Laser-compact group
Laser-export Co.Ltd

NEW!

TECHNOLOGY-SERIES

LASERS FOR OEM

DIODE-PUMPED, SOLID-STATE, Q-SWITCHED LASERS

from infrared to ultraviolet

TECHNOLOGY family lasers -
high-effective instruments for OEM in compact package. Small and powerful.

FEATURES

- High pulse energy (up to 3000 μJ)
- Ultra-compact design
- High peak power (up to 250 kW)
- Short pulse duration
- Perfect beam quality
- Conductive cooling of laser head
- High pulse-to-pulse stability
- Cost-effectiveness

APPLICATIONS

- Materials micromachining (including transparent)
- Marking
- Laser-induced breakdown detection (LIBD)
- Mass spectrometry (MALDI TOF)
- Laser microdissection
- Remote sensing
- Ablation
- OPO pumping
- Photoacoustics
- Laser-induced breakdown spectroscopy (LIBS)

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Laser-compact group introduces a new series of unique actively Q-switched DPSS lasers which is intended to be used in industrial applications. Development of this series (brand name ***"TECHNOLOGY"***) is based on many years experience in R&D and manufacturing of Q-switched lasers: more than 2,500 of this kind lasers (mainly UV) have been produced for OEMs in mass spectrometry, microdissection and marking applications.

Small and powerful ***TECHNOLOGY***-series lasers are new alternatives to the large, complicated and expensive high-power lasers. Due to combination of high pulse energy and peak power, ultra-compact footprint and conductive cooled laser head, superior pulse-to-pulse stability and beam quality, low power consumption and maintenance-free operation, they meet OEM customers` requirements and are more adequate for commercial applications.

Offering both high power and high laser intensity on target (GW/cm^2) in the visible and UV, these lasers present unique advantages for efficient laser micromachining (especially of transparent materials). Besides, ***TECHNOLOGY***-series lasers provide a higher processing speed (compared with the lasers operating at high repetition rate with low pulse energy) as the result can be achieved with the minimum number of laser pulses. Possibility of operating at lower frequencies simplifies and reduces the price of the whole micromachining system, as it doesn`t require an expensive high-speed scanning head.

TECH-series lasers are ideal sources for use in micro processing of different materials, including biological tissues,thin films, multilayered structures and semiconductors (for example, resistors trimming, LCD repair, scribing of photovoltaic and other electric thin films, marking of cables, PC boards, gemstones, surface or inside-glass marking, etc.).

TECH-series includes four different lines: ***Specific, Express, Basic*** and ***Advanced***. Each line has its advantages.

Express line features the shortest pulse width and provides the highest peak power: up to 250 kW at 1053 nm and up to 165 kW at 527 nm. For marking applications it means better quality: high peak power at low frequency increases the surface temperature rapidly, vaporizing the material with minimal heating of the substrate. If the pulse repetition is high, a lower peak power produces less vaporization but more heat.

Parameter / Model	TECH-527 *Express*	TECH-1053 *Express*
Wavelength, nm	**527**	**1053**
Mode of Operation	Q-switched, ext. / int.triggering	
Pulse Energy at 1 kHz, μJ	500	1000
Pulse Duration at 1 kHz (FWHM), ns	< 3	< 4
Peak Power at 1 kHz, kW	> 165	> 250
Range of Pulse Repetition Rate, kHz	0 - 1	
Beam Quality	TEM_{00}, M^2 < 1.2	
Pulse-to-Pulse Stability- StdDev/mean, %	< 2	< 1
Long Term Stability, % / 8 hrs	< 2%	
Operation Voltage, V	24 ± 10%	
Power Consumption, W	15-70[1]	
Laser Head Heating Power, W	5-20[1]	
Weight of Laser Head, kg	< 1.5	
Weight of PSU, kg	< 2	

[1] Depending on pulse repetition rate

Specific line offers the smallest high-energy lasers for OPO pumping and other applications. It features longer pulse width compared with the other lines and the highest pulse energy: up to 2 mJ in IR and up to 1 mJ in green spectrum range.

Parameter / Model	TECH-527 *Specific*	TECH-1053 *Specific*
Wavelength, nm	**527**	**1053**
Mode of Operation	Q-switched, ext. / int.triggering	
Pulse Energy at 1 kHz, μJ	1000	2000
Pulse Duration at 1 kHz (FWHM), ns	> 7	>10
Peak Power at 1 kHz, kW	140	180
Range of Pulse Repetition Rate, kHz	0 - 1	
Beam Quality	TEM_{00}, M^2 < 1.2	
Pulse-to-Pulse Stability- StdDev/mean, %	< 2	< 1
Long Term Stability, % / 8 hrs	< 2%	
Operation Voltage, V	24 ± 10%	
Power Consumption, W	15 - 70[1]	
Laser Head Heating Power, W	5 - 20[1]	
Weight of Laser Head, kg	< 1.5	
Weight of PSU, kg	< 2	

[1] Depending on pulse repetition rate

Basic line of TECHNOLOGY-series lasers with low power consumption and economic price was specially designed for budget applications. ***Advanced*** line features the highest average output power (at 4 kHz) and higher pulse energy compared with ***Basic*** line models. 263, 351,527 and 1053 nm wavelengths are available.

