



DIAMOND Cx-10 Series

Sealed CO₂ Laser

Coherent's DIAMOND Cx-10 Series sealed CO₂ lasers are the best power-size ratio available in the market. Built on the highly acclaimed C-series platform, the Cx-10 utilizes a new state-of-the-art integrated RF power supply and a sealed waveguide design. This easy-to-integrate laser system enables high quality laser processing with low maintenance and operating cost. With its superior power stability and fast pulse fall times, the Cx-10 is the optimal choice for high volume laser marking, engraving and cutting applications.

The Cx-10 laser provides a rated output power of 120W designed for high reliability and easy serviceability. The liquid cooled modular platform provides cost effective optimization of operating wavelength from 9.3 μm to 10.6 μm enabling rapid adaptability to changing applications and market needs. The Cx-10 is completely compatible with the rest of the C-series lasers.

The C-Series and Cx-10 Series offer superior beam quality and power stability in a compact, flexible package. The Cx-10 Series CO₂ lasers deliver exceptional value, performance and reliability.

FEATURES

- 120W CO₂ Laser
- Compact design with the highest power/volume ratio in its class
- Superior beam quality, power stability and reliability
- Field serviceable modular design
- Available in four wavelengths: 9.3 μm , 9.6 μm , 10.2 μm and 10.6 μm

APPLICATIONS

- High volume marking, cutting, and engraving
- Film cutting and processing
- Process wide range of materials from acrylics, cardboard, ceramics, glass, polymer films, leather, paper, textiles, wood and PCBs.



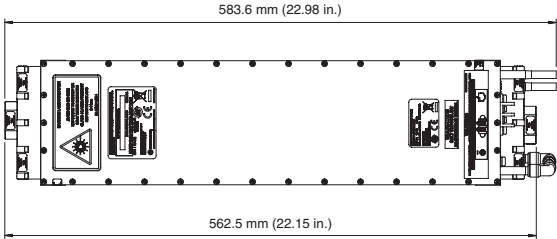
SPECIFICATIONS	Cx-10L 10.6	Cx-10L 10.2	Cx-10L 9.6	Cx-10L 9.3
Wavelength (µm)	10.6 ± 0.03	10.2 ± 0.05	9.6 ± 0.05	9.3 ± 0.05
CW Rated Power ¹ (W)	≥120	≥100		≥80
Typical Output Power ¹ (W)		>135		≥100
Power/Volume ² (mW/cm ³)	≥15.23	≥12.69		≥10.16
Cold Start Power Stability ³ (%)			±4	
Power Stability ⁴ (%)			±2	
Typical Pulse Fall Time ⁵ (µsec)			≤60	
Beam Quality (M ²)			≤1.2	
Beam Diameter (mm)			1.8 ± 0.2	
Beam Divergence (mrad) (full angle)			≤8.0	
Beam Ellipticity			≥0.83, ≤1.2	
Pointing Stability (% divergence/actual µrad)			±5/<250	
Polarization			Linear Horizontal ≥100:1	
Operating Frequency and Duty Cycle			0 to 100 kHz, 2% to 100% DC	
CONFIGURATION & FACILITY REQUIREMENTS				
Weight (kg)			14.5 kg (32 lbs.)	
Dimensions (L x W x H)			563 x 132 x 106 mm (22.2 x 5.2 x 4.2 in)	
Input Power			48 VDC, 38A	
Heat Dissipation (W)			≤1700	
Maximum Case Temperature			<60°C (140 oF)	
Operating Environment				
Temperature			5 to 45°C (41 to 113°F)	
Altitude			≤2000 m (6500 ft)	
Humidity			Non-Condensing ≤95%	
Shipping/Storage Environment			-10°C - +60°C (14 - 140 oF), Non-condensing	
Coolant			Distilled water with 25-35% Dow Frost*	
Coolant Flow Rate			≥5.7 l/min. (1.5 gpm)	
Maximum Coolant Pressure			827 kPa (120 psig)	
Max. Pressure Differential (at 1.5 gpm)			<206 kPa (30 psig)	
Coolant Temperature			15°C - 30°C (59 - 86 oF)	

