

YDFLP-LP Series MOPA Pulsed Fiber Lasers

JPT YDFLP-LP series pulsed fiber lasers make use of master oscillator power amplifier (MOPA) configuration, and show excellent laser performance as well as high level of temporal pulse shaping controllability. As compared to the Q-switching technology, LP series fiber laser is better in flexibility, it can realize lower/higher pulse repetition with smaller time delay. As compared to M series fiber laser, the MOPA configuration adopts the pulse compensation, which enables minimum pulses deformation, and hence makes the peak power of the fiber laser higher.

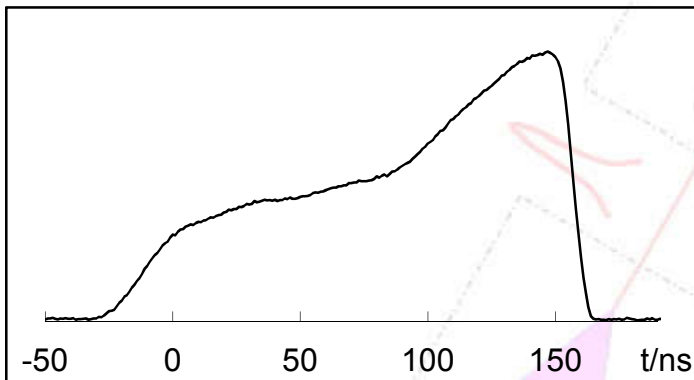


Key Features

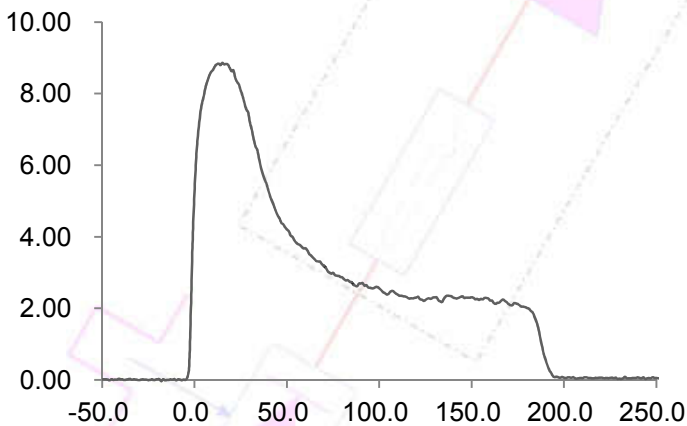
- >20W nominal power
- Excellent beam quality
- Fixed pulse width @200ns
- Adjustable pulse frequency (1 ~ 400kHz)
- Precise pulse control, first pulse usability
- Anti-reflection protection
- Flexible and customized control
- No photon darkening effect

Applications

- ✓ Silicone keypad marking
- ✓ Metal deep engraving
- ✓ Stainless steel black marking
- ✓ Metal surface processing
- ✓ High frequency line processing



Waveform compensation optimization



Final output after amplification

Specifications:

Laser Type	Unit	MOPA				
Power		20	30			60
M2		<1.3		<1.8		<1.8
Product Model		LP1+-S	LP1+-S	LP2+-L1	LP1+-L1	LP1+-L1
Delivery Cable Length	m	2m (customized)		3m(customized)		3m(Customized)
Nominal Average Output Power	W	>20	>30			>60
Maximum Pulse Energy	mJ	0.66	0.8	1.0	1.2	1.2
Full Power Repetition Range	kHz	30~400	37~400	30~400	25~400	50~400
Pulse Repetition Rate Range	kHz	1~400				
Pulse Duration	ns	200				
Longtime Average Power Stability	%	<5				
Cooling Method		Air Cooling				
Supply DC Voltage (VDC)	V	24				
Current Consumption	A	<8	<10			<15
Current Supply Consumption	A	>8	>10			>15
Power Consumption@20℃	W	<192	<240			<360
Central Emission Wavelength	nm	1064				
Emission Bandwidth@3dB	nm	<15				
Polarization		Random				
Anti-Reflection Protection		Yes				
Output Beam Diameter	mm	7±0.5		6±0.5		6±0.5
Output Power Tuning Range	%	0~100				
Operation Temperature	℃	0~40				
Storage Temperature	℃	-10~60				

