



DIAMOND C-55/C-60+ Series

Low Power CO₂ OEM Lasers for Marking and Engraving Applications

The Coherent C-60+ CO₂ laser provides 60 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-60+ is ideal for laser processing of many materials, including paper, plastics, wood, rubber, leather, cloth and more.

The C-60+ 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-60+ 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 three wavelengths (9.3 μm , 10.2 μm , or 10.6 μm) and cooling configurations (air, fan, or liquid)

APPLICATIONS

- Marking
- Engraving
- Cutting



| SPECIFICATIONS | DIAMOND C-55 (9.3 μm) | DIAMOND C-55 (10.2 μm) | DIAMOND C-55 | DIAMOND C-60+ (9.3 μm) | DIAMOND C-60+ (10.2 μm) | DIAMOND C-60+ |
|---------------------------------------|---|------------------------|----------------|--|-------------------------|----------------|
| 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 ¹ (W) | 40 | 55 | 55 | 45 | 55 | 60 |
| Power Stability ² (%) | ±5 | ±5 | ±5 | ±4 | ±4 | ±4 |
| Mode Quality (M ²) | <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 | 10 kg (22 lbs) | | | | | |
| Dimensions | 576 x 93 x 155 mm (22.7 x 3.7 x 6.1 in.) | | | 667 x 93 x 155 mm (26.2 x 3.7 x 6.1 in.) | | |
| Input Power ³ | 48 VDC, 20 A | | | | | |
| Cooling | Liquid Available Upon Request | | | | | |
| Heat Dissipation (W) | <1200 | | | | | |
| 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 | | | | | |

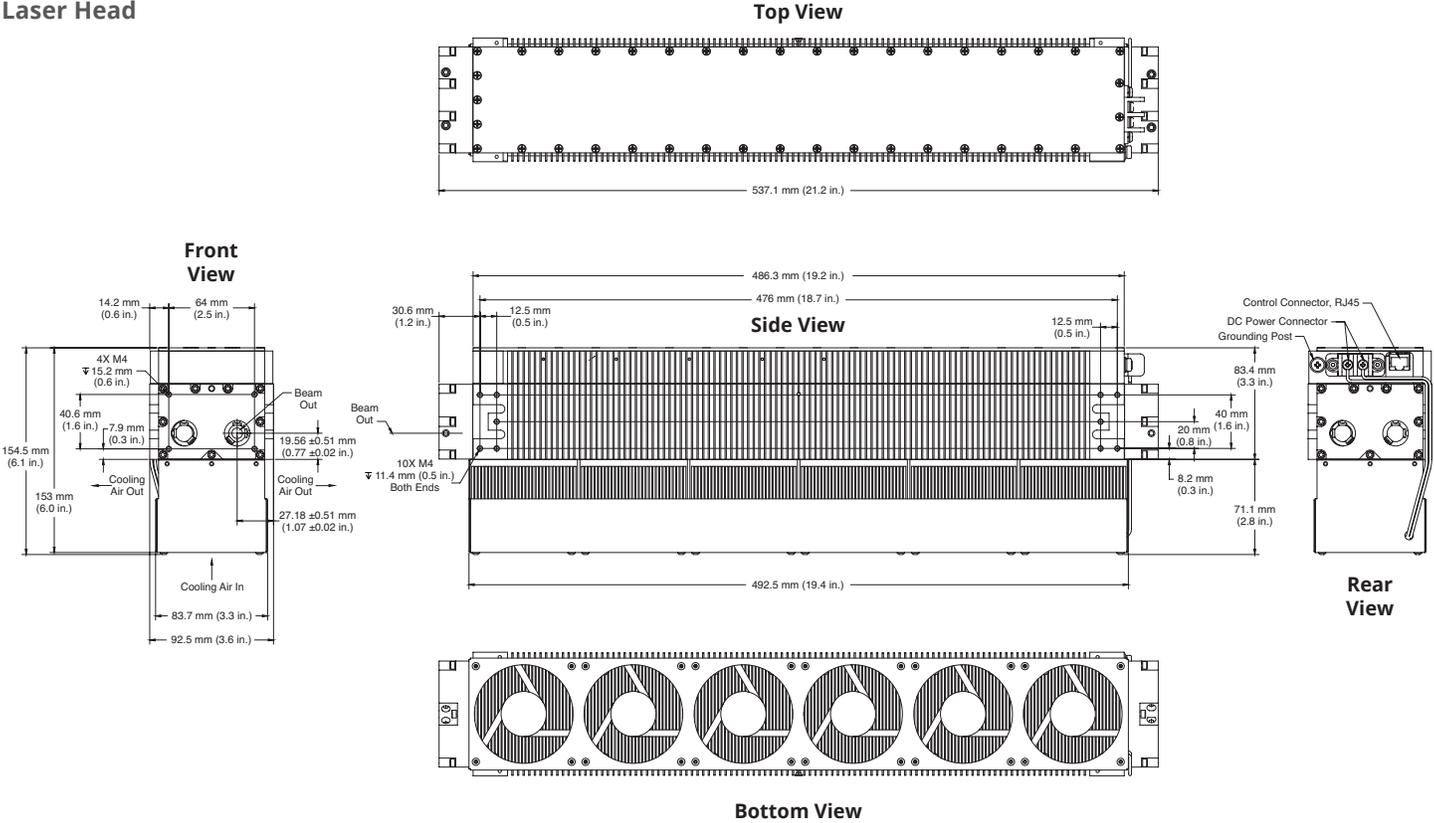
¹ Power measured at 25°C and derated by 1%/C for higher laser head temperatures.

