

STM Series Nanosecond Pulsed Fiber Lasers

775nm pulsed fiber of Nanosecond Pulsed Fiber Lasers have been designed to allow users flexibility in their application refinement. With user selectable pulse-widths and repetition rates, these lasers put more options into the hands of the user than traditional lasers with fixed parameters. In addition, the ability to externally trigger pulses on some of the models make these laser an extremely flexible tool.

Based on an all-fiber laser cavity design and offering excellent beam quality and wall plug efficiency, these compact air-cooled lasers are an ideal choice for your application.

Repetition Rate: 20 - 40 MHz*

Average Power Stability: < 3%

Pulse to Pulse Stability: <5%



Features

- All -fiber laser cavity
- Excellent beam quality
- High wall plug efficiency
- Graphical User Interface
- Highly reliable, maintenance free
- Safety interlock
- Compact & air-cooled

Applications

- Structured Illumination Microscopy
- Super Resolution Microscopy
- 3rd Generation DNA Sequencing
- Entertainment
- Military, and Scientific Research

	Wavelength	Energy/Pulse	Pulse duration**
External or Internal Triggering	1028, 1064, 1550 nm	100 nJ	1.5 - 4 ns
External or Internal Triggering	514, 532 nm	50 nJ	1.3 - 4 ns
External or Internal Triggering	775 nm	30 nJ	1.3 - 4 ns
Internal Triggering	1120, 1240 nm	60 nJ	1.1 - 4 ns
Internal Triggering	560, 620 nm	10 nJ	0.5 - 2 ns

* Other repetition rates custom

** Other models available

STR Series Fiber Lasers

1. STR Series 10-100W Q-switched Pulse Fiber Laser

The STR Series 10-100W Q-switched pulse fiber laser is the industrial marking and micromachining laser. This series pulse laser has high peak power, high single-pulse energy and optional spot diameter and can be widely applied in the fields, such as marking, precision processing, graphic engraving of non-metal, gold, silver, copper and aluminum with altitude stress resistance, stainless materials without altitude stress resistance. Its marking process features lower cost and more stable performance compared with traditional laser. All components of the 10-100W Q-switched pulse fiber laser are developed by us independently, with high product reliability. And its good compatibility has well recognized by the market and its quality has reached the international advanced level.

Features:

- Highly stable laser output
- High single-pulse energy
- High marking efficiency
- Short pulse setup time
- High reliability
- Maintenance-free operation



Technical specifications:

Model	STR-P20QE	STR-P20QB	STR-P30QB	STR-P50QB
Average output power (W)	20	≥20	≥30	50
Central wavelength	1064	1064	1064	1064
Pulse repetition rate (kHz)	20-60	20 - 60	30 - 60	50-100
Output power stability	<3%	<3%	<3%	<3%
Output beam diameter (mm)	7±1	7±1	7±1	7±1
Polarization	Random	Random	Random	Random
Pulse width (ns)	90-130	<120@20kHz	<120@30kHz	90-150
Maximum pulse energy (mJ)	1	1@20kHz	1@30kHz	1
Delivery cable length (m)	2	2.0	2.0	2
Power supply (VDC)	24	24±1	24±1	24
Power range (%)	10-100	10-100	10-100	10-100
Power consumption (W)	170	200@20°C	300@20°C	340
Size (mm)	391x260x120	215×286×95	215×286×95	391x260x120
Cooling	Air	Air	Air	Air
Operation temperature (°C)	0-40	0 ~ 40	0 ~ 40	0-40

Model	STR-P30Q	STR-P50Q	STR-P100Q
Average output power (W)	30	50	100
Central wavelength	1064	1064	1064
Pulse repetition rate (kHz)	30-60	50-100	20-200
Output power stability	<3%	<3%	<5%
Output beam diameter (mm)	7±1	7±1	6.5±1
Polarization	Random	Random	Random

