Product Catalog

DAVI Laser Technology Co.,Ltd.

Contents

Company Profile

DAVI Laser Technology Co., Ltd. established its R&D team in Beijing in 2008, joined with talents from various fields of opto-mechatronics, specialized in RF CO_2 lasers for over 16 years. The headquarter of DAVI Laser is located in Beijing. Due to the continuous expansion of production scale, the manufacturing base was relocated from Beijing to Taiyuan Shanxi Industrial Park in 2019. The new manufacturing base has modern office and workshops of 6,000 square meters, with professional teams of R&D, production, sales, and after-sales service. In order to keep track of the latest technologies and applications in the laser industry, company established the DAVI Laser Research Institute in 2020, providing a solid technical foundation for the subsequent development of DAVI Laser.

DAVI Laser is committed to providing high-performance laser source for various industries, company has first-class optical purification workshops and dust-free workshops, equipped with advanced production equipment and inspection instruments that capable of evaluating the performance of various products, thereby laying a solid foundation for manufacturing high-quality products.

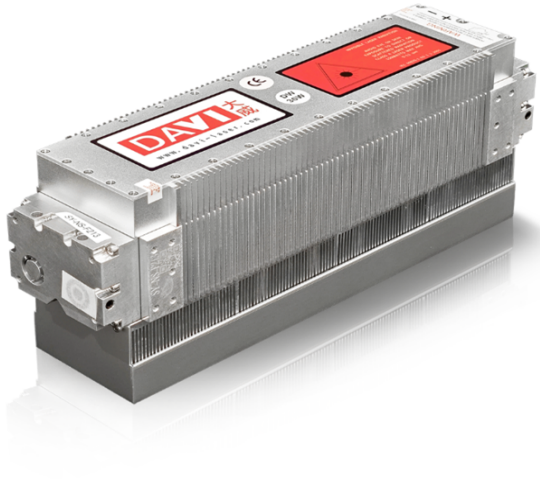
DAVI Laser has multiple national patents and has obtained the Certificate of ISO 9001, along with the Certificate of CE, RoHS and FDA and so on. So far, DAVI Laser has launched RF CO_2 lasers with power of 30W, 50W, 80W, 100W, 150W, 300W and 500W, as well as UV lasers with power of 3W and 5W. Its technical strength is in the leading position in China. DAVI's laser products are widely used in industrial processing, medical beauty, packaging and printing, electronic components, semiconductors, and mechanical parts and other industries. DAVI RF CO_2 laser products consistently rank first in sales volume in Chinese market and are exported to over 20 countries.

After years of development, DAVI Laser has established itself as a leading enterprise in the RF CO_2 laser industry in China. Our goal is to research and manufacture more advanced laser systems, and we will continue to enhance the overall capabilities of company, contributing to the development of laser industry in China.

D30 Series RF CO_2 Lasers

The D30 series RF CO_2 lasers are well-known for their high reliability, featuring a compact design that integrates the RF power supply with the laser cavity. This configuration ensures excellent beam quality and power stability. With a wavelength range of 9.3 to 10.6μm, the lasers can be configured for both air and water cooling, make it as the preferred choice for high-performance laser marking and engraving systems. In addition, it incurs minimal operating and maintenance costs.

The D30 series RF CO_2 lasers are an ideal solution for laser processing of a wide array of materials, including paper, plastic, wood, rubber, leather, and fabric etc.



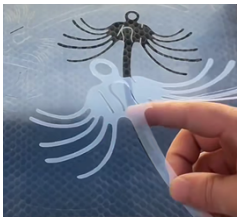
Advantages:

- Excellent beam quality
- Stable power output
- Integrated design of RF power supply and laser cavity
- High reliability
- Both air and water cooling available
- Capable of high-quality laser processing on a variety of materials

Applications:

- Marking
- Engraving
- Cutting

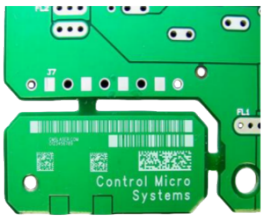
Application Scenarios:



