

HighLight DD SERIES

High Power Direct-Diode Industrial Laser System

The HighLight™ DD-Series direct-diode lasers from Coherent delivers both high power and an increased range of “smart” output beam shapes, making it the ideal source for laser heat treating, cladding, and welding applications – all at faster speeds, greater deposition rates and larger areas.

When configured with the pressurized/gravity feed powder nozzles from Coherent, the HighLight DD-Series lasers enable high deposition rate cladding or larger spot sizes for heat treating.

The performance, energy efficiencies, and low maintenance of the HighLight DD-Series makes it the top choice for industrial materials processing applications.



FEATURES

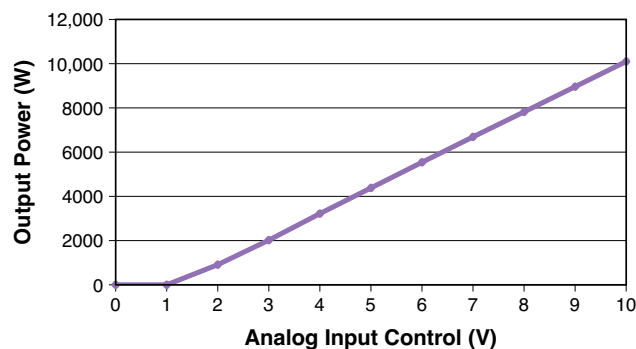
- Systems up to 10 kW (CW) at 976 nm
- High-power free space beam for a large working distance (~275 mm)
- Industrial, compact laser head with easily interchangeable beam shape options
- Mobile control panel, remote diagnostics, aiming beam and pyrometer process control options
- >50% wallplug efficient
- Cladding nozzle
- Heat treating accessories