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

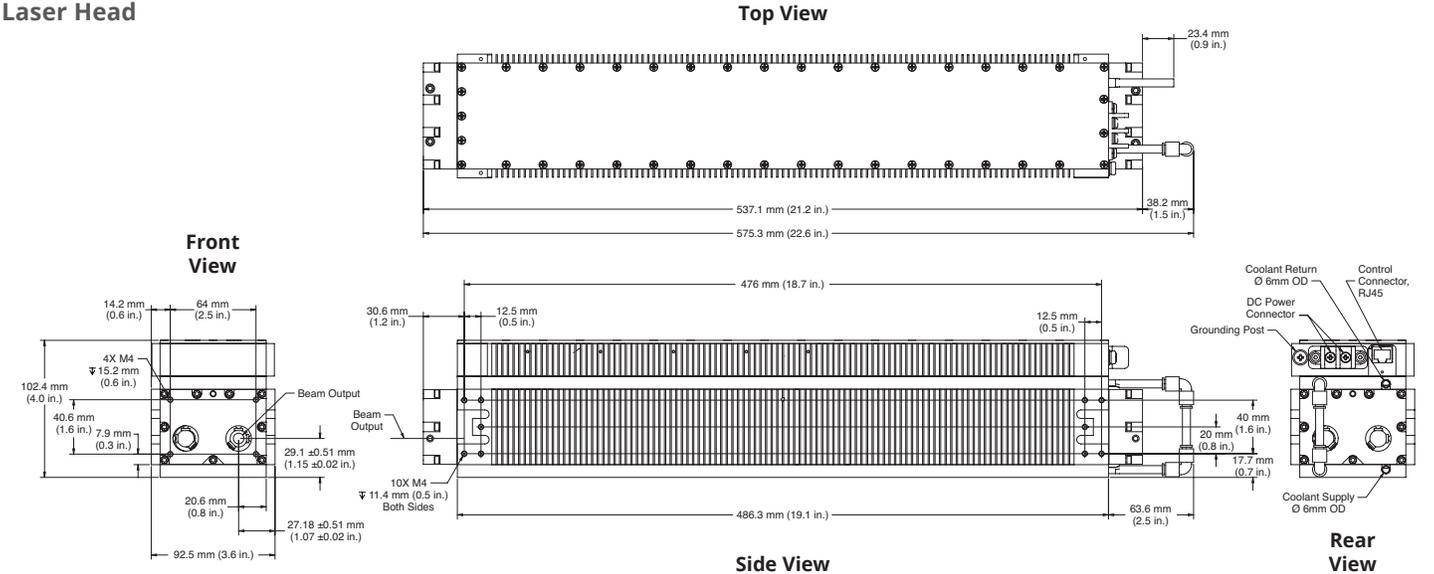
³ Optional fans add 1A.