PE film Cutting

Beverage Bottle Marking

Cardboard Marking



PCB boards Marking

D30 Series Product Specifications

SPECIFICATIONS \ MODEL	D30i	D30	GMIT35
Wavelength (μm)	9.3	10.6	10.6
Optical Output Power(W)①	⩾ 25W	⩾ 40W	⩾ 38W
Power Stability(%)②③	< ±5%		< ±4.5%
Mode Quality (M^2)	M^2 < 1.3		M^2 < 1.15
Beam Elipticity	< 1.2:1		< 1.15:1
Beam Size (mm)	1.8±0.2		
Beam Divergence (mrad, full angle)	7.5±0.5		
Polarization	> 100:1		
Pulse Frequency (kHz)	0 ~ 25kHz		
Duty Cycle	0 ~ 100%		
Weight	6.3kg(Fan) / 5.6kg(Water)		
Dimensions(mm)	359.2 × 92 × 140.1(Fan) / 359.2 × 92 × 94.8(Water)		
Cooling	Fan / Water		
Heat Dissipation (W)	< 600W		
Input Power			
DC Input Voltage (VDC)	48VDC		
DC Input Current(A)④	12.5A		
Environment Condition			
Maximum Case Temperature	< 55℃		
Temperature	5℃ ~ 35℃		
Altitude	< 2000m		
Humidity	Non-Condensing		
Shipping/Storage Environment	-10°C ~ 60°C, Non-Condensing		
Coolant			
Dynamic Coolant Flow Rate (l/min)	4L/min		
Coolant Maximum Static Pressure (kPa)	500kPa		
Coolant Setpoint Temperature Range	20°C - 30°C		
Hardness of water（CaCO3）	< 250mg/L		

The above specifications are subject to change without prior notice

Notes:

① Measured at 25°C and derated by 1%/°C for higher laser head temperatures

② Power Stability definition: ± (Pmax-Pmin)/(2Pmax)

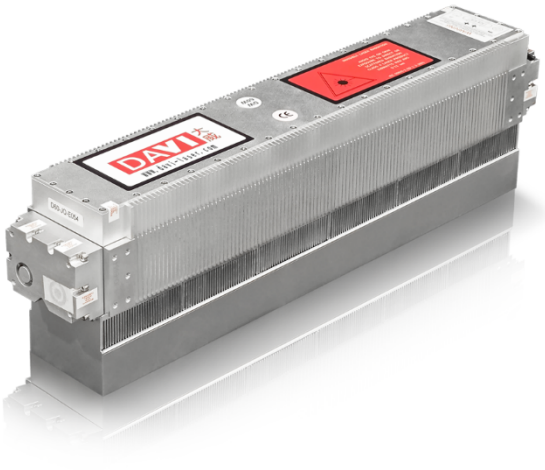
③ Measured at constant duty cycle after 10 minutes laser out at operating condition

④ Measured at 10 KHz PRF and 60% duty cycle operation, maximum average input current

D60 Series RF CO_2 Lasers

The D60 series RF CO_2 lasers boasts high reliability, featuring a compact integrated design that combines the RF power supply with the laser cavity. It offers exceptional beam quality and power stability, with a laser wavelength range of 9.3 to 10.6 μm and can be configured for both air cooling and water cooling. These attributes make it the preferred choice for high-performance laser marking and engraving systems, while also incur very low operational and maintenance costs.

The D60 series RF CO_2 laser is an ideal solution for laser processing of various materials, including paper, plastic, wood, rubber, leather, and fabric etc.



Advantages:

- Excellent beam quality
- Stable power output
- Integrated design of RF power supply and laser cavity
- High reliability
- Both air and water cooling available
- Capable of high-quality laser processing on a variety of materials

Applications:

- Marking
- Engraving
- Cutting

Application Scenarios:

Silicone Strap Marking

Wood Product Marking

Paper Engraving

Denim products Engraving

D60 Series Product Specifications

SPECIFICATIONS \ MODEL	D60i	D60	GMIT60
Wavelength (μm)	9.3	10.6	10.6
Optical Output Power(W)①	⩾ 40W	⩾ 60W	⩾ 60W
Power Stability(%)②③	< ±5%		< ±4.5%
Mode Quality (M^2)	M^2 < 1.2		M^2 < 1.15
Beam Elipticity	< 1.2:1		< 1.15:1
Beam Size (mm)	1.8±0.2		
Beam Divergence (mrad, full angle)	7.5±0.5		
Polarization	> 100:1		
Pulse Frequency (kHz)	0 ~ 25kHz		
Duty Cycle	0 ~ 100%		
Weight	10.2kg(Fan) / 8.8kg(Water)		
Dimensions(mm)	539.2 × 92 × 155.2(Fan) / 539.2 × 92 × 94.8(Water)		
Cooling	Fan / Water		
Heat Dissipation (W)	< 1200W		
Input Power			
DC Input Voltage (VDC)	48VDC		
DC Input Current(A)④	25A		
Environment Condition			
Maximum Case Temperature	< 55℃		
Temperature	5℃~35℃		
Altitude	< 2000m		
Humidity	Non-Condensing		
Shipping/Storage Environment	-10°C~60°C, Non-Condensing		
Coolant			
Dynamic Coolant Flow Rate (l/min)	4L/min		
Coolant Maximum Static Pressure (kPa)	500kPa		
Coolant Setpoint Temperature Range	20℃ - 30℃		
Hardness of water（CaCO3）	< 250mg/L		

