

Foton Series Diode Pumped 355nm UV Lasers

In order to meet the requirements of precise processing in industrial, we developed a 355nm end-pumped Q-switched laser. The adoption of water cooled system allows laser source to have stable performance, smaller size, compact structure and low power consumption. The output laser beam is the fundamental mode, the beam quality is good, and the peak power is high, which can meet most industrial precision processing requirements. The product is provided with either all-in-one pack or individual pack for your needs.



All-in-one pack



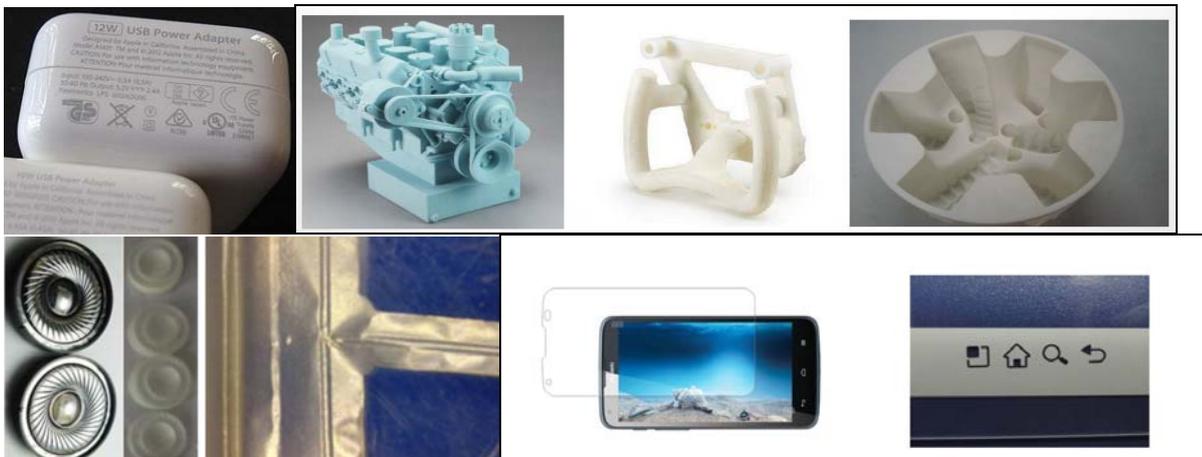
Individual pack

Features:

Thanks to the integrated design, the product has compact structure, small size, light weight, low power consumption, stable operation over time and good beam quality. The laser's driver has a simple design and a user-friendly operation interface. It is extremely convenient for user to install and debug it, besides user also can adjust and control the laser power and repetition frequency output at any time in order to meet various need.

Applications:

- Fine cutting, scribing, marking and micro-machining of various materials;
- laser rapid prototyping;
- LED scribing;
- FPC board cutting;
- Micro-holes drilling ($\varnothing 10\mu\text{m}$);
- Flexible PCB board marking and dicing;
- Plating removing;
- Blind hole processing.

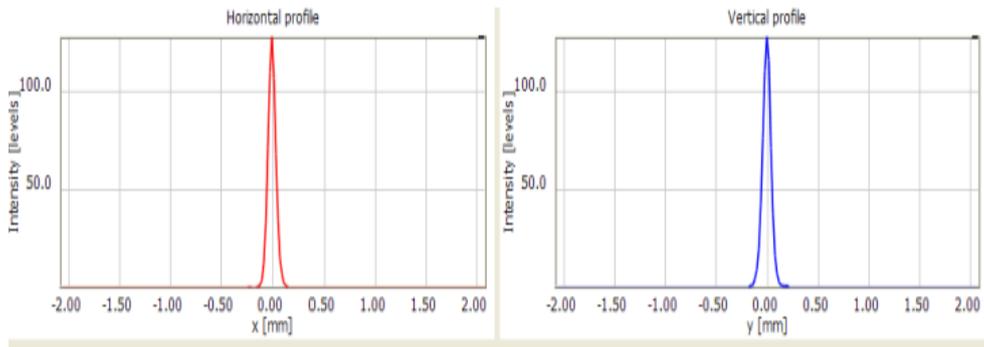


Specification:

Model	Foton-355-3	Foton-355-5
Laser	DPSS Laser	DPSS Laser
Wavelength	355nm	355nm
Average Power	>3W@30kHz	>5W@40kHz
Beam Spot	<0.7mm	<0.7mm
Beam Divergence	<2mrad	<2mrad
Pulse Width	<15ns@30kHz	<15ns@40kHz
Beam Mode	TEM ₀₀	TEM ₀₀
Beam Quality (M ²)	≤1.2	≤1.2
Frequency Range	20kHz~200kHz	30kHz~200kHz
Stability	≤2%	≤2%
Pointing RMS	<10urad	<10urad
Polarization	Linear (Vertical)	Linear (Vertical)
Ratio	>100:1	>100:1
Cooling Method	Water Cooled	Water Cooled
Power Supply	220VAC@50Hz	220VAC@50Hz
Working Temperature	15~30°C	15~30°C
Power Consumption	500W	500W
Dimension	400x240x138mm	400x240x138mm
Weight	17kg	17kg

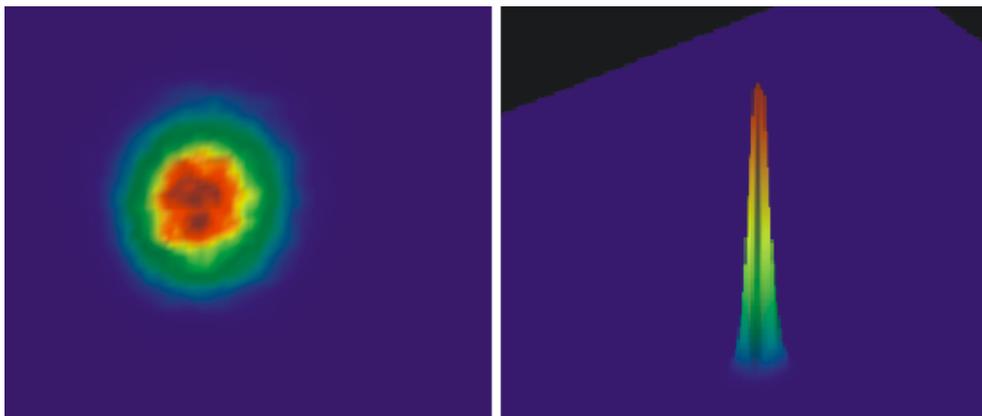
Specification subject to change without notice

Typical Laser Beam:



Energy intensity distribution along X-axis

Energy intensity distribution along Y-axis



3D energy intensity distribution diagram

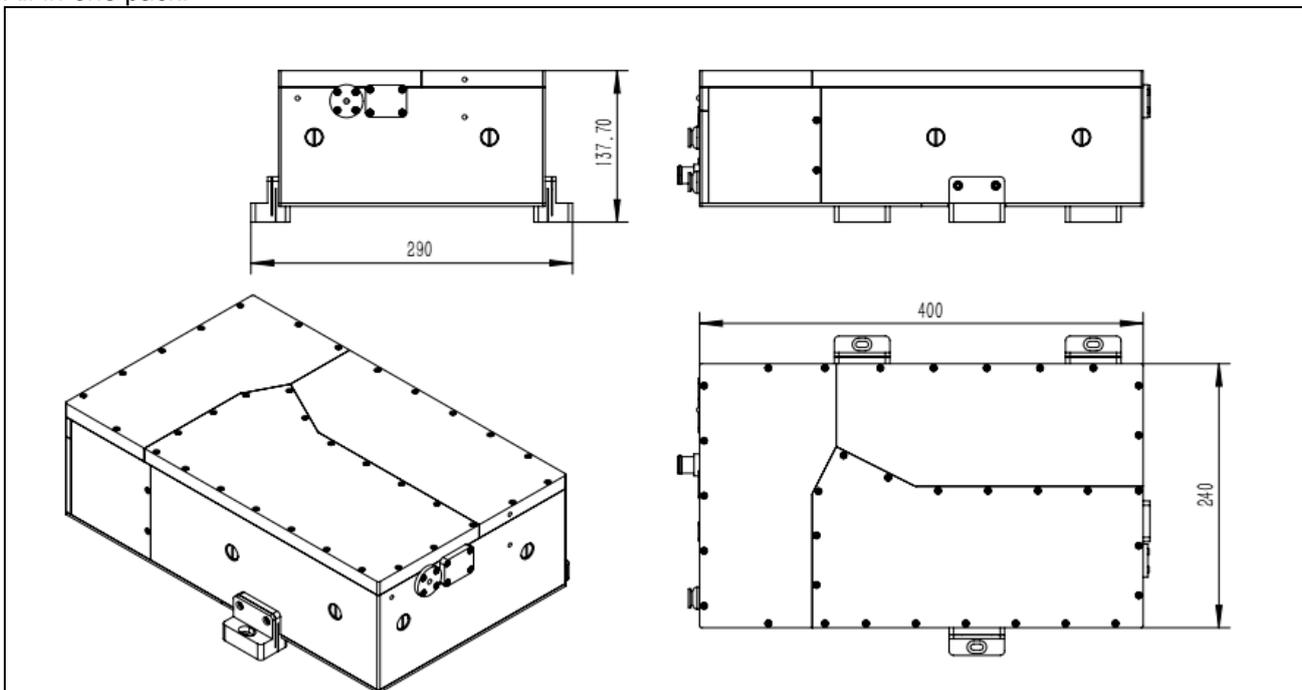
A good beam quality can be observed from the 2 diagrams on above, as the energy intensity distribution is symmetry along X and Y axes.

