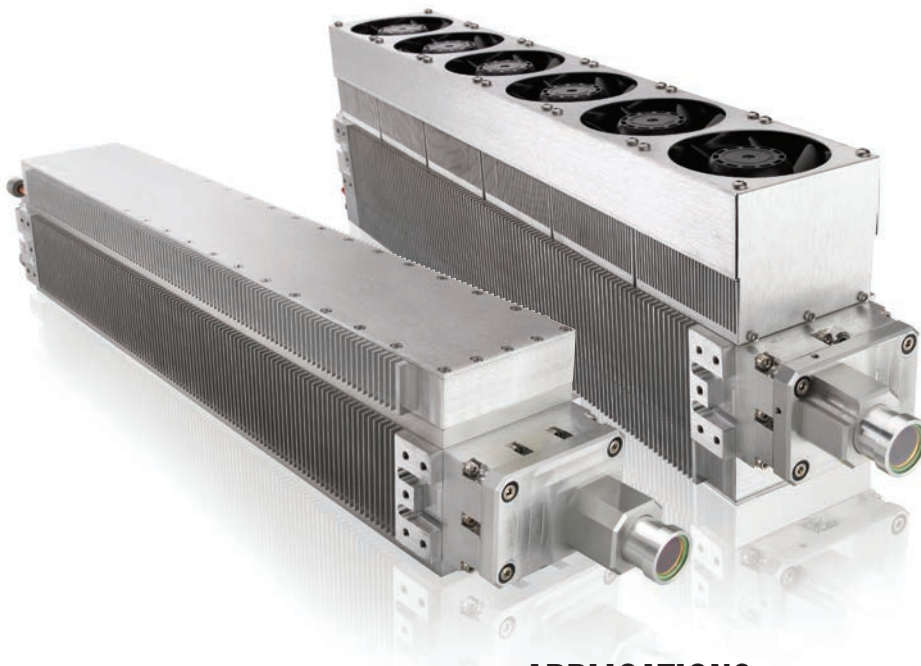


# Diamond C-70 Series

## Low Power CO<sub>2</sub> OEM Lasers for Marking, Engraving, and Cutting Applications

The Coherent C-70 CO<sub>2</sub> laser provides 70 Watts of power with best-in-class reliability and package size, making it well suited for demanding high speed and large area laser marking and engraving systems, as well as many cutting applications. This production-ready, easy-to-integrate laser system enables high performance with low maintenance and operating costs. The C-70 is ideal for laser processing of many materials, including paper, plastics, wood, rubber, leather, cloth and more.

The C-70 is part of the Coherent C-series family of products which offer a full range of power levels – from 20 W to 70 W. Based on a sealed waveguide and integrated RF power supply design, the C-70 boasts outstanding production-proven reliability, while delivering excellent beam quality, power stability and pulse control in a compact, flexible and integrated package. The modular platform design provides cost-effective optimization of operating wavelength (from 9.3 to 10.6  $\mu\text{m}$ ) and cooling configuration (air/liquid), enabling rapid adaptability to changing applications and market needs.



### FEATURES

- Superior beam quality, power stability and reliability
- Industry leading compact size with integrated RF power supply
- Versatile power range and pulse frequency control (CW or PWM)
- High speed laser processing on a wide range of materials
- Available in multiple wavelengths (9.3  $\mu\text{m}$  to 10.6  $\mu\text{m}$ ) and cooling configurations (air or liquid)

### APPLICATIONS

- Marking
- Engraving
- Cutting
- Medical and Dental
- Food, Beverage and Pharmaceutical Packaging
- Microelectronics and Consumer Electronics
- Automotive and Electronic Components

Specifications	Diamond C-70A (10.2 μm)	Diamond C-70A	Diamond C-70L (10.2 μm)	Diamond C-70L
Wavelength (μm)	10.11 to 10.31	10.55 to 10.63	10.11 to 10.31	10.55 to 10.63
Optical Output Power <sup>1</sup> (W)	70			
Power Stability <sup>2</sup> (%)	±5		±3	
Mode Quality (M <sup>2</sup> )	<1.3			
Beam Diameter (mm)	3.6 ±0.5 at output aperture			
Beam Divergence (mrad, full angle)	<5			
Polarization	>100 to 1 (fixed linear, parallel to width dimensions)			
Operating Frequency and Duty Cycle	0 to 200 kHz, 0 to 100% DC			
Configuration and Facility Requirements				
Weight	10.2 kg (22.5 lbs.)		9.7 kg (21.5 lbs.)	
Dimensions (L x W x H)	604.9 x 92.5 x 154.5 mm (23.8 x 3.64 x 6.08 in.)		647.5 x 92.5 x 104.1 mm (25.5 x 3.64 x 4.1 in.)	
Input Power <sup>3</sup>	48 VDC, 20 A			
Cooling	Air		Liquid	
Heat Dissipation (W)	<1200			
Maximum Case Temperature	<60°C (140°F)			
Operating Environment Temperature Altitude Humidity	5 to 40°C (41 to 104°F) <2000 m (6500 ft.) Non-condensing			
Shipping/Storage Environment	-10 to 60°C (14 to 140°F), non-condensing			
Coolant Coolant Flow Rate Maximum Coolant Pressure Max. Pressure Differential (at 1.0 gpm) Coolant Temperature	Distilled water with 25 to 35% Dow Frost <sup>4</sup> >3.8 lpm (1.0 gpm) 7 kg/cm2 (100 psig) 3.2 bar (46 psig) 15 to 30°C (59 to 86°F)			