Parameter / Model	TECH-263		TECH-351		TECH-527		TECH-1053	
	Basic	*Advanced*	*Basic*	*Advanced*	*Basic*	*Advanced*	*Basic*	*Advanced*
Wavelength, nm	**263**		**351**		**527**		**1053**	
Mode of Operation	Q-switched, ext. / int.triggering							
Pulse Energy[1,2], μJ	25	50	125	200	250	500	500	1000
Average Output Power[2],W	-	0.2	-	0.8	-	2	-	4
Pulse Duration (FWHM)[1,2], ns	4		5		5		6	
Peak Power[1,2], kW	6	12	25	40	50	100	85	165
Range of Pulse Repetition Rate, kHz	0 - 4							
Beam Quality	TEM_{00}, M^2 < 1.2							
Pulse-to-Pulse Stability-StdDev/mean[1,2], %	< 15	< 10	< 5		< 3		< 1	
Long Term Stability, % / 8 hrs	< 2%							
Operation Voltage, V	24 ± 10%							
Power Consumption, W	Basic: 15-70 [3], Advanced: 20-90 [3]							
Laser Head Heating Power, W	Basic: 5-20 [3], Advanced: 5-30 [3]							
Weight of Laser Head, kg	<1.5							
Weight of PSU, kg	< 2							

[1] Measured at 1 kHz pulse repetition rate for *Basic* line.
[2] Measured at 4 kHz pulse repetition rate for *Advanced* line.
[3] Depending on pulse repetition rate

Due to our policy of continuous product improvement, specifications may change without notice.

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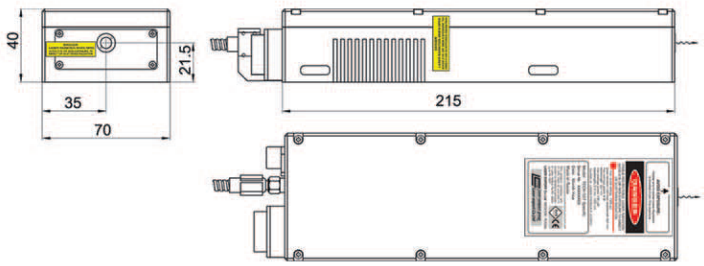
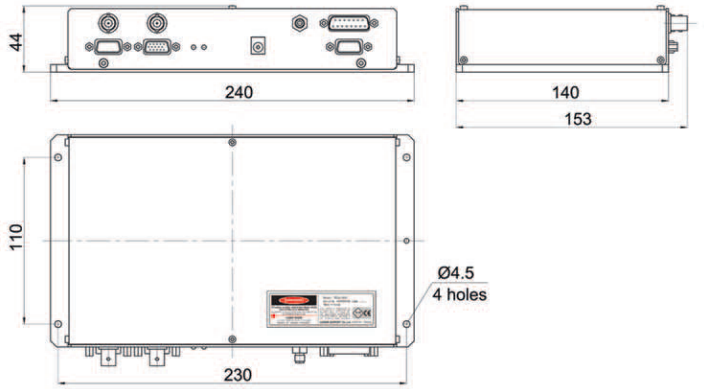
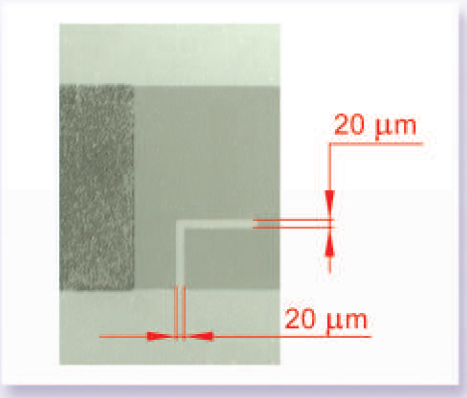
Drawing of Laser Head



Drawing of Power Supply Unit



Fan Heat Sink to be attached depending on operation conditions and/or pulse repetition rate



Resistor trimming is performed with ML5 laser machine (*Lasers & Apparatus TM*) using TECH-527 laser. Trim cut width is 20 µm.

ISO 9001:2008 certified

We are ready to offer customized solution for your application. Please contact Laser-compact group for any laser requirements exceeding the standard specifications.