

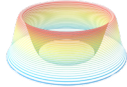
YLS-AMB SERIES

Adjustable Mode Beam Lasers

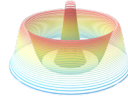
Independent & Dynamic Control of Beam Profile



Central Beam:
50 μm Core, up to 9 kW
100 μm Core, up to 30 kW



Ring Beam:
Outer \varnothing 150 or 300 μm



Central + Ring Beam:
up to 50 kW

The Broadest Range of
Beam Profile Tunability



FEATURES

- ▶ Rapid Automatic Switching Between Applications with Different Optimal BPP
- ▶ No Need for External Optics to Adjust BPP
- ▶ Total Output Power up to 50 kW
- ▶ Central Core Power up to 30 kW
- ▶ Easy Process Optimization and Automation
- ▶ Cost-effective Solution to Most Complex Tasks
- ▶ Energy Efficiency > 45%
- ▶ Maintenance-free Operation
- ▶ Industry Leading Reliability



APPLICATIONS

- ▶ Multiple Applications by the Same Laser
- ▶ Applications Requiring On-the-fly Adjustment of Beam Brightness
- ▶ Applications Requiring Non-uniform Intensity Distribution
- ▶ Demanding High-quality Cutting Applications
- ▶ 2D/3D Thin & Thick Metal Cutting and Welding
- ▶ Structural Aluminum Welding
- ▶ Improved Pierce Quality
- ▶ Improved Welding and Brazing Quality
- ▶ Processing Any Metal: Mild and Stainless Steel, Titanium, Copper, Brass and Aluminum



YLS-AMB Adjustable Mode Beam Lasers

improve productivity in cutting, welding and additive manufacturing by independent programmable adjustment of the beam mode to any combination of a small-spot high intensity bright core or a larger ring-shaped beam. In cutting, AMB increases piercing and cutting speeds and improves processing quality of both thick and thin materials by the same laser. In welding, AMB lasers eliminate spatter, cracking and porosity at the highest welding speeds unattainable by other methods.

YLS-AMB lasers deliver the highest total power with the widest range of beam mode parameters on the market including single mode core option and are fitted with either a single direct output, a single output with integrated beam coupler or multiple outputs with beam switches.

YLS-AMB SERIES

Adjustable Mode Beam Lasers

Optical Characteristics	YLS-	1500/1500	3000/3000 5000/5000	8000/12000	15000/15000	30000/20000
Wavelength, nm		1068-1080				
Mode of Operation		CW/Modulated				
Modulation Frequency, kHz		0-5				
Total Average Power, kW		3	6 10	20	30	50
Central Core Output Power, kW		1, 1.5, 2	1, 3, 5 5	3, 6, 8	15	30
Ring Beam Output Power, kW		2, 1.5, 1	5, 3, 1 5	15, 12, 10	15	20
Power Tunability, %		10-100				
Power Stability, %		±1				
Central Fiber Core Diameter, µm		50	50 or 100		100	
Outer Ring Fiber Diameter**, µm		65×150	65×150 or 130×300		130×300	
Central Beam Parameter Product, mm × mrad		2	2 or 3.5		4.2	
Ring Beam Parameter Product, mm × mrad		<22, 17 Typ. for 130×300 µm Ring			<16.5	

* The specifications are given for the specific typical models. The maximum total average power for YLS-AMB Series lasers is up to 50 kW, the maximum central core power is up to 9 kW at 50 µm core and up to 30 kW at 100 µm core. Different output power levels, custom core/ring output power combinations and core and ring fiber diameters are available upon request. The length of the delivery fiber may be limited by combination of the central core output power and diameter. Please contact IPG Representative with your requirements.

** Outer ring fiber diameter of 100 µm is possible in combination with 50 µm core. Please contact your Sales Representative for custom configurations.

General Characteristics

Cabinet Dimensions (W × D × H), mm	Up to 5 kW: 780 × 804 × 556 6-10 kW: 1005 × 804 × 556 12-25 kW: 1005 × 804 × 806 26-40 kW: 1005 × 804 × 1055 41-50 kW: 1005 × 804 × 1770
Weight, kg	Up to <1000
Supply Voltage, VAC	400-480 3-phase, 50/60 Hz
Wall-plug Efficiency, %	>45

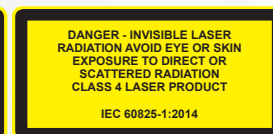
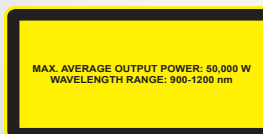
IPG Photonics offers YLS-AMB lasers with single direct output, single output with integrated fiber to fiber couplers and multiple outputs with integrated beam switches. Direct output YLS-AMB lasers are fitted with fixed output processing fiber. Direct output YLS-AMB lasers provide on the fly beam mode adjustment without external free-space optics such as optical switches, zoom process heads and other peripherals.

YLS-AMB lasers with integrated fiber to fiber couplers allow easy field replacement of processing fibers also adding additional level of beam mode adjustment flexibility.

YLS-AMB lasers with integrated beam switches boost productivity by beam sharing between multiple processing workstations.



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