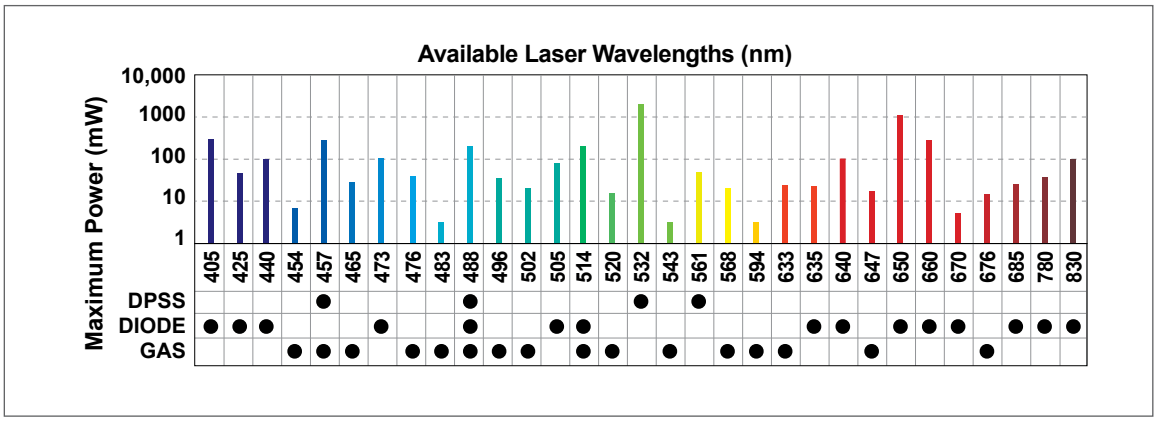
85 BLS series laser, front view

Melles Griot offers the most complete portfolio of laser technologies in the industry. Wavelengths range from the violet through the near infrared, with delivered power up to 3 Watts. We also offer design and manufacturing of laser electro-optical assemblies incorporating multiple laser sources, optics, mechanics and electronics. Reliable assemblies require manufacturing to sub-micron and micro radian tolerances — one of our key competencies. These turnkey "light engines" can dramatically shorten your supply chain, reduce your field service costs, and minimize production complexities. They also come complete with a Melles Griot guarantee of performance.

Beam delivery options including precision-focused spots, custom-tailored spot geometries, and fiber optic beam delivery maximize your installation and service options. Logistics and service arrangements including safety stock, kanban, rotating service spares, and global pricing and service help ensure that you have the right light sources in the right locations at the right time.

Select from more than 27 wavelengths

Melles Griot manufactures a comprehensive line of lasers and laser systems for laboratory and OEM applications. Standard products include helium neon lasers, diode-pumped solid-state lasers, argon, mixed gas ion lasers, and semiconductor laser assemblies. Available wavelengths range from 405 nm in the violet to 830 nm in the near infrared, with powers ranging from a few milliwatts to several watts, as shown in the chart below.



Spectral output available from Melles Griot lasers

Ready to purchase?

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If you have questions call 1-800-MG-LASER , email mglasers@idexcorp.com
or go to mellesgriot.com

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