The above specifications are subject to change without prior notice

Notes:

① Measured at 25°C and derated by 1%/°C for higher laser head temperatures

② Power Stability definition: ± (Pmax-Pmin)/(2Pmax)

③ Measured at constant duty cycle after 10 minutes laser out at operating condition

④ Measured at 10 KHz PRF and 60% duty cycle operation, maximum average input current

T80/T100 RF CO_2 Lasers

The T80/T100 RF CO_2 lasers is a continuous output lasers featuring Ceramic Core design, which can be configured for both air cooling and water cooling. Traditional CO_2 lasers utilize glass or metal cavities with internal metal components. Therefore, the users have to face the problem with power decreased and reduced beam stability that caused by laser gas attenuation.

The T series CO_2 lasers adopt Ceramic Core design that allows the gas to be completely contained within a separate, non-reactive Ceramic Core without any parts inside. The metal electrode is mounted outside the resonant cavity. Laser gases are excited from the outside and there are no internal metal surfaces that cause reaction and contamination.

Compared to traditional metal-sealed lasers, the Ceramic Core technology can reduce thermal expansion by 70%, significantly reducing the possible changes in internal parts. The Ceramic Core technology also uses 30% fewer parts than traditional CO_2 lasers, reducing the possibility of failure. At the same time, the T-series RF CO_2 laser has an extremely short pulse rise and fall time and a small heat-affected zone, making it ideal for engraving and cutting. Production efficiency is 4 times higher than traditional CO_2 lasers.

Advantages

- Fully Ceramic Core design significantly reduces laser gas attenuation, extending the lifespan by threefold.
- A 30% reduction in internal components of the resonant cavity enhances reliability.
- Extremely short pulse rise and fall time, contribute to high production efficiency.
- Excellent power stability ensures high reliability.

Applications

- Marking
- Engraving
- Cutting
- 3D Printing

T80/T100 Product Specifications

MODEL / SPECIFICATIONS	T80	T100
Wavelength (μm)	10.6	10.6
Output Power(W)①	⩾ 80W	⩾ 100W
Power Stability(%)②③	< ±5%	< ±4%
Mode Quality (M^2)	M^2 < 1.2	
Beam Elipticity	< 1.2:1	
Beam Diameter(mm)	2.5 ±0.5	
Beam Divergence (mrad, full angle)	5.2 ±0.5	
Rise Time(μs)	＜75μs	
Pulse Frequency (kHz)	0 - 100kHz	
Weight	14.5kg(Fan) / 17.5kg(Water)	
Dimensions (L x W x H)	535 × 192.9 × 156(Fan) / 581.15 × 176× 156.1(Water)	
Cooling	Fan / Water	
Heat Load (W)	< 1400W	
Input Power		
DC Input Voltage (VDC)	48VDC	
Continous DC Input Current(A)④	30A	
Environment Condition		
Maximum Case Temperature	< 50°C	
Temperature	5°C ~ 35°C	
Altitude	< 2000m	
Humidity	Non-Condensing	
Shipping/Storage Environment	-10°C ~ 60°C, Non-Condensing	
Coolant		
Dynamic Coolant Flow Rate (l/min)	6L/min	
Coolant Maximum Static Pressure (kPa)	500kPa	
Coolant Setpoint Temperature Range	20°C - 30°C	
Hardness of water （CaCO3）	< 250mg/L	

The above specifications are subject to change without prior notice

Notes:

① Measured at 25°C and derated by 1%/°C for higher laser head temperatures

② Power Stability definition: ± (Pmax-Pmin)/(2Pmax)

③ Measured at constant duty cycle after 10 minutes laser out at operating condition

④ Measured at 10 KHz PRF and 60% duty cycle operation, maximum average input current

M100/ M150 RF CO_2 Lasers

The M Series RF CO_2 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.

