

# DPSS Nd:YAG Micro Lasers

# STA-01-MOPA series



A number of applications like high precision ranging and imaging, LIDAR, micro-materials processing, UV spectroscopy in chemistry and biochemistry will benefit from energetic (300–500  $\mu\text{J}$ ) high beam quality sub-nanosecond ( $\sim 200$  ps) laser pulses. To address the needs of these applications the new MOPA microlasers from STANDA utilize Master Oscillator Power Amplifier platform that combines

company's renowned STA-01 microlaser oscillators together with a highly efficient amplifying stage. Due to the MOPA configuration the unique spatial and temporal characteristics of the microlasers are preserved while their output power is raised to the multiwatt level. All Master Oscillators as well as Power Amplifiers are produced at Standa facilities.

## APPLICATIONS

- Marking
- Biomedical
- LIDAR and Laser Ranging
- Micro dissection
- Material processing
- TiSa, OPO pumping
- Spectroscopy (LIBS, LIPS and PIV)
- Nonlinear Optics (Harmonics and Supercontinuum Generation)
- Diamond drilling (SiC) other hard materials
- Sensing and Monitoring
- Semiconductor Inspection
- MALDI-TOF
- Laser Induced Fluorescence (LIF)
- Micromachining

## SPECIFICATIONS

Models *	STA-01-MOPA 1	STA-01-MOPA 2	STA-01-MOPA 3	STA-01-MOPA 4
Wavelength, nm			1064	
Average Output Power (max), W	3	2.5	0.2	5
Pulse Energy, $\mu\text{J}$	300	50	200	100
Pulse Width (FWHM), ns	0.8	0.4	0.2	0.5
Repetition Rate (max), kHz	10	50	1	50
Peak Power, MW			up to 1.2	
Beam Divergence ( $1/e^2$ , full angle), mrad			< 6	
Pulse Spectral Structure			SLM	
Spatial Mode			TEM <sub>00</sub>	
Beam Propagation Factor M <sup>2</sup>			< 1.2	
Polarization Ratio (linear)			> 100 : 1	
Power Stability RMS, %			< 1%	
Operating Voltage, V AC			100–230	
Power Consumption, W			<100	
Operating Temperature, °C			20–35	
Interfaces		USB, External Trigger (TTL rising edge)		
Dimensions of Laser Head, mm		79 (W) × 37.5 (H) × 75 (L)		
Dimensions of Controller, mm		471 (W) × 157 (H) × 458 (L)		
Warranty		12 months		

\* Models names might differ from ones provided in our website.

**D P S S M I C R O L A S E R S**

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## STA-01-MOPA-SH/TH

## Second and Third Harmonic Generators

Without compromising their compactness and beam quality the STA-01-MOPA series lasers can be equipped with second and third harmonic generation crystals for nonlinear frequency conversion. STANDA can offer green and UV lasers with 532 and 355 nm wavelengths accordingly.

### SPECIFICATIONS

Models*	STA-01-MOPA-SH-1	STA-01-MOPA-SH-2	STA-01-MOPA-SH-3	STA-01-MOPA-SH-4	STA-01-MOPA-TH-1	STA-01-MOPA-TH-2	STA-01-MOPA-TH-3	STA-01-MOPA-TH-4
Wavelength, nm	532				355			
Average Output Power (max), mW	1500	1200	100	2500	750	700	50	1250
Pulse Energy, $\mu$ J	150	10	100	50	75	5	50	25
Pulse Width (FWHM), ns	0.7	0.4	0.2	0.5	0.5	0.4	0.2	0.7
Repetition Rate (max), kHz	10	50	1	50	10	50	1	50
Peak Power, MW	up to 1.2							
Pulse Spectral Structure	SLM							
Beam Propagation Factor $M^2$	< 1.2							
Power Stability RMS, %	< 1%							
Interfaces	USB, External Trigger (TTL rising edge)							
Dimensions of Laser Head, mm	79 (W) $\times$ 37.5 (H) $\times$ 75 (L)							
Dimensions of Controller, mm	471 (W) $\times$ 157 (H) $\times$ 458 (L)							
Warranty	12 months							

\* Models names might differ from ones provided in our website.

## 12WCS1

## Water Cooling System

Equip laser head with proper cooling equipment. STANDA has specially designed a cooling unit that serves as compact and reliable heat dissipation system.

### SPECIFICATIONS

Rated Voltage	DC 12 V $\pm$ 10%
Q-max	800 L/hour $\pm$ 10%
H-max	4 m $\pm$ 10%
Size	75 $\times$ 54 $\times$ 66 mm
Life Expectancy	50000 hours at 25°C
Noise	24.5 dB
Power Supply Voltage	12 V
Power	3 W
Working Liquid	Distilled water
Thermal Resistance Coefficient of the System	0.05 °W



## STA-01-X

## Non-standard Lasers

Due to the MOPA configuration different modifications of output parameters are possible. Contact STANDA directly or find your local STANDA representative if you have laser specification other than given in the table of standard units.

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