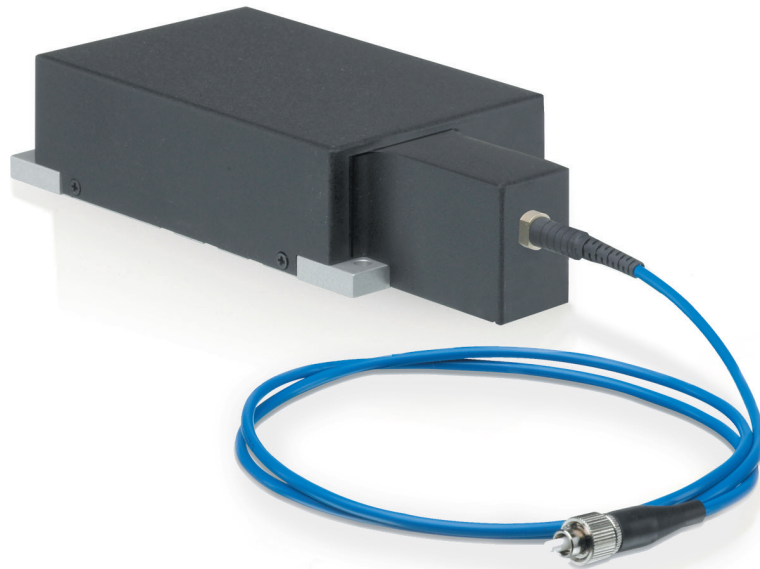


Blue Solid-State Laser System with Fiber Delivery 488 nm, 10 to 30 mW



The 85 BCF series fiber coupled, solid-state laser provides up to 30 mW of stable output at 488 nm over a wide temperature range. Fiber delivery offers the opportunity for bulkhead mounting configurations as well as simplified optical alignment and system service at the factory and in the field. The superb beam quality, both circular and non-astigmatic, and low optical noise make them excellent direct replacements for air-cooled argon lasers in flow cytometry, confocal microscopy, capillary electrophoresis, DNA analysis and inspection and defect metrology. The small size, low power consumption, minimal heat-sinking requirements, and RS-232 control and monitoring interface are particularly suitable for compact self-contained systems and OEM applications.

Key Attributes

- Up to 30 mW at 488 nm
- Single-mode fiber options
- FC/APC, FC/PC or collimated output
- Excellent beam quality, $M^2 < 1.2$
- Stable output from 10°C to 40°C
- Low-noise output:
rms: < 0.5% typical, (20 Hz to 1 MHz)
peak-to-peak: < 1% (20 Hz to 20 kHz)
- RS-232 interface
- Power consumption < 15 W

Specifications

Beam Characteristics:

Output Wavelength: 488 ± 0.5 nm
Output Power¹: 10 to 30 mW (see table)
Transverse Mode: TEM₀₀
Polarization:
Linear (vertical $\pm 5^\circ$) > 50:1
(polarization-maintaining fiber only).

Fiber Characteristics:

Type:
Single-mode or single-mode
polarization-maintaining fiber
Length: 1 m
Termination: FC/APC,
FC/PC or collimating optics

Output Characteristics:

M²: < 1.2 (collimated output only)
Mode-Field Diameter:
 4.0 ± 0.7 μ m (FC/APC and FC/PC only)
Beam Diameter (1/e²):
 0.6 ± 0.1 mm (collimated output only)
Numerical Aperture:
< 0.12 (FC/APC and FC/PC only)
Far-Field Divergence (1/e²):
< 1.1 mrad (collimated output only)
Mechanical Characteristics:
Jacket: 3 mm diameter PVC
Bend Radius: > 25 mm

Stability Characteristics:

Pointing Stability:
< 30 μ rad over 2 hours
(ambient $\pm 3^\circ$ C, collimated output only)
Power Stability:
 $\pm 2\%$ over 2 hours (ambient $\pm 3^\circ$ C)
Amplitude Noise:
Peak-to-Peak: < 1% (20 Hz to 20 kHz)
rms: < 0.75% (20 Hz to 1 MHz)
(< 0.5% typical)

