Q-SWITCHED SERIES

DPSS Q-Switched Lasers

Features:

Wavelength 262nm to 1340nm, Power up to 4W • Excellent beam quality Extremely low power consumption • Air-cooled – no cooling water or fan required Unmatched ultra-compact and ultra-light-weight • Repetition rate 1 kHz to 100 kHz internal adjustment, 0 Hz to 200 kHz by external trigger

Applications:

Material processing • Semiconductor inspection • LIDAR • Photoluminescence Solar material processing • Scientific research • Raman Spectroscopy

Q-Switched UV Laser



Wavelengths	355 nm	351 nm	349 nm	266 nm	262 nm
Max. average power at					
optimal repetition rate*	100 mW	100 mW	100 mW	50 mW	50 mW
Max. Pulse energy* at 1 kHz rep. rate	25 µJ	50 µJ	50 µJ	15 µJ	25 µJ
Available average output power	100 mW, 50 mW	/, 25 mW, 10 mW	50 mW, 30 mW, 20) mW, 10 mW, 5 mV	V
Pulse width	Typically 10 - 15	ns, varies from po	wer and repetition r	ate, 5 - 100 ns optic	on available
Repetition rate	1 kHz to 100 kH	z internal adjustabl	le, 0 Hz to 400 kHz b	y external trigger	
Beam divergence, full angle	3 - 4 mrad			2 - 6 mrad	
Beam diameter (1/e2)	0.2 mm			0.15 x 0.3 mm	
Transverse beam mode	TEMoo, M ² < 1.3	; Typically M ² < 1.1, f	or 349, 351 and 355 i	nm; Elliptical beam	for 262 and 266 nm
Longitudinal mode	Multiple longitu	dinal modes; Narro	ow linewidth with lor	ng coherence length	n option available
Power stability, rms	5% after warm-	up			
Beam pointing stability	< 0.02 mrad at c	constant temperatu	re		
Polarization	Linear; Ratio 10	10:1			
Q-Switched Blue Lasers					

440 nm 447 nm 473 nm Wavelengths Max. average power at 50 mW 50 mw 50 mW optimal repetition rate* Pulse energy* at 10 kHz rep. rate 5 µJ 5 µJ 5μJ 50 mW, 25 mW, 10 mW Available average power Typically 15 - 35 ns, varies from power and repetition rate, 7 - 100 ns option available Pulse width Repetition rate 1 kHz to 100 kHz internal adjustable, 0 Hz to 200 kHz by external trigger Transverse beam mode TEMoo, $M^2 < 1.2$, typical $M^2 < 1.1$ 0.2 mm Beam diameter (1/e2) Beam divergence, full angle 3 - 4 mrad Longitudinal mode Narrow linewidth with long coherence length option available Power stability, rms 5% after warm-up Beam pointing stability < 0.02 mrad at constant temperature Polarization Linear; Ratio 100:1

Q-Switched Green Lasers

Wavelengths	532 nm	527 nm	523 nm	555 nm and 561 nm available	
Max. average power at					
optimal repetition rate	1000 mW	1000 mW	1000 mW		
Max. Pulse energy* at 1 kHz	0.20 µJ	0.35 µJ	0.35 µJ		
Available average power	1 W, 500 mW, 200 mW, 100 mW, 50 mW standard version				
Pulse width	Typically 10 - 25 ns, varies from power and repetition rate, 7 - 100 ns option available				
Repetition rate	1 kHz to 100 kHz internal adjustable, 0 Hz to 400 kHz by external trigger				
Beam diameter (1/e2)	0.3 mm				
Beam divergence, full angle	3 - 4 mrad				
Transverse beam mode	TEMoo, M ² < 1.2, typical M ² < 1.1				
Longitudinal mode	Single longitudinal mode with long coherence length option available				
Power stability, rms	3% after warm-up				
Beam pointing stability	< 0.02 mrad at constant temperature				
Polarization	Linear; Ratio 100:1				



Q-Switched Red Lasers						
Wavelengths	657 nm		66	0 nm		671 nm
Max. average power at						
optimal repetition rate	200 mW		50	l0 mW		500 mW
Pulse energy* at 10 kHz rep. rate	20 µJ		0.5	50 µJ		0.50 μJ
Available average power (mW)	500, 200, 100 (higher average powers available, contact CrystaLaser for details)					
Pulse width	Typically 20 - 40 ns, varies from power and repetition rate, 10 - 100 ns option available					
Repetition rate	1 kHz to 100 kHz internal adjustable, 0 Hz to 200 kHz by external trigger					
Transverse beam mode	TEMoo, M ² < 1.2, typical M ² < 1.1					
Beam diameter (1/e2)	0.3 mm					
Beam divergence, full angle	3 - 4 mrad					
Longitudinal mode	Narrow line width with long coherence length option available					
Power stability, rms	3% after warm-up					
Beam pointing stability	< 0.02 mrad at constant temperature					
Polarization	Linear; Ratio 100:1					
Q-Switched Infrared Lasers						
Wavelengths	1064 nm 1	053 nm 10)47 nm	946, 1122, 1313, 131	9, 1338	8, 1342, and 1444 nm available
Max. average power	2000 mW 2	2000 mW	000 mW			
Max. pulse energy* at 1 kHz	0.32 mJ 0	.60 mJ 0.	60 mJ			
Available average power(mW)	2000, 1500, 1	000, 500, 200), 100 (higł	her average powers av	ailable,	contact CrystaLaser for details)
Pulse width	Typically 15 -	- 30 ns, varie	es from po	ower and repetition r	ate, 7 -	100 ns option available
Repetition rate	1 kHz to 100 kHz internal adjustable, 0 Hz to 500 kHz by external trigger					
Transverse beam mode	TEMoo, M ² < 1.2, typical M ² < 1.1					
Beam diameter (1/e2)	0.5 mm					
Beam divergence, full angle	3 - 4 mrad					
Longitudinal mode	Single longitudinal mode with long coherence length option available					
Power stability, rms	3% after warm-up					
Beam pointing stability	< 0.02 mrad at constant temperature					
Polarization	Linear; Ratio 100:1					

Notes: Laser output power and pulse energy can be optimized to a custom repetition rate upon request. Contact us for higher power Q-switched lasers.

Q-Switched Lasers Mechanical, Electrical and Environmental Specifications

Size and weight of laser head	Type 2: L x W x H, 18.5 x 5 x 3.6 cm³, 0.5 kg (for most Q-switched laser);
	Type 3: 18.5 x 7 x 3.6 cm ³ , 0.6 kg
Size and weight of power supply	D x W x H, 20 x 20 x 8 cm³ (7.9" x 7.9" x 2.5"), 1.4 kg (3 lb) Custom compact size available
Operating temperature	5 °C to 35 °C
Warm-up time	< 3 minutes
Operating voltage	90 - 250 VAC; 12 VDC or 24 VDC option available; Typically power consumption 40 W
Cooling	Laser head: conductive cooling; Power supply: air cooling
Timing jitter:	Trigger to laser pulse output timing jitter of +/- 3 ns is available for all the Q-switched lasers

Contact Crystalaser for details regarding the Tahoe and Rubicon Series Laser