Contact JPT

JPT(China)

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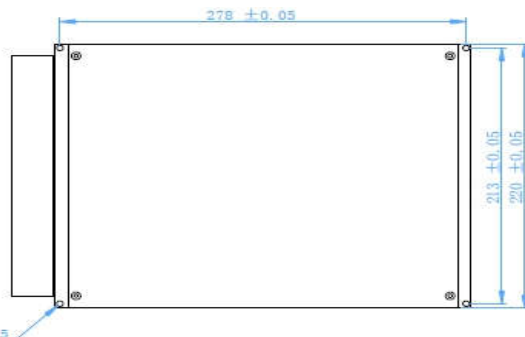
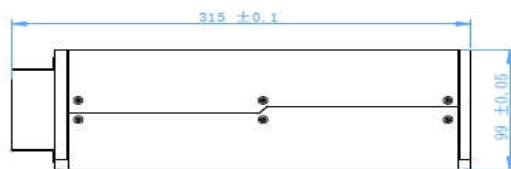
JPT(Singapore)

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Dimension is suitable for 20/30 watts
Dimension of 60w is 315*275*99mm

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DIRECT OR SCATTERED RADIATION**

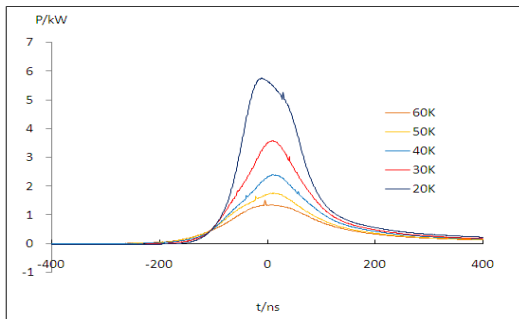
YDFLP-M1+ MOPA Pulsed Fiber Lasers

JPT YDFLP-M1+ series MOPA pulsed fiber lasers make use of master oscillator power amplifier (MOPA) configuration, and show excellent laser performance as well as high level of temporal pulse shaping controllability. As compared to the Q-switching technology, the pulse repetition frequency (PRF) and pulse width can be controlled independently in MOPA configuration, while the peak power of the fiber laser can be well maintained. This feature is crucial for material processing applications, such as laser marking. Besides, its good pulse width tunability enables minimum pulses deformation, increases the thresholds of nonlinearities, and hence makes the laser more reliable and robust.

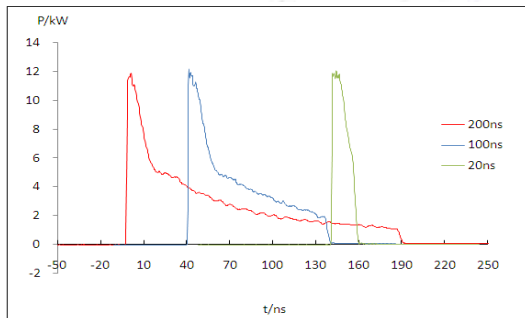


Key Features

- >20W nominal power
- Excellent beam quality
- Adjustable pulse width (6~250ns)
- Adjustable pulse frequency (1~1000kHz)
- Precise pulse control, first pulse usability
- Anti-reflection protection
- Flexible and customized control
- No photon darkening effect



Q-Switched: The peak power decreased with high frequency.



MOPA: High peak power maintained by adjusting the pulse width.

