

YLS-SERIES

High Power Ytterbium Fiber Lasers

Highest Power in the Industry



FEATURES

- ▶ Any Power up to 120 kW
- ▶ Excellent Beam Parameter Product
- ▶ CW or Modulated
- ▶ Maintenance-free Operation
- ▶ Energy Efficiency >40%
- ▶ Modular "Plug and Play" Design
- ▶ Compact, Rugged and Easy to Install
- ▶ Optional Affixed Chiller
- ▶ Hot Diode Redundancy
- ▶ Integrated Coupler or Beam Switch Option



APPLICATIONS

- ▶ 2D/3D Thin & Thick Cutting
- ▶ Stainless & Mild Steel Cutting
- ▶ Processing Copper, Brass, Aluminum & Titanium
- ▶ Welding
- ▶ Drilling
- ▶ Cladding
- ▶ Brazing
- ▶ Heat Treating



YLS Series lasers range from up to 120 kW output power, operating in CW or modulated modes. YLS lasers have a dynamic range from 10% to full power with no change in beam divergence or beam profile. The high brightness allows the use of long focal length processing lenses for vastly improved depth of field in applications such as remote welding. Housed in rugged air-conditioned and sealed cabinets, YLS systems are controlled by either digital I/O, analogue control or IPG own LaserNet software with the additional option to add DeviceNet, Profibus or Ethernet interfaces.

YLS systems are available with the widest range of fiber diameters, fiber lengths and a variety of multi-port beam switches, allowing the laser to be shared between workstations on a time or energy basis. A wide range of beam delivery optics are tailored for use with YLS lasers, including cutting and welding processing heads, 2D and 3D high power scan heads for remote welding and wobble welding heads, which provide a variety of beam path options to suit different application requirements.

YLS-SERIES

High Power Ytterbium Fiber Lasers

Optical Characteristics	YLS 6000	YLS 10000	YLS 20000	YLS 40000	YLS 60000	YLS 120000
Wavelength, nm	1070 ±5					
Mode of Operation	CW/Modulated					
Modulation Frequency, kHz	0-5					
Max. Average Power*, kW	6	10	20	40	60	120
Power Tunability, %	10-100					
Power Stability, %	±1					
Feed Fiber Core Diameter**, µm	50	100	150	200	300	
Beam Parameter Product (Feed Fiber), mm × mrad	2	4	7	9	17	
Minimal Process Fiber Core Diameter***, µm	100	200	300	400	800	
Beam Parameter Product (Process Fiber), mm × mrad	3.5	6.5	12	13.0	17.0	48

*The power levels listed above are representative of selected models. Any power level in the 1-120 kW range is available.

**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.

***Larger core diameters are available upon request.

General Characteristics

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, beam sharers, wobbling welding heads and 2D and 3D scanners for remote welding applications. 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.



+1 (508) 373-1100;

IPGPhotonics.com/contact

www.ipgphotonics.com

MAX. AVERAGE OUTPUT POWER: 240,000 W
WAVELENGTH RANGE: 900-1200 nm

DANGER - INVISIBLE LASER
RADIATION AVOID EYE OR SKIN
EXPOSURE TO DIRECT OR
SCATTERED RADIATION
CLASS 4 LASER PRODUCT

IEC 60825-1:2014

Legal notices: All product information is believed to be accurate and is subject to change without notice. Information contained herein shall legally bind IPG only if it is specifically incorporated into the terms and conditions of a sales agreement. Some specific combinations of options may not be available. The user assumes all risks and liability whatsoever in connection with use of a product or its application. IPG, IPG Photonics, The Power to Transform and IPG Photonics' logo are trademarks of IPG Photonics Corporation. © 2026 IPG Photonics Corporation. All rights reserved.