

YLR-AM

Adjustable Mode Laser for Flexibility and Versatility in 3D Printing

Single-mode & Multi-mode Outputs from One Fiber

NEW



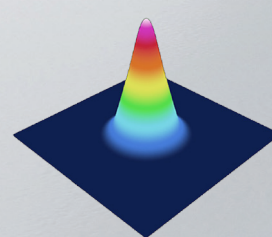
FEATURES

- ▶ Wavelength 1070 nm
- ▶ Single-mode Output 1 kW
- ▶ Multi-mode Output up to 5 kW
- ▶ Single-mode Fiber Core 14 μm
- ▶ Multi-mode Fiber Core 40 μm & 75 μm
- ▶ Maximum Modulation Rate 50 kHz
- ▶ Fast ON/OFF Switching <50 μs
- ▶ Automatic Change of Process Spot Sizes
- ▶ Easy Process Optimization and Automation
- ▶ No Bulk External Optics
- ▶ Compact and Rugged Design

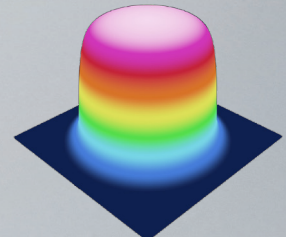


APPLICATIONS

- ▶ Sintering Stainless, Aluminum, Titanium, Superalloys, Copper
- ▶ Specialty Welding & Cutting



Single-Mode



Multi-Mode

In sintering and welding spots of different sizes are often processed in sequence. Solutions for changing beam spot size requiring external moving bulk optics, such as zoom collimators, are slow, expensive, result in energy losses and are prone to optics contamination. **The YLR-AM** laser allows user to rapidly change beam spot size from single-mode to ~3-5 \times larger in diameter from the same laser without any bulk moving external optics. Rapid switching between two spot sizes at approximately constant fluence results in up to 10 \times faster printing, reductions of capital cost and factory floor area. The single-mode core enables copper printing with a low-cost infrared laser.

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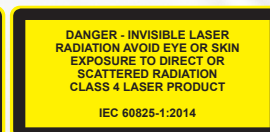
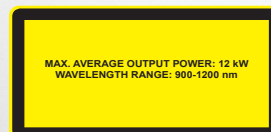
| Optical Characteristics | YLR-1000/3000-AM | YLR-1000/5000-AM |
|------------------------------------------|------------------|------------------|
| Wavelength, nm | 1075 ± 10 | |
| Operation Mode | CW/Modulated | |
| Maximum Single-mode Output Power, W | 1000 | |
| Maximum Multi-mode Output Power, W | 3000 | 5000 |
| Maximum Modulation Rate, kHz | 50 | |
| Switching ON/OFF time, µs | <50 | |
| Power Tuning Range, % | 10-100 | |
| Power Stability*, % | ± 1 | |
| Single-mode Fiber Core Diameter, µm | 14 | |
| Single-mode Beam Quality, M ² | <1.3 | |
| Multi-mode Fiber Core Diameter, µm | 40 and 75 | |
| Multi-mode BPP, mm × mrad | <2.4 and <3.2 | |

* Over 4 hours

| General Characteristics | YLR-1000/3000-AM | YLR-1000/5000-AM |
|------------------------------|------------------|------------------|
| Dimensions (W × D × H), mm | 448 × 801 × 177 | 448 × 780 × 177 |
| Weight, kg | 75 | 80 |
| Supply Voltage 50-60 Hz, VAC | 3-phase, 400-480 | |
| Power Consumption, W | <11.5 | 15 |



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