Applications

- ✓ Excellent marking effect on plastic
- ✓ Metal surface processing, coating peeling
- ✓ Black marking on stainless steel
- ✓ Alumina black marking
- ✓ Large area engraving
- ✓ Semi-conductor & Electronics applications

Specifications:

Laser Type	Unit	MOPA	
Product Model		YDFLP-20-M1+-S	YDFLP-30-M1+-S
M ²		<1.3	
Delivery Cable Length	m	2m (customized)	
Nominal Average Output Power	W	>20	>30
Maximum Pulse Energy	mJ	0.5	
Full Power Repetition Range	kHz	40~1000	60~1000
Pulse Repetition Rate Range	kHz	1~1000	
Pulse Duration	ns	6~250	
Longtime Average Power Stability	%	<5%	
Cooling Method		Air Cooling	
Supply DC Voltage (VDC)	V	24V	
Current Consumption	A	<8	<10
Current Supply Consumption	A	>8	>10
Power Consumption@20℃	W	<192	<240
Central Emission Wavelength	nm	1064	
Emission Bandwidth@3dB	nm	<15	
Polarization		Random	
Anti-Reflection Protection		Yes	
Output Beam Diameter	mm	7±0.5	
Output Power Tuning Range	%	0~100	
Operation Temperature	℃	0~40	
Storage Temperature	℃	-10~60	

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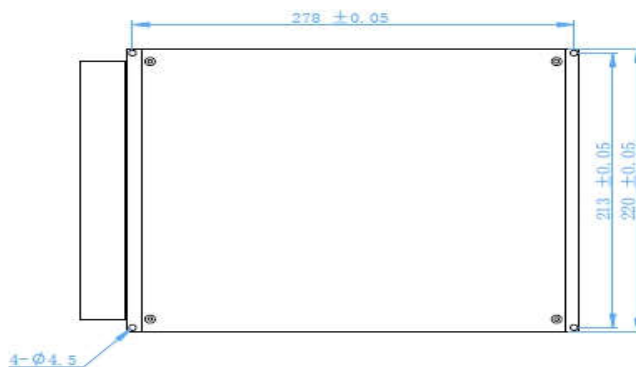
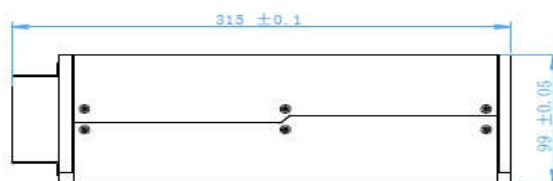
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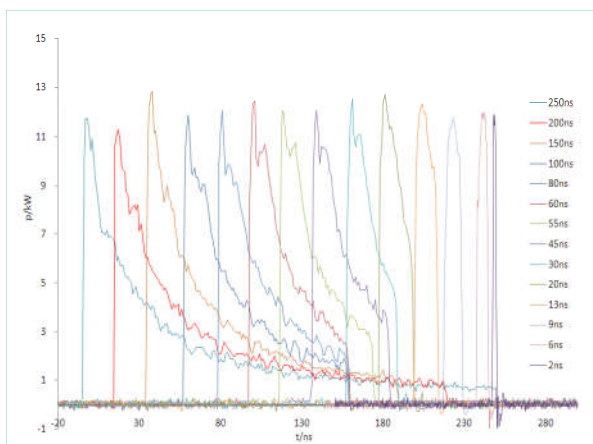


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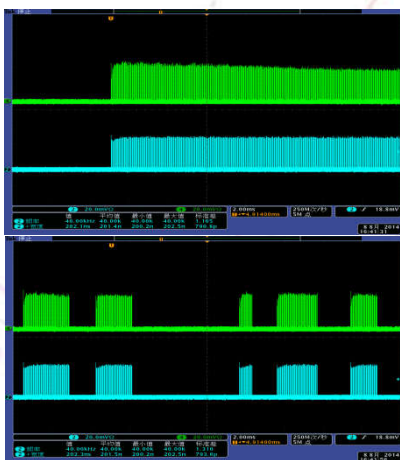
7 years dedication YDFLP-M6+

YDFLP- M6+ MOPA pulsed fiber laser is a brand new product after JPT 7 years' endeavour and dedication.

