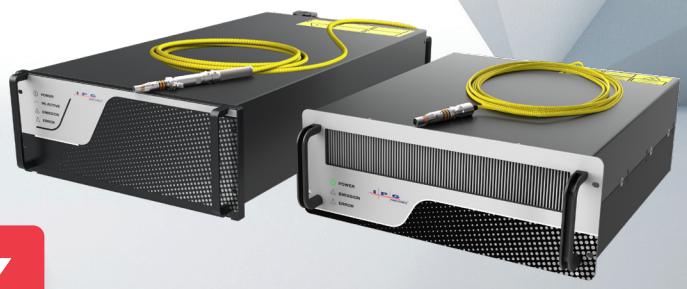
YLR Series

Ytterbium Fiber Lasers

Output Power up to 4 kW
Single-Mode up to 3 kW
Air-cooled up to 1.5 kW



NEW

FEATURES

- Wavelength 1.07 µm*
- Output Power 100 W to 4 kW
- Single-mode up to 3 kW
- Direct Modulation up to 50 kHz
- Air-cooled up to 1.5 kW
- High Reliability, Low Cost

* 1007 nm, 1010 nm, 1030 nm and other wavelengths in 1006-1080 nm range are available upon request.

APPLICATIONS

- Precision Cutting and Scribing
- Microdrilling, Blind Hole Machining
- Welding
- Sintering/ 3D Printing
- Heat Treating
- Scientific and Advanced Applications

YLR Series diode-pumped CW fiber lasers provide a unique combination of high power, high stability, ideal beam quality, fiber delivery, ultra-long lifetime and record wall-plug efficiency. Single-mode output up to 3 kW may be integrated via collimator or QBH plug-in connector. Standard wavelength is 1070 nm, with other wavelengths in 1006-1080 nm available upon request. Multi-mode output is emitted from a step index fiber with core diameter from 50 to 200 µm, allowing optimal performance in critical welding and additive manufacturing applications. Air-cooled units are available up to 1.5 kW and water-cooled units up to 4 kW.

The CW output can be modulated up to 50 kHz. The YLR compact 19” rack mounted packages offered as a cost effective, adaptable solution for a clean room system or for integration into a production line. Featuring optional front panel touch display or standard rear Analog, RS-232 or Ethernet controls, the rack mount configuration is ideal for a variety of applications from precision materials processing to advanced and scientific applications. Beam delivery options include coupler, beam switch (time or energy share) and delivery optics such as cutting and welding heads.

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Optical Characteristics	
Central Wavelength*, nm	1070 ±10
Mode of Operation	CW/Modulated
Modulation Frequency, kHz	0-50
Maximum Average Power **, W	100 to 4000
Power Tunability, %	10-100
Power Stability***, %	± 0.5
Optical Noise****, % RMS	<2, typ.1
Output Fiber Core	Single-mode or 50, 100 and 200 µm diameter
Single-mode Beam Quality, M^2	<1.1 (up to 3 kW)
Beam Parameter Product, mm × mrad	<2 @ 50 µm, <5 @ 100 µm, <10 @ 200 µm

* Other wavelengths in 1006-1080 nm range are available upon request. ** Output power may be limited by wavelength selection
*** Over 4 hours, T=const **** 10 kHz to 10 MHz

General Characteristics				
Cabinet Dimensions (W × D × H), mm	Output Power, W	Cooling	Weight, kg	Supply Voltage, VAC
448 × 394 × 133	100	Air-cooled	<25	single-phase 50/60 Hz 100-240
448 × 500 × 177	200,300	Air-cooled	<30	single-phase 50/60 Hz 100-240
	400	Air-cooled	<30	single-phase 50/60 Hz 200-240
448 × 497 × 266	500, 700, 1000, 1500	Air-cooled	<50	single-phase 50/60 Hz 200-240
448 × 580 × 133	100, 200,300	Water-cooled	<30	single-phase 50/60 Hz 100-240
	400, 500, 600, 700	Water-cooled	<30	single-phase 50/60 Hz 200-240
	1000	Water-cooled	<50	single-phase 50/60 Hz 200-240
	1500	Water-cooled	<70	single-phase 50/60 Hz 200-240
448 × 798 × 177	2000, 2500, 3000, 4000	Water-cooled	<80	3-phase 50/60 Hz, 400-480

Single-mode lasers are equipped with a 5 mm beam diameter affixed collimator for powers up to 400 Watts; 500 - 4,000 Watt lasers terminate to an HLC-8 connector. Affixed collimator options include beam diameters in either 2.5 or 7.5 mm. IPG manufactures a complete suite of optical beam delivery components including delivery fiber and optics, collimators, beam couplers, switches and sharers, and processing heads and scanners, as well as process control and tooling solutions. Interchangeable collimators and processing heads connect easily to the HLC-8.

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