We measured the laser pulse width and average power at the operation current 8.5A with our 5W 355nm laser and then calculated the laser peak power. The data are listed in the following table.

PRR (kHz)	Pulse Width (ns)	Average Power (W)	Peak Power (kW)
30	12	4.02	11
40	13	6.33	12
50	13	6.35	10
60	14	5.21	6
70	16	4.75	4
80	17	4.54	3
90	18	4.24	3
100	20	3.67	2

Outline and Mounting:

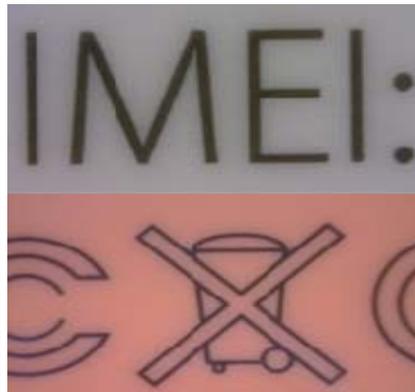
All-in-one pack:



Processed Samples by 3W 355nm Lasers



Charger

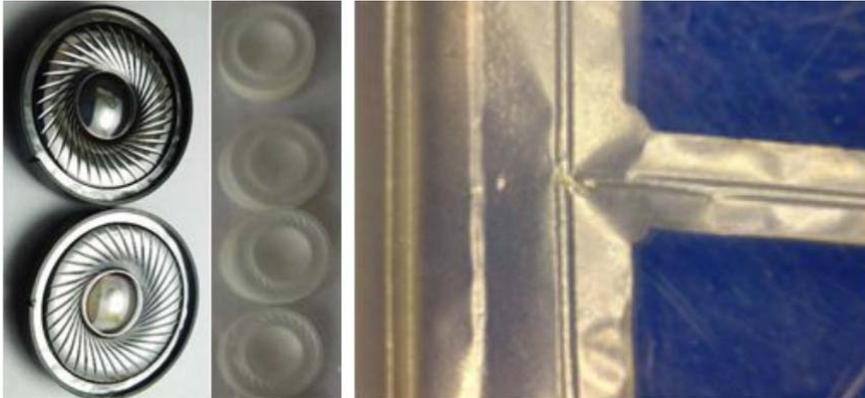


PVC materials



3D printing

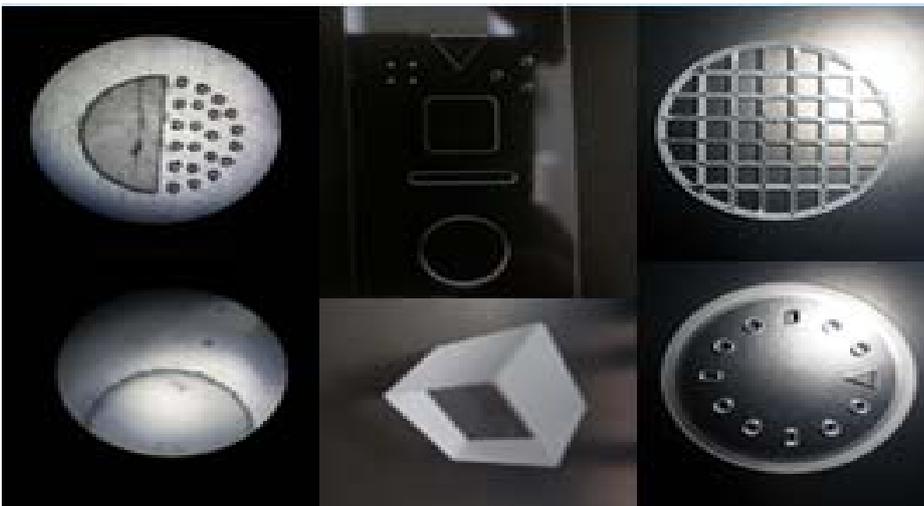
Processed Samples by 5W 355nm Laser



Cutting ear's phone



Flying marking of plastic materials



Sub-surface engraving and cutting of fragile glasses

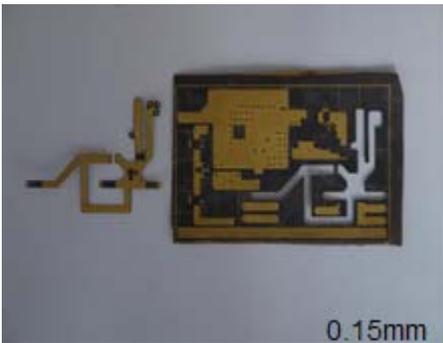
Processed Samples by 10W 355nm Laser



Marking



Painting removal of mobile's touch screen

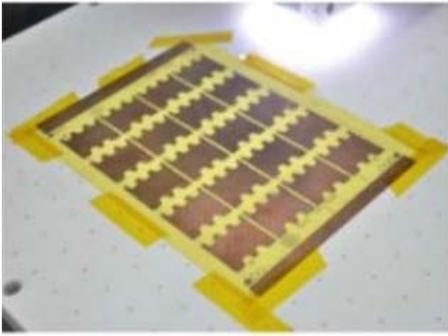


Cutting of metals

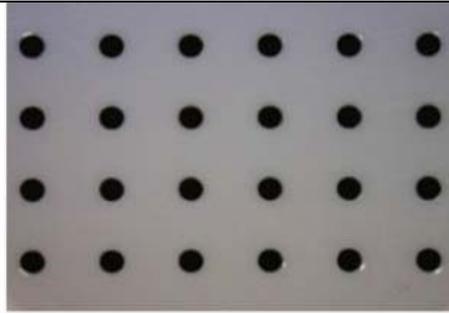
Processed Samples by 15W 355nm Laser



Cutting of fiber materials



Cutting of FPC boards



Drilling of ear phone

STI Series DPSS UV Lasers