- ◆ **Introduce GUI software:** user friendly interface, realizing human-machine interaction
- ◆ **First pulse usable and adjustable**
- ◆ **Zero time delay:** faster response speed
- ◆ **Precise pulse control:** pulse-to-pulse controllable
- ◆ **Broader pulse width range:** 1~250ns
- ◆ **Wider pulse frequency range:** 1~2000kHz
- ◆ **No ghost image**



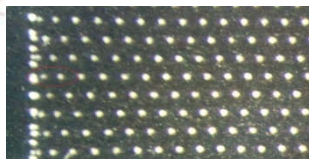
Output waveform



M6+ zero time delay

Advanced application performance

- First pulse usability and adjustability
- Anti-reflection protection
- No photon darkening effect
- Fast on/off time



M6+ first pulse: usable



Others first pulse: unusable

- No ghost image

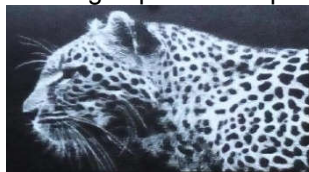


M6+ marking effect

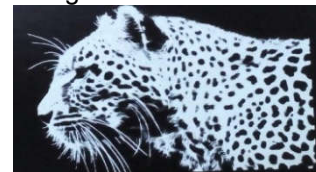


Others marking effect

- High speed bitmap scanning



M6+ scanning time: 65s

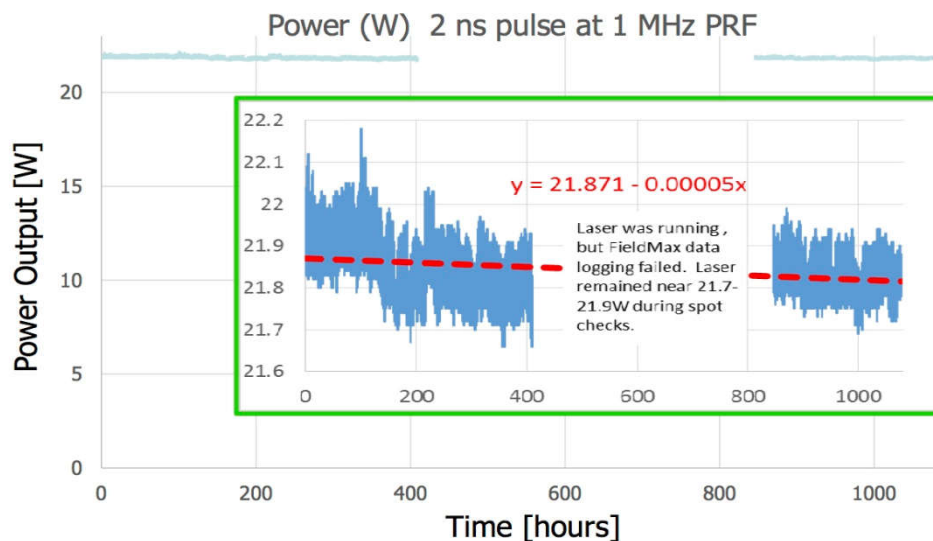


Others scanning time: 115s

Specifications:

Laser Type	Unit	MOPA		
Product Model		YDFLP-20-M6+-S	YDFLP-30-M6+-L1	YDFLP-30-M6+-S
M ²		<1.3	<1.8	<1.3
Delivery Cable Length	m	2m (Customized)		
Nominal Average Output Power	W	>20	>30	>30
Maximum Pulse Energy	mJ	0.5	0.9	0.5
Full Power Repetition Range	kHz	40~2000	31~2000	60~2000
Pulse Repetition Rate Range	kHz	1~2000		
Pulse Duration	ns	1~250	2~250	2~250
Longtime Average Power Stability	%	<5		
Cooling Method		Air Cooling		
Supply DC Voltage (VDC)	V	24		
Current Consumption	A	<8	<10	<10
Current Supply Consumption	A	>8	>10	>10
Power Consumption@20℃	W	<120	<150	<150
Central Emission Wavelength	nm	1064		
Emission Bandwidth@3dB	nm	<15		
Polarization		Random		
Anti-Reflection Protection		Yes		
Output Beam Diameter	mm	7	6	7
Output Power Tuning Range	%	0~100		
Operation Temperature	℃	0~40		
Storage Temperature	℃	-10~60		