Pulse width (ns)	90-130	90-150	50-130
Maximum pulse energy (mJ)	1	1	1
Delivery cable length (m)	2	2	2
Power supply (VDC)	24	24	24
Power range (%)	10-100	10-100	10-100
Power consumption (W)	240	340	450
Size (mm)	391x260x120	396x360x123	396x360x123
Cooling	Air	Air	Air
Operation temperature (°C)	0-40	0-40	0-40

Model	STR-P20QS	STR-P30QS
Average output power (W)	≥20	≥30
Central wavelength	1064	1064
Pulse repetition rate (kHz)	30 - 60	40 - 60
Output power stability	<3%	<3%
Output beam diameter (mm)	6-8	6-8
Polarization	Random	Random
Pulse width (ns)	110-140 @30kHz	130-150 @40kHz
Maximum pulse energy (mJ)	0.67	0.75
Beam quality (M2)	<1.5	<1.6
Power supply (VDC)	24±1	24±1
Power range (%)	10-100	10-100
Power consumption (W)	200@20°C	300@20°C
Size (mm)	290*215*95	290*215*95
Cooling	Air	Air
Operation temperature (°C)	0 ~ 40	0 ~ 40

Remarks: STR-PQE, -P20QS and -P30QS are economic versions. Others are high-quality versions.

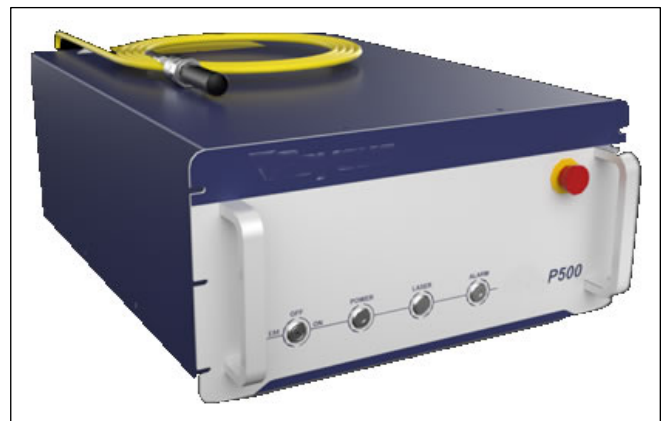
2. STR Series Short Pulse Fiber Lasers

2.1 STR Series Short Pulse High-power Fiber Lasers

The short pulse fiber lasers have a variety of pulse width options, including high average power (10-2000W), high-peak power ($\leq 15\text{kW}$) and 2-350ns, adjustable repetition frequencies of 10-1000kHz, short pulse setup time ($\leq 100\mu\text{s}$), online modifiable pulse width and other characteristics. It is ideal for industrial applications in the field of solar photovoltaic, thin film cutting, sheet material cutting, welding, surface cleaning of materials, fine marking and material deepening, etc.

Features:

- Common control interface
- Extremely wide operating frequency range
- A variety of pulse width options
- Online modifiable pulse width
- Short pulse setup time
- High light beam quality
- Air cooling design



Model	STR-P200	STR-P300	STR-P500
Central Emission wavelength (nm)	1064	1064	1064

Nominal average output power (W)	200@20-50kHz	300@30-50kHz	500@20-50kHz
Nominal average output power (W)	100@10kHz	250@20kHz	200@10kHz
Pulse repetition rate (kHz)	10-50	20-50	10-50
Laser power stability (8hrs)	<5%	<5%	<5%
Polarisation	Random	Random	Random
Pulse width (ns)	90-130	120-140	80-160
Maximum Pulse energy (mJ)	10@20kHz	12.5@20kHz	25@20kHz
Fiber core dia. (um)	100	100	200
Fiber length (m)	5.0	5.0	10.0
Output power tunability (%)	10-100	10-100	10-100
Operating voltage	220VAC	220VAC	220VAC
Cooling	Air	Water	Water
Operating temperature (°C)	0-40	0-40	0-40
Dimension WxDxH (mm)	485x237x764	485x237x764	502x254x755

2.2 MOPA Fiber Lasers

The MOPA pulsed fiber lasers have the features such as high average power (20-200W), high peak power (15kW), tunable pulse widths from 2ns to 500ns and as high pulse repetition rate as 2000kHz. These lasers are ideal for applications such as solar , film cutting, thin material cutting, high resolution marking etc.