Operating Characteristics

Operating Mode: Automatic Power Control
Warm-up Time: < 3 minutes
Maximum Heat Dissipation:
Laser Head: 7 W
Controller: 8 W

Environmental Characteristics:

Temperature (ambient):
Operating: 10° C to 40° C
Nonoperating: -10° C to $+60^\circ$ C
Humidity:
Operating: 0 to 95%, noncondensing
Nonoperating: 0 to 95%, noncondensing
Baseplate Temperature: 10° C to 40° C
Shock: < 25 g, < 11 msec (nonoperating)
Vibration:
Operating:
< 0.3 g (sinusoidal) 5 Hz to 500 Hz
Nonoperating:
< 3.0 g (sinusoidal) 5 Hz to 500 Hz

Mounting Surface Requirements:

Surface Flatness: < 0.003 in./in.
Surface Roughness: < 63 μ m. rms

Electrical Characteristics:

Input Voltage²: 100 to 240 $\pm 10\%$ Vac
(5 ± 0.25 Vdc for OEM version)
Input Frequency: 50 to 60 Hz, single phase
Input Power: < 15 W (max)

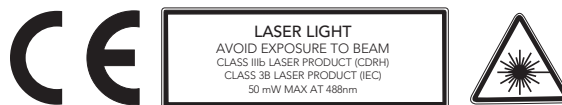
Weight:

Laser Head: 0.8 kg (1.7 lb)
Laser Controller (with cables): 0.9 kg (1.9 lb)
Power Supply: 0.5 kg (1.2 lb)

Safety and Regulatory Compliance:

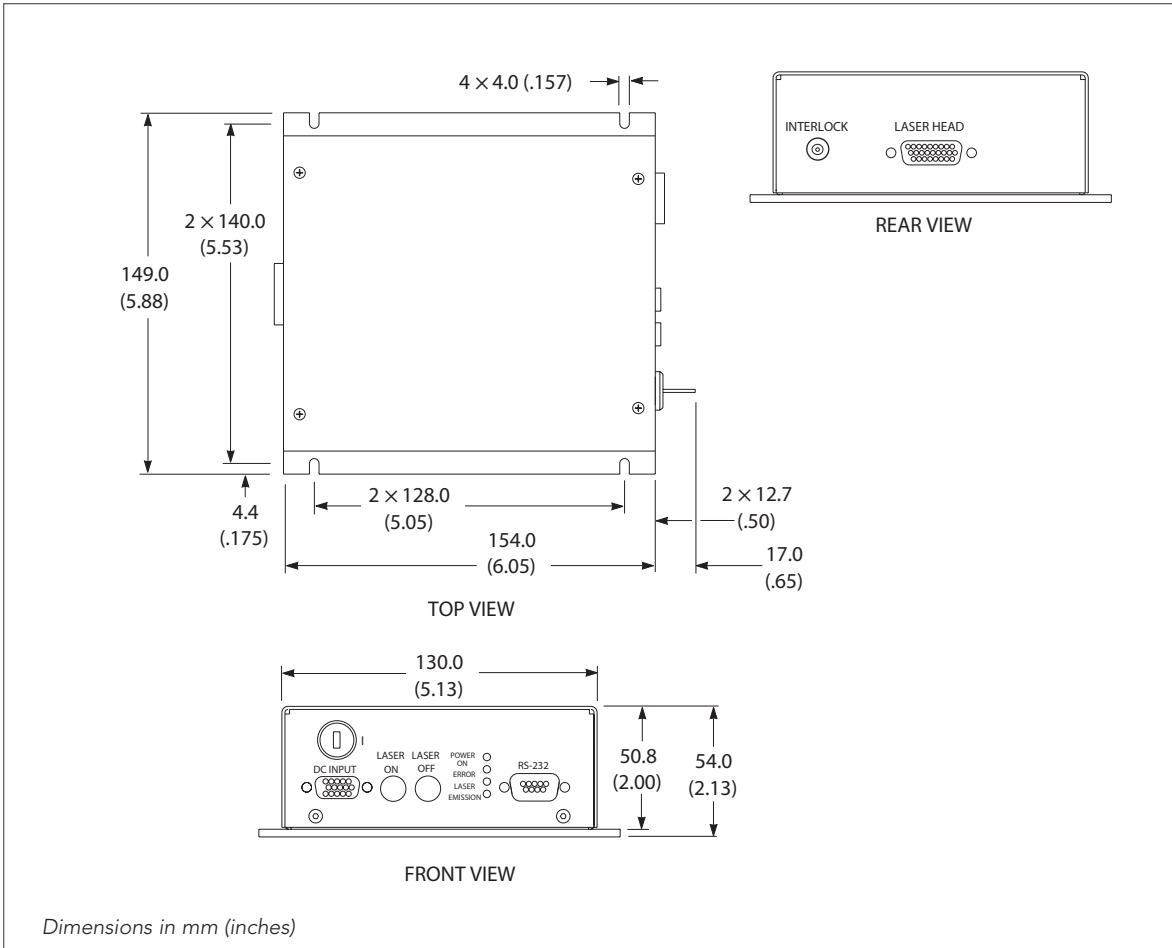
CDRH Class: IIIb
IEC Class: 3B
CE: Compliant