Long-term stability Tested by Third Party:



Conclusion: Long-term average power instability <5%

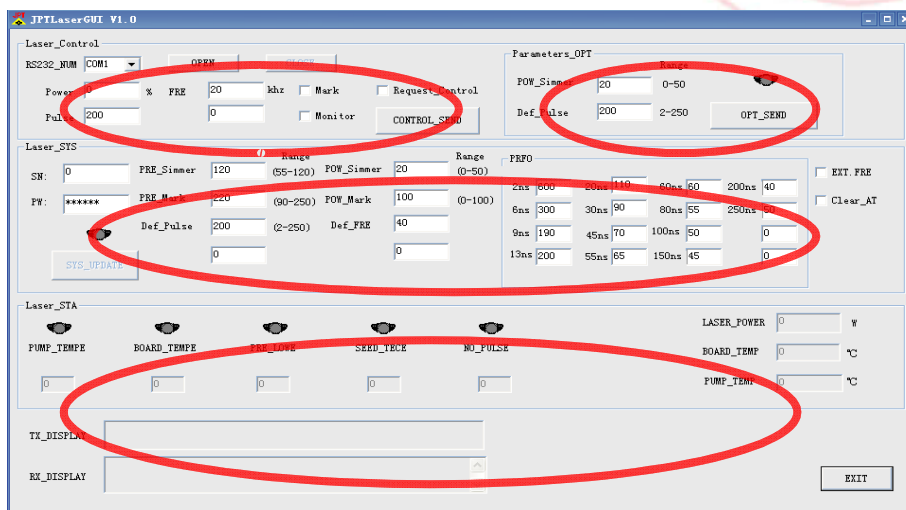
Advanced GUI Controlling Software:

Laser Control

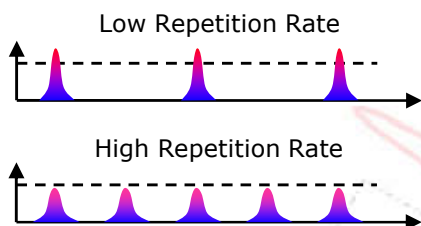
System Parameters (Limited)

Parameters Optimization

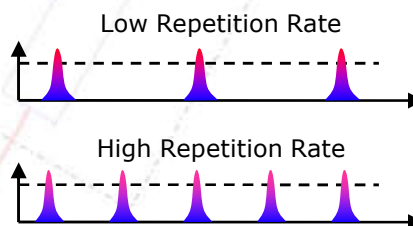
Status Monitoring



Comparison of the Peak Powers of the Pulses:



Q-switched Pulses Train



MOPA Pulses Train

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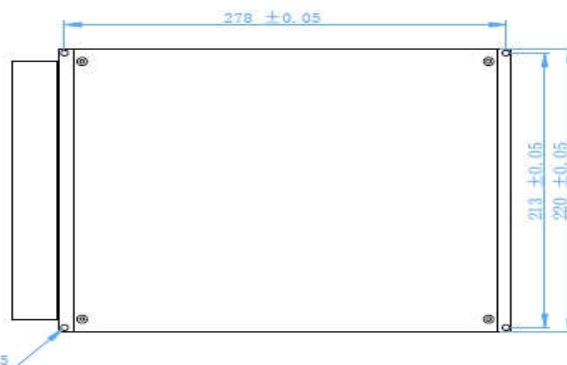
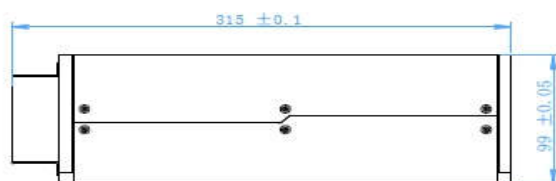
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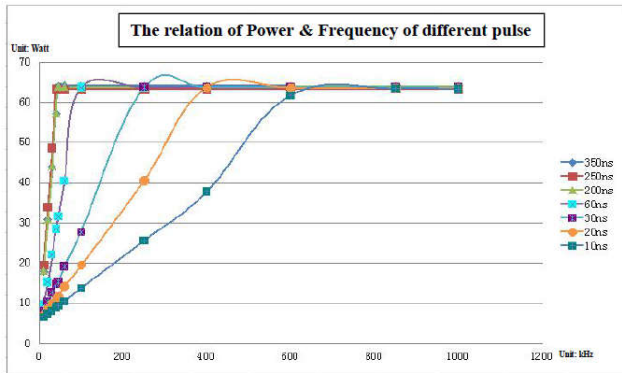
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YDFLP-LM1 MOPA Pulsed Fiber Lasers

