Diamond C-55 Series

Low Power CO_2 OEM Lasers for Marking and Engraving Applications

The Coherent C-55 CO_2 laser provides 55 Watts of power with best-in-class reliability and package size, making it the OEM laser of choice for high volume laser marking and engraving systems. This production-ready, easy-to-integrate laser system enables high quality laser marking with low maintenance and operating costs. The C-55 is ideal for laser processing of many materials, including paper, plastics, wood, rubber, leather, cloth and more.

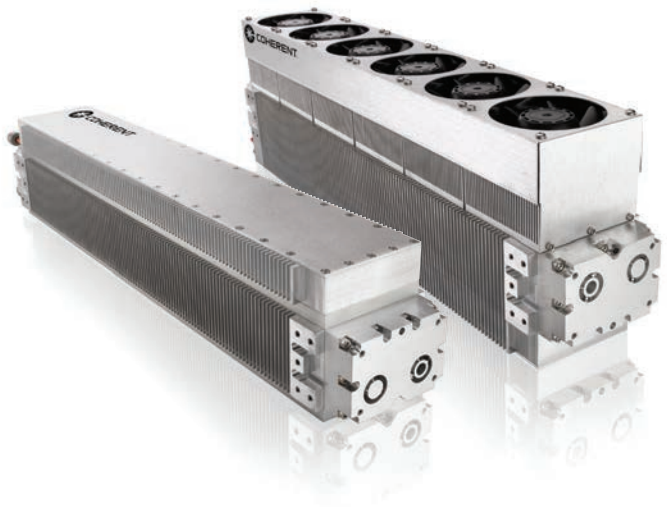
The C-55 is part of the Coherent C-Series family of products which offer a full range of power levels – from 20 W to 70 W. Based on a sealed waveguide and integrated RF power supply design, the C-55 boasts outstanding production-proven reliability, while delivering superior beam quality and power stability in a compact, flexible and integrated package. The modular platform design provides cost-effective optimization of operating wavelength (from 9.3 to 10.6 µm) and cooling configuration (air/liquid), enabling rapid adaptability to changing applications and market needs.

FEATURES & BENEFITS

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

APPLICATIONS

- Marking
- Engraving
- Cutting



COHERENT®
Superior Reliability & Performance

SPECIFICATIONS[1]	DIAMOND C-55A (9.3 µm)	DIAMOND C-55A (10.2 µm)	DIAMOND C-55A
Wavelength (µm)	9.24 to 9.35	10.11 to 10.31	10.55 to 10.63
Optical Output Power[1] (W)	40	55	55
Power Stability[2] (%)	±5		
Mode Quality (M^2)	<1.2		
Beam Size (mm)	1.8 ±0.2		
Beam Divergence (mrad, full angle)	7.5 ±0.5		
Polarization	>100 to 1 (fixed linear, parallel to width dimension)		
Operating Frequency and Duty Cycle	0 to 100 kHz, 0 to 100% DC		
CONFIGURATION AND FACILITY REQUIREMENTS			
Weight	10.0 kg (22.0 lbs.)		
Dimensions (L x W x H)	538 x 92.5 x 154.5 mm (21.2 x 3.64 x 6.08 in.)		
Input Power[3]	48 VDC, 20A		
Cooling	Air		
Heat Dissipation (W)	<1200		
Maximum Case Temperature	<60°C (140°F)		
Operating Environment Temperature Altitude Humidity	 5 to 40°C (41 to 113°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	– – – – –		