¹ Output power is adjustable via RS-232 or external interface from 10% to 110%. Specifications are valid only at 100% of specified power. Recommended power range is 70 to 110% power.
² If user-supplied, the 5 Vdc power supply must meet the following requirements: power > 20 W; ripple < 5% peak-to-peak; line regulation < 0.5%.



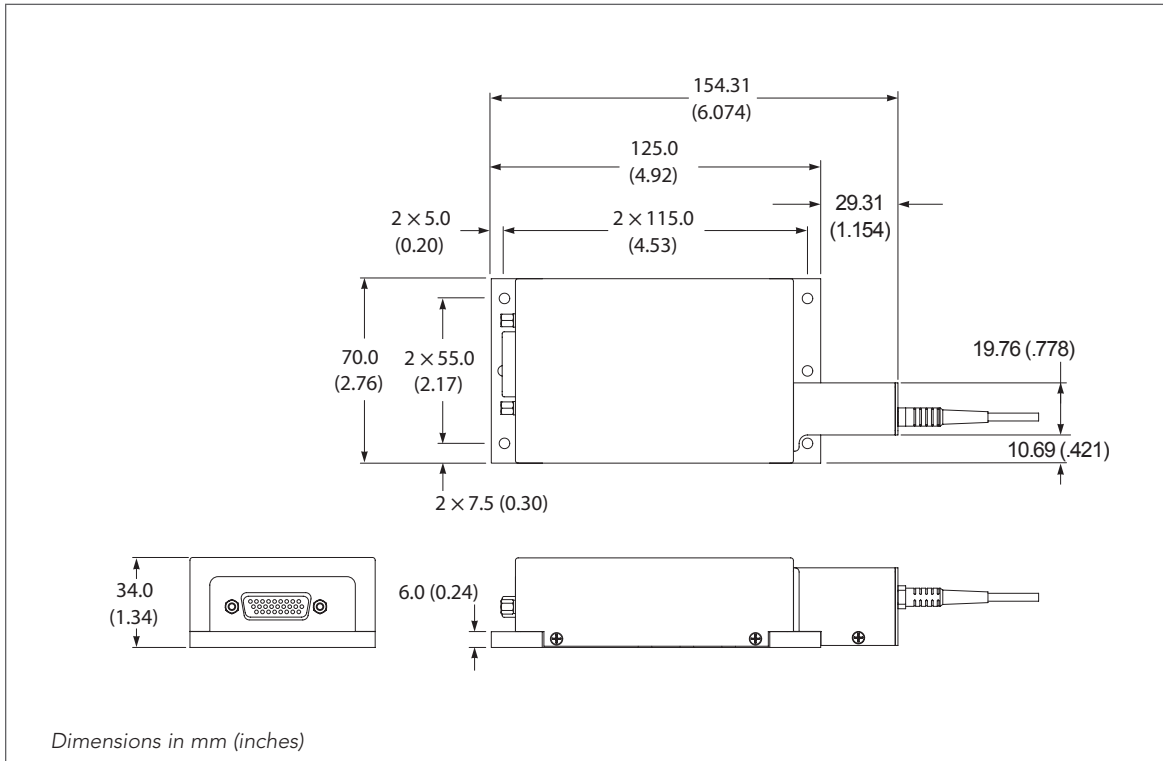
Melles Griot lasers and instruments are designed, tested and manufactured for compliance with applicable electrical and laser safety standards.

