

HighLight DL HPS SERIES

All-In-One, Industrial Diode Laser

The Coherent HighLight™ DL HPR lasers are compact, high power, fiber delivered industrial diode laser systems that offers unmatched convenience and economy for metal processing applications such as cladding, heat treating and brazing. With its standard, 19" rack mount form factor and integrated electronics, the laser is easy to incorporate into existing systems, and is well-suited for the spaceconstrained environments often found in automotive manufacturing and semiconductor fabrication. Also, the HighLight DL HPR series uses conduction-cooled diodes which do not require deionized cooling water. Finally, its 45% wall plug efficiency minimizes energy consumption and cost of ownership.

The HighLight DL HPR series is available in both turn-key and customized OEM configurations, along with an extensive range of options which provide the flexibility for integration into a wide variety of laser-based manufacturing systems.



FEATURES

- Output power: 1000 to 4000 Watts
- Laser Beam Quality: 60 and 100 mm*mrad
- 19" Rack for integration
- Fiber coupled
- Homogenous beam profile
- Comprehensive accessories available

APPLICATIONS

- Heat Treatment
- Cladding
- Brazing

Specifications	HighLight DL1000HPR		HighLight DL2000HPR	
Nominal Power, CW (W)	1000		2000	
Power Range (%)	10 to 100			
Laser Beam Quality (BPP) (mm*mrad)	60	100	60	100
Power Stability Over 24-hour; Cooling Water ΔT = ±1 K (%)	±2			
Pulse Frequency Range	1000 600			
Laser On-Signal (Hz)				
Analog Modulation (Hz)				
Wavelength (nm)	1020	1020	980, 1020	980, 1020
Wavelength Tolerance (nm)	±10			
Electrical Ratings				
Operating Voltage	3x AC 230/400 V ±10%; 50/60 Hz; PE or 3x AC 277/480 V ±10%; 50/60 Hz; PE			
Connected Load (kVA)	<2.4		<4.5	
Max. Current Consumption at 400 V (A)	3.5		5.7	
Fuses Typ: Circuit Breaker (A)	16			
Cooling Integrated				
Cooling Water Specification	According to DIN ISO 3696 Quality Level 3			
Recommended Cooling Capacity¹ (kW)	2.8		4	
Cooling Water Pressure (hPa)	<5000			
Cooling Water Temperature (°C)	22			
Cooling Water Temperature Tolerance Range (K)	Laser: ±1; Fiber: ± 2.5			
Nominal Cooling Water Flow Rate¹ (l/min.)	Laser: 5; Fiber: 2	Laser: 8; Fiber: 2	Laser: 10; Fiber: 2	Laser: 8; Fiber: 2
Pressure Drop (hPa)	Laser: <4500; Fiber: <2500			
Water Connection	Laser: 2x Ø16 mm hose; Fiber: 2x Ø12 mm hose			
Fiber Delivery System				
Interface²	QBH, QD			
Diameter (µm)	600 or 800	1000	600 or 800	1000
Numerical Aperture (NA)	0.22 or 0.15	0.22	0.22 or 0.15	0.22
Length (m)	<35			
Dimensions and Weight				
Laser Dimension; w/o Connectors (L x W x H) (mm)	~652 x ~483 x ~267			
Laser Weight; w/o Cooling Water (kg)	<70			
Environmental Conditions				
Ambient Temperature (°C)	+10 to +40			
Humidity, Dew Point Temperature (°C)	≤19			
Storage Temperature (°C)	5 to 50			
Customer Interface				
Analog Power Control (V DC)	0 to 10			
Digital Power Control (V DC)	24			
Interface for Control via PC	Ethernet			
Options Laser				
	Bus Interface (CanOpen, EtherCAT)²			

Notes:

1. Depending on system configuration.
2. Other options are available upon request.

Specifications	HighLight DL3000HPR		HighLight DL4000HPR	
Nominal Power, CW (W)	3000		4000	
Power Range (%)	10 to 100			
Laser Beam Quality (BPP) (mm*mrad)	60	100	60	100
Power Stability Over 24-hour; Cooling Water ΔT = ±1 K (%)	±2			
Pulse Frequency Range	1000			
Laser On-Signal (Hz)				
Analog Modulation (Hz)	600			
Wavelength (nm)	940, 980, 1020			
Wavelength Tolerance (nm)	±10			
Electrical Ratings				
Operating Voltage	3x AC 230/400 V ±10%; 50/60 Hz; PE or 3x AC 277/480 V ±10%; 50/60 Hz; PE			
Connected Load (kVA)	<6.8		<9	
Max. Current Consumption at 400 V (A)	10		13.5	
Fuses Typ: Circuit Breaker (A)	16		32	
Cooling Integrated				
Cooling Water Specification	According to DIN ISO 3696 Quality Level 3			
Recommended Cooling Capacity¹ (kW)	5.2		.5	
Cooling Water Pressure (hPa)	<5000			
Cooling Water Temperature (°C)	22			
Cooling Water Temperature Tolerance Range (K)	Laser: ±1; Fiber: ± 2.5			
Nominal Cooling Water Flow Rate¹ (l/min.)	Laser: 15; Fiber: 2	Laser: 10; Fiber: 2	Laser: 15; Fiber: 2	Laser: 12; Fiber: 2
Pressure Drop (hPa)	Laser: <4500; Fiber: <2500			
Water Connection	Laser: 2x Ø16 mm hose; Fiber: 2x Ø12 mm hose			
Fiber Delivery System				
Interface²	QBH, QD			
Diameter (µm)	600 or 800	1000	600 or 800	1000
Numerical Aperture (NA)	0.22 or 0.15	0.22	0.22 or 0.15	0.22
Length (m)	<35			
Dimensions and Weight				
Laser Dimension; w/o Connectors (L x W x H) (mm)	~652 x ~483 x ~267			
Laser Weight; w/o Cooling Water (kg)	<70			
Environmental Conditions				
Ambient Temperature (°C)	+10 to +40			
Humidity, Dew Point Temperature (°C)	≤19			
Storage Temperature (°C)	5 to 50			
Customer Interface				
Analog Power Control (V DC)	0 to 10			
Digital Power Control (V DC)	24			
Interface for Control via PC	Ethernet			
Options Laser				
	Bus Interface (CanOpen, EtherCAT)²			

