

Diamond C-20 & C-20+ Series

Low Power CO₂ OEM Lasers for Marking and Engraving Applications

The Coherent C-20 CO₂ 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 μm), enabling rapid adaptability to changing applications and market needs.



FEATURES

- 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 μm , 10.2 μm , or 10.6 μm)

APPLICATIONS

- Marking
- Engraving

Diamond C-20 & C-20+ Series

Specifications	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
Optical Output Power ¹ (W)	13	20	20
Power Stability ² (%)	±10		
Mode Quality (M ²)	<1.2		
Beam Diameter (mm)	1.8 ±0.2		
Beam Divergence (mrad, full angle)	7.5 ±0.5		
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		
Configuration and Facility Requirements			
Weight	6.8 kg (15.0 lbs.)		
Dimensions (L x W x H)	395 x 93 x 155 mm (15.5 x 3.7 x 6.1 in.)		
Input Power ³	48 VDC, 11.5 A		
Cooling	Liquid Available upon Request		
Heat Dissipation (W)	<575		
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		

- Notes:
1. Power measured at 25°C and derated by 1%/C for higher laser head temperatures.
 2. Power stability based on $\pm(P_{max} - P_{min}) / (2 * P_{max})$ average power measurement at constant duty cycle after 10-minute warm-up at operating condition.
 3. Optional fans add 1 A.

Diamond C-20 & C-20+ Series

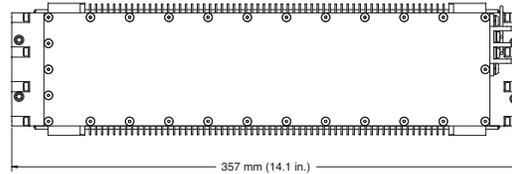
Specifications	Diamond C-20+ (9.3 μm)	Diamond C-20+ (10.2 μm)	Diamond C-20+
Wavelength (μm)	9.24 to 9.35	10.11 to 10.31	10.55 to 10.63
Optical Output Power ¹ (W)	13	20	20
Power Stability ² (%)	±8		
Mode Quality (M ²)	<1.2		
Beam Diameter (mm)	1.8 ±0.2		
Beam Divergence (mrad, full angle)	7.5 ±0.5		
Polarization	>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)	IP 65		
Configuration and Facility Requirements			
Weight	6.8 kg (15.0 lbs.)		
Dimensions (L x W x H)	475 x 93 x 155 mm (18.7 x 3.7 x 6.1 in.)		
Input Power ³	48 VDC, 11.5 A		
Cooling	Liquid Available upon Request		
Heat Dissipation (W)	<575		
Maximum Case Temperature	<60°C (140°F)		
Operating Environment Temperature Altitude Humidity	5 to 45°C (41 to 113°F) <2000 m (6500 ft.) Non-condensing		
Shipping/Storage Environment	-10 to 60°C (14 to 140°F), non-condensing		

- Notes:
1. Power measured at 25°C and derated by 1%/C for higher laser head temperatures.
 2. Power stability based on $\pm(P_{max} - P_{min}) / (2 * P_{max})$ average power measurement at constant duty cycle after 10-minute warm-up at operating condition.
 3. Optional fans add 1 A.