Technical specifications:

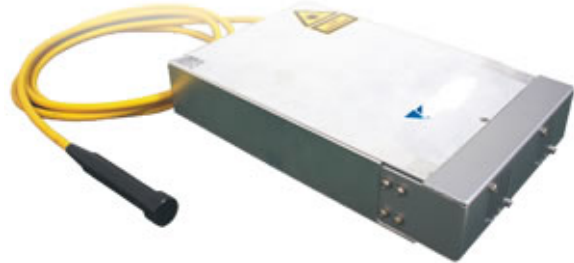
Model	STR-P20MB	STR-P60M	STR-P100M
Central Emission wavelength (nm)	1064	1064	1064
Polarization	Random	Random	Random
Nominal average output power (W)	20	60	100
Maximum Pulse energy (mJ)	0.5	1.0	1.0
Pulse repetition rate (kHz)	10-1000	20-1000	20-1000
Pulse width (ns)	2-350	10-350	10-350
Typical beam quality (M ²)	<1.3	<1.6	<1.6
Collimated beam diameter (mm)	6-8	6-8	5.5-7.5
Output power tunability (%)	10-100	10-100	10-100
Long term power stability (8hrs)	<3%	<3%	<5%
Length of beam delivery fiber (m)	2.0	2.0	2.0
Operating voltage	24VDC	24VDC	220VAC
Typical power consumption (W)	150	350	450
Cooling	Air	Air	Air
Operating temperature (°C)	0-40	0-40	0-40
Dimension WxDxH (mm)	286x215x95	340x260x120	396x360x123

3. STR Series Single Mode CW Fiber Lasers

STR series low power single mode CW fiber laser is a compact module up to 100W output power with fiber delivery through a near diffraction limited beam. The excellent beam quality and power stability make this laser a multipurpose tool with cost effective performance and maintenance free operation.

Features:

- High efficiency
- Excellent beam quality
- Compact air-cooled package
- Maintenance free operation

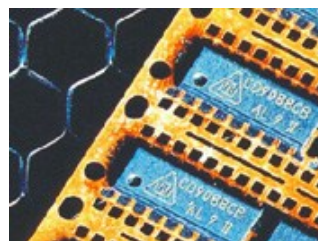


Applications:

- Marking
- Engraving
- Micromachining

Technical specifications:

Model	STR-C5	STR-C10	STR-C20	STR-C50	STR-C100
Mode of operation	CW	CW	CW	CW/Modulated	CW/Modulated
Central Emission wavelength (nm)	1060-1085	1060-1085	1060-1085	1060-1085	1060-1085
Polarization	Random	Random	Random	Random	Random
Nominal output power (W)	5	10	20	50	50
Max. modulation frequency (kHz)	NA	NA	NA	50	50
Beam quality (M^2)	<1.05	<1.05	<1.05	<1.1	<1.1
Collimated beam diameter (mm)	3-7	3-7	3-7	3-7	3-7
Output power tunability (%)	10-100	10-100	10-100	10-100	10-100
Long term power stability (8hrs)	<3%	<3%	<3%	<3%	<3%
Length of beam delivery fiber (m)	2	2	2	5	5
Operating voltage	24VDC	24VDC	220VAC	220VAC	220VAC
Power consumption (W)	35	55	100	250	500
Cooling	Air	Air	Air	Air	Water
Operating temperature ($^{\circ}$ C)	0-45	0-45	0-45	0-45	0-45
Dimension WxDxH (mm)	146x230x42	146x230x42	215x304x105	450x650x246	450x240x680



4. STR Series Single Module CW Fiber Lasers

STR series high power single module CW fiber laser is up to 3000W output power with fiber delivery through a near diffraction limited beam. The laser beam is multi-mode and the excellent beam quality and power stability make this series laser a multipurpose tool with cost effective performance and maintenance free operation.