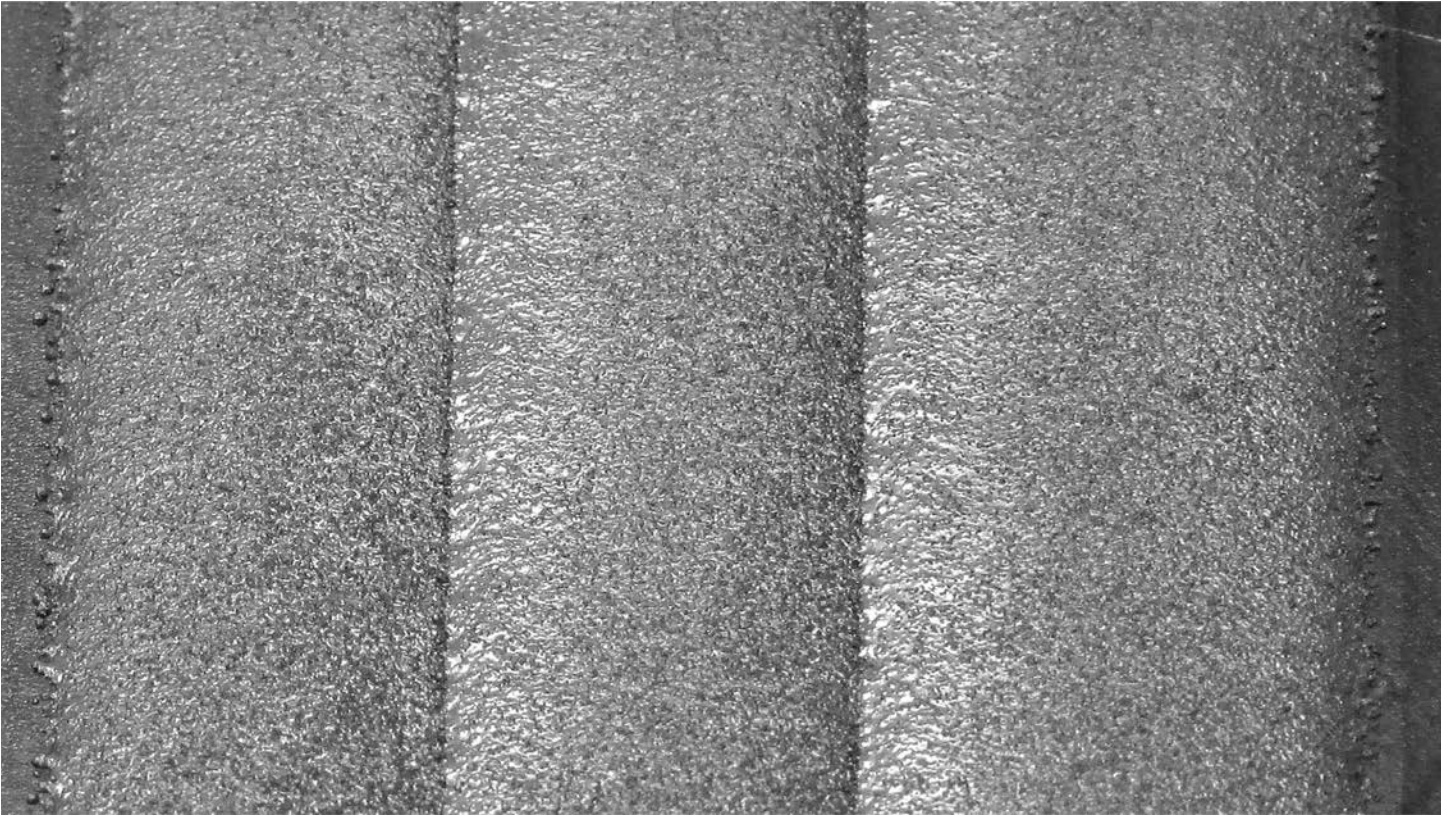
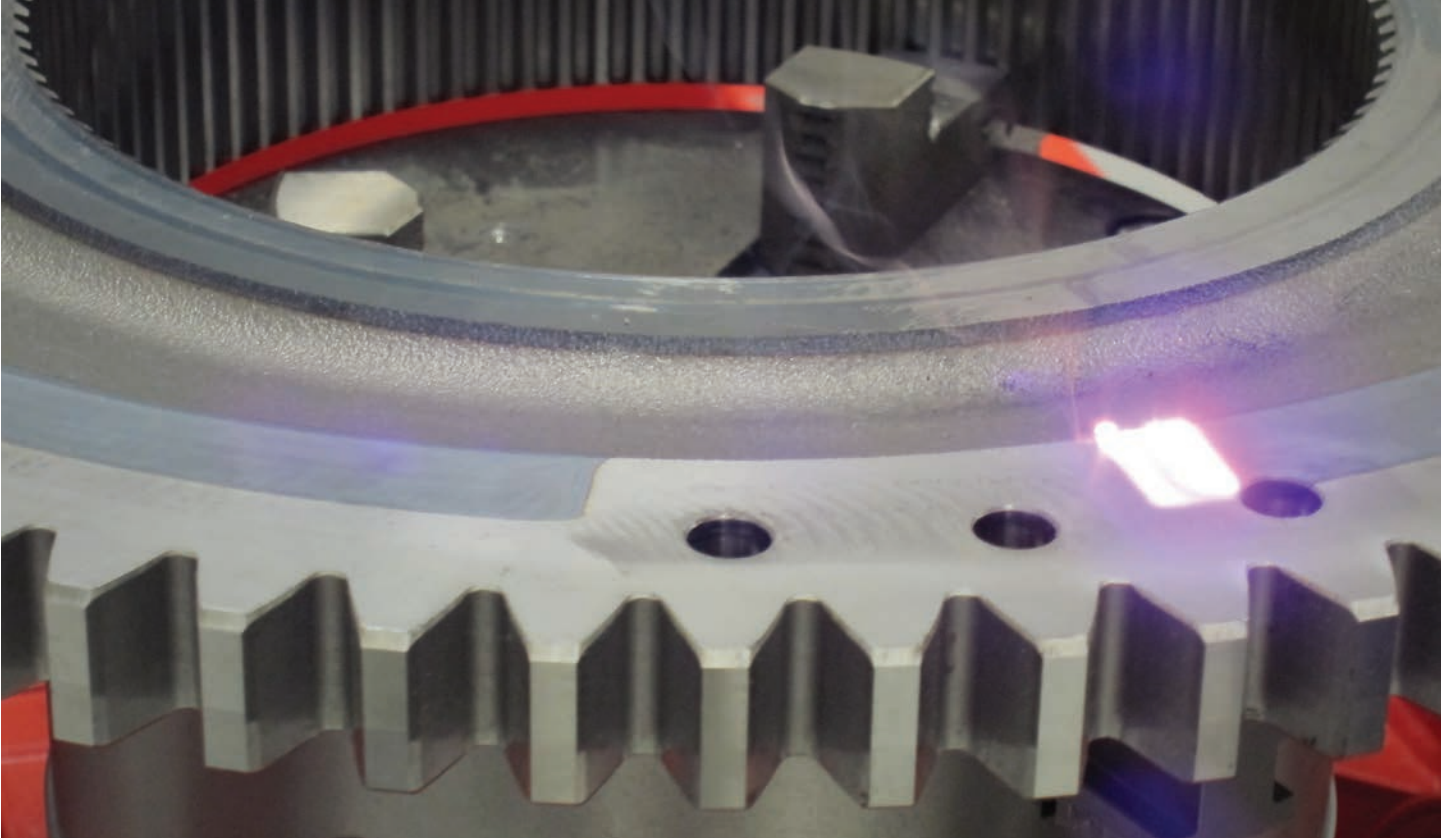
APPLICATIONS

