

## M300 RF CO<sub>2</sub> Lasers

The M series RF CO<sub>2</sub> lasers feature a slab discharge design, with the M300 lasers achieving a peak power of over 750W. This compact laser integrates the RF power supply with the laser cavity, providing excellent beam quality and power stability. The M300 lasers get short pulse rise and fall times, significantly enhancing production efficiency. With its high peak power and superior beam quality, the M300 lasers are ideally suited for a wide array of material processing applications.

The M series RF CO<sub>2</sub> lasers is built on a universal platform, featuring standardized mechanical, electrical, and optical interfaces, along with common software and unified service and support. The power range extends from 100W to 500W.



### Advantages

- Wide range of operating power
- High peak power
- Short pulse rise and fall time
- Excellent beam quality
- High power stability

### Applications

- Marking
- Engraving
- Cutting
- Drilling
- 3D Printing

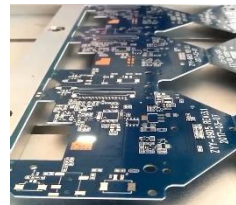
### Application Scenarios:



Acrylic Cutting



Wood Product Cutting



PCB Board Drilling



Pattern Cutting

## M300 Product Specifications

SPECIFICATIONS	MODEL	M300i	M300
	Wavelength (μm)		9.3
Output Power(W) <sup>①</sup>		≥ 220W	≥ 250W
Power Range(W)		10-220W	10-250W
Peak Power(W)		660W	750W
Power Stability(%) <sup>②</sup>		< ±6%	
Mode Quality (M <sup>2</sup> )		M <sup>2</sup> < 1.2	
Beam Ellipticity		< 1.2:1	
Beam Diameter(mm) <sup>③</sup>		7.0±1	8.5±1
Full-Angle Beam Divergence(mrad)		< 2.0	
Typical Polarization (parallel to baseplate)		> 100:1	
Pulse Frequency (kHz)		0 - 100kHz	
RF Excitation Pulse Width Range (μs)		2 - 1000μs	
Duty Cycle Limit (%)		0~60%	
Pulse Rise/Fall Time(μs)		≤60μs	
Weight		47kg	
Dimensions (L x W x H)		1077 x 197 x 227	
Cooling		Water	
Heat Load (W)		< 4500W	
<b>Input Power</b>			
DC Input Voltage (VDC)		48VDC	
Continous DC Input Current(A) <sup>④</sup>		90A	
<b>Environment Condition</b>			
Maximum Case Temperature		5°C ~ 40°C	
Temperature		< 50°C	
Altitude		< 2000m	
Humidity		< 80%, Non-Condensing	
Shipping/Storage Environment		-10°C ~ 60°C, Non-Condensing	
<b>Coolant</b>			
Dynamic Coolant Flow Rate (l/min.)		6L/min	
Coolant Maximum Static Pressure (kPa)		210-820kPa	
Coolant Setpoint Temperature Range		20°C - 25°C	
Hardness of water (CaCO <sub>3</sub> )		< 250mg/L	

The above specifications are subject to change without prior notice.

Notes:

- ① Measured at 10 kHz PRF, 60% duty cycle after a 5 minutes warm-up from cold start.
- ② Power Stability definition: At a constant water temperature,  $\pm (P_{max}-P_{min})/(2P_{max})$
- ③ Measured at the position of light outlet
- ④ Measured at 10 kHz PRF and 60% duty cycle operation, maximum average input current