



HighLight FL10000

10 kW Industrial High Power Fiber Laser

The Coherent-ROFIN HighLight FL10000 laser is a high brightness, high-power fiber laser offering with 10 kW the highest output power of the HighLight™ FL Series. With its modular and robust design the laser has been set-up for optimum efficiency, flexibility and reliability in industrial applications such as cutting, welding and surface treatment. HighLight FL lasers incorporate technical innovations with field-proven reliability into solutions that can be optimally tailored to enable higher throughput in many materials processing applications. The combination of different power levels and range of fiber core diameters allow for precise adaptation in a broad range of processing tasks. The lasers allow operation either in CW or pulsed mode at repetition rates of up to 5 kHz. The emitted wavelength of 1 μm achieves high absorption in many materials and is especially suitable for processing highly reflective materials. In addition, these lasers are inherently immune to back reflections, enabling safe processing of materials such as brass and copper. Furthermore, industry leading power control delivers long term stability and high process consistency in these applications.

Up to four fibers can be used including two channel interlocks per output and a multi-station fieldbus interface.

The lasers are equipped with the Coherent-ROFIN Control Unit (RCU), which offers numerous monitoring tasks and e-service capability. A scanner processing solution package is optionally available enabling simple implementation of scanner-based applications.

All lasers of the HighLight FL Series are characterized by maximum efficiency and service friendly, modular pumping units, helping to reduce operating and maintenance costs.

FEATURES

- Output power: 10 kW
- Field-proven "all fiber" technology
- High wall plug efficiency
- Long life diode pumping modules on T-bars
- Inherently back reflection safe
- Versatile production tool due to wide range of beam qualities
- Industry leading power control for high process consistency
- Equipped with Control Unit for internet-accessible diagnostics and e-service