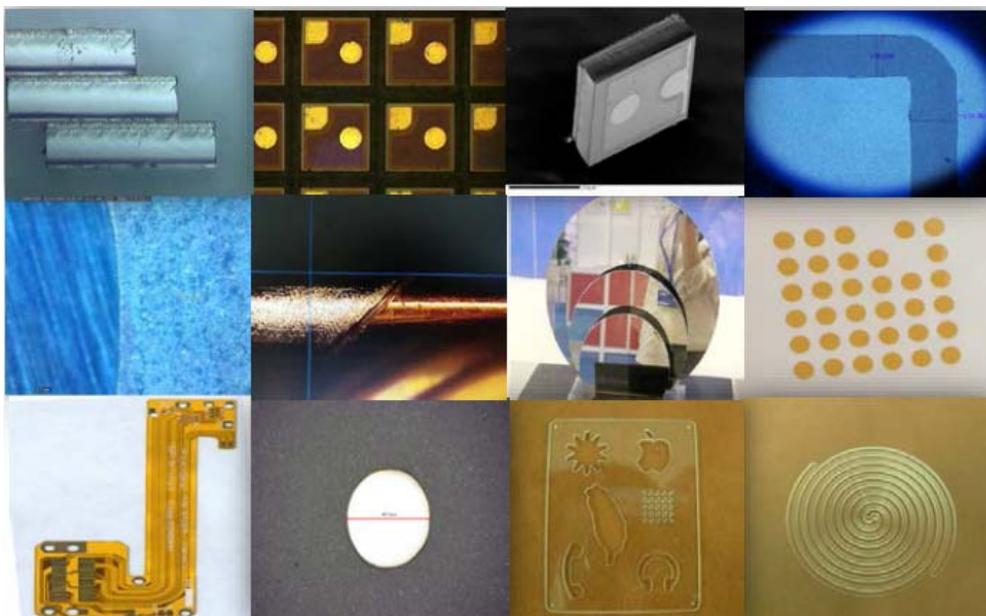


Part Number	STI-355-3	STI-355-5	STI-355-10	STI-355-15	STI-355-20
Wavelength(nm)	355	355	355	355	355
Pulse Repetition Rate (kHz)	10-50	10-50	10-50	50-150	50-150
Pulse Width (ns) @50kHz	≤16	≤16	≤18	≤20	≤20
Average Power (W) @30kHz	>3	>5	>10	>15	>20
Average Power Stability over 24hrs	<±3%	<±3%	<±3%	<±3%	<±3%
Spatial Mode	TEM00	TEM00	TEM00	TEM00	TEM00
Beam Quality M ²	<1.2	<1.2	<1.3	<1.3	<1.3
Beam Divergence Full Angle (mrad)	< 2	< 2	< 2	< 2	< 2
1/e ² Beam Dia. (mm)	0.7	0.7	0.7	0.7	0.7
Beam Roundness	>90%	>90%	>90%	>90%	>90%
Pointing Stability (urad)	<50	<50	<50	<50	<50
Polarization Direction	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Polarization Ratio	100:1	100:1	100:1	100:1	100:1
Cooling	Water/Air	Water/Air	Water	Water	Water
Dimension (Laser Head) (mm)	415x115x106	415x115x106	415x115x106	415x115x106	415x115x106
Dimension (Power Supply) (mm)	480x454x130	480x454x130	480x454x130	480x454x130	480x454x130

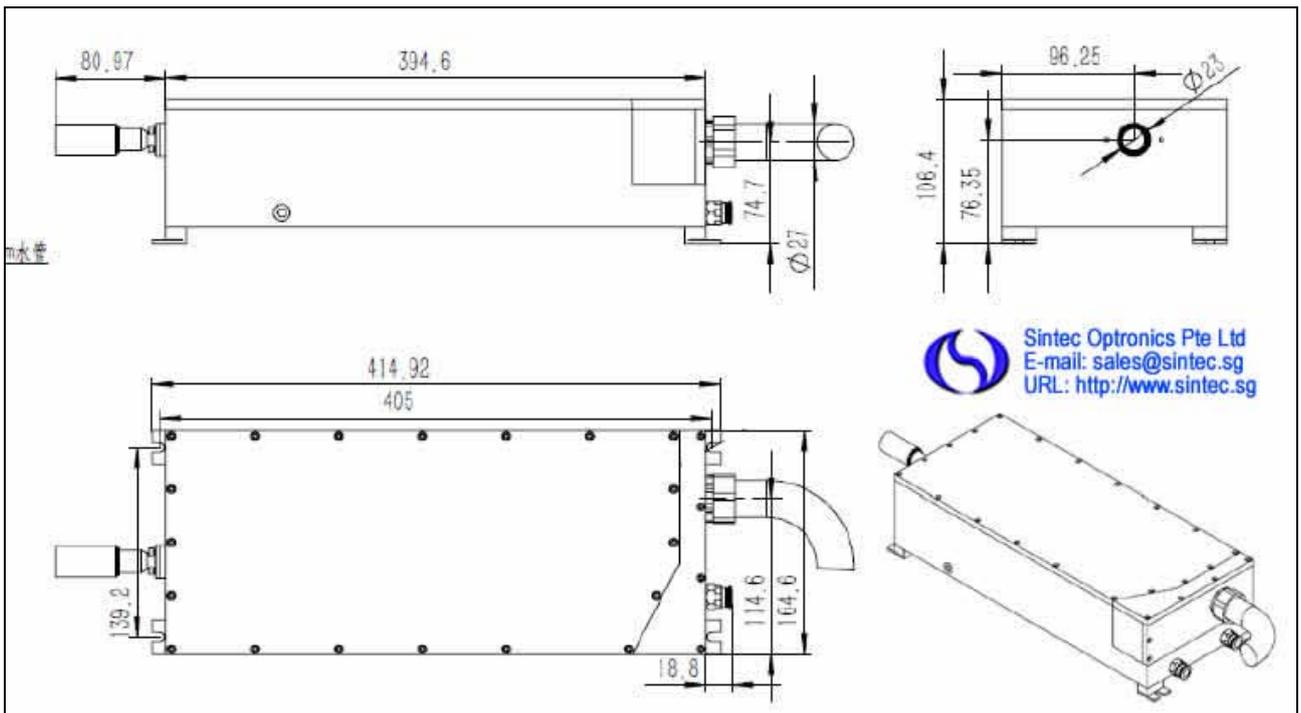
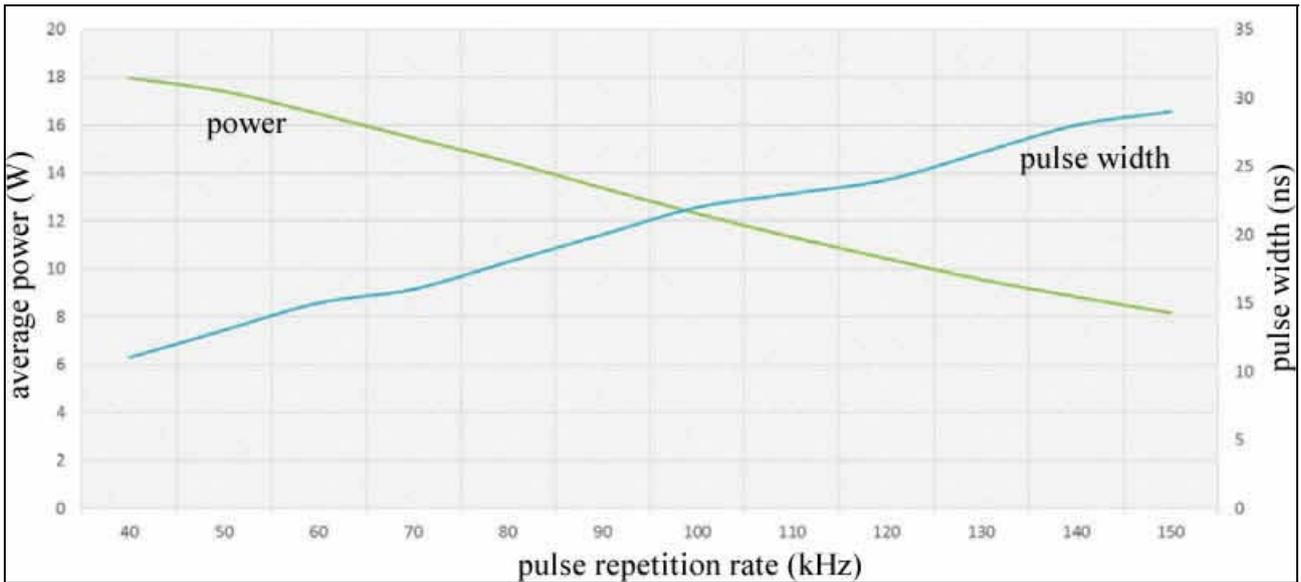
Remark: Single shot to 200kHz for pulse repetition rate available upon request.

