

Passively Q-switched Sub-nanosecond Micro Lasers

STA-01


APPLICATIONS

- Pump source for harmonic generators, optical parametric oscillators and amplifiers (using periodically poled KTP or LiNbO₃ crystals)
- Low-coherence "white light" interferometry
- Test and measurement systems
- Optical coherence tomography
- Two-photon microscopy
- Fluorescence microscopy
- Laser seeding
- Spectroscopy
- 3D mapping

STA-01 series Diode Pumped Nd:YAG Solid-State Micro Lasers deliver high peak powers (up to 1 MW) with sub-nanosecond pulse lengths. Different resonator configurations allow STA-01 series lasers to reach high repetition rates of up to 200 kHz or pulse energies as high as 1 mJ. The family of highly reliable passively Q-switched solid-state lasers are suitable for various applications because of their compactness and excellent beam quality.

The laser consists of laser controller and laser head. The laser can be operated from external or internal trigger mode.

SPECIFICATIONS

Models *	STA-01-1	STA-01-2	STA-01-3	STA-01-4	STA-01-5	STA-01-6	STA-01-7	STA-01-8	STA-01-9
Wavelength, nm	1064								
Average Output Power (max), mW	140	100	120	125	65	20	100	200	40
Pulse Energy, μ J	2	2	3	5	6.5	20	100	200	0.4
Pulse Width (FWHM), ns	0.5	0.6	0.8	0.6	0.7	< 0.2	0.6	0.6	0.4
Repetition Rate (max), kHz	70	50	40	25	10	1	1	1	100
Beam Profile	$M^2 \leq 1.1$								
Pulse Spectral Structure	Single longitudinal mode								
Polarization Ratio	$> 100 : 1$								
Beam Waist Diameter Inside the Laser Head $1/e^2$, μ m	25–400								
Pulse Spectrum FWHM, pm	< 5 (near transform limited)								
Pulse to Pulse Energy Stability RMS	< 0.4								
Power Stability Over Six Hours	$< \pm 1.5\%$								
External Power Supply Voltage, V AC	100–240								
Operating Temperature, $^{\circ}$ C	15–40								
Interfaces	USB, External Trigger (TTL rising edge) 1 Hz–max repetition rate								
Laser Head Dimensions:									
Diameter, mm	25								
Length, mm	44.5								
Warranty	12 months or 5000 hours whichever occurs first								
Laser Head Cooling	Radiator: 12LGL2-25 included								
Laser Controller Cooling	Included								

* Each Standa STA-01 laser is equipped with proper heatsink by default.

Specifications are subject to changes without advance notice.

Ask Standa for any SLM microlaser from 100 ps to 3 ns.

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Optical Tables

1 Brackets & Rails

2 Base Mounts & Accessories

3 Optical Mounts

4 Optical Positioners

5 Base Positioners

6 Translation & Rotation Stages

7 Motorised Positioners & Controllers

8 Fine Adjustment Screws

9 Opto-Mechanics & Sets

10 Light Test & Measurement Instruments

11 Lasers & Laser Accessories

12

Second and Third Harmonic Generators

STA-01SH

STA-01TH

Without compromising their compactness and beam quality the STA-01 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-01SH-1	STA-01SH-2	STA-01SH-3	STA-01SH-4	STA-01SH-5	STA-01TH-1	STA-01TH-2	STA-01TH-3
Wavelength, nm	532					355		
Average Output Power (max), mW	40	25	50	20	100	25	35	50
Pulse Energy, μ J	4	5	50	0.2	100	2.5	3.5	50
Pulse Width (FWHM), ns	0.5	< 0.7	0.5	0.5	0.5	0.4	0.5	0.8
Repetition Rate (max), kHz	10	5	1	100	1	10	10	1
Beam Profile	$M^2 \leq 1.2$							
Pulse Spectral Structure	Single longitudinal mode							
Polarization Ratio	> 100 : 1							
Beam Waist Diameter Inside the Laser Head $1/e^2$, μ m	25 – 400							
Warranty	12 months or 5000 hours whichever occurs first							
Laser Head Cooling	Radiator: 12LGL2-25 included							
Laser Controller Cooling	included							

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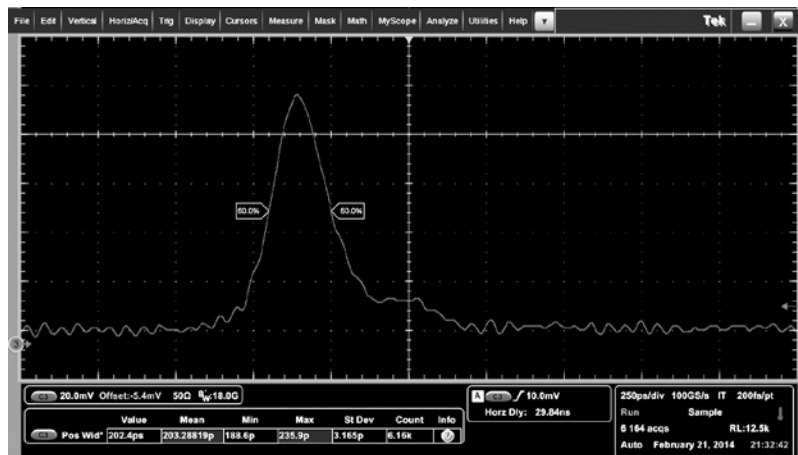
Almost every Standa laser can be converted to SHG and THG, please contact Standa for more information.

Non-standard Lasers

STA-01-X

STANDA Laser engineers always seek new challenges. Inquiries for lasers not in the standard catalogue list are always interesting for STANDA team. Thanks to customer inquiries, over 15 years STANDA has produced multiple laser systems designed to meet most challenging demands.

STA-01-6 model with pulse duration less than 190 ps



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