

DIODE – PUMPED SOLID STATE LASER
Model TECH-1053 Advanced
Specification

Wavelength.....	1053nm
Max. Average Pulse Energy at 4 kHz.....	> 800 µJ
Max. Average Output Power	> 3.2 W
Max. Peak Power at 4 kHz.....	> 80 kW
Mode of Operation.....	Q-switched, ext./int. triggering/through RS-232
Range of Pulse Repetition Rate:	
Ext. Triggering ¹	single pulse - 4 kHz
Int. Triggering: through RS-232 ²	0.01 - 4 kHz
without PC ³	4 ± 0.01 kHz
Pulse Duration (4 kHz, Average Pulse Energy >800µJ, FWHM)	< 10 ns
Stability – StdDev/Mean (4 kHz, Average Pulse Energy>800µJ).....	< 1 %
Long-term stability (Av. Power (RMS)/Av. Power (4 kHz, Average Power > 3.2 W, within 8 hours).....	< 2 %
Beam Profile.....	TEM ₀₀
Beam Height.....	21.5 ± 1.0 mm
Beam Diameter (1/e ² , at output aperture).....	0.7± 0.2 mm
Beam Divergence (full angle, 1/e ²).....	< 5 mrad
Beam Quality, M ²	< 1.2
Polarization Linearity.....	> 100:1, vertical (< 5°)
Laser Trigger to Sync Out Pulse ⁴ (4 kHz, Average Pulse Energy >800µJ)	
Delay (the value is within the range)*.....	200 ... 220 µs
Delay instability *.....	< 2% from delay value
Trigger method *	by the rising edge of the triggering pulse
Laser Emission to Sync Out Pulse ⁴ (4 kHz, Average Pulse Energy >800µJ)	
Delay.....	< 50 ns
Jitter	< 2 ns
Operating Temp/Humidity Range	+15 to + 35 °C /up to 80% non-condensing
Shipping Temp/Humidity Range(In the manufacturer package)	-20 to +50 °C / up to 80% humidity at 25 °C
Dimensions (L x H x W):	
Laser Head (without connectors)	215 x 40 x 70 mm
Power Supply without Fan Heat Sink ⁵	230 x 47 x 148 mm
Power Supply with Fan Heat Sink ⁵	230 x 117 x 148 mm
Fiber Cable Length.....	1.5 ± 5% m
Minimal long term bending radius of fiber cable.....	50 mm
LH-PS cable Length.....	1.5 ± 5% m
Weight:	
Laser Head	1.2 ± 0.1 kg
Power Supply without Fan Heat Sink ⁵	1.9 ± 0.1 kg
PSU Fan Heat Sink.....	1.7 ± 0.1 kg
Operating Voltage.....	24 ± 10% V DC
Max. Current Consumption	< 6 A
Max. Power Consumption	<140 W
Warm-up Time.....	< 10 min
Remote Control of Laser Parameters (ON/OFF, Ext./Int. Triggering, pulse repetition rate, pulse energy)	via interface RS-232
Data rate via Interface RS-232	4800 bit/s
Laser Class.....	IV
Compliance.....	CE, RoHS

Note. Laser has only OEM version. Laser is designated solely as OEM components for incorporation into the customer's end products. Therefore, they do not comply with the appropriate safety requirements for complete laser products (Standard EN 60825-1:2014). The complete laser product manufacturer is responsible for complying with these requirements

¹ Triggering with external electric pulse generator; generator is not included in delivery set.

² Generation of periodical laser pulses using PC, step 0.01 kHz. Average energy may be changed by software from 100µJ up to maximum value.

³ Generation of periodical laser pulses at 4kHz rep. rate; external generator and/or PC are not required.

⁴ Sync Out signal is generated by pulse of laser light.

⁵ Without AC/DC adapter

*In the case of trigger method by the rising edge of the triggering pulse (default setting). The laser can be configured to operate with a trigger pulse of 200 ... 220 µs duration, generated by user (specified when placing an order). In this case, the delay time 300 ± 250 ns and the delay jitter < 8 ns are counted from the falling edge of the trigger pulse 200 ... 220 µs