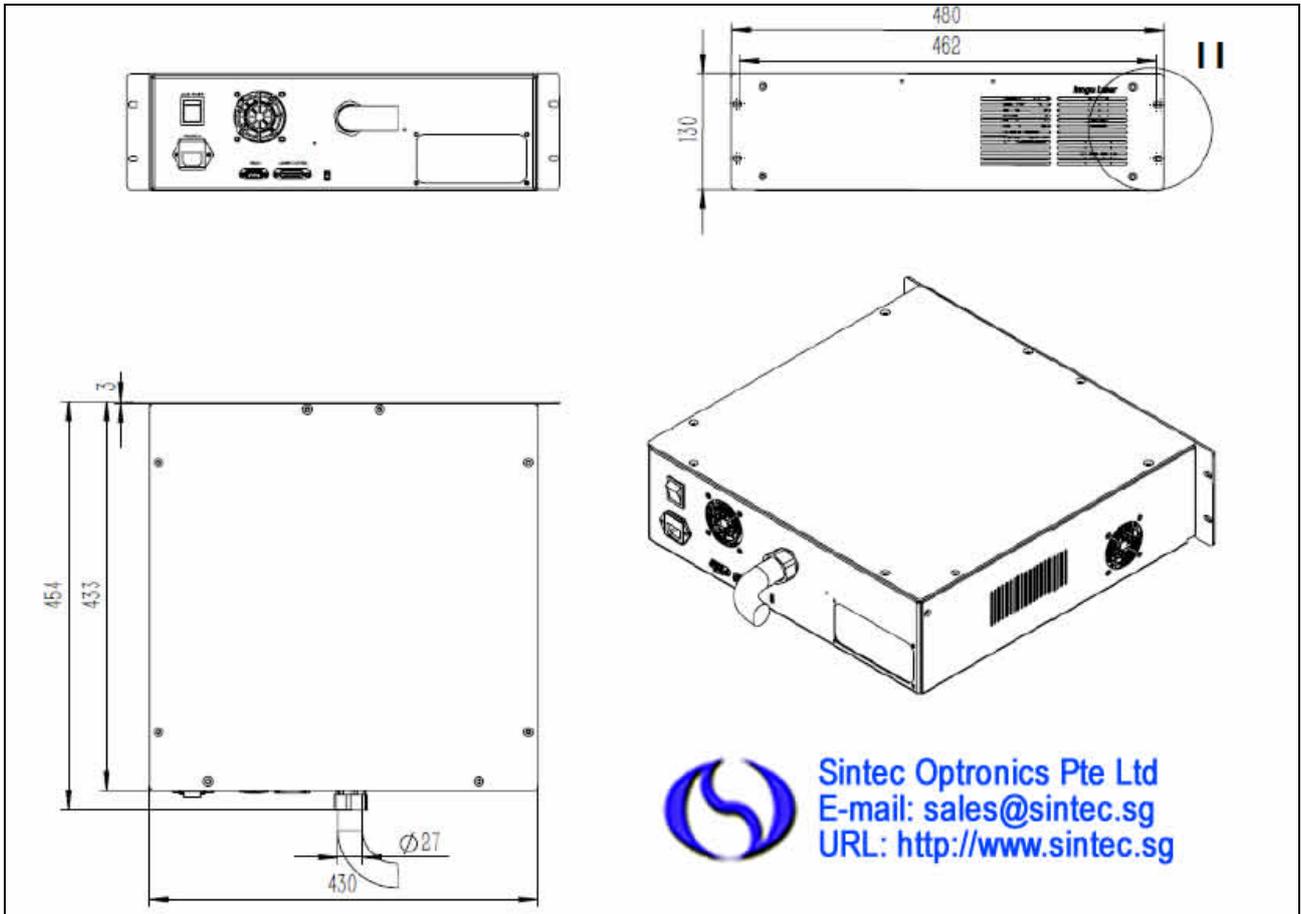
Applications

ITO film etching, ceramic cutting, scribing and marking, glass cutting and marking, polymeric material marking and cutting, material micro-processing, wafer cutting, laser rapid prototyping, scientific research.



As example, the performance of 15W laser is shown as follows.



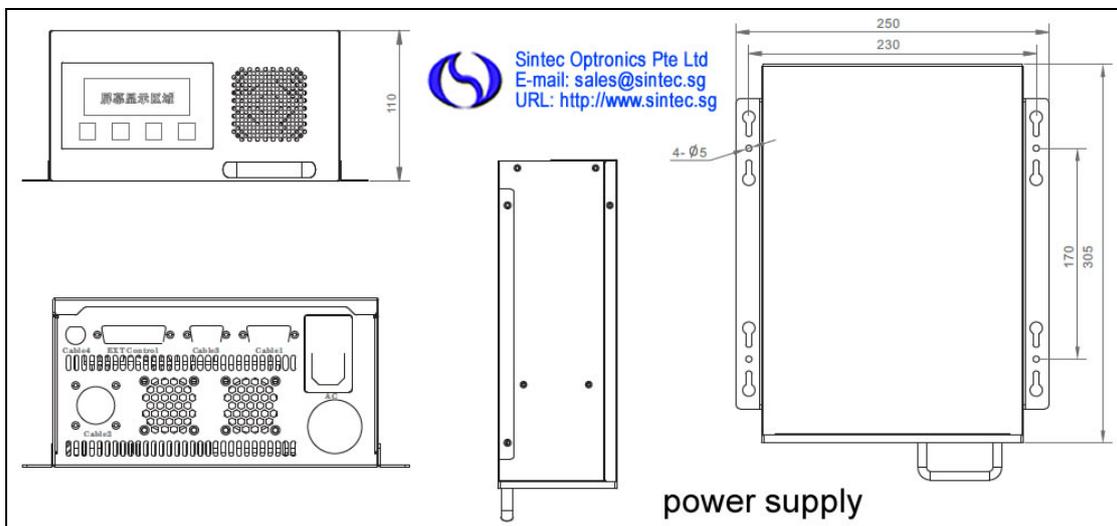
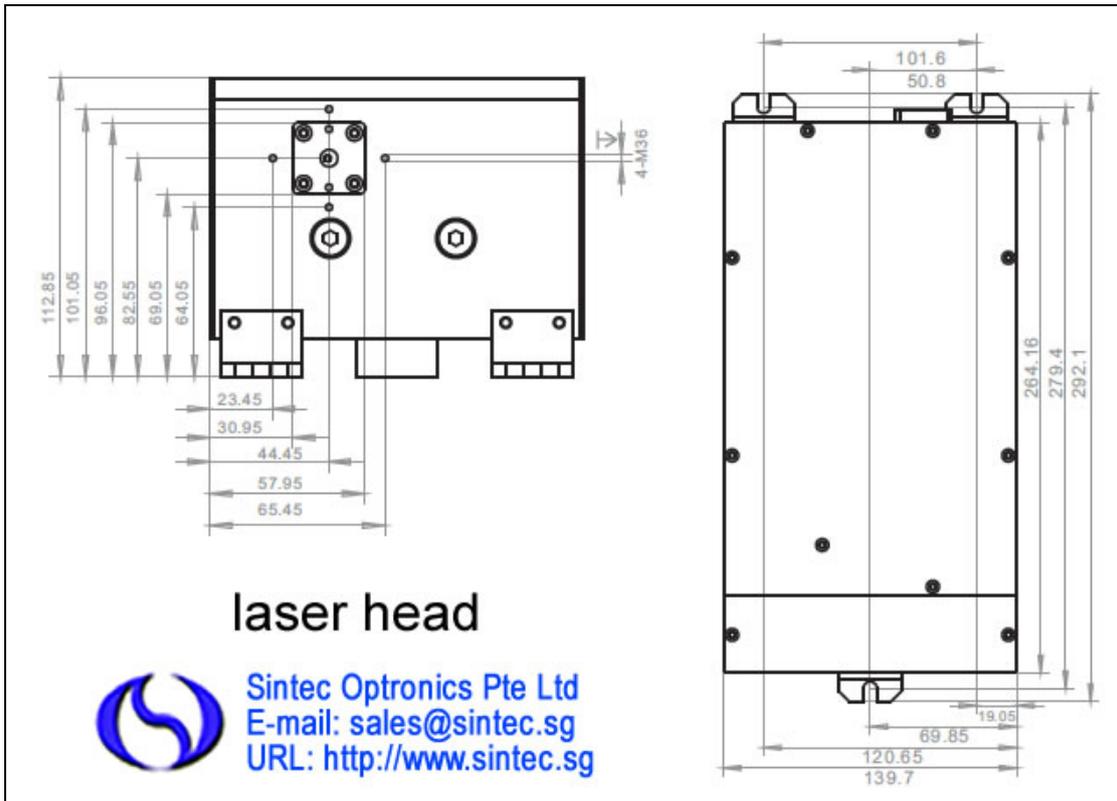
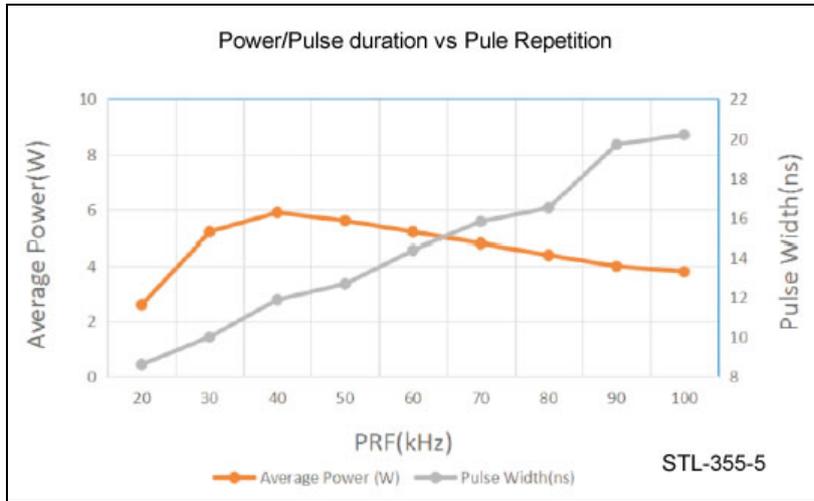