APPLICATIONS

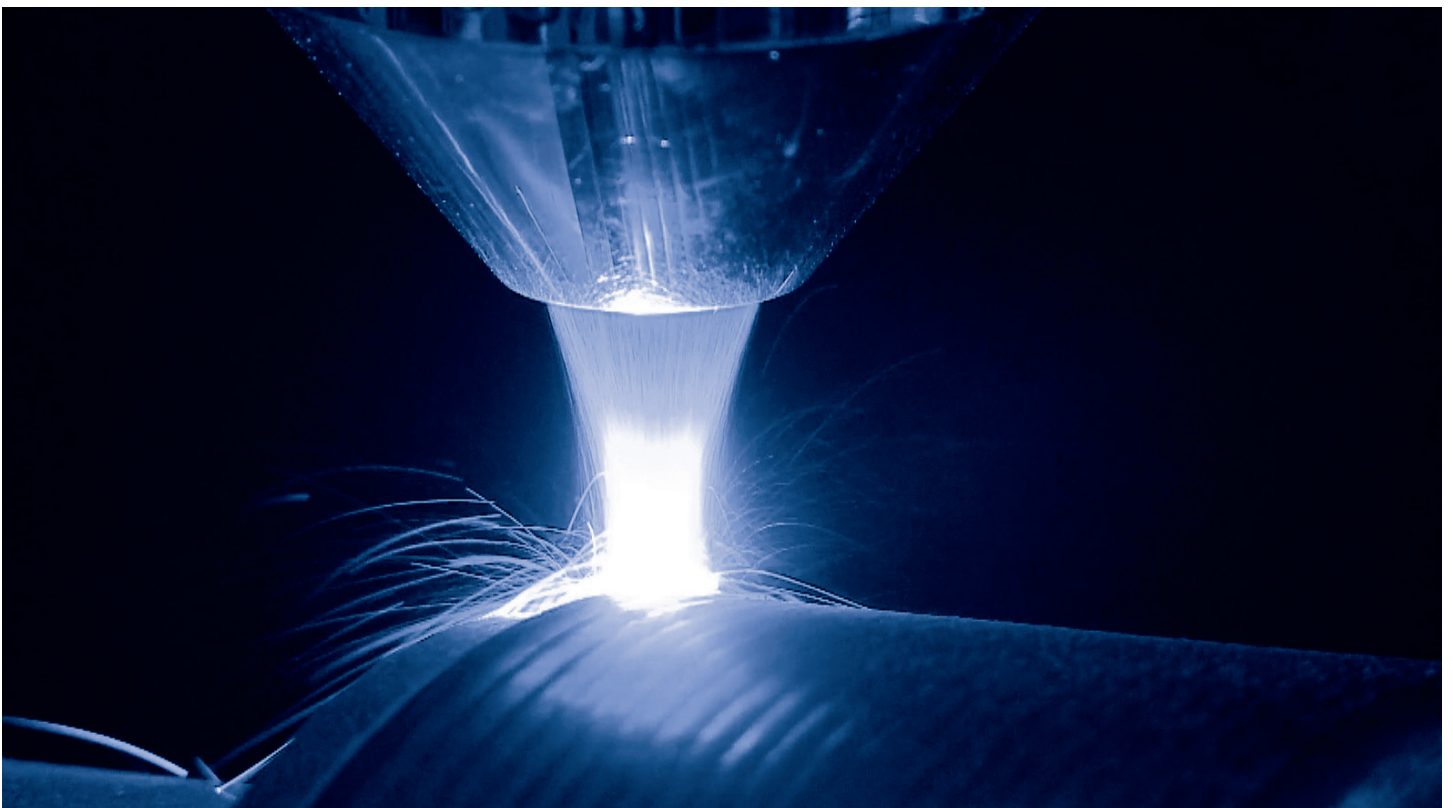
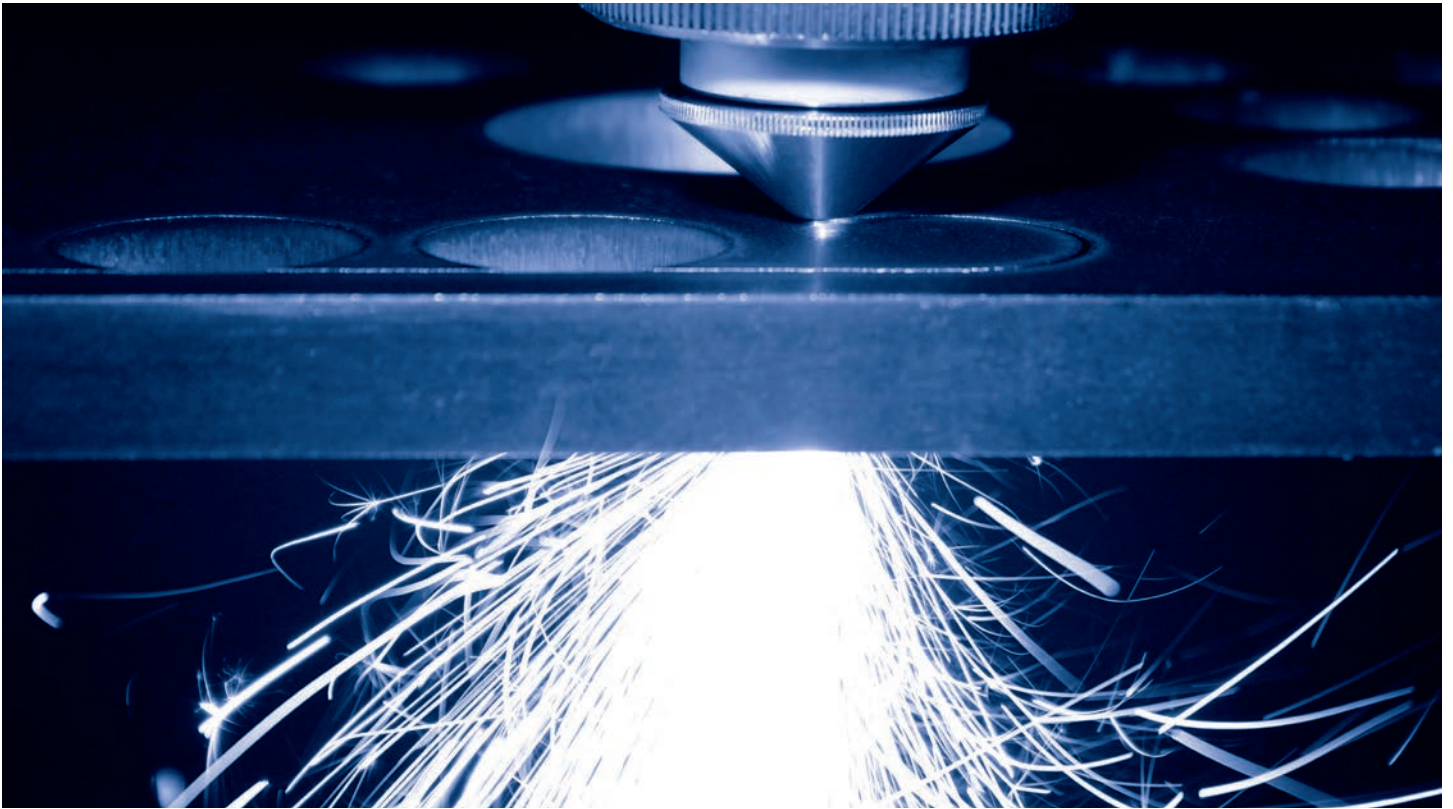
- Cutting
- Welding
- Surface Treatment
- Remote and Scanner-based Applications