MELLES GRIOT



Dimensions in mm (inches)

85 BCF series laser controller



Dimensions in mm (inches)

85 BCF series laser head

MELLES GRIOT

How to Order

Output

Power (mW)	Product Number
10	85-BCF-010-ABC
20	85-BCF-020-ABC
30	85-BCF-030-ABC

To completely specify the laser, the primary product number (e.g., 85-BCF-010) must be terminated by a three-digit code (ABC), described to the left, which specifies the fiber type (A), the termination (B), and the regional line cord (C).

Fiber type (A): 1 = single-mode polarization-maintaining fiber; 2 = single-mode fiber (does not maintain polarization).

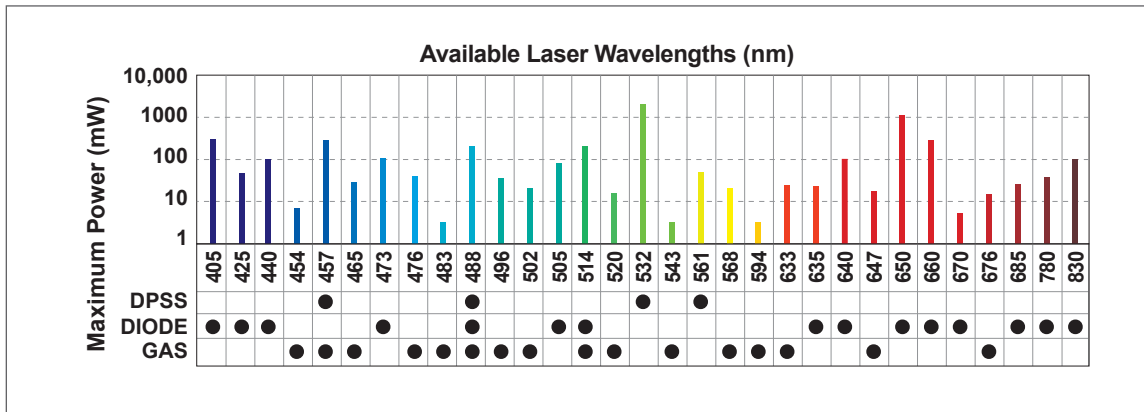
Termination (B): 1 = FC/APC; 2 = FC/PC; 5 = collimated flange.

Regional line cord (C): 0 = OEM (does not include manual, line cord, or dc power supply); 1 = Japan (100 Vac, JIS 8303); 2 = North America (115 Vac, NEMA 5–15P); 3 = European Union (230 Vac, CEE 7/ VII Schuko), 4 = United Kingdom (240 Vac, BS1363/A).

For example, 85-BCF-020-212 indicates the 20 mW laser with a single-mode fiber terminated by an FC/APC connector and shipped with a standard line cord for North America.

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?

Go to marketplace.idexop.com/store/diode-lasers

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

or go to mellesgriot.com

MELLES GRIOT

2051 Palomar Airport Road, 200 • Carlsbad, CA 92011 • 1-760-438-2131 • mglasers@idexcorp.com • www.mellesgriot.com