STL Series DPSS UV Lasers



- Laser head and power supply are individual and the laser head is compact
- The laser is controlled via built-in panel and RS232
- Widely used in 3C electronic applications and laser marking of metals and non-metals, 3D printing, surface film removing etc.

Part number	STL-355-3	STL-355-5
Wavelength	355nm	355nm
Output laser power	>3W@40kHz	>5W@40kHz
Beam divergence	<2mrad	<2mrad
Pulse repetition rate	20kHz-200kHz	20kHz-200kHz
Pulse duration	<15ns@30kHz	<15ns@30kHz
Pulse to pulse stability	<3%	<3%
Average power stability	<3%	<3%
Beam spatial mode	TEM ₀₀ ($M^2 < 1.2$)	TEM ₀₀ ($M^2 < 1.2$)
Polarization ratio	>100:1 horizontal	>100:1 horizontal
Beam diameter	<1mm	<1mm
Beam circularity	>90%	>90%
Cooling	Water cooling	Water cooling
Warm-up time	<15min	<15min
Operation temperature	18-35°C	18-35°C
Dimension (laser head)	292.1x139.7x112.8mm	292.1x139.7x112.8mm
Dimension (power supply)	305x250x110mm	305x250x110mm



Foton Series Diode Pumped 532nm Green Lasers

In order to meet the requirements of precise processing in industrial, we developed a 532nm end-pumped Q-switched laser. The adoption of water cooled system allows laser source to have stable performance, smaller size, compact structure and low power consumption. The output laser beam is the fundamental mode, the beam quality is good, and the peak power is high, which can meet most industrial precision processing requirements. The product is provided with either an all-in-one pack or individual pack for your needs.



All-in-one pack



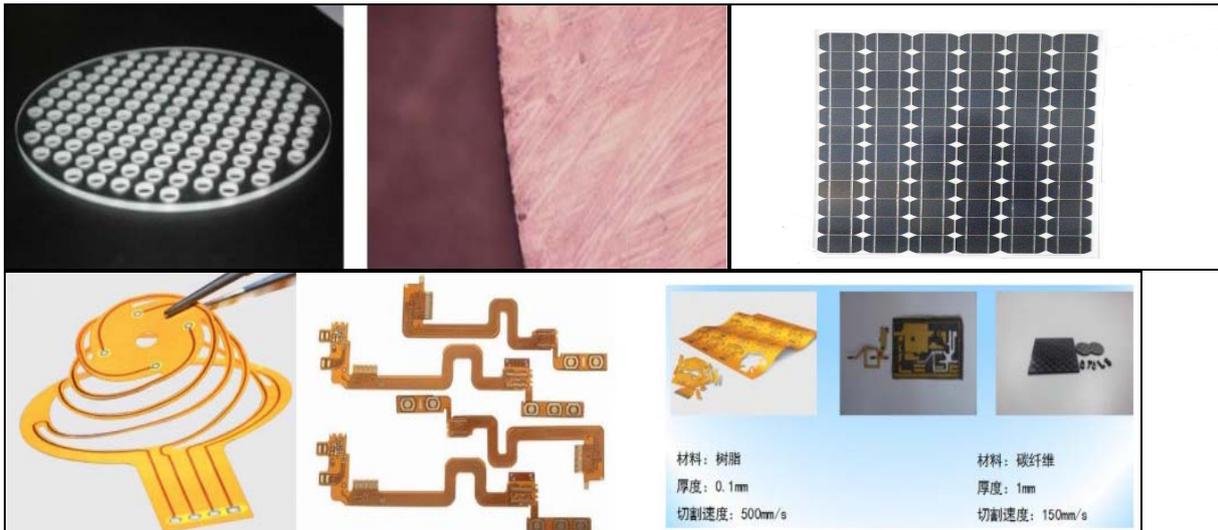
Individual pack

Features:

Thanks to the integrated design, the product has compact structure, small size, light weight, low power consumption, stable operation over time and good beam quality. The laser's driver has a simple design and a user-friendly operation interface. It is extremely convenient for user to install and debug it, besides user also can adjust and control the laser power and repetition frequency output at any time in order to meet various need.

Applications:

The DPSS green laser is suitable for processing and marking characters, patterns, batch numbers, production dates, Bar code, logo on a variety of materials, such as nylon, ABS, PVC, PES, coating materials, spray materials, plastic rubber, epoxy resin and others. The marked graphics are high resolution and beautiful. At present, the DPSS green laser marking machine has incomparable performance in many fields such as craft craving, electronic devices, pipeline materials, and film etching, which other types of laser marking machine cannot achieve.

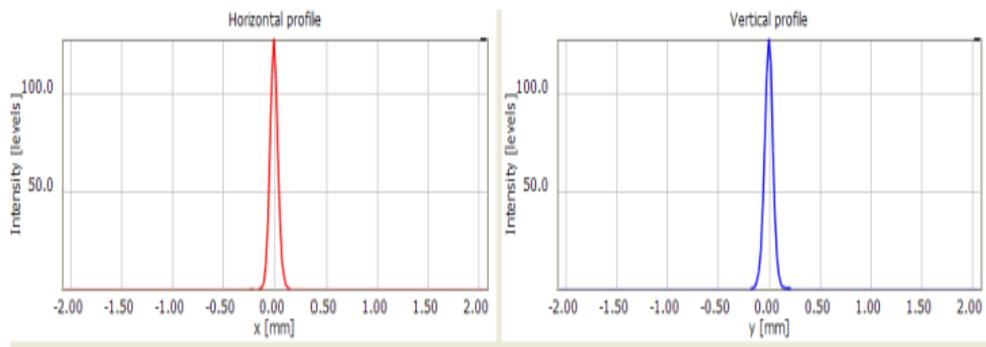


Specifications:

Model	Foton-532-5	Foton-532-10
Laser	DPSS Laser	DPSS Laser
Wavelength	532nm	532nm
Average Power	5W@50kHz	10W@50kHz
Beam Spot	0.7mm	0.7mm
Beam Divergence	<2mrad	<2mrad
Pulse Width	<15ns@30kHz	<15ns@40kHz
Beam Mode	TEM ₀₀	TEM ₀₀
Beam Quality (M ²)	≤1.2	≤1.2
Frequency Range	30kHz~100kHz	30kHz~100kHz
Stability	≤2%	≤2%
Pointing RMS	<10urad	<10urad
Cooling Method	Water Cooled	Water Cooled
Pre Heat	3~5mins	3~5mins
Power Supply	220VAC@50Hz	220VAC@50Hz
Working Temperature	15~30°C	15~30°C
Dimension	400x240x138mm	400x240x138mm
Weight	17kg	17kg