SPECIFICATIONS	PRELIMINARY Technical Data HighLight FL10000 (Multi Mode FFS) Yb:YAG Fiber Laser
Nominal Power (W)	10,000
Power Range (%)	10 to 100
Laser Beam Quality (BPP) at Collimator	>4.5 mm x mrad ≤ BPP ≤6 mm x mrad for 150 μm fiber (other fiber diameter on request)
Power Stability (%)	±2
Pulse Frequency Range	CW to 5 kHz
Wavelength (nm)	1070 ±10
ELECTRICAL RATINGS	
Voltage	3 x 230/400 V ±10% or 3 x 277/480 V ±10%; 50/60 Hz; PE
Connected Load (kVA)	~27.7
Effective Power at Nominal Power (kW)	~25.8
Max. Current Consumption at 400 V (A)	45; CCU 45.5
Fuses Type NH (A)	50
COOLING	
Recommended Cooling Capacity* (kW)	≥29
Flow rate 2 fibers** (l/h)	5300; CCU Laser: 3600; Optics: 1150
Flow rate 4 fibers** (l/h)	5600; CCU Laser: 3600; Optics: 1600
Temperature (°C)	25; CCU Laser: 25; Optics: 34
Temperature Tolerance Range (°C)	±1
Max. Pressure (hPa)	6000
Pressure Drop (hPa)	4000; CCU: Laser: 4000; Optics: 3500
FIBER DELIVERY SYSTEM	
Interface	QBH, QD
Diameter (μm)	150 to 1000
Type	Step index fiber incl. RSY safety system
Length (m)	10, 15, 20, 30, 35 (other length on request)
Accessories (options)	Collimators, Focusing optics, Cross-Jet, Galvo-Scanner
DIMENSIONS & WEIGHTS	
Laser Dimension (L x W x H) (mm)	861 x 1119 x 1881; CCU: 861 x 1179 x 1881
Laser Weight (kg)	<530; CCU: <550
ENVIRONMENTAL CONDITIONS	
Ambient Temperature (°C)	5 to 40
Humidity (°C)	Dewpoint <24; (CCU: Dewpoint ≤34, other on request)
CUSTOMER INTERFACE	
Digital Signals (V DC)	24
Power Control (V DC)	0 to 10 (50 μs to 70 μs [Level] resp. a pulse period)
Trigger Control (V)	Gate 24, 15, or 5; Frequency 15/5
Laser Operating Elements	Pilot laser/PC-control
OPTIONS LASER	
	Fieldbus-Interface, Scanner processing solution, Customer specific color, Casters, Climate Control Unit (CCU), Handheld (Touch screen)

* The recommended cooling capacity covers maximum power dissipation due to diode degradation and 100% laser power absorbed at an internal or external beam dump.

