

# DIAMOND C-20 & C-20+ Series

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

The Coherent C-20 CO<sub>2</sub> laser provides 20 Watts of power with best-in-class reliability and package size, making it the OEM laser of choice for cost-effective and compact laser marking and coding systems. This production-ready, easy-to-integrate air-cooled laser enables high quality laser marking and coding with low maintenance and operating costs. The C-20 is ideal for laser processing of many materials, including paper, plastics, wood, rubber, leather, cloth and more.

The C-20 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-20 boasts outstanding production-proven reliability (lifetime >50,000 hours), while delivering superior beam quality and power stability in a compact, economical and flexible package. The modular platform design provides cost-effective optimization of operating wavelength (from 9.3 to 10.6  $\mu\text{m}$ ), enabling rapid adaptability to changing applications and market needs.

### FEATURES & BENEFITS

- Superior beam quality and power stability
- Low maintenance air-cooled design with rugged reliability
- Flexible, extremely compact and easy to install
- Economical, high quality laser processing on a wide range of materials
- Optimized performance at multiple wavelengths (9.3  $\mu\text{m}$  or 10.6  $\mu\text{m}$ )

### APPLICATIONS

- Marking
- Engraving



SPECIFICATIONS	DIAMOND C-20 (9.3 μm)	DIAMOND C-20 (10.2 μm)	DIAMOND C-20	DIAMOND C-20+ (9.3 μm)	DIAMOND C-20+ (10.2 μm)	DIAMOND C-20+
Wavelength (μm)	9.24 to 9.35	10.11 to 10.31	10.55 to 10.63	9.24 to 9.35	10.11 to 10.31	10.55 to 10.63
Optical Output Power <sup>1</sup> (W)	13	20	20	13	20	20
Power Stability <sup>2</sup> (%)	±10	±10	±10	±8	±8	±8
Mode Quality (M <sup>2</sup> )	<1.2					
Beam Size (mm)	1.8 ±0.2					
Beam Divergence (mrad, full angle)	<7.5	<8.0		<7.5	<8.0	
Polarization	>100 to 1 (fixed linear, parallel to width)					
Operating Frequency and Duty Cycle	0 to 200 kHz, 0 to 100% DC					
Ingress Protection Rating (IP)	NA	NA	NA	IP 65	IP 65	IP 65
CONFIGURATION & FACILITY REQUIREMENTS						
Weight	6.6 kg (14.5 lbs)					
Dimensions	395 x 93 x 155 mm (15.5 x 3.7 x 6.1 in.)			475 x 93 x 155 mm (18.7 x 3.7 x 6.1 in.)		
Input Power <sup>3</sup>	48 VDC, 11.5 A					
Cooling	Liquid Available Upon Request					
Heat Dissipation (W)	<575					
Maximum Case Temperature	<60°C (140°F)					
Operating Environment						
Temperature	5 to 40°C (41 to 104°F)			5 to 45°C (41 to 113°F)		
Altitude	<2000 m (6500 ft.)					
Humidity	Non-Condensing					
Shipping/Storage Environment	-10 to 60°C (14 to 140°F), Non-Condensing					

<sup>1</sup> Power measured at 25°C and derated by 1%/C for higher laser head temperatures.

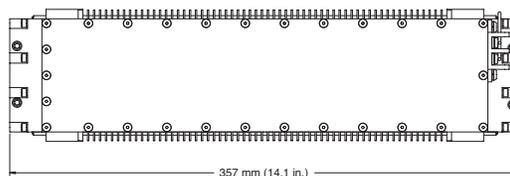
<sup>2</sup> Power stability based on  $\pm(P_{max} - P_{min})/(2 \cdot P_{max})$  average power measurement at constant duty cycle after 10-minute warm-up at operating condition.

<sup>3</sup> Optional fans add 1A.