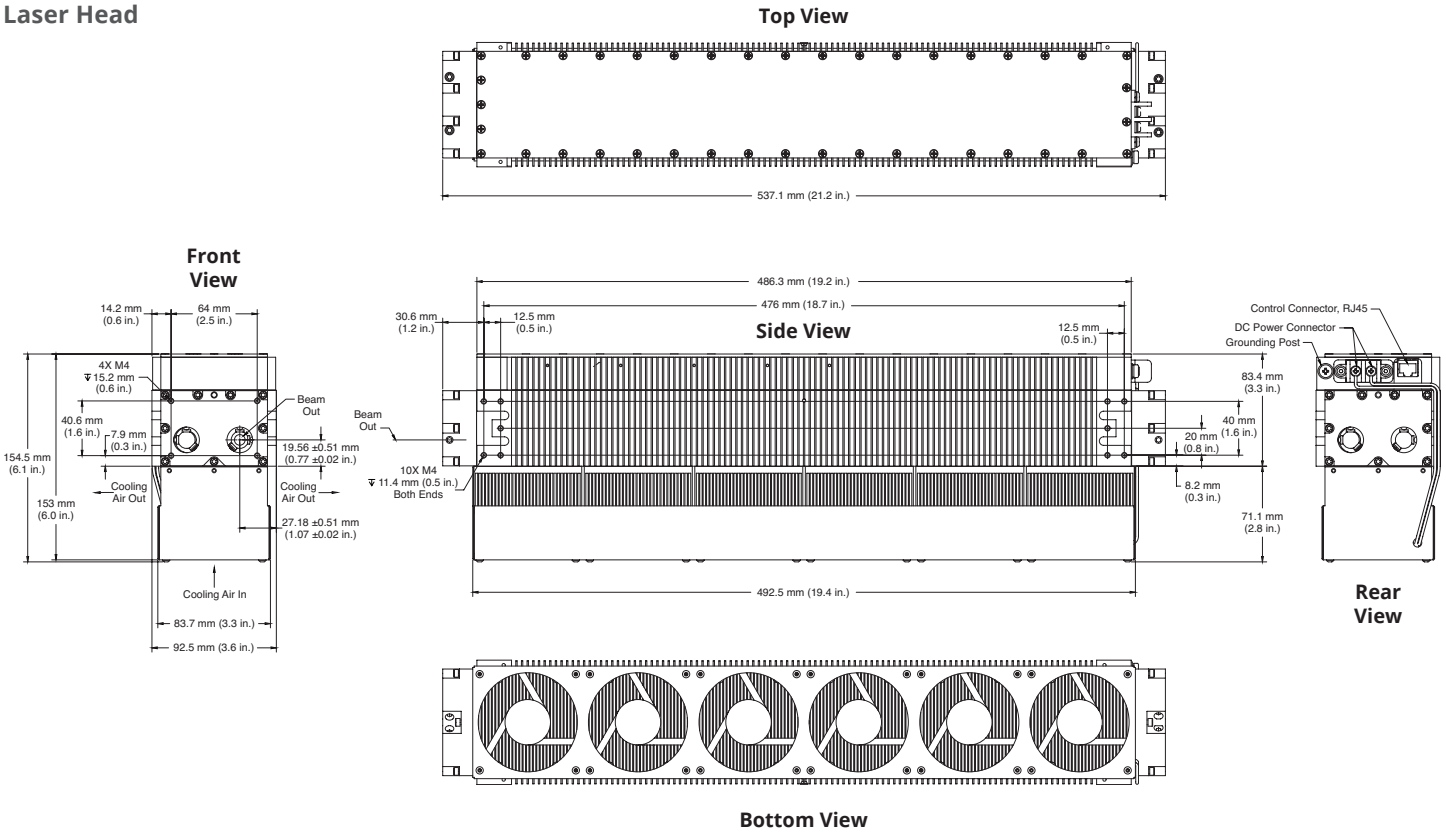
1 Power measured at 25°C and derated by 1%/C for higher laser head temperatures.
2 Power stability based on $\pm(P_{max} - P_{min})/(2*P_{max})$ average power measurement at constant duty cycle after 10-minute warm-up at operating condition.
3 Optional fans add 1A.