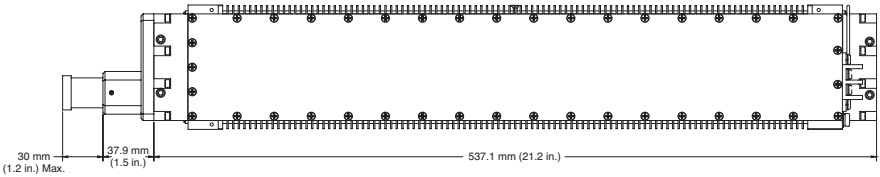
**Notes:**

1. Power measured at 25°C and derated by 1%/C for higher laser head temperatures.
2. Power stability based on  $\pm(P_{\text{max}} - P_{\text{min}})/(2 \cdot P_{\text{max}})$  average power measurement at constant duty cycle after 10-minute warm-up at operating condition.
3. Optional fans add 1 A.
4. Dow Frost is a trademark of the Dow Chemical Company.

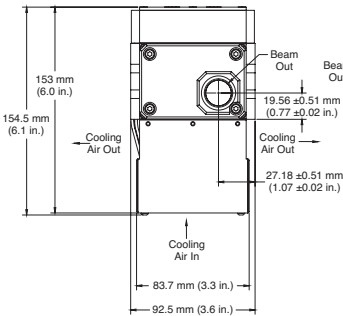
Mechanical Specifications

Diamond C-70A Laser Head

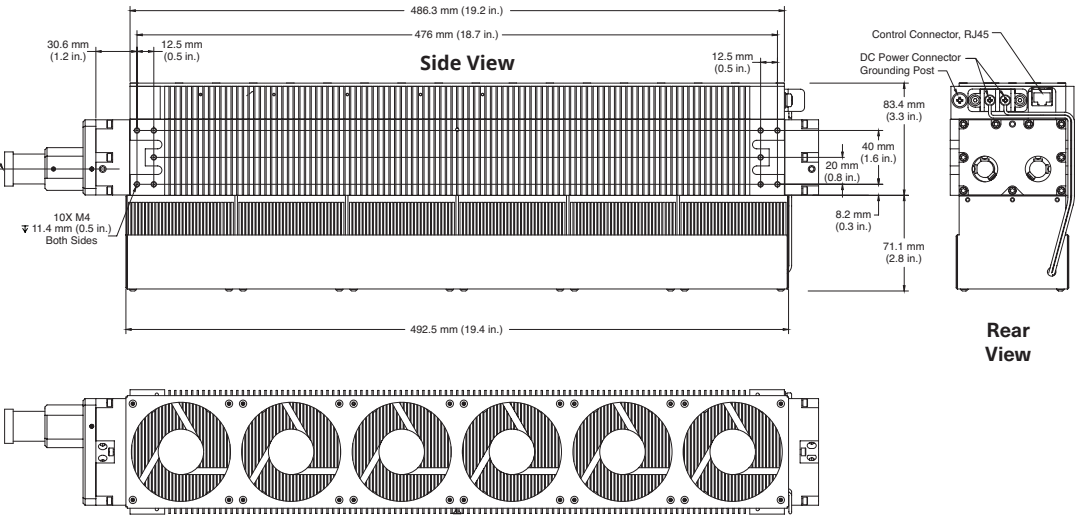
Top View



Front View

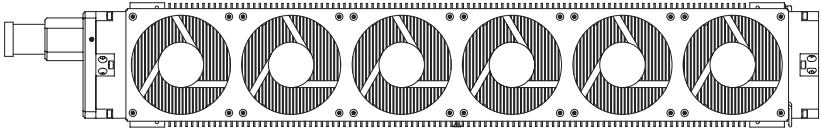


Side View



Rear View

Bottom View



Mechanical Specifications

Diamond C-70L Laser Head