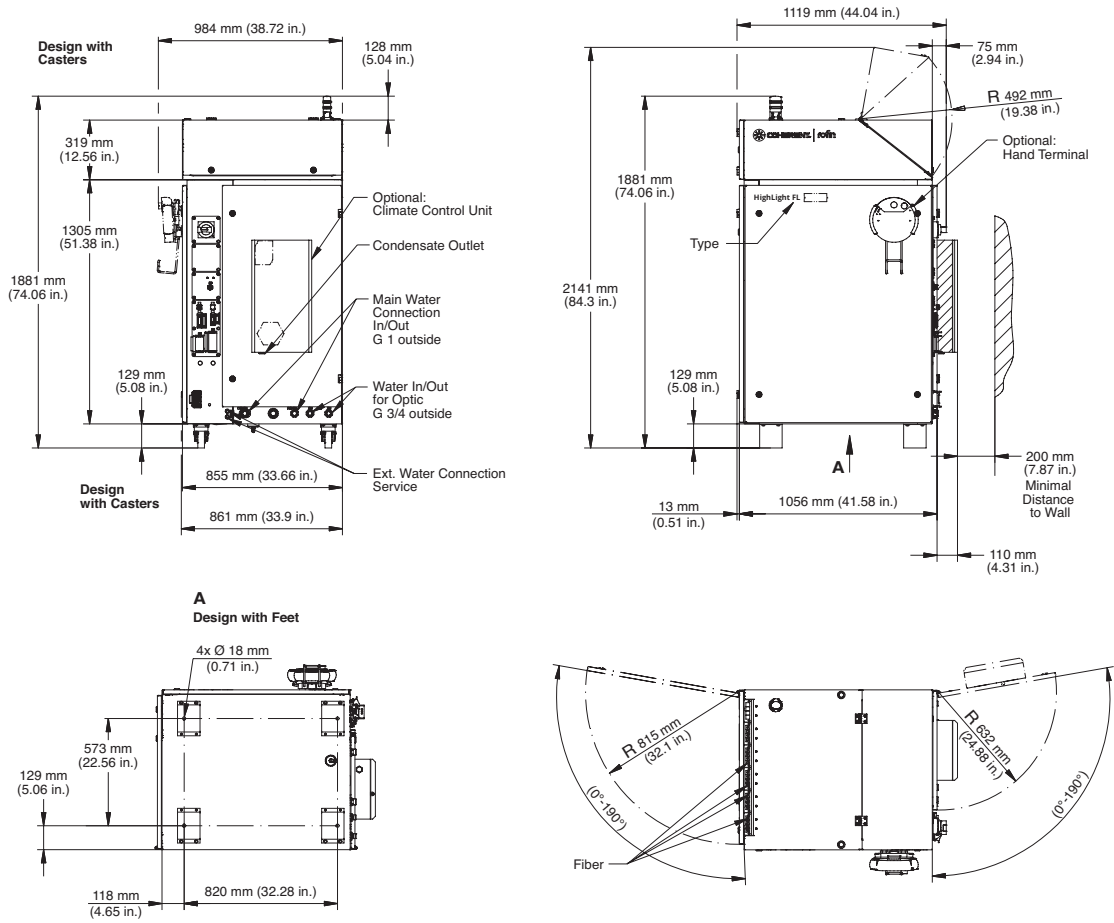
** An additional flow rate of 500l/h is recommended for the use of an external power meter.



MECHANICAL SPECIFICATIONS

HighLight FL10000

- Design with Feet (Standard)
- Design with Climate Control Unit (Optional)
- Design with Casters (Optional)



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

Coherent offers a limited warranty for all HighLight lasers. For full details of this warranty coverage, please refer to the Service section at www.Coherent.com or contact your local Sales or Service Representative. Printed in the U.S.A. MC-XXX-17-0M0617 Copyright ©2017 Coherent, Inc.



Coherent-Rofin industrial lasers are designed in strict accordance with the respective safety regulations. We certify that each laser manufactured by our company complies with FDA Radiation Performance Standards, 21 CFR Subchapter J and with IEC 60825. Warning labels as shown in the figure appear on each Coherent-Rofin laser to indicate the respective classification.