

Compact Evolution XL Series

Industrial High Power
Diode Laser

The Compact Evolution XL series products are high power, fiber-coupled, industrial diode laser systems offering up to 1200 W output power. With a modular and robust design, the Compact Evolution provides optimum efficiency, flexibility, and reliability in industrial applications such as plastic welding, selective soldering, brazing, and heat treatment.

Compact Evolution XL series products offer a turn-key solution with an extensive range of accessory options that provide flexibility for integration into a wide range of laser-based manufacturing systems.

Features and Benefits

- Output power: up to 1200 W
- 19" Rack for easy integrate
- Long life diode modules
- Equipped with control unit for internet-accessible diagnostics and e-service

Applications

- Brazing
- Heat Treatment
- Plastics Welding
- Scientific Applications
- Selective Soldering



SPECIFICATIONS

SPECIFICATIONS	Compact Evolution XL 980		
	800	1000	1200
Nominal Power (W)	800	1000	1200
Power Range (%)	10 to 100		
Laser Beam Quality (BPP) (mm * mrad)	22		
Power Stability Over 24-hour; Cooling Water $\Delta T = \pm 1$ K (%)	± 2		
Pulse Frequency Range (Hz)	1000		
Laser On-Signal	600		
Analog Modulation			
Wavelength (nm)	980		
ELECTRICAL RATINGS			
Voltage	200 to 240 (1P/N/PE)		
Connected Load (kVA)	2.6	2.8	3.4
Effective Power at Nominal Power (kW)	2.5	2.7	3.3
Max. Current Consumption at 230 V (A)	12	13	15
Fuses Type G (A)	16		
COOLING			
Recommended Cooling Capacity (kW)	1.2	1.5	1.8
Cooling Water ¹ Pressure (Max. Value) (bar)	6		
Cooling Water ¹ Temperature (°C)	22		
Cooling Water ¹ Flow Rate (Min. Value) (l/min.)	12		
Pressure Drop (hPa)	<2500		
FIBER DELIVERY SYSTEM			
Interface	QBH		
Diameter (μm)	300		
Numerical Aperture	0.22		
Length (m)	≤ 20		
Accessories (options)	Fixed Optics, Scanners, Process control via Pyrometer, Radial Optics, Line Optics, Chiller		
DIMENSIONS & WEIGHTS			
Laser Dimension (L x W x H)	~626 x ~483 x ~267 mm (~24.65 x ~19.02 x ~10.51 in.)		
Laser Weight	40 kg (88.18 lbs.)		
ENVIRONMENTAL CONDITIONS			
Ambient Temperature in Operation (°C)	18 to 40 °C (64 to 104 °F)		
Storage Temperature (°C)	5 to 50 °C (41 to 122 °F)		
CUSTOMER INTERFACE			
Analog Power (V DC)	0 to 10 (600 Hz ma. Modulation frequency)		
Digital Signals (V DC)	24		
Interface for Control via PC	Ethernet		
OPTIONS LASER			
	Bus Interface (RS232, CanOpen, EtherCAT, RTI, MOD Bus)		

¹ Use water according to DIN ISO 3696.

AVAILABLE ACCESSORIES¹

COLLIMATORS



The collimator is optimized to the requirements of Compact Series diode laser optical specifications: It is available with different collimating focal length for SMA and QBH fiber connector.

FIXED OPTICS



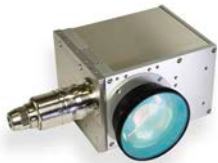
The processing head with fixed spot size is used for soldering or contour welding. Different focal length allow a wide variation of spot sizes to meet the requirements of the application.

FIXED OPTICS WITH INTEGRATED PYROMETER



The processing head with integrated pyrometer is used for non-contact measuring of the work piece temperature and enables closed loop temperature control. A powerful software package allows processes documentation and optimization.

SCANNER OPTICS



Scanner optics is used for quasi-simultaneous welding. A broad variation of spot sizes and scanning fields are available to meet the requirements of the application.

SCANNER OPTICS WITH INTEGRATED PYROMETER



The processing head enables quasi- simultaneous welding with the advantage of closed loop temperature control.

¹ All processing heads are available with SMA or QBH fiber connector.

AVAILABLE ACCESSORIES¹

OPTICS FOR RADIAL WELDING



The processing head enables simultaneous welding of a radial symmetrical component without rotating part or optics. Customer specific, dimensioning, and optical set up can be optimized to the welding geometry.

OPTICS FOR RADIAL WELDING WITH INTEGRATED PYROMETER



The processing head enables quasi-simultaneous welding of a radial symmetrical component with the advantage of closed loop temperature control. The programmable servomotor allows the welding without rotating the part.

