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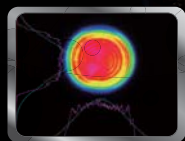
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## **SGR Series Q-Switched Nd:YAG Laser**





▶ Flat-top Distribution



▶ Mobile Version Available



▶ Beam Tubing Shielding for Long-term Operation

▶ Pumping Dye Lasers



▶ Pumping Ti: Sapphire Lasers



▶ LIDAR



**Features:**

- 1064nm, 532nm, 355nm, 266nm optional
- RS232 and TTL interface for remote or external control
- Repetition rates up to 50Hz
- Injection seeded for narrow linewidth
- Invar structure inside
- High reliability and stability
- Superior beam quality
- Quick lamp change without realignment

**Application:**

- LIDAR
- CARS
- Laser Shock Peening (LSP)
- Pumping OPO
- Pumping Dye Lasers
- Pumping Ti:Sapphire Lasers
- Pulsed Laser Deposition (PLD)
- Laser Cleaning and Ablation
- Plasmas Generated by Laser Pulses

- Laser Trigger Switch (LTS)
- Photo Chemistry
- Laser Illuminating
- Nonlinear Optics
- Laser Ion Source (LIS)
- Laser Flyer

Beamtech SGR (Super-Gaussian Resonator) series Q-switched Nd:YAG lasers combine VRM (variable reflectivity mirror) and unstable resonator design creating a cavity with large TEM<sub>00</sub> mode volume for high efficiency of excitation and energy extraction. You can specify "flat-top-hat" with uniform energy distribution or "VRM Gaussian" profiles.

The Beamtech close-coupled diffuse pump chamber delivers uniform pumping to the laser rod for optimum lasing excitation efficiency and allows for higher stored energy by eliminating parasitic oscillations within

the pump chamber. The pump chamber uses chemically inert materials to withstand high pumping energy and absorb unwanted UV and IR radiation emitted by the flashlamps. One or more amplifiers can be added to the oscillator for higher energy output. With scientific or industrial grade models available, the SGR series will fit right in your scientific research, medical or OEM industrial application.



Specifications:					
Products <sup>1</sup>	SGR-10	SGR-20	SGR-30	SGR-40	SGR-60
Repetition Rate <sup>2</sup> (Hz)	10,20	10,20	10	10	10
Pulse Energy (mJ)					
1064nm	1000	2000	3000	4000	6000
532nm	500	1000	1500	2000	3000
355nm	300	550	Option	Option	Option
266nm	100	180	Option	Option	Option
Energy Stability <sup>3</sup> (%)					
1064nm	≤1	≤1	≤1	≤1	≤1
532nm	≤2	≤2	≤2	≤2	≤2
355nm	≤3	≤3	≤3	≤3	≤3
266nm	≤5	≤5	≤5	≤5	≤5
Power Drift <sup>4</sup> (%)					
1064nm	≤3	≤3	≤3	≤3	≤3
532nm	≤5	≤5	≤5	≤5	≤5
355nm	≤6	≤6	≤6	≤6	≤6
266nm	≤8	≤8	≤8	≤8	≤8
Pulse Width <sup>5</sup> (ns)					
1064nm	7-9	8-10	10-12	10-12	10-12
532nm	6-8	7-9	9-11	9-11	9-11
355nm	6-8	7-9	9-11	9-11	9-11
266nm	6-8	7-9	9-11	9-11	9-11
Divergence <sup>6</sup> (mrad)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
Pointing Stability (urad)	≤30	≤30	≤30	≤30	≤30
Beam Diameter <sup>7</sup> (mm)	10	12	14	16	18
Jitter <sup>8</sup> (ns)	≤1	≤1	≤1	≤1	≤1
Spatial Mode Profile <sup>9</sup>					
Near Field	>70%	>70%	>70%	>70%	>70%
Far Field	>95%	>95%	>95%	>95%	>95%
Linewidth (cm <sup>-1</sup> )					
Standard	<1.0	<1.0	<1.0	<1.0	<1.0
Injection Seeded	<0.003	<0.003	<0.003	<0.003	<0.003

**Note:**

\*1. All specifications, unless otherwise stated, are for Q-Switched 1064nm operation and are subject to change without notice.

\*2. Up to 50Hz high repetition rates available on request. 10Hz is Max repetition rates for SGR-30/40/60.

Mechanical and Utilities:			
Products <sup>1</sup>	SGR-10	SGR-20/30/40	SGR-60
Size (L×W×H) (mm)			
Laser Head	1163×405×265	1163×405×265	1265×565×243
Power Supply <sup>10</sup>	884×520×736	884×520×736	884×520×736
Cooling System	N/A	705×460×710	836×688×1125
Control Panel		240×170×70	
Weight (kg)			
Laser Head	60	72	140
Power Supply	126	75	246
Cooling System	N/A	100	280
Electrical Service	220V-50Hz-16A	220V-50Hz-16A	380V-50Hz-25A
Room Temperature		5-30°C	
Length			
Control Line		3m	
Power Line		1.8m	
Umbilical Line		3m	

\*3. Dev. to average (shot to shot for 99% of pulses).

\*4. Average for 8 hours with room temperature variation less than ±3 C.

\*5. Full width half max (FWHM).

\*6. Full angle at 1/e<sup>2</sup> of the peak.

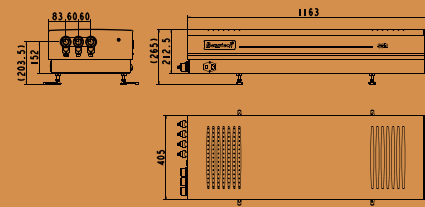
\*7. Measured at the laser output.

\*8. With respect to external trigger.

\*9. Near field profiles measured at 1m from laser output;

Far field profiles measured at the focal plane, least squares fit to Gaussian profile.

\*10. The power supply and cooling system of SGR-10 are integrated together.



SGR-10/20/30/40 laser head