Features:

- High Electro-optical Conversion Efficiency
- Altitude Stress-resisting Capacity
- Sheet Cutting Efficiency
- Customized Output Fiber Length
- Optional Air Cooling or Water Cooling
- Maintenance-free Operation
- Wide Modulation Frequency Range



Technical specifications:

Model	STR-C1000W	STR-C1500X	STR-C2000X	STR-C3000S
Mode of operation	CW/Modulated	CW/Modulated	CW/Modulated	CW/Modulated
Central Emission wavelength (nm)	1075-1085	1075-1085	1075-1085	1075-1085
Polarization	Random	Random	Random	Random
Nominal output power (W)	1000	1500	2000	3000
Max. modulation frequency (kHz)	5	5	5	5
Output head	QBH	QBH	QBH	QBH
Beam quality (M^2)	<1.3	2.1-2.7	2.1-2.7	2.1-2.7
Output power tunability (%)	10-100	10-100	10-100	10-100
Long term power stability (8hrs)	<3%	<3%	<3%	<3%
Red pointer	yes	yes	yes	yes
Length of beam delivery fiber (m)	20	20	20	20
Operating voltage (VAC)	340-420	340-420	340-420	340-420
Typical power consumption (W)	4000	6000	8000	10000
Cooling	Water	Water	Water	Water
Operating temperature ($^{\circ}$ C)	10-40	10-40	10-40	10-40
Dimension WxDxH (mm)	485x240x765	520x620x986	520x620x986	900x447x251
Weight	<50kg	<90kg	<90kg	<80kg
External Control	RS232/AD	RS232/AD	RS232/AD	RS232/AD/Ethernet

5. STR Series High Power Multi-module CW Fiber Lasers

The high-power multi-module continuous fiber laser series ranges from 1500W to 12000W, with high electro-optical conversion efficiency, high-quality multi-mode beam, high energy density, wide modulation frequency, high reliability, long lifetime.

Features:

- High electro-optical conversion efficiency
- Customized output fiber length
- QBH connector
- Maintenance-free operation
- Wide modulation frequency range
- Small size, easy to install



Technical specifications:

Model	STR-MC3300X	STR-MC4000X	STR-MC6000X	STR-MC12000X
Mode of operation	CW/Modulated	CW/Modulated	CW/Modulated	CW/Modulated
Central Emission wavelength (nm)	1075-1085	1075-1085	1075-1085	1075-1085
Polarization	Random	Random	Random	Random
Nominal output power (W)	3300	4000	6000	12000
Max. modulation frequency (kHz)	5	5	2	2
Output head	QBH	QBH	QBH	QBH
BBP (mrad)	≤5	≤5	≤5	≤10
Output power tunability (%)	10-100	10-100	10-100	10-100
Long term power stability (8hrs)	<3%	<3%	<3%	<3%
Red pointer	yes	yes	yes	yes
Length of beam delivery fiber (m)	20	20	20	20
Operating voltage (VAC)	340-420	340-420	340-420	340-420
Typical power consumption (W)	13200	16000	24000	48000
Cooling	Water	Water	Water	Water
Operating temperature (°C)	10-40	10-40	10-40	10-40
Dimension WxDxH (mm)	650x1000x1450	650x1000x1450	1200x1000x1230	1620x1000x1560
Weight	<200kg	<250kg	<450kg	<900kg
External Control	RS232/AD	RS232/AD	RS232/AD	RS232/AD

6. STR Series QCW Fiber Lasers

The Quasi-Continuous Fiber Laser Series ranges from 75W to 600W, with higher electro-optical conversion efficiency, better optical quality and lower maintenance cost. This series product is a perfect alternative of existing light-pumped YAG laser and is an ideal choice for spot welding, seam welding, boring and other industrial applications needing wide pulse and high peak due to its diversified compatibility and the convenience for most YAG systems to use it with simple transformation.