The M Series lasers deliver excellent beam quality and power stability. With short pulse rise and fall times, the M Series lasers significantly enhance production efficiency. The high peak power and superior beam quality make the M Series lasers an ideal choice for a wide range of material processing applications.

The M series RF CO_2 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

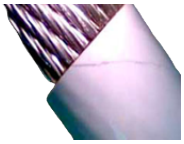
- Wide range of operating power
- High peak power
- Short power rise and fall time
- Excellent beam quality
- High power stability
- RF power supply can be Installed vertically or horizontally

Applications

- Marking
- Engraving
- Cutting

Application Scenarios:

Thermos Cups Marking



Wires Stripping

Fabric Cutting

Tyre Marking

M100/M150 Product Specifications

SPECIFICATIONS \ MODEL	M100i	M100	M150
Wavelength (μm)	9.3	10.6	
Output Power(W)①	⩾ 90W	⩾ 100W	⩾ 150W
Power Range(W)	10-90W	10-100W	10-150W
Peak Power(W)	225W	250W	375W
Power Stability(%)②	< ±6%		
Mode Quality (M^2)	M^2 < 1.3		
Beam Elipticity	< 1.2:1		
Beam Diameter(mm)③	2.2±0.6		
Full-Angle Beam Divergence(mrad)	< 7		
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)	< 90μs		
Weight	22.8kg		
Dimensions (L x W x H)	908.4*164.6*134.8		
Cooling	Water		
Heat Load (W)	< 2400W		
Input Power			
DC Input Voltage (VDC)	48VDC		
Continous DC Input Current(A)④	50A		
Environment Condition			
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		
Coolant			
Dynamic Coolant Flow Rate (l/min.)	6L/min		
Coolant Maximum Static Pressure (kPa)	210-500kPa		
Coolant Setpoint Temperature Range	20°C - 30°C		
Hardness of water （CaCO3）	< 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, ± (Pmax-Pmin)/(2Pmax)

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

M2-100/ M2-150 RF CO_2 Lasers

The M Series RF CO_2 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.

The M Series lasers deliver excellent beam quality and power stability. With short pulse rise and fall times, the M Series lasers significantly enhance production efficiency. The high peak power and superior beam quality make the M Series lasers an ideal choice for a wide range of material processing applications.

The M series RF CO_2 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.

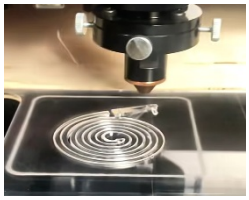
Advantages

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

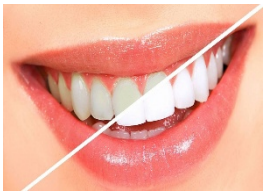
Applications

- Marking
- Engraving
- Cutting

Application Scenarios:



Acrylic Carving



Laser Tooth Cleaning

Leather Cutting

Laser Beauty Treatments

M2-100/M2-150 Product Specifications

SPECIFICATIONS \ MODEL	M2-100i	M2-100	M2-150
Wavelength (μm)	9.3	10.6	
Output Power(W)①	⩾ 90W	⩾ 100W	⩾ 150W
Power Range(W)	10-90W	10-100W	10-150W
Peak Power(W)	225W	250W	375W
Power Stability(%)②	< ±6%		
Mode Quality (M^2)	M^2 < 1.3		
Beam Elipticity	< 1.2:1		
Beam Diameter(mm)③	2.2±0.6		
Full-Angle Beam Divergence(mrad)	< 7		
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)	< 90μs		
Weight	15.9kg		
Dimensions (L x W x H)	936.7×88.6×171.5		
Cooling	Water		
Heat Load (W)	< 2400W		
Input Power			
DC Input Voltage (VDC)	48VDC		
Continous DC Input Current(A)④	50A		
Environment Condition			
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		
Coolant			
Dynamic Coolant Flow Rate (l/min.)	6L/min		
Coolant Maximum Static Pressure (kPa)	210-500kPa		
Coolant Setpoint Temperature Range	20°C - 30°C		
Hardness of water （CaCO3）	< 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, ± (Pmax-Pmin)/(2Pmax)