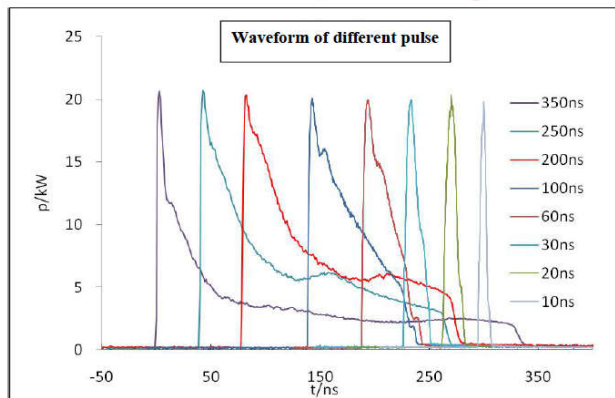
JPT YDFLP-LM1 series MOPA pulsed fiber lasers make use of master oscillator power amplifier (MOPA) configuration, offering 8 waveforms from 10ns to 350ns. The pulse energy of 60/70watts lasers is up to 1.5mj, meanwhile the beam quality remains excellent ($M^2 < 1.8$). The 60/70 watts lasers provides top performance as well as high efficiency in a wide range of applications.



60W full-loaded, the actual output power in different frequency and pulse width

Key Features

- >60W nominal power
- Excellent beam quality
- Adjustable pulse width (10~350ns)
- Adjustable pulse frequency (1~1000kHz)
- Precise pulse control, first pulse usability
- Anti-reflection protection
- Flexible and customized control
- No photon darkening effect



60W Waveform of different pulse width

Applications

- ✓ Thin metal cutting & drilling
- ✓ Ceramic wafer processing
- ✓ Die steel deep engraving
- ✓ Large area marking & engraving

Specifications:

Laser Type	Unit	MOPA	
Product Model		YDFLP-60-LM1-L1	YDFLP-70-LM1-L1
M ²		<1.8	
Delivery Cable Length	m	3m (customized)	
Nominal Average Output Power	W	>60	>70
Maximum Pulse Energy	mJ	1.5	
Full Power Repetition Range	kHz	40~1000	47~1000
Pulse Repetition Rate Range	kHz	1~1000	
Pulse Duration	ns	10~350	
Longtime Average Power Stability	%	<5	
Cooling Method		Air Cooling	
Supply DC Voltage (VDC)	V	24V	
Current Consumption	A	<15	
Current Supply Consumption	A	>15	
Power Consumption@20℃	W	360	
Central Emission Wavelength	nm	1064	
Emission Bandwidth@3dB	nm	<15	
Polarization		Random	
Anti-Reflection Protection		Yes	
Output Beam Diameter	mm	6±0.5	
Output Power Tuning Range	%	0~100	
Operation Temperature	℃	0~40	
Storage Temperature	℃	-10~60	