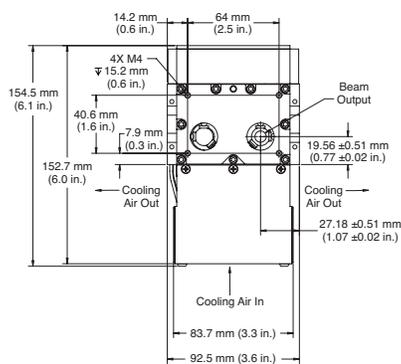
## MECHANICAL SPECIFICATIONS

### DIAMOND C-20A Laser Head

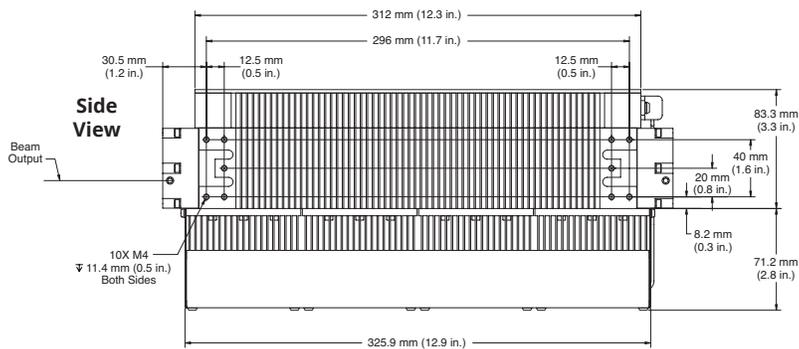
Top View



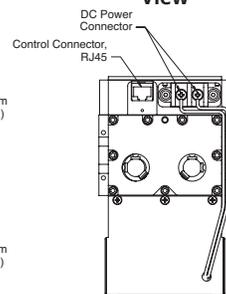
Front View



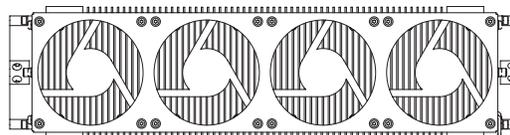
Side View



Rear View

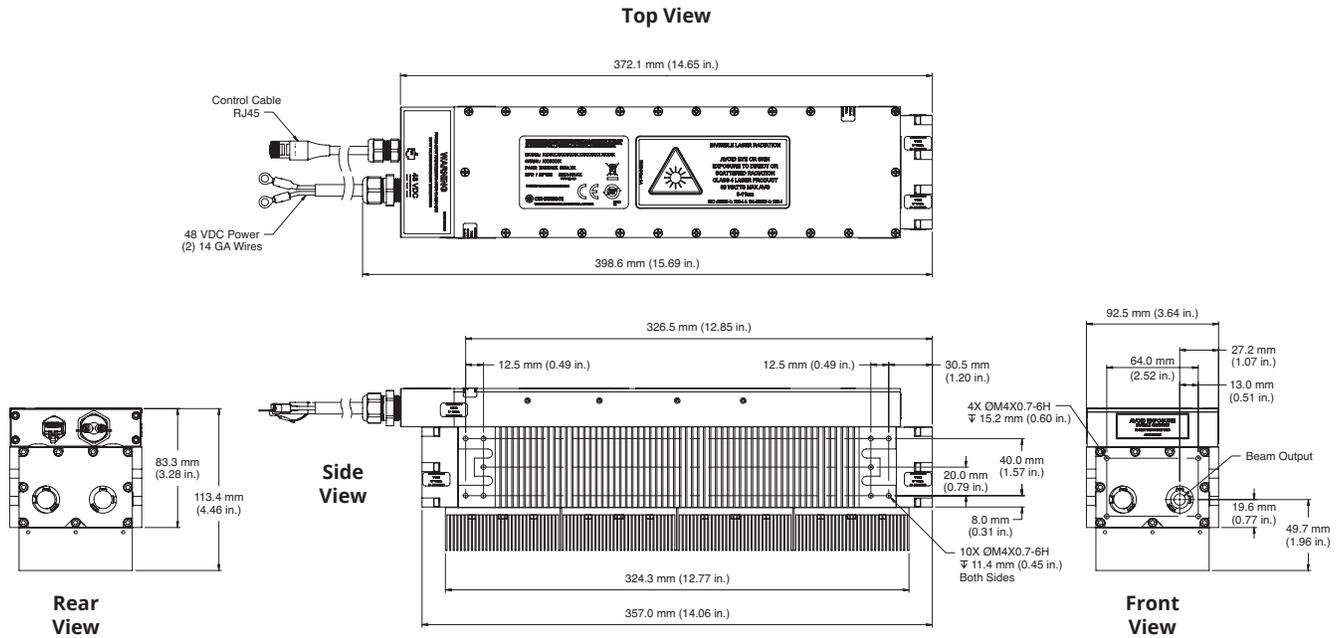


Bottom View



## MECHANICAL SPECIFICATIONS

### DIAMOND C-20+ Air-Cooled Laser Head



### DIAMOND C-20+ Air-Cooled with Fans Laser Head