SPECIFICATIONS	Diamond C-55L (9.3 µm)	Diamond C-55L (10.2 µm)	Diamond C-55L
Wavelength (µm)	9.24 to 9.35	10.11 to 10.31	10.55 to 10.63
Optical Output Power[1] (W)	40	55	55
Power Stability[2] (%)	±3		
Mode Quality (M^2)	<1.2		
Beam Size (mm)	1.8 ±0.2		
Beam Divergence (mrad, full angle)	7.5 ±0.5		
Polarization	>100 to 1 (fixed linear, parallel to width dimension)		
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 4.1 in.)[3]		
Input Power[4]	48 VDC, 20A		
Cooling	Liquid		
Heat Dissipation (W)	<1200		
Maximum Case Temperature	<60°C (140°F)		
Operating Environment Temperature Altitude Humidity	 5 to 40°C (41 to 113°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* >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)		

1 Power measured at 25°C and derated by 1%/C for higher laser head temperatures.
2 Power stability based on ±(P_{max} - P_{min})/(2*P_{max}) average power measurement at constant duty cycle after 10-minute warm-up at operating condition.
3 The overall height dimension is taller for the Dual Chillplate version of this item.
4 Optional fans add 1A.
* Dow Frost is a trademark of the Dow Chemical Company.

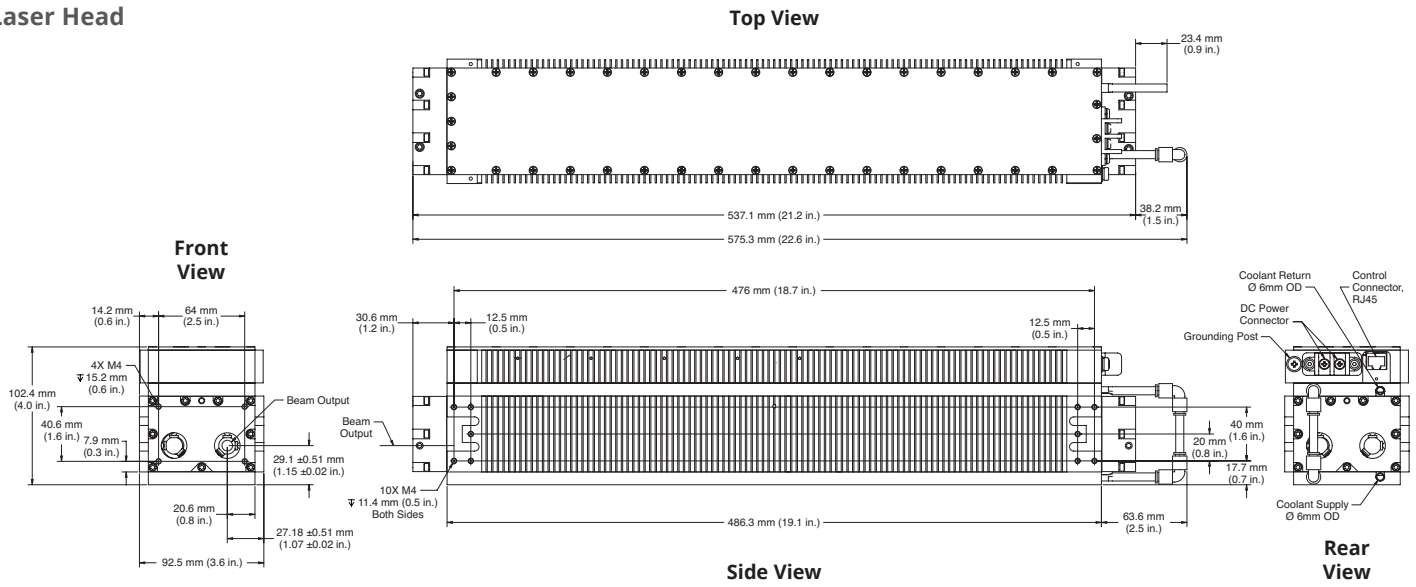
MECHANICAL SPECIFICATIONS

Diamond C-55A Laser Head



MECHANICAL SPECIFICATIONS

Diamond C-55L Laser Head



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