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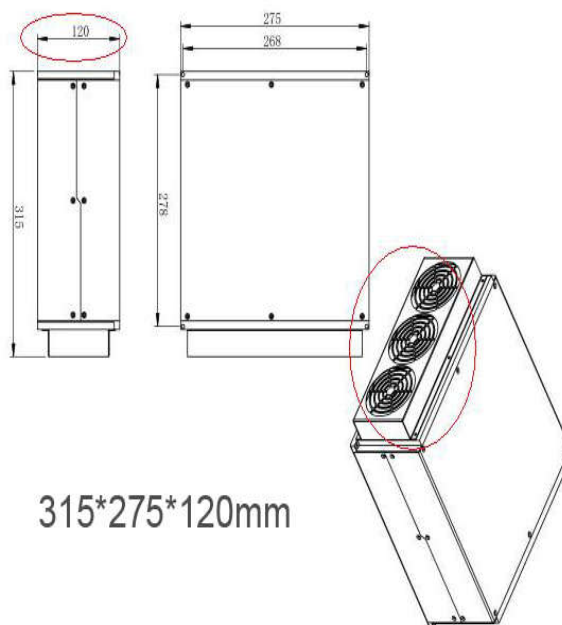
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315*275*120mm

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Specifications:

Laser Type	Unit	MOPA		
Product Model		100-LP1-L1	100-LM1-L1	120-LM1-L1
M ²		<1.8		
Delivery Cable Length	m	3m (customized)		
Nominal Average Output Power	W	>100		>120
Maximum Pulse Energy	mJ	1.2	1.5	
Full Power Repetition Range	kHz	83~400	67~1500	80~1500
Pulse Repetition Rate Range	kHz	1~400	1~1500	
Pulse Duration	ns	250	10~350	
Longtime Average Power Stability	%	<5		
Cooling Method		Air Cooling		
Supply DC Voltage (VDC)	V	24V		
Current Consumption	A	<20		<25
Current Supply Consumption	A	>20		>25
Power Consumption@20℃	W	<480		<600
Central Emission Wavelength	nm	1064		
Emission Bandwidth@3dB	nm	<15		
Polarization		Random		
Anti-Reflection Protection		Yes		
Output Beam Diameter	mm	6±0.5		
Output Power Tuning Range	%	0~100		
Operation Temperature	℃	0~40		
Storage Temperature	℃	-10~60		