Features:

- High electro-optical conversion efficiency > 30%



- Two work modes: continuous and pulse
- Extremely stable output performance
- Excellent light beam quality
- Optional QCS / QBH output connector and output length

Technical specifications

Model	STR-QCW150/1500	STR-QCW300/3000	STR-QCW450/4500	STR-QCW600/6000
Operation mode	CW/Modulation	CW/Modulation	CW/Modulation	CW/Modulation
Average power(CW), (W)	250	500	750	800
Average power(Pulse), (W)	150	300	450	600
Maximum output power, (W)	1500	3000	4500	6000
Maximum pulse energy,(J)	15	30	45	60
Wavelength (nm)	1080±5	1080±5	1080±5	1080±5
Repetition rate (Hz)	0-5000	0-5000	0-5000	0-5000
Pulse width (ms)	0.05-50	0.05-50	0.05-50	0.05-50
Output power stability	<3%	<3%	<3%	<3%
Red laser	Yes	Yes	Yes	Yes
Beam delivery connector	QBH	QBH	QBH	QBH
BBP (mrad)	0.4, 2, 5	5, 10	5, 10	5, 10
Power supply	200-240	340-420	340-420	340-420
Control mode	RS232/AD	RS232/AD	RS232/AD	RS232/AD
Power output range (%)	10-100	10-100	10-100	10-100
Power consumption (W)	1000	2000	3000	3500
Size (mm)	485x240x680	650x890x1000	650x1000x1450	650x1000x1450
Weight (kg)	<50	<150	<200	<250
Cooling	Air	Water	Water	Water
Operation temperature (°C)	10-40	10-40	10-40	10-40

STJ Series Fiber Lasers

1. STJ-LP Series Fiber Lasers

STJ-LP-Series Fiber Lasers adopts MOPA (Master Oscillator Power Amplifier) structure, diode laser as seed light, and fiber based power amplification. This laser integrates independence adjustment of pulse width and frequency, to make sure a constant pulse energy output, which provides a good combining solution to the requirements of high power laser source and high marking speed.

The extremely flexible pulse width and frequency adjustment, which plays a significant impact on colour formation, enables colour or silver shining marking on stainless steel.

Features:

- Flexible & independent control of pulse width & frequency
- Selectable pulse shape
- High repetition frequency
- No laser leakage

Applications:

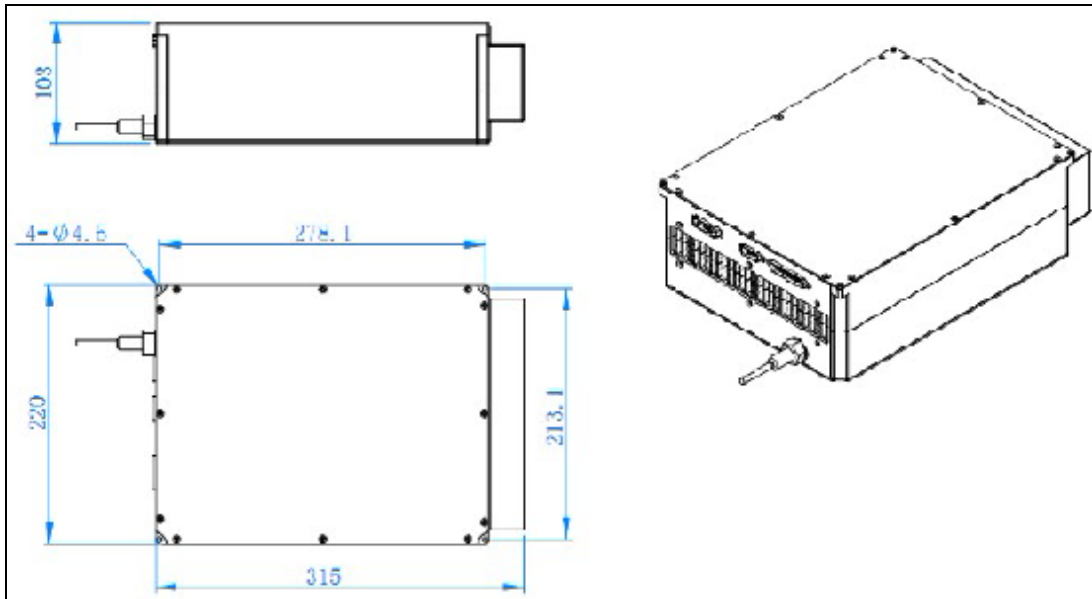
- Marking / Colour marking
- Ablation
- Cutting
- Drilling
- Scribing
- Soldering
- Trimming
- Engraving