- High Deposition Rate Cladding
- Small-to-Large Area Heat Treating
- Hermetic Welding

| Specifications | | HighLight DD10000 |
|---|--|---|
| Nominal Power (CW) | | 10,000 |
| Wavelength (nm) | | 976 |
| Power Stability (%/h) | | ≤2 |
| Working Distance | | 275 mm (10.8 in.) |
| Maximum Repetition Rate (Hz) | | 300 |
| Rise/Fall Time (ms) | | 1 |
| Line Beam Shape Options (mm) (nominal, multi mode) | | 6, 12, 18, 24, 30, 36 |
| Line Beam Width Expansion Options (mm) | | 1, 2, 3, 4, 5, 6, 8, 12 |
| Mechanical Specifications | | |
| Laser Head Dimensions (H x W x D) | | 283 x 190 x 201 mm (11.1 x 7.5 x 7.9 in.) |
| Laser Control Unit Dimensions (H x W x D) | | 1360 x 586 x 850 mm (53.5 x 23.1 x 33.5 in.) |
| Chiller Dimensions (H x W x D) | | 2005 x 874 x 1872 mm (78.9 x 34.4 x 37.7 in.) |
| Laser Head/Beam Shape Module Weight | | 23 kg (50 lbs) |
| Laser Control Unit (LCU) Weight | | 250 kg (550 lbs) |
| Chiller Weight | | ~600 kg (1320 lbs.) |
| Electrical Requirements | | |
| Operating Voltage (VAC) | | 400/460 ±10% (model dependent) |
| Frequency (Hz) | | 47 to 63 |
| Maximum Current Draw (A) | | 80/70 |
| Dual Loop Chiller (Deionized/Distilled) | | |
| Chiller Cooling Capacity (kW) | | >16/14 |
| Chiller Water Temperature (°C) | | 25/25 ±1 |
| Chiller Flow Rate (l/min.) | | 42/42 |
| Chiller Water Pressure (psi) | | 65/50 |
| Chiller Operating Voltage (VAC) | | 400/460 (±10%) |
| Chiller Operating Frequency (Hz) | | 50/60 |
| Chiller Maximum Current Draw (A) | | 29 |
| Environmental Conditions | | |
| Purge Gas (l/min. CD) | | <1 |
| Operating Temperature | | 5 to 45°C (41 to 113°F) |
| Storage Temperature (drained and purged) | | -20 to 65°C (-4 to 149°F) |
| Operating Humidity (%) | | 10 to 80, non-condensing |

HighLight DD10000 PIV Curve
(typical)





Mechanical Specifications

HighLight DD10000