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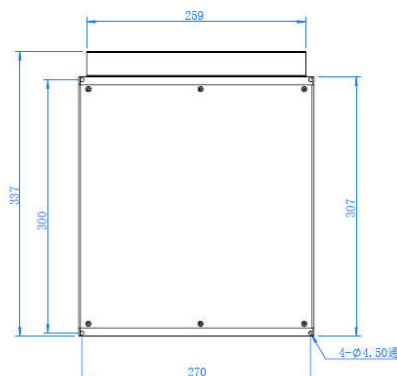
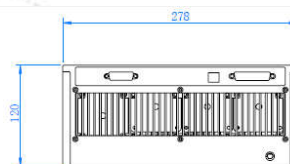
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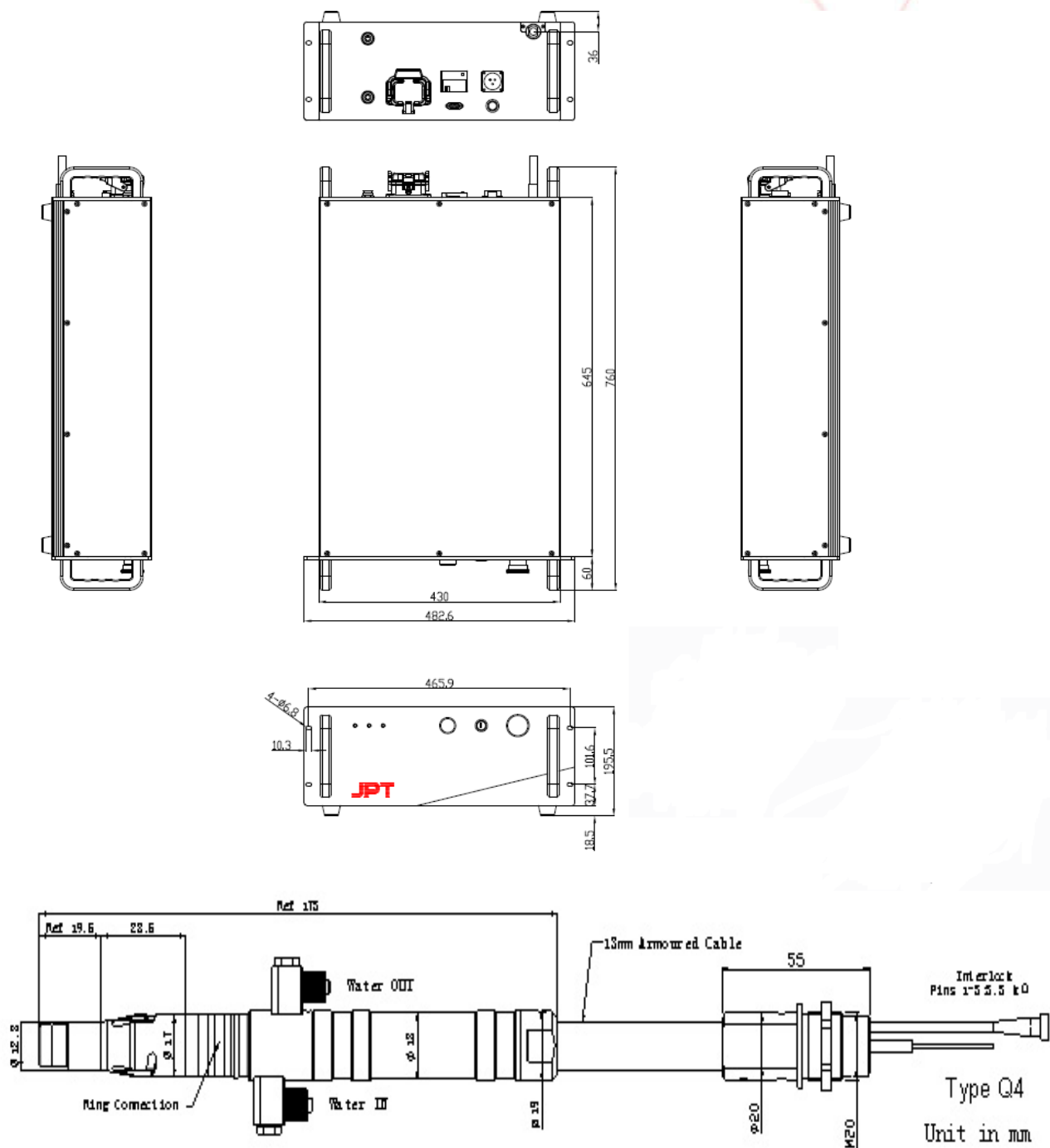
JPTCW-800-SM-K

JPT JPTCW-800-SM-K CW laser is the ultra combination of optics, machinery, electric and control system; It can monitor the real-time working status and warning through control interface by JPT designed control software, and can record the working data as well for data analysis. Laser comes with a water chiller, supporting us higher photoelectric conversation rate, lower power consumption, compact design, maintenance-free, flexible fiber cable output, and easily integrated by customers. It's the best choice of cutting, welding and other applications in processing industry.



Specifications:

Parameter	Unit	Specification	
Product Model		JPTCW-800-SM-K	JPTCW-1000-SM-K
Nominal Average Output Power	W	800	1000
Beam Parameter Product	mm*mrad	SM 0.4 , MM 1	
Central Emission Wavelength	nm	1080	
@3db Spectral Width@3db	nm	< 5	
Delivery Cable Length	m	15	
Cooling Method		Water Cooling (Purified Water)	
Operating Voltage, Single-phase	V	220	
Maximum Power Consumption	W	2700	3300
Operation Temperature	°C	10 ~ 40	
Storage Temperature	°C	-20 ~ 50	
Weight	KG	60	
Size	mm	483*760*195.5	



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