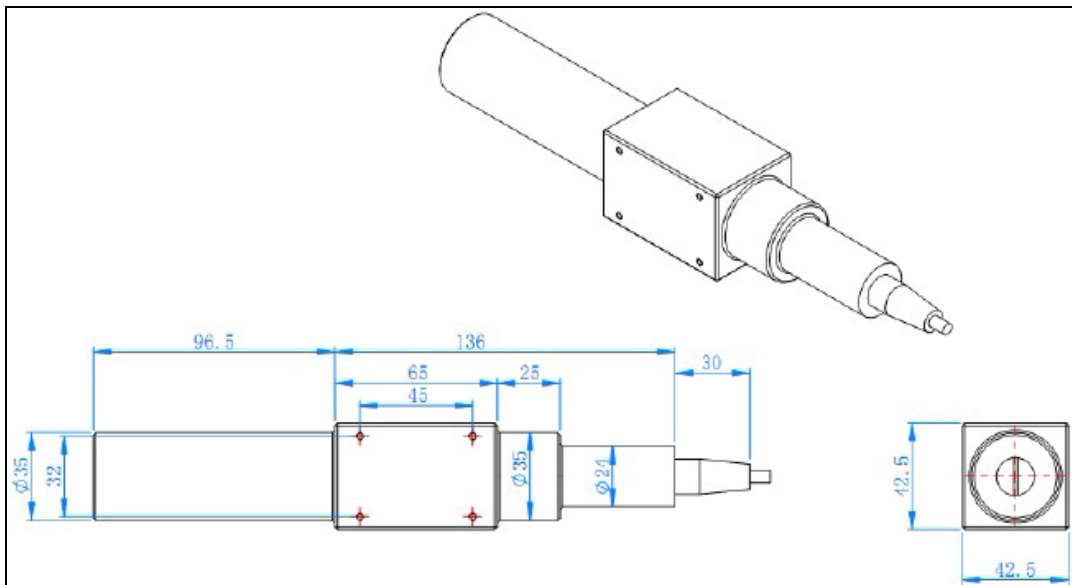
Technical specifications

Model	STJ-LP-20	STJ-LP-30	STJ-LP-60	STJ-LP-100
M ²	< 1.3		< 1.8	
Output cable length (m)	2		3	
Average output power (W)	> 20	> 30	> 60	> 100
Maximum pulse energy (mJ)	0.8		1.2	
Pulse repetition rate at Maximum power (kHz)	25~ 400	37 ~ 400	50 ~ 400	83 ~ 400
Pulse repetition rate (kHz)	1 ~ 400			
Pulse width (ns)	200		250	
Output power stability (%)	< 5			
Cooling	Air			
Power supply (V)	24			
Current (A)	< 8	< 10	< 15	< 20
Maximum power consumption (W)	120	140	300	450
Central wavelength (nm)	1064			
Pulse width @3dB (ns)	< 15			
Polarization	Random			
Resist of high reflection	Yes			
Beam diameter (mm)	7±0.5		6±0.5	
Power range (%)	0 ~ 100			
Operation temperature (°C)	0 ~ 40			
Storage temperature (°C)	-10 ~ 60			

Weight (kg)	8	10	13.4
Size (mm)	315 × 220 × 99	315 × 275 × 99	337 × 278 × 120

Dimension:


Laser cabinet



Isolator

2. STJ-M7 Series MOPA Fiber Lasers

STJ-M7 series high power 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, through adjusting different combination of the above parameters, the peak power of laser can be well maintained. These lasers