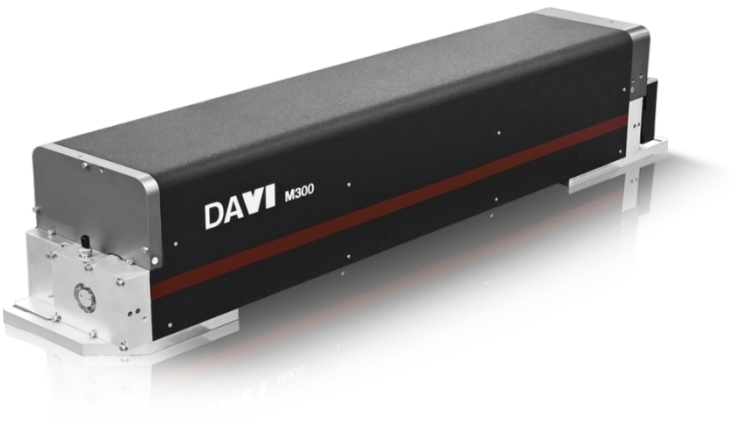
③ Measured at the position of shaping lens light outlet

④ Measured at 10 KHz PRF and 60% duty cycle operation, maximum average input current

M300 RF CO_2 Lasers

The M series RF CO_2 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_2 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.



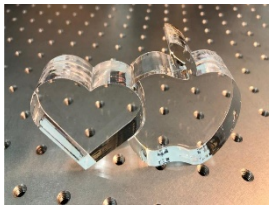
Advantages

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

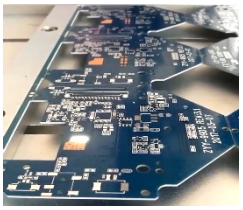
Applications

- 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	10.6
Output Power(W)	⩾ 220W	⩾ 250W
Power Range(W)	10-220W	10-250W
Peak Power(W)	660W	750W
Power Stability(%)	< ±6%	
Mode Quality (M^2)	M^2 < 1.2	
Beam Elipticity	< 1.2:1	
Beam Diameter(mm)	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%	
Fall Time(μs)	≤60μs	
Weight	47kg	
Dimensions (L x W x H)	1077 x 197 x 227	
Cooling	Water	
Heat Load (W)	< 4500W	
Input Power		
DC Input Voltage (VDC)	48VDC	
Continous DC Input Current(A)	90A	
Environment Condition		
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	
Coolant		
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 （CaCO3）	< 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, ± (Pmax-Pmin)/(2Pmax)

③ Measured at the position of light outlet

④ Measured at 10 KHz PRF and 60% duty cycle operation, maximum average input current

M500 RF CO_2 Lasers

The M Series RF CO_2 lasers feature a slab discharge design. The peak power of the M500 RF CO_2 lasers achieves over 1800W. 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_2 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.

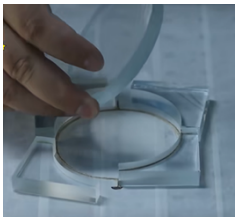
Advantages

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

Applications

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

Application Scenarios:



Glass Cutting

Carbon Fiber Cutting

Automobile Parts Cutting

3D printing

M500 Product Specifications

MODEL / SPECIFICATIONS	M500
Wavelength (μm)	10.6
Output Power(W)	≥ 450W
Power Range(W)	20-450W
Peak Power(W)	1800W
Power Stability(%)	< ±6%
Mode Quality (M^2)	M^2 < 1.2
Beam Elipticity	< 1.2:1
Beam Diameter(mm)	8.5±1
Full-Angle Beam Divergence(mrad)	< 2.2
Typical Polarization (parallel to baseplate)	> 100:1
Pulse Frequency (kHz)	0 - 100kHz
RF Excitation Pulse Width Range (μs)	2 - 1000μs
Duty Cycle Limit (%)	0～40%
Fall Time(μs)	≤60μs
Weight	59kg
Dimensions (L x W x H)	1224 x 196.9 x 227
Cooling	Water
Heat Load (W)	< 9000W
Input Power	
DC Input Voltage (VDC)	48VDC
Continous DC Input Current(A)	190A
Environment Condition	
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
Coolant	
Dynamic Coolant Flow Rate (l/min.)	9.5L/min
Coolant Maximum Static Pressure (kPa)	240-820kPa
Coolant Setpoint Temperature Range	20°C - 25°C
Hardness of water（CaCO3）	< 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, ± (Pmax-Pmin)/(2Pmax)

③ Measured at the position of light outlet

④ Measured at 10 KHz PRF and 60% duty cycle operation, maximum average input current

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