¹ Power measured at 25°C and derated by 1%/°C for higher laser head temperature.
² Power/volume defined as (CW rated power in mW)/(L*W*H in cm³).
³ Power stability based on $\pm(P_{max} - P_{min})/(2*P_{max})$ measured from cold start for 5 minutes at 25 kHz 99% DC.
⁴ Power stability based on $\pm(P_{max} - P_{min})/(2*P_{max})$ measured for 10 minutes at 25 kHz 99% DC.
⁵ 10% and 90% of peak power fall points measured at 1.5 kHz PRF, 350 µs pulse width, after 5 minutes.
* Dow Frost is a trademark of the Dow Chemical Company.

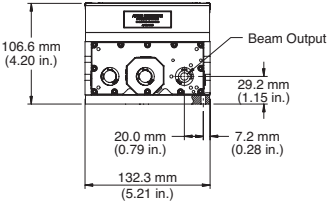
MECHANICAL SPECIFICATIONS

Laser Head

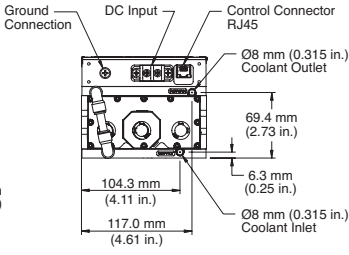
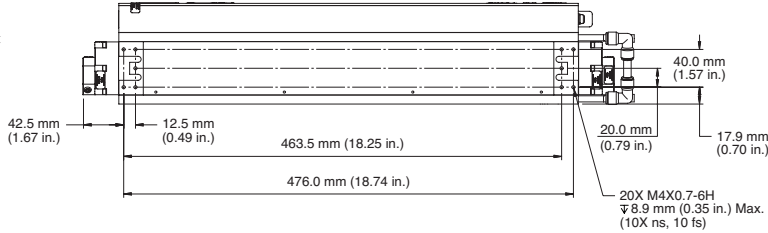
Top View



Front View

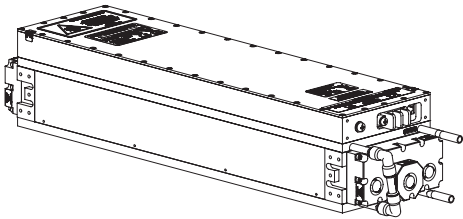
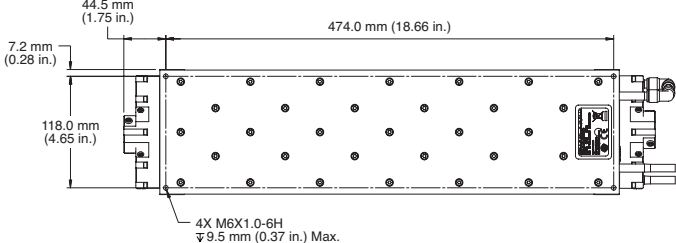


Side View



Rear View

Bottom View



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All specifications subject to change without notice. Coherent, Inc. warrants to the original purchaser for a period of two years from the date of delivery that the Diamond J-3 Series product is free from defects in material and workmanship. The warranty does not apply to any unit damaged by accident, abuse or operation in a manner inconsistent with the procedures and specifications outlined in the manual supplied with the laser.
The DIAMOND Cx-10 CO2 laser is a component that does not include all safety features as required by the FDA and the Center for Devices and Radiological Health (CDRH). It is sold solely to qualified manufacturers who in their end product will supply all interlocks and indicators, and will comply fully with CDRH regulations and/or local regulatory agencies. Printed in the U.S.A. MC-001-17-0M0118Rev.A. Copyright ©2018 Coherent, Inc.