<http://www.Sintec.sg> <http://www.SintecOptronics.com> sales@Sintec

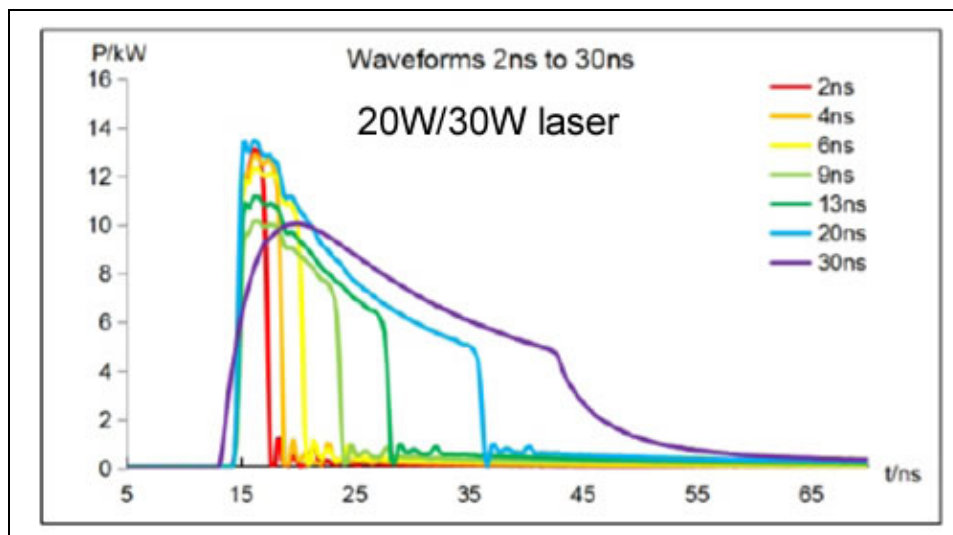


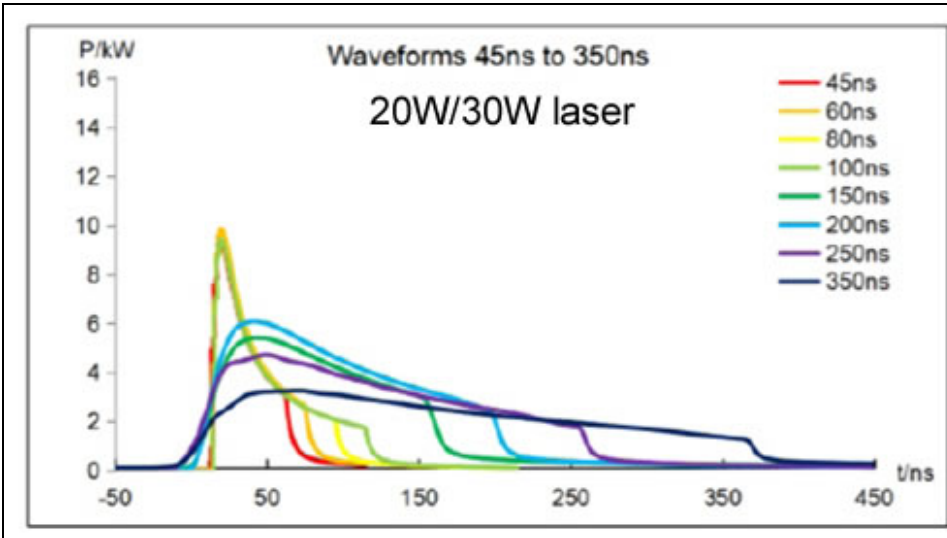
are suitable for more material processing which Q-switch limited. The higher output power makes its advantages especially in high speed marking applications.