LINE OPTICS



Line optics are used for applications that require a rectangular or square spot. Customized optical layouts allow a wide variation of different foci's.

INTERFACE CONVERTER

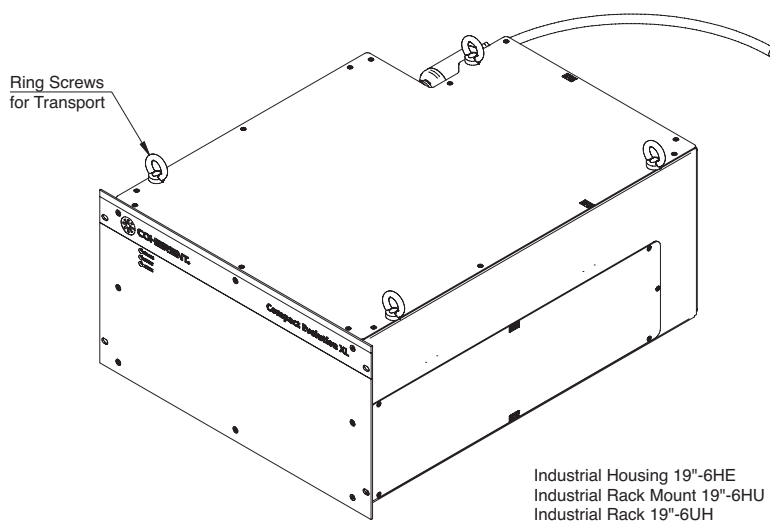
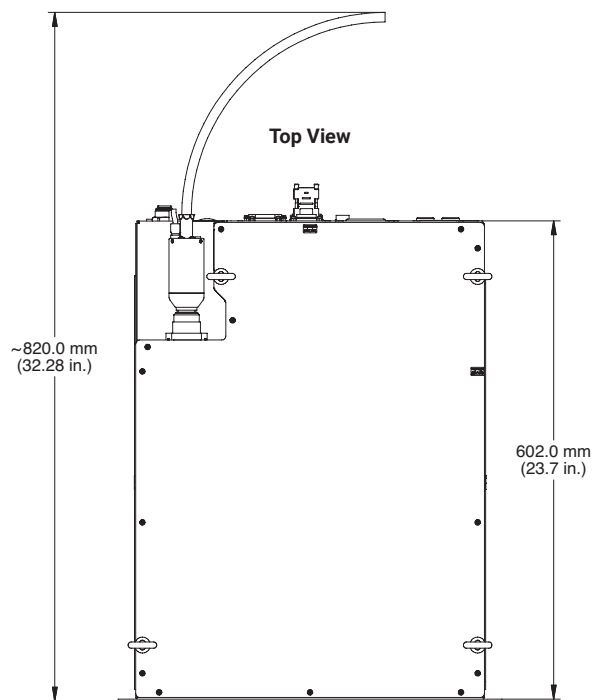
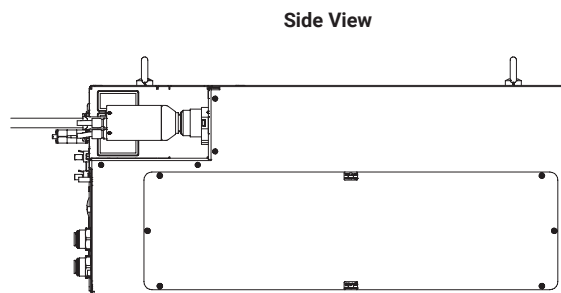
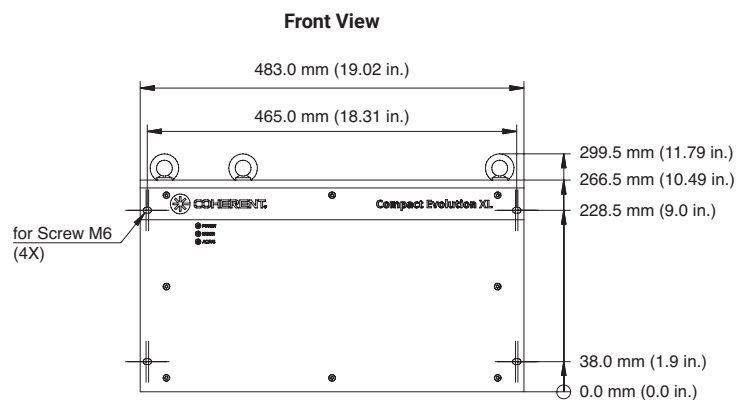


Interface Converter allows customers already using Compact Lasers an easy upgrade to Compact Evolution without changing the wiring of the customer interface.

¹ All processing heads are available with SMA or QBH fiber connector.

MECHANICAL SPECIFICATIONS

Compact Evolution XL Series



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice. Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

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