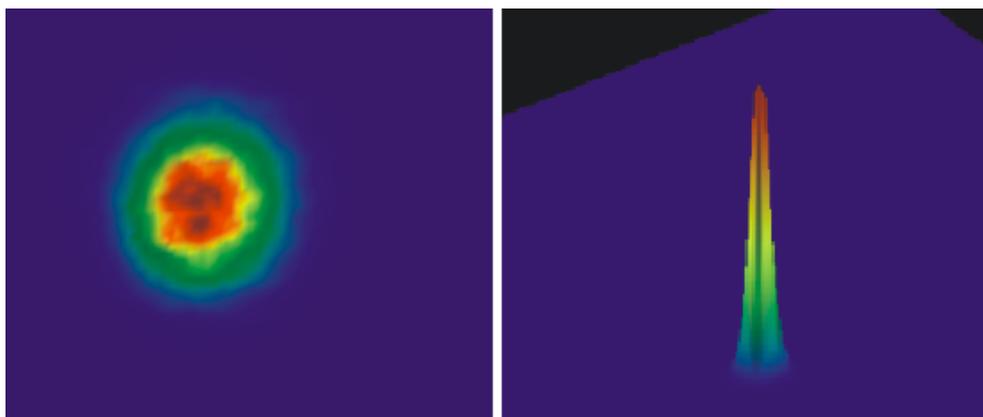
Specification subject to change without notice

Typical Laser Beam:



Energy intensity distribution along X-axis

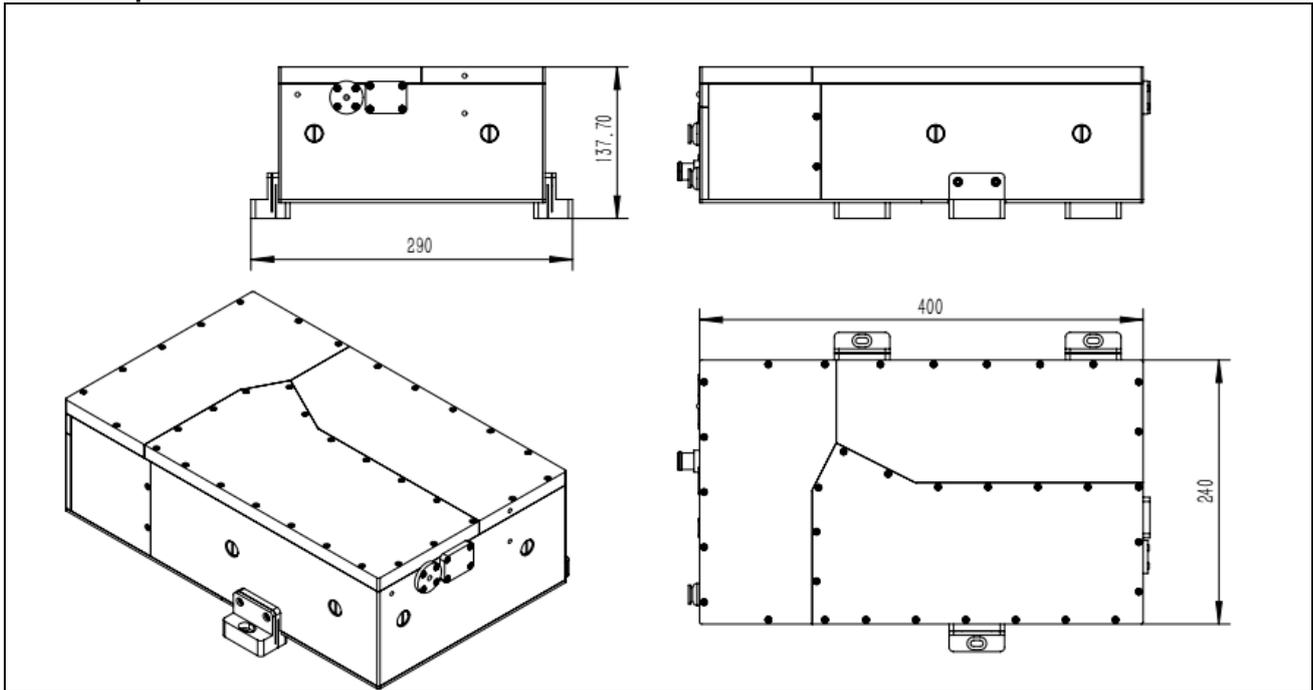
Energy intensity distribution along Y-axis



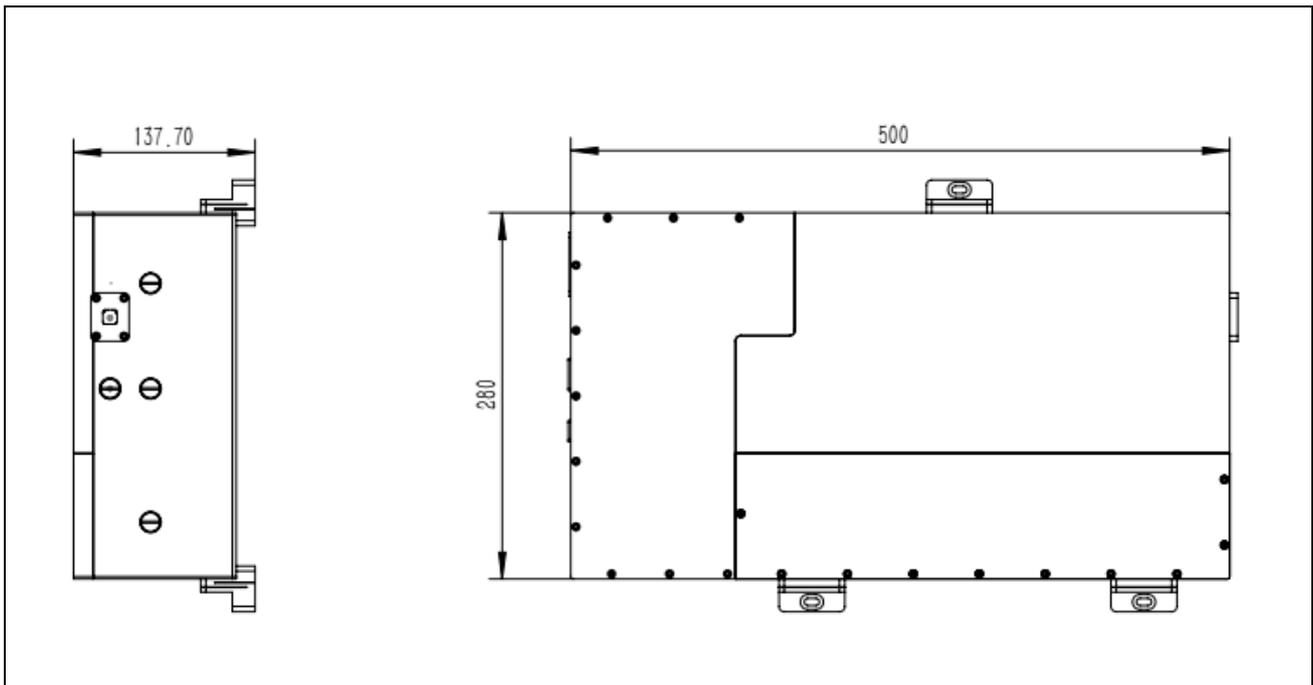
3D energy intensity distribution diagram

A good beam quality can be observe from the 2 diagram on above, as the energy intensity distribution is symmetry along X and Y axes.

