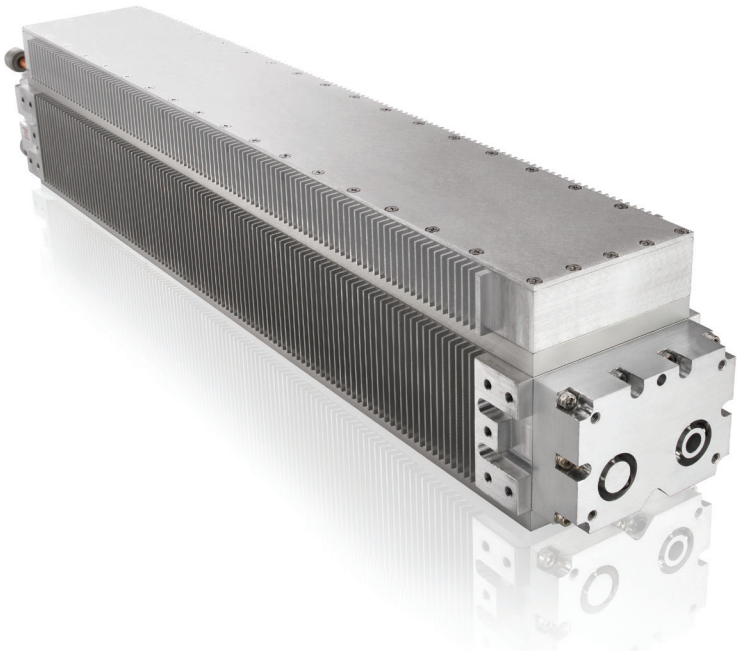
Diamond C-55-5 CO LASER

40 Watt CO 5.5 µm Laser Source

The C-55-5 Diamond CO Laser is a compact reliable laser source for processing materials at the 5.5 µm wavelength. The unique 5.5 µm wavelength provided by the C-55-5 provides improvements in performance and quality for many materials normally processed with CO2 lasers at 10.6 µm. Because of the shorter wavelength compared to CO2 lasers smaller holes can be drilled and finer feature sizes can be achieved, for example in micro-electronic and additive manufacturing applications.

The C-55-5 also provides a new solution for processing materials with unique absorption properties at this wavelength, such as welding of certain polymers and medical applications.



FEATURES

- Based on field proven highly reliable Coherent C-Series CO_2 laser platform
- Unique 5.5 µm wavelength offers higher density, smaller features, and finer detail for materials traditionally processed with CO_2 lasers at 10.6 µm
- New solutions for materials with unique absorption properties at 5.5 µm wavelength

APPLICATIONS

- Polymer Additive Manufacturing
- Polymer Welding
- Converting – Perforation, Cutting, Kiss-Cutting
- PCB Via Hole Drilling
- Glass Processing

