

Compact Solid-State Green Laser 532 nm, 10 to 20 mW



The 85 GCA series green diode-pumped solid-state lasers deliver diffraction limited, TEM_{00} output from a compact, self-contained package that includes drive electronics and thermoelectric cooling. Automatic power control (APC) provides excellent power stability over a broad operating temperature range, and the highly efficient electronics require less than 10 W at 5 Vdc input. These lasers are ideal for spectroscopy, laser-induced fluorescence, medical diagnostics, alignment, and a wide variety of testing applications. Systems are available in research and ultra compact OEM configurations with a variety of standard and custom beam delivery systems.

Key Attributes

- Up to 20 mW at 532 nm
- Automatic power control
- < 3% peak-to-peak noise (20 Hz to 2 MHz)
< 0.5% rms noise (20 Hz to 2 MHz)
- Stable output from 10°C to 40°C
- All solid-state for reliability
- Excellent beam quality ($M^2 < 1.2$)
- < 10 W power input at 5 Vdc
- Interface for remote monitoring and operation
- Integrated laser controller
- OEM and “drop-in” formats

Specifications

Beam Characteristics:

Output Power (CW):

85-GCA-010: > 10 mW

85-GCA-015: > 15 mW

85-GCA-020: > 20 mW

Wavelength: 532 ± 1.0 nm

Wavelength Purity: > 98% at 532 nm

Transverse Mode: TEM₀₀

Beam Quality: $M^2 < 1.2$

Polarization

Orientation: Vertical $\pm 5^\circ$

Extinction Ratio: > 100:1

Warm-up Time: < 5 minutes

Bore Sight (both planes with reference to base plate): < 5 mrad

Beam Pointing Stability

(constant temperature): < 0.02 mrad

Power Stability (constant temperature

$\pm 2^\circ\text{C}$ over 8 hours): < $\pm 2\%$

Amplitude Noise (20 Hz to 2 MHz):

< 3% P-P

< 0.5% rms

Beam Diameter ($1/e^2$, at waist): 1.1 ± 0.2 mm

Beam Divergence (full angle, $1/e^2$): < 1.25 mrad

Beam Ellipticity: < 1.1:1

Centration (with respect to nominal): < 1.0 mm

Electrical Specifications:

Input Voltage: 5 ± 0.25 Vdc (universal AC input
5 Vdc power supply included)

Input Power (maximum): 10 W

Environmental Specifications:

Operating Temperature (base plate
temperature¹): $+10^\circ\text{C}$ to $+40^\circ\text{C}$

Storage Temperature: -10°C to $+50^\circ\text{C}$

Relative Humidity, Operating:

0 to 95% noncondensing

Laser Head Weight: 0.8 kg (2 lbs)

Power Supply Weight: 0.4 kg (1 lb)

Options:

AC Power Cords:

L40000-170-04 (100 Vac, JIS 8303, Japan)

1010-0002 (115 Vac, NEMA 5-15P, U.S.A.)

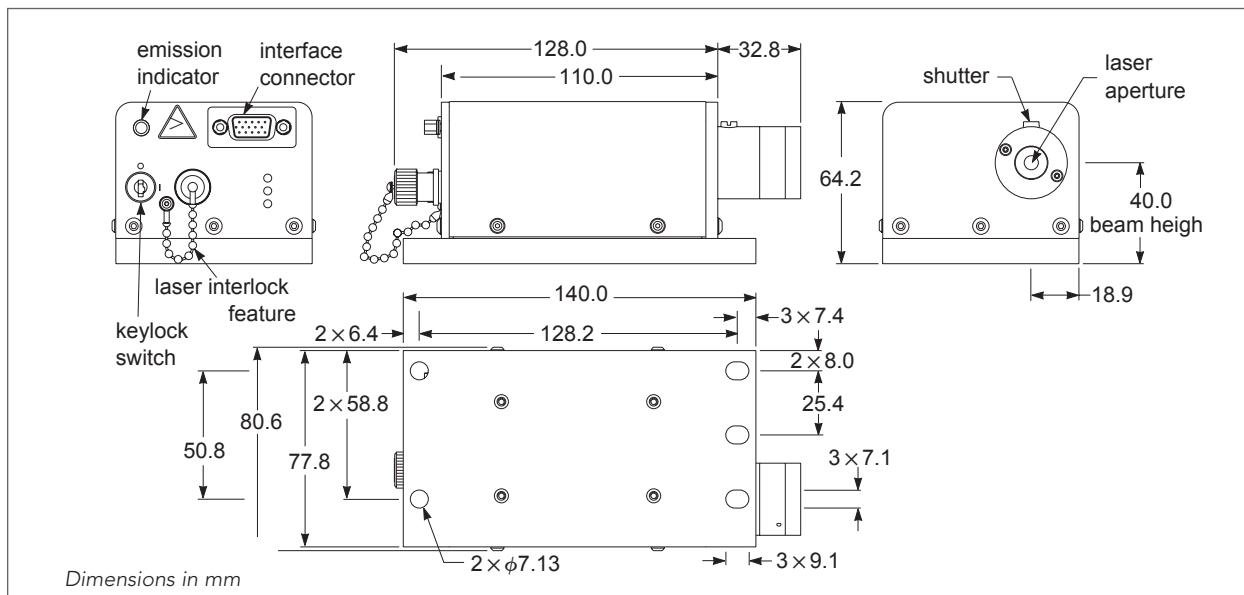
L40000-170-02 (230 Vac, CEE7/VII Schuko, Europe)

L40000-170-03 (240 Vac, BS 1363/A, U.K.)

¹ User must provide sufficient heatsink to ensure that base plate temperature does not exceed 40°C .



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



85 GCA series laser and supplied base plate

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