Notes:

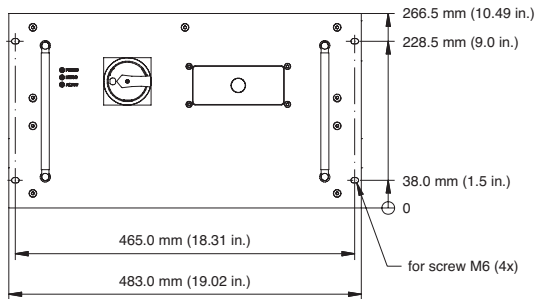
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Mechanical Specifications

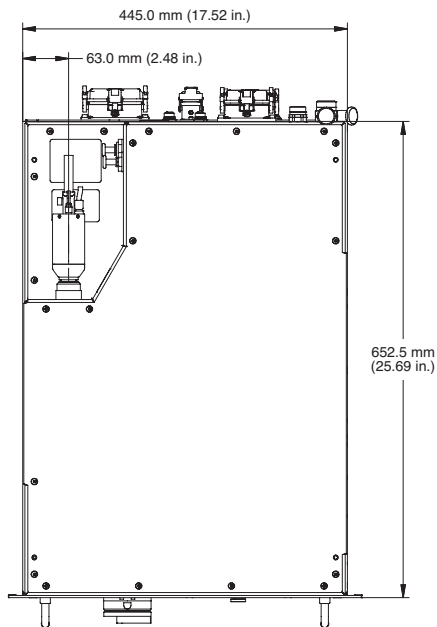
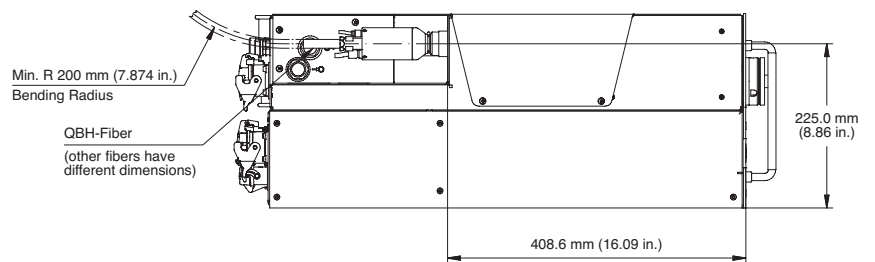
HighLight DL HPR Series

Laser Beam Quality (BPP) 60 mm*mrad

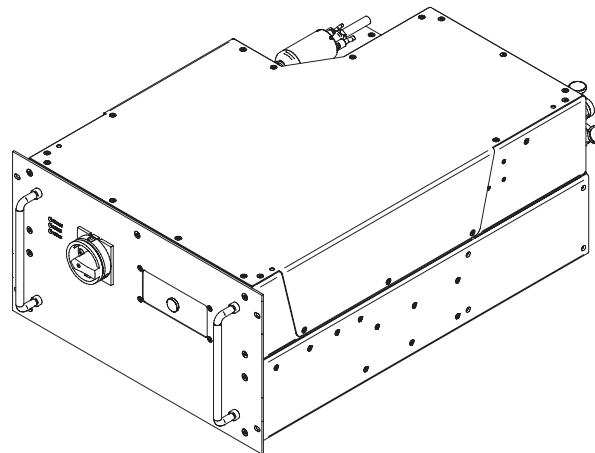
Front View



Side View



Top View



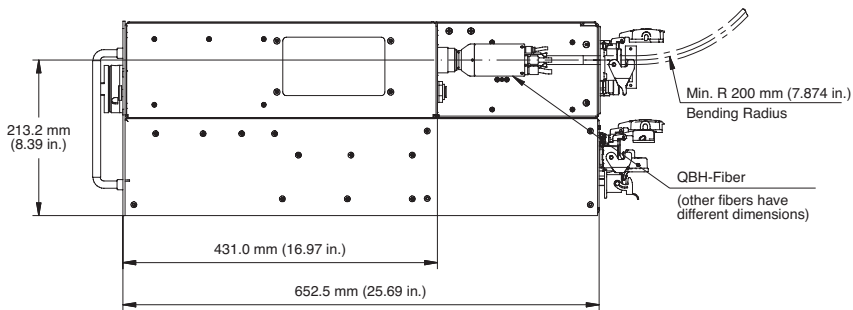
HighLight DL HPS Series

Mechanical Specifications

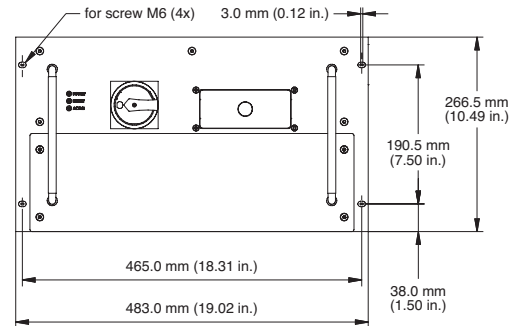
HighLight DL HPR Series

Laser Beam Quality (BPP) 100 mm*mrad

Side View



Front View



Top View