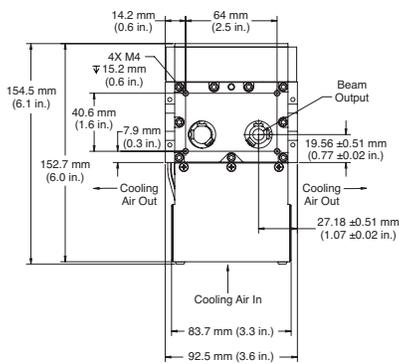
Mechanical Specifications

Diamond C-20A Laser Head

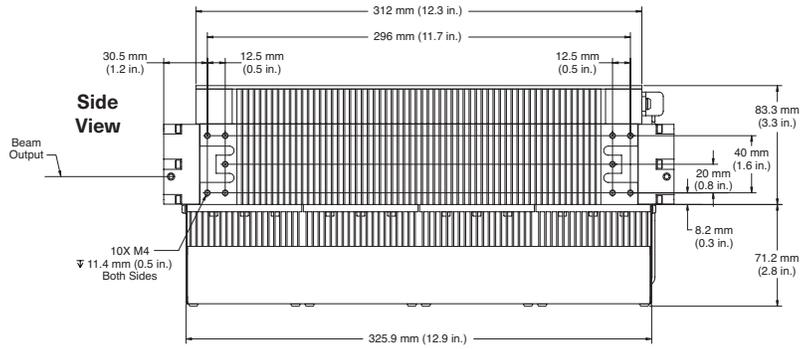
Top View



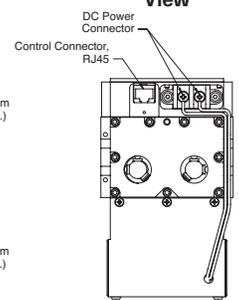
Front View



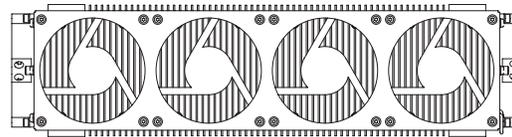
Side View



Rear View

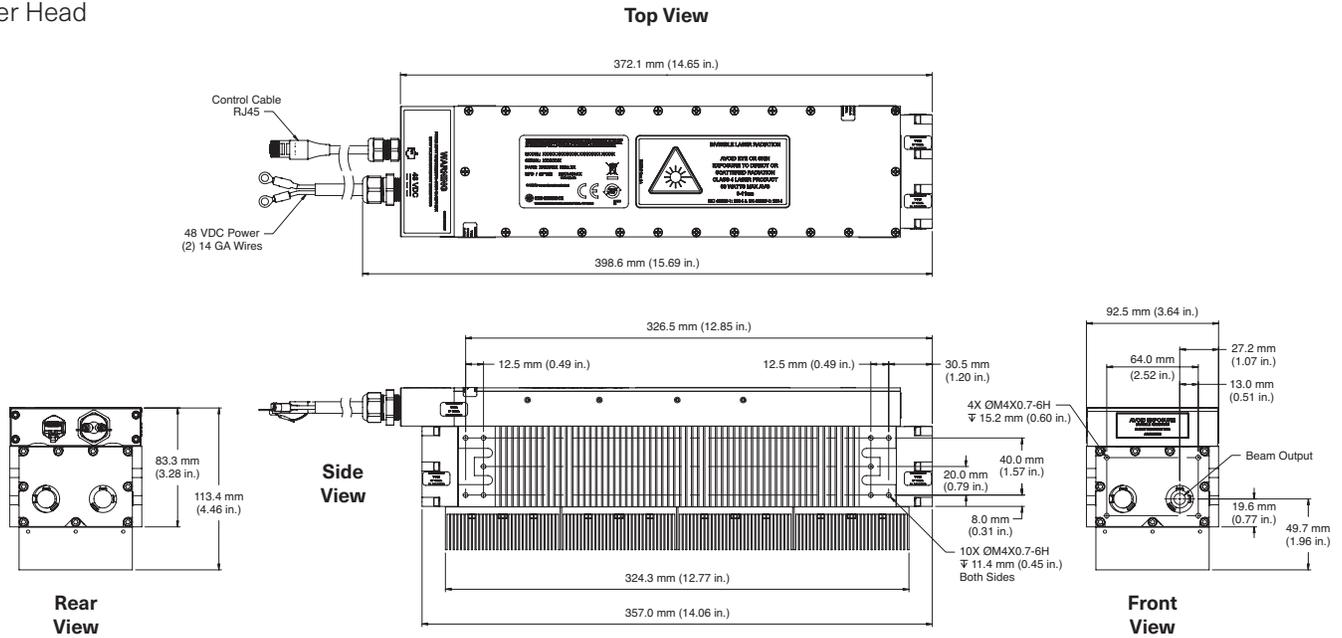


Bottom View

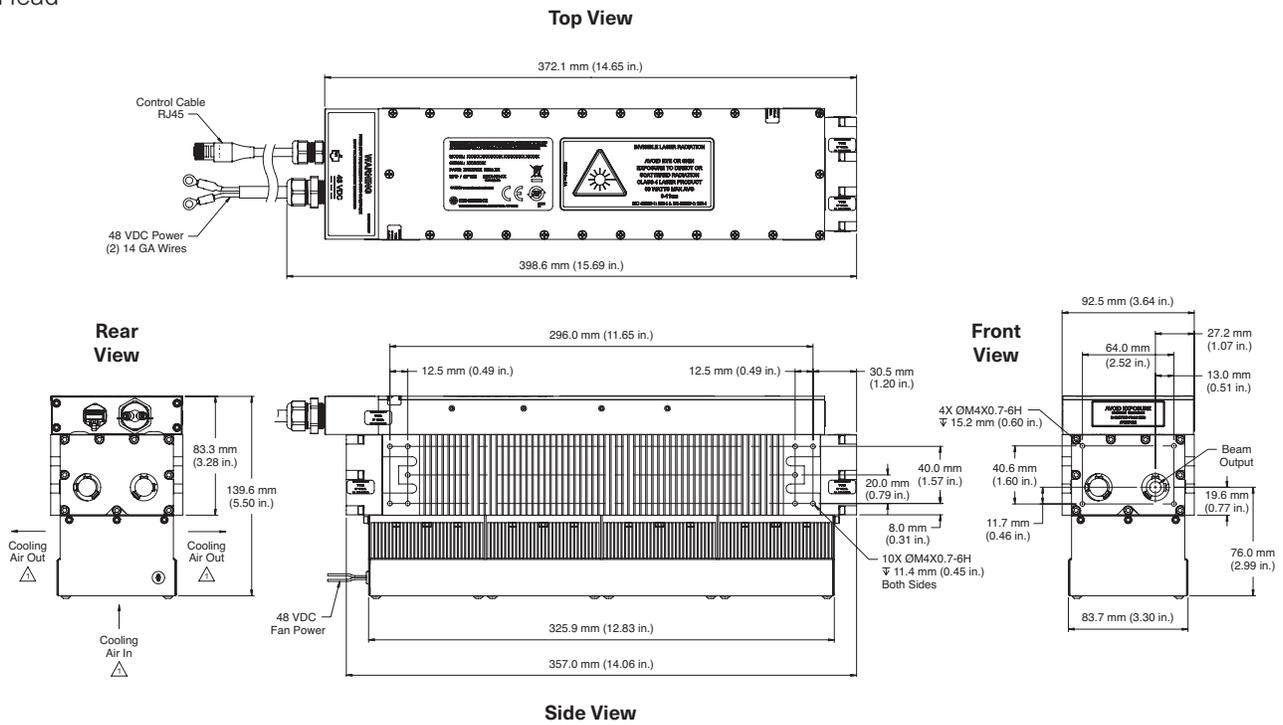


Mechanical Specifications

Diamond C-20+ Air-Cooled Laser Head



Diamond C-20A+ Air-Cooled with Fans Laser Head



Mechanical Specifications

Diamond C-20+ Liquid-Cooled
Laser Head