Application Advantages

- Scribing, drilling
- Surface treatment
- Sheet metal cutting, welding
- Marking on fly
- Metal surface processing, peeling coating

Product number		STJ-M7-20-SR	STJ-M7-30-SR
M ²		<1.3	<1.3
Delivery Cable Length	m	2	2
Nominal Average Output Power	W	>20	>30
Maximum Pulse Energy	mJ	0.8	0.8
Pulse Repetition Rate Range	kHz	1 ~ 4000	1 ~ 4000
Pulse Duration	ns	2 ~ 350	2 ~ 350
Output Power Stability	%	<5	<5
Cooling Method		Air	Air
Supply DC Voltage (VDC)	V	24	0.8
Current Consumption	A	<5	<6
Environmental Supply Current	A	>5	>6
Power@20°C	W	<120	<144
Central Emission Wavelength	nm	1064	1064
Emission Bandwidth@3dB	nm	<15	<15
Polarization		Random	Random
Output Beam Diameter	mm	7±0.5	7±0.5
Output Power Tuning Range	%	0 ~ 100	0 ~ 100
Operation Temperature	°C	0 ~ 40	0 ~ 40
Storage Temperature	°C	-10 ~ 60	-10 ~ 60
Weight	kg	4.4	4.5
Size(L×W×H)	mm	245 × 200 × 65	245 × 200 × 65





Product Number		STJ-M7-60-L1-R	STJ-M7-80-L1-R	STJ-M7-100-L1-R	STJ-M7-120-L1-R
M ²		<1.8	<1.8	<1.8	<1.8
Delivery Cable Length	m	3	3	3	3
Nominal Average Output Power	W	>60	>80	>100	>120
Maximum Pulse Energy	mJ	1.5	2.0	1.5	1.5
Pulse Repetition Rate Range	kHz	1 ~ 4000	1 ~ 4000	1 ~ 4000	1 ~ 4000
Pulse Duration	ns	2-500	2-500	2-500	2-500
Output Power Stability	%	<5	<5	<5	<5
Cooling Method		Air Cooled	Air Cooled	Air Cooled	Air Cooled
Supply DC Voltage (VDC)	V	48	48	48	48
Current Consumption	A	<6	<7	<8	<9
Environmental Supply Current	A	>6	>7	>8	>9
Power@20°C	W	<260	<300	<400	<450
Central Emission Wavelength	nm	1064	1064	1064	1064
Emission Bandwidth@3dB	nm	<15	<15	<15	<15
Polarization		Random	Random	Random	Random
Output Beam Diameter	mm	7±0.5	7±0.5	7±0.5	7±0.5
Output Power Tuning Range	%	0 ~ 100	0 ~ 100	0 ~ 100	0 ~ 100
Operation Temperature	°C	0 ~ 40	0 ~ 40	0 ~ 40	0 ~ 40
Storage Temperature	°C	-10 ~ 60	-10 ~ 60	-10 ~ 60	-10 ~ 60

N.W	kg	8.5	8.5	13.2	13.2
Size(L×W×H)	mm	325 × 260 × 75	325 × 260 × 75	350 × 280 × 112	350 × 280 × 112



Product Number		STJ-M7-150-L1-R	STJ-M7-200-L1-R
M ²		<1.8	<1.8
Delivery Cable Length	m	5	5
Nominal Average Output Power	W	>150	>200
Maximum Pulse Energy	mJ	1.5	1.5
Pulse Repetition Rate Range	kHz	1 ~ 4000	1 ~ 4000
Pulse Duration	ns	4 ~ 500	8 ~ 500
Output Power Stability	%	<5	<5
Cooling Method		Air Cooled	Air Cooled
Supply DC Voltage (VDC)	V	48	48
Current Consumption	A	<12	<16
Environmental Supply Current	A	>12	>16
Power@20°C	W	<600	<800
Central Emission Wavelength	nm	1064	1064
Emission Bandwidth@3dB	nm	<20	<20
Polarization		Random	Random
Output Beam Diameter	mm	7±0.5	7±0.5
Output Power Tuning Range	%	0 ~ 100	0 ~ 100
Operation Temperature	°C	0 ~ 40	0 ~ 40
Storage Temperature	°C	-10 ~ 60	-10 ~ 60
N.W	kg	24.8	24.8
Size(L×W×H)	mm	430 × 351 × 133	430 × 351 × 133