

M100/150

二氧化碳射频激光器

Carbon dioxide
RF laser

M系列射频CO₂激光器采用平板放电结构设计,其中M100型号峰值功率超过250W, M150型号则超过375W。该紧凑型激光器将射频电源与激光腔体集成,支持垂直或水平灵活安装。

The M Series RF CO₂ lasers is designed with a slab discharge configuration, with the M100 lasers achieving a peak power of over 250W and the M150 lasers exceeding 375W. This compact laser design integrates the RF power supply with the laser cavity, allowing for flexible installation options, either vertically or horizontally.



产品特点

- ◆ 广泛的工作功率范围
- ◆ 高峰值功率
- ◆ 上升与下降时间短
- ◆ 优异的光束质量
- ◆ 高功率稳定性
- ◆ 射频电源可垂直或水平安装

Product Features

- ◆ Wide range of operating power
- ◆ High peak power
- ◆ Short power rise and fall time
- ◆ Excellent beam quality
- ◆ High power stability
- ◆ RF power supply can be installed vertically or horizontally

应用场景

Application Scenarios



保温杯打标
Thermos Cups
Marking



剥线
Wires Stripping



裁布
Fabric Cutting



轮胎打标
Tyre Marking

产品参数

Product parameter

参数 SPECIFICATIONS	型号 MODEL		
	M100i	M100	M150
波长(μm) Wavelength (μm)	9.3		10.6
输出功率(W) ^① Output Power(W) ^①	≥ 90W	≥ 100W	≥ 150W
功率范围(W) Power Range(W)	10-90W	10-100W	10-150W
峰值功率(W) Peak Power(W)	225W	250W	375W
功率稳定性(%) ^② Power Stability(%) ^②			< ± 6%
光束质量(M ²) Mode Quality (M ²)			M ² < 1.3
光束椭圆度 Beam Ellipticity			< 1.2:1
光束直径(mm) ^③ Beam Diameter(mm) ^③			2.2±0.6
光束发散角(mrad全角) Full-Angle Beam Divergence(mrad)			< 7.0
偏振(线性偏振, 平行于宽度) Typical Polarization(parallel to baseplate)			> 100:1
脉冲频率 Pulse Frequency (kHz)			0 - 100kHz
脉冲频率宽度 RF Excitation PulseWidth Range (μs)			2 - 1000μs
占空比 Duty Cycle Limit (%)			0 ~ 60%
脉冲上升/下降时间(μs) Fall Time(μs)			< 90μs
重量 Weight			22.8kg
尺寸: 长*宽*高(mm) Dimensions (L*W*H)			908.4×164.6×134.8
散热方式 Cooling			水冷 Water
热负荷 Heat Load (W)			< 2400W
电源要求 Input Power			
输入电压 DC Input Voltage(VDC)			48VDC
输入电流 ^④ Continuous DC Input Current(A) ^④			50A
环境条件 Environment Condition			
工作环境温度 Maximum Case Temperature			5°C ~ 40°C
外壳最高温度 Temperature			< 50°C
海拔高度 Altitude			< 2000m
湿度 Humidity			< 80%, 无冷凝 Non-Condensing
航运和存储环境 Shipping/Storage Environment			-10°C ~ 60°C, 无冷凝 Non-Condensing
冷却水要求 Coolant			
流速 Dynamic Coolant FlowRate(l/min.)			6L/min
水压 Coolant Maximum Static Pressure(kPa)			210-500kPa
温度 Coolant Setpoint Temperature Range			20°C - 30°C
硬度 (CaCO ₃) Hardness of water (CaCO ₃)			< 250mg/L

以上规格如有变动, 恕不另行通知。

说明:

- ① 从冷启动开始预热5分钟后, 以10 kHz的脉冲重复频率和60%的占空比条件下测量
- ② 功率稳定性的定义为: 在恒定的水温下, $\pm(P_{max}-P_{min})/(2P_{max})$
- ③ 在整形镜出口光口位置测量
- ④ 在10 kHz的脉冲重复频率和60%占空比条件下, 测量最大平均输入电流

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 shaping lens light outlet
- ④ Measured at 10 kHz PRF and 60% duty cycle operation, maximum average input current