Outline and Mounting
All-in-one pack:



Foton-532-5/10/35



Foton-532-60

Processed Samples by 10W 532nm Laser



Cutting of FPC boards

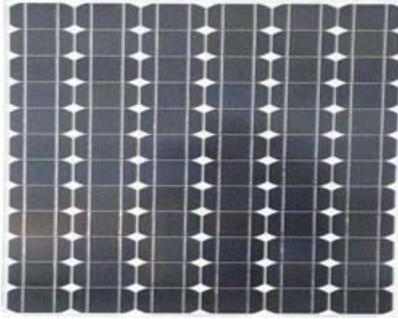


Marking

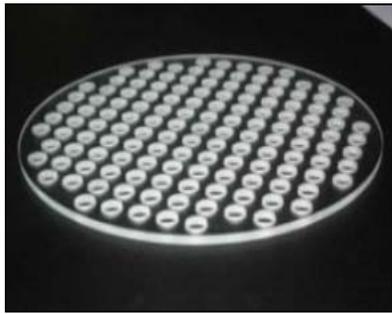


Painting removal

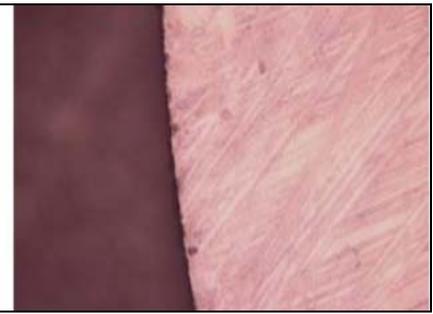
Processed Samples by 35W 532 Laser



Solar



Drilling of sapphire



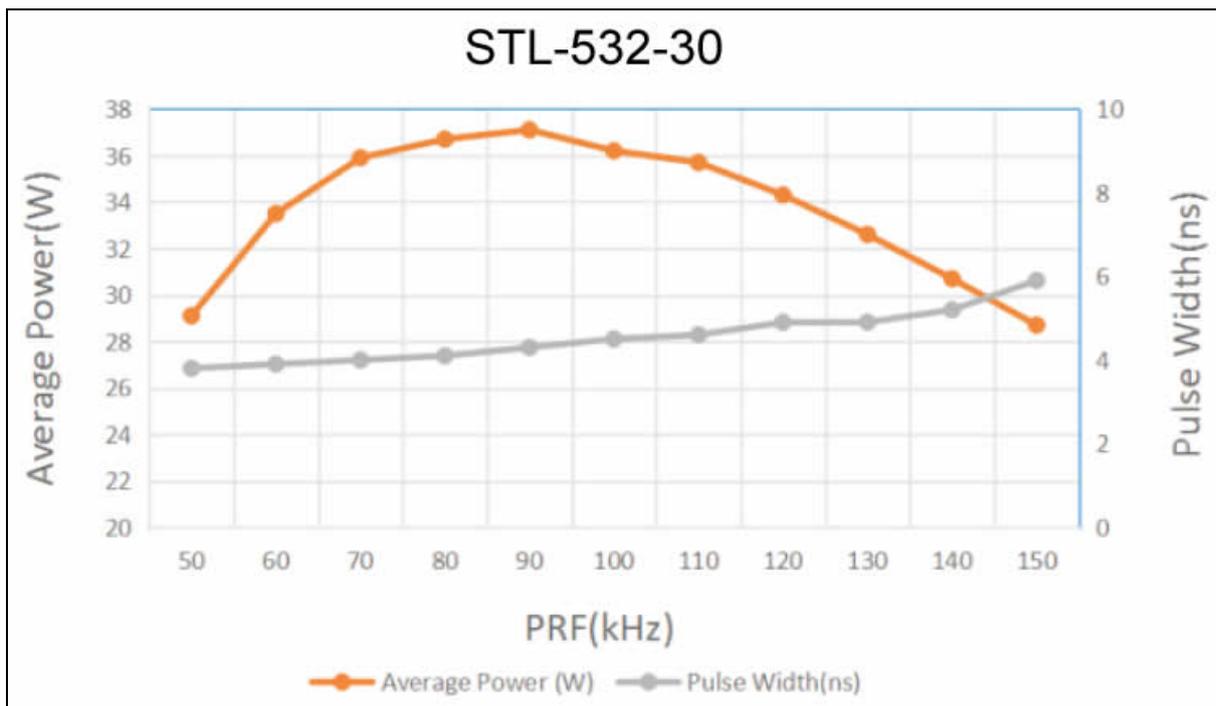
Welding & cutting of aluminum-coated zinc plate

STL Series DPSS 532nm Green Lasers

- Laser head and power supply are individual and the laser head is compact
- The laser is controlled via built-in panel and RS232
- Widely used in 3C electronic applications and laser marking of metals and non-metals, glass cutting, 3D printing, surface film removing etc.

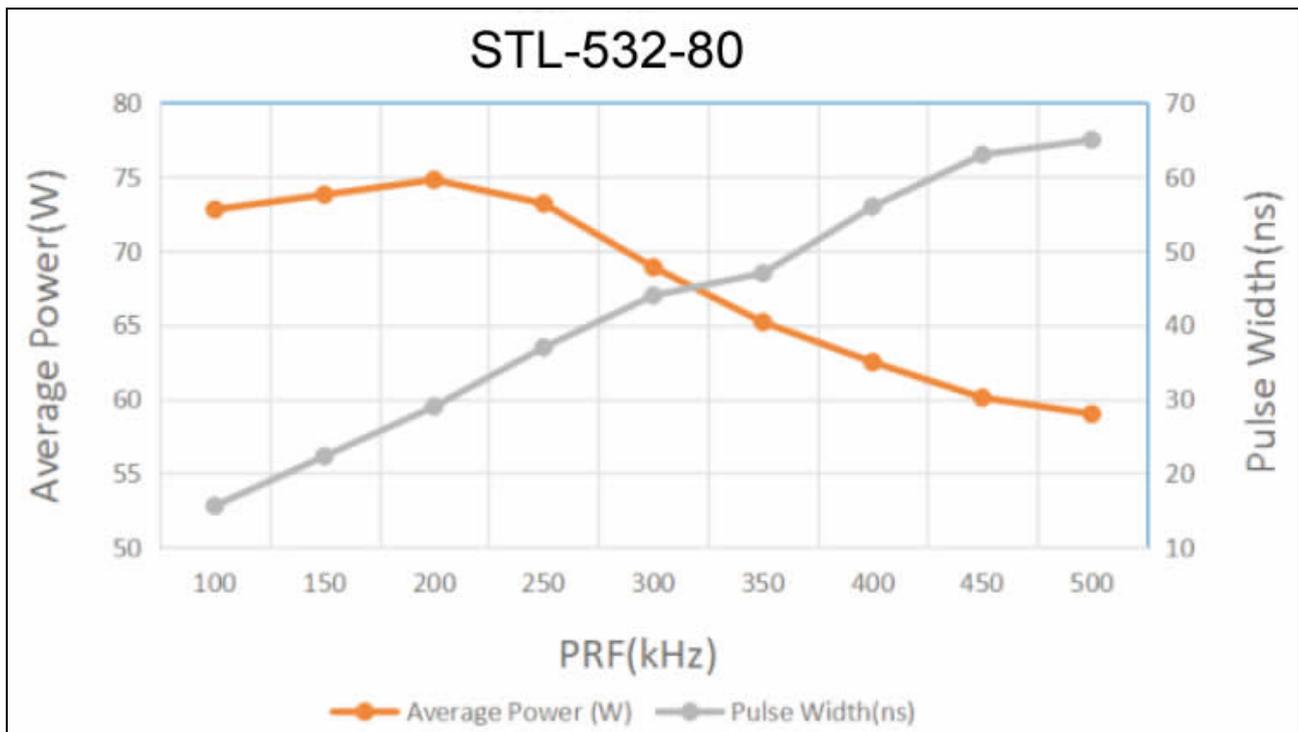


Part number	STL-532-20/40	STL-532-30
Wavelength	532nm	532nm
Output laser power	>20W@50kHz/>40W@80kHz	>30W@100kHz
Beam divergence	<2mrad	<2mrad
Pulse repetition rate	20kHz-200kHz	50kHz-200kHz
Pulse duration	<20ns@50kHz	<10ns@50kHz
Pulse to pulse stability	<3%	<3%
Average power stability	<3%	<3%
Beam spatial mode	TEM ₀₀ (M ² <1.2)	TEM ₀₀ (M ² <1.2)
Polarization ratio	>100:1 horizontal	>100:1 horizontal
Beam diameter	<2mm	<2.5mm
Beam circularity	>90%	>85%
Cooling	Water cooling	Water cooling
Warm-up time	<15min	<15min
Operation temperature	18-35°C	18-35°C
Dimension (laser head)	420x180x105mm	642x210x111mm
Dimension (power supply)	482x392x88mm	430x383x176mm





