

# YLS-Series

## 10-100 kW Ytterbium Fiber Lasers



### Applications

- ▶ Cutting
- ▶ Drilling
- ▶ Welding
- ▶ Cladding
- ▶ Annealing
- ▶ Brazing
- ▶ Heat Treating
- ▶ Advanced Applications



### Features

- ▶ Any Power up to 100 kW
- ▶ Excellent Beam Parameter Product
- ▶ Constant BPP over Entire Power Range
- ▶ Small Focus over Large Working Distance
- ▶ Over 40% Wall-plug Efficiency
- ▶ Modulation up to 5 kHz
- ▶ Maintenance-free Operation
- ▶ Modular "Plug & Play" Design
- ▶ Compact, Rugged & Easy to Install
- ▶ Optional Affixed Chiller
- ▶ Hot Redundancy
- ▶ Integrated Coupler or Beam Switch Option



**IPG Photonics' YLS low-order-mode Ytterbium fiber laser systems** range from 1 to 100 kW, operating in CW or modulated modes up to 5 kHz. They have dynamic range from 10% to full power with no change in beam divergence or beam profile, allowing a single laser to be utilized for both high and low-power applications such as welding, drilling and precision cutting, a previously unheard of capability. The high brightness allows the use of long focal length processing lenses for vastly improved depth of field and minimal damage to optical components. Housed in rugged air-conditioned and sealed cabinets, YLS systems are controlled by either digital I/O, analog control or IPG's own LaserNet software with the additional option to add either DeviceNet, Profibus or Ethernet interfaces. YLS systems are available with the widest range of fiber diameters, fiber lengths up to 100 meters and a variety of multi-port beam switches, beam couplers, termination optics and scanners.

# YLS-Series

## 10-100 kW Ytterbium Fiber Lasers

### Optical Characteristics

	YLS-10000	YLS-20000	YLS-50000	YLS-100000
Wavelength, nm	1070 ± 5			
Mode of Operation	CW/ Modulated			
Modulation Frequency, kHz	0-5			
Max. Average Power <sup>1</sup> , W	10	20	50	100
Power Tunability, %	10 - 100			
Power Stability, %	±2			
Feed Fiber Core Diameter <sup>2</sup> , μm	100	100	200	300
Beam Parameter Product (Feed Fiber), mm x mrad	4	4	12	16
Minimal Process Fiber Core Diameter <sup>3</sup> , μm	200	300	400	500
Beam Parameter Product (Process Fiber), mm x mrad	8	12	17	25

<sup>1</sup>The power levels listed above are representative of selected models. Any power level in the 1-100 kW range is available.

<sup>2</sup>A direct feed fiber terminates in either an HLC (QBH-type) or LCA (QD-style) connector in standard lengths of up to 30 meters. Custom connectors and fiber lengths are available.

<sup>3</sup>Larger core diameters are available upon request.

### General Characteristics

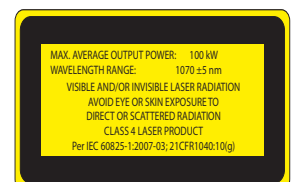
Cabinet Dimensions (W x D x H), mm	856 x 806 x 1517	1480 x 806 x 1206	2362 x 806 x 1517	3580 x 806 x 1836
Weight, kg	380	750	1800	3600
Cooling	Water-cooled			
Supply Voltage, VAC 3-phase	400-480, 50/60 HZ			
Wall-plug Efficiency, %	>40			

IPG offers Beam Delivery Accessories such as beam delivery fiber, beam couplers, shutters, switches and beam sharers. These accessories can be purchased separately from the laser or installed internally prior to laser purchase. Please contact your IPG Sales Representative to discuss these options. Specified cabinet dimensions and weights are typical for models with feed fiber only. Integrating beam delivery accessories and process fibers will increase weight and may increase cabinet height.

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