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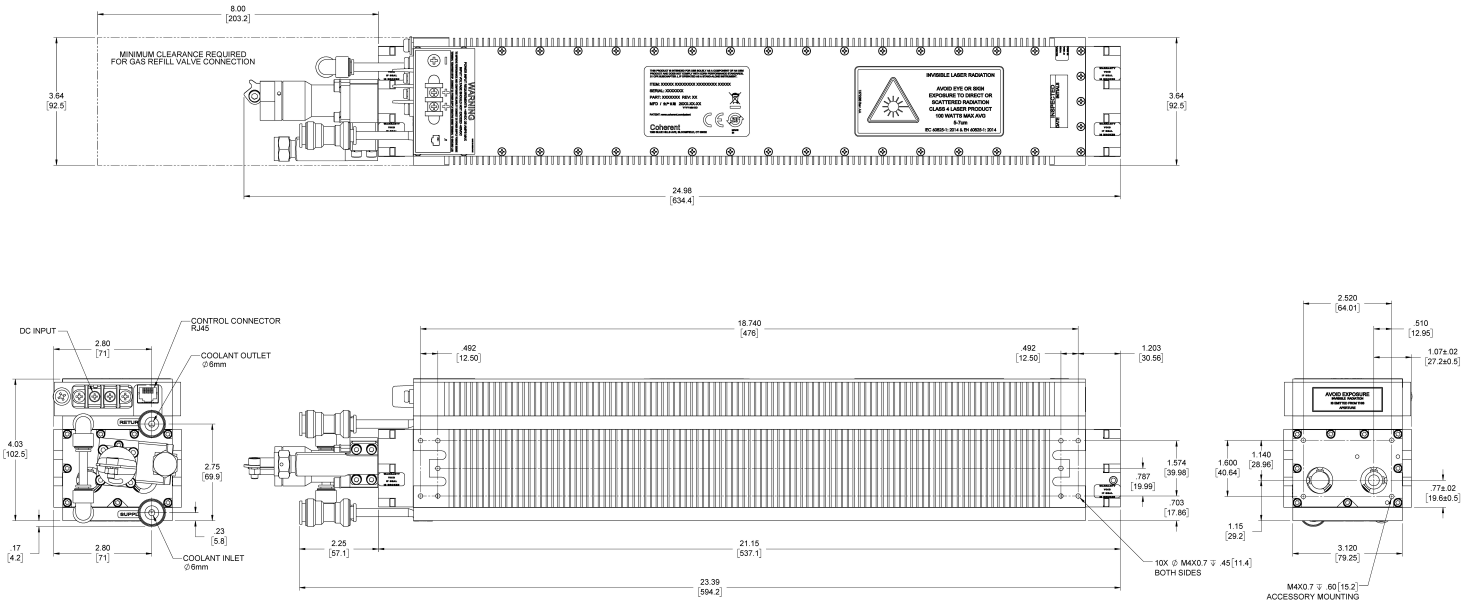
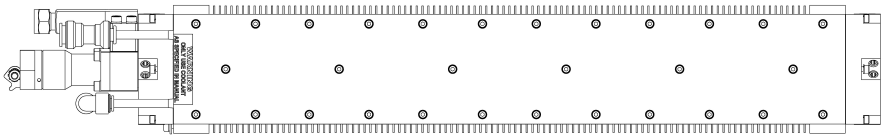
Specifications	Diamond C-55-5 CO
Wavelength (µm)	5.55 ±0.25, 90% power contained within this band
Optical Output Power[1] (W)	40
Power Stability[2] (%)	±5
Beam Size (mm)	1.9 ±0.2
Beam Divergence (mrad, full angle)	<4.5
Polarization	>100 to 1 (fixed linear, parallel to width)
Operating Frequency and Duty Cycle	0 to 100 kHz, 0 to 100% DC
Configuration and Facility Requirements	
Weight	9.5 kg (21.0 lbs.)
Dimensions (L x W x H)	579.6 x 92.5 x 104.1 mm (22.82 x 3.64 x 4.10 in.)
Input Power[3]	48 VDC, 20 A
Heat Dissipation (W)	<1000
Coolant Coolant Flow Rate Maximum Coolant Pressure Max. Pressure Differential (at 1.0 gpm) Coolant Temperature	Distilled water with Corrosion Inhibitor[3] >3.8 lpm (1.0 gpm) 7 kg/cm^2 (100 psig) 3.2 bar (46 psig) 15 to 30°C (59 to 86°F)
Maximum Case Temperature	<50°C (122°F)
Operating Environment Temperature Altitude Humidity	 5 to 40°C (41 to 104°F) <4000 m (13,000 ft.) Non-condensing
Dry Purge Gas Requirements[4]	While the laser head itself does not require dry purge gas, the external beam delivery system will. Recommended dewpoint for this system is <-50°C.
Shipping and Storage Requirements	
Shipping/Storage Environment	-10 to 60°C (14 to 140°F), non-condensing
IATA Shipping Classification[5]	Dangerous goods in apparatus UN3363 CLASS 9

Notes:
1. Power measured at 25°C and derated by 1%/C for higher laser head temperatures.
2. Power stability measured as ±(Pmax - Pmin)/(2*Pmax) average power at constant duty cycle for a duration of 5 minutes after 10-minute warm-up at operating condition.
3. Consult operating manual for approved corrosion inhibitors.
4. Clean dry air or nitrogen are acceptable as purge gases. Coherent can recommend suitable commercial gas filter/dryers.
5. If transported by ground or sea, different regulations may apply. Contact your local transportation professionals for instructions appropriate to the specific region and method of transport.

Mechanical Specifications

Diamond C-55-5 CO Laser Head





For more information
www.coherent.com