Part number	STL-532-60	STL-532-80
Wavelength	532nm	532nm
Output laser power	>60W@100kHz	>80W@100kHz
Beam divergence	<2mrad	<2mrad
Pulse energy	0.6mJ@100kHz	0.8mJ@100kHz
Pulse repetition rate	50kHz-500kHz	50kHz-500kHz
Pulse duration	<15ns@60kHz	<15ns@60kHz
Pulse to pulse stability	<3%	<3%
Average power stability	<3%	<3%
Beam spatial mode	TEM ₀₀ (M ² <1.2)	TEM ₀₀ (M ² <1.2)
Polarization ratio	>100:1 horizontal	>100:1 horizontal
Beam diameter	<1mm	<1mm
Beam circularity	>90%	>90%
Cooling	Water cooling	Water cooling
Warm-up time	<15min	<15min
Operation temperature	18-35°C	18-35°C
Dimension (laser head)	435x180x113mm	435x180x113mm
Dimension (power supply)	430x383x176mm	430x383x176mm



STJ Lark Series Lasers

STJ Lark-Series Lasers Includes UV and green light, it adopts a thermal method combining conduction heat dissipation and air convection heat dissipation. The pulse width is narrower, the repetition frequency is higher, the beam quality is high, and the spot roundness is high. In terms of structural design, it is smaller in size, lighter in weight and more beautiful in appearance. In the electronic control design, strong anti-electromagnetic interference capability, high thermal management efficiency, user-friendly GUI interface.



Technical specifications:

Model	STJ-Lark-532-7	STJ-Lark-532-10	STJ-Lark-355-3S	STJ-Lark-355-5S
Wavelength	532nm		355nm	
Average Power	>7W@40kHz	>10W@40kHz	>3W@40kHz	>5W@60kHz
Pulse Width	<15ns@40kHz		<10ns@40kHz	<10ns@60kHz
Pulse Repetition Rate	20kHz-200kHz		20kHz-200kHz	30kHz-200kHz
Spatial Mode	TEM ₀₀		TEM ₀₀	
Beam Quality M ²	M ² ≤ 1.2		M ² ≤ 1.2	
Beam Roundness	>90%		>90%	
Beam Divergence	≤2mrad		≤2mrad	
Beam Diameter	Non-expanding 0.7±0.1mm		Non-expanding 0.7±0.1mm	
Polarization Ratio	> 100:1		> 100:1	
Polarization Direction	Horizontal		Vertical	
Average Power Stability	RMS ≤ 3% @ 24hs		RMS ≤ 3% @ 24hs	
Pulse Stability	RMS ≤ 3% @ 40hs		RMS ≤ 3% @ 40hs	RMS ≤ 3% @ 60hs
Operating Temp & RH	10-35°C;<80%		10-35°C;<80%	
Storage Temp & RH	-15~50°C;<90%		-15~50°C;<90%	
Cooling	Air		Air	
Supply Voltage	DC 12V		DC 12V	
Average Power Consumption	< 300W		< 300W	< 350W
Size	236 × 118 × 110		236 × 118 × 110	
weight	Laser Head: 4kg		Laser Head: 4kg	
	Power Control : 7kg		Power Control : 7kg	

IL Series DPSS 532nm Lasers



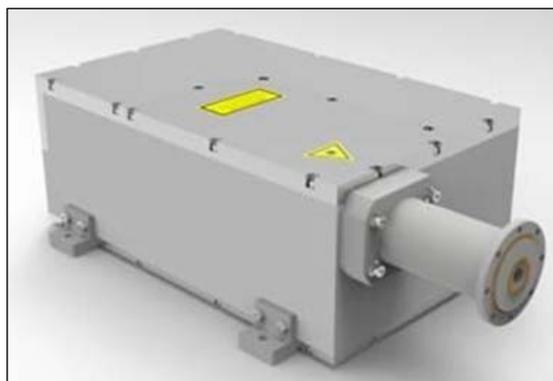
- Diode pumped air cooling technology
- Good beam quality
- The laser is sealed
- High performance price ratio.

Diode end-pumped lasers adopt full sealed-off design with small volume and low power consumption as well as fiber-coupled pumping, which is easily for the integration of system and equipment. The modularized design provides the convenience for changing by customers. The laser beam is TEM₀₀ with high beam quality, high peak power and compact in size.

MODEL	DPSS-532-7-IL	DPSS-532-10-IL	DPSS-532-15-IL	DPSS-532-20-IL
Average power @30kHz	7W	10W	15W	20W
Beam Mode	TEM00-M2<1.2	TEM00-M2<1.3	TEM00-M2<1.5	TEM00-M2<1.8
Peak power@ 30kHz	11.7 kW	16.7 kW	25 kW	33.3 kW
Pulse Energy@ 30kHz	0.23mJ	0.33mJ	0.5mJ	0.67mJ
Wavelength	532nm			
Pulse width	20ns@30Khz			
Beam Diameter	1.0mm			
Beam Divergence	<2.5mrad			
Polarization Ratio	100:1 Vertical			
Average Power Stability	<2%			
Beam-Pointing stability	<25μrad			
Pulse Repetition Rate Range	5K - 200KHz / CW			
Cooling	Air-cooling			
Ambient Temperature	15~300C			

STJ Seal-Series Lasers

The STJ Seal-Series Lasers includes both UV and green lasers with excellent beam quality and perfect spot characteristics. The whole machine adopts integrated structure design, and the optical path and external drive circuit are integrated, which makes the product have strong anti-interference ability. Optimize and upgrade the fully sealed structure to prevent external dust. At the same time, the isolation of external water molecules make the machine have strong resistance of humidity, making the SEAL series adaptable to harsher industrial environments. In addition, a self-cleaning system in the cavity allows longer lifetime of the machine.



Technical specifications:

Model	STJ-Seal-532-20S	STJ-Seal-532-30S	STJ-Seal-355-3S	STJ-Seal-355-5S	STJ-Seal-355-10S	STJ-Seal-355-15S
Wavelength	532nm		355nm			
Average Power	>20W@80kHz	>30W@80kHz	>3W@40kHz	>5W@60kHz	>10W@80kHz	>15W@80kHz
Pulse Width	<12ns@80kHz	<12ns@80kHz	<10ns@40kHz	<10ns@60kHz	<12ns@80kHz	
Pulse Repetition Rate	40kHz-300kHz		30kHz-200kHz		40kHz-300kHz	
Spatial Mode	TEM ₀₀		TEM ₀₀			
Beam Quality M ²	M ² ≤ 1.2		M ² ≤ 1.2			
Beam Roundness	>90%		>90%			
Beam Divergence	≤2mrad		≤2mrad			
Beam Diameter	Non-expanding: 0.8±0.1mm		Non-expanding: 0.7±0.1mm		Non-expanding: 0.8±0.1mm	
Polarization Ratio	> 100:1		> 100:1			
Polarization Direction	Vertical		Horizontal			
Average Power Stability	RMS ≤ 3% @ 24hs		RMS ≤ 3% @ 24hs			
Pulse Stability	RMS ≤ 3% @ 80kHz		RMS ≤ 3% @ 40kHz	RMS ≤ 3% @ 60kHz	RMS ≤ 3% @ 80kHz	
Operating Temp & RH	10~40°C;<80%		10~40°C;<80%			
Storage Temp & RH	-15~50°C;<90%		-15~50°C;<90%			
Cooling	Water		Water			
Supply Voltage	DC 12V		DC 12V			
Average Power Consumption	350W	400W	< 300W	< 350W		< 450W
Size	337 × 180 × 114mm		302 × 180 × 114mm		337 × 180 × 114mm	
Weight	14kg		9kg		13kg	