MECHANICAL SPECIFICATIONS

DIAMOND C-55A
Laser Head

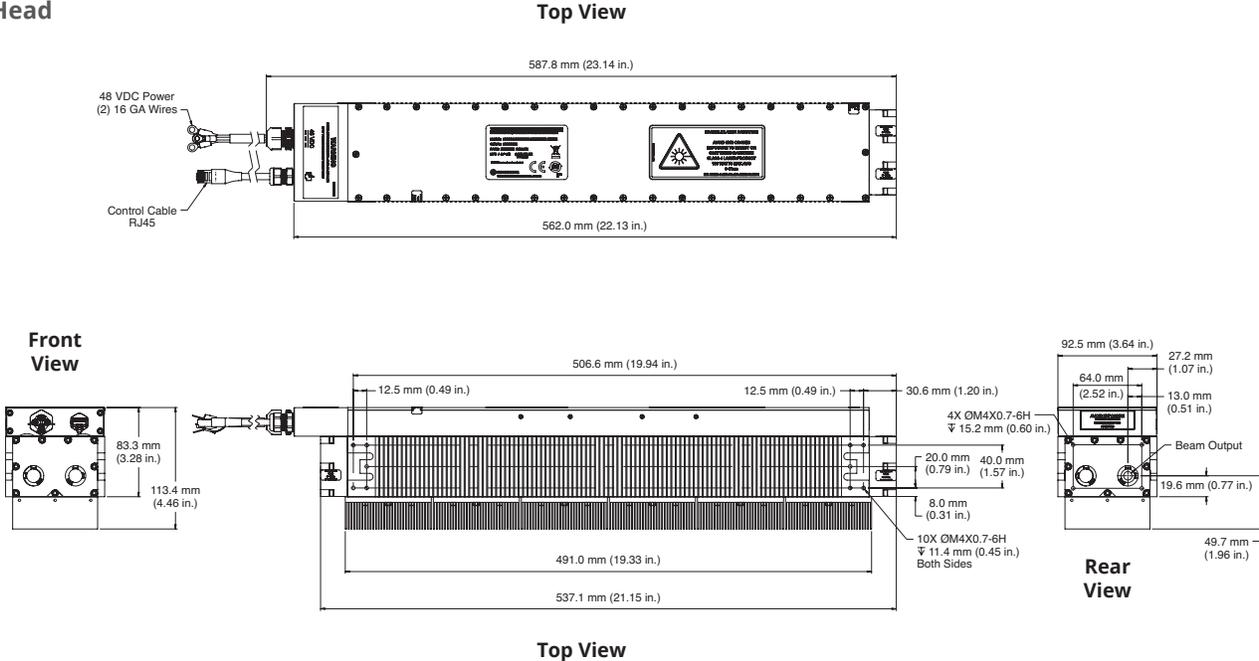


DIAMOND C-55L
Laser Head

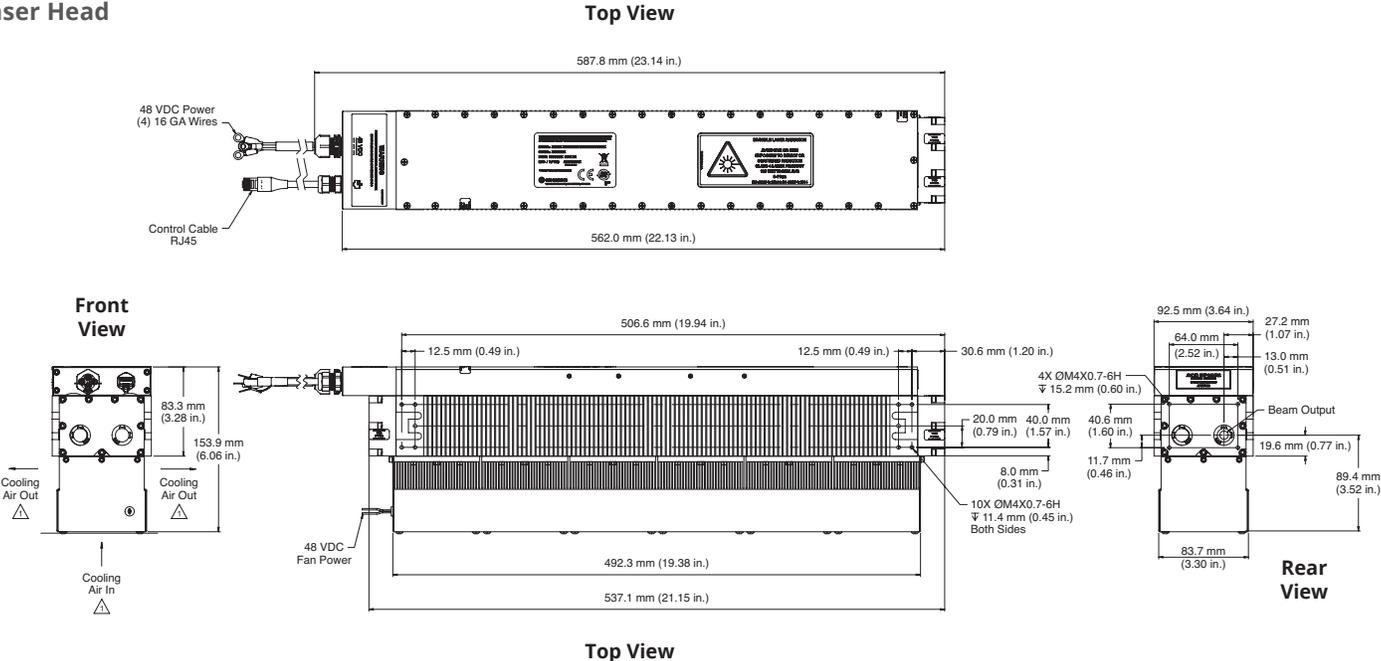


MECHANICAL SPECIFICATIONS

DIAMOND C-60+ Air-Cooled Cross Flow Laser Head

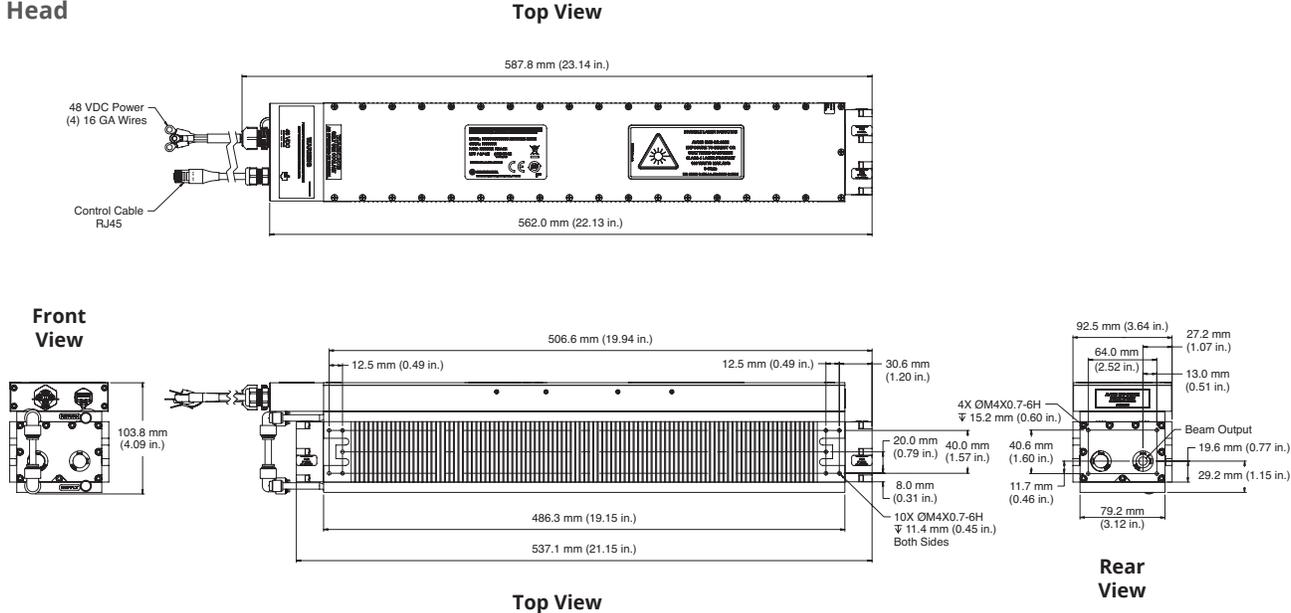


DIAMOND C-60+ Air-Cooled with Fans Laser Head



MECHANICAL SPECIFICATIONS

DIAMOND C-60+ Liquid-Cooled Laser Head



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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-2 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 C-55 and C-60+ 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. MC-033-14-0M0721Rev.E Copyright ©2021 Coherent, Inc.

