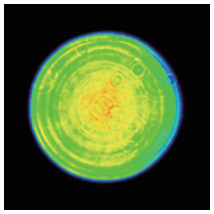
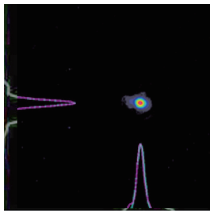
SGR series lasers

Features

- Pulse energy: 400mJ - 6J@1064nm
  Multiple harmonics available
- (532/355/266nm optional)
- Repetition rate up to 50 Hz
- Single longitudinal mode seeding for
- narrow linewidth output available
- Higher energy (>6J) available
- Super-Gaussian beam profile
- Super-Gaussian beam profile
  Quick lamp replacement design without
- optical path adjustment
  Engineering technology ensures
  long-term stable operation



Near field @1064nm



Far field @1064nm

High-Energy Q-Switched Nd:YAG Pulsed Laser

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 TEM00 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 laser shock peening, LiDAR, plasma excitation, PLD, tokamak, laser flyer, laser-matter interaction, and as pump sources for dye lasers, OPO, and ultrafast Ti femtosecond lasers.

In terms of design, the SGR series features modular and engineered design to ensure product reliability and stability. The power control cabinet is equipped with comprehensive external trigger connections and communication interfaces, facilitating synchronized system trigger control and remote control for users. The SGR series places particular emphasis on safety and electromagnetic compatibility design, featuring protective shutters, built-in interlocks, flow switches, emergency stop switches, and enclosure protection.

Applications

- LIDAR
- CARS
- Laser Shock Peening(LSP)
- Pumping OPO
- Pumping Dye Lasers
- Pumping Ti:Sapphire Femtosecond Laser
- Pulsed Laser Deposition (PLD)
- Laser Cleaning and Ablation
- Tokamak
- Laser-produced Plasma
- Laser Trigger Switch (LTS)
- Photo Chemistry
- Laser Illuminating
- Nonlinear Optics
- Laser Ion Source (LIS)
- Laser Driving Flyer

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TÜVRheinland Certificated

TÜV CERT ISO9001:2015

Specifications

Models[1]		SGR-10	SGR-20				SGR-30		SGR-40		SGR-50		SGR-60	
Repetition Rate		10	10	20	30	50	5	10	5	10	5	10	5	10
Energy (mJ)	1064nm	1000	2000	2000	2000	1500	3000	3000	4000	4000	5000	5000	6000	6000
	532nm	500	1000	1000	1000	750	1500	1500	2000	2000	2500	2500	3000	3000
	355nm	250	500	400	400	300	750	750	1000	1000	1250	1250	1500	1500
	266nm	90	180	100	90	50	250	200	350	300	400	350	500	400
Energy Stability[2](RMS)	1064nm	<1%												
	532nm	<2%												
	355nm	<4%												
	266nm	<4%												
Power Drift[3]	1064nm	<3%												
	532nm	<5%												
	355nm	<6%												
	266nm	<8%												
Pulse Width[4]		1064nm: 8-10ns; Other wavelengths: 7-10ns												
Spatial Profile[5]	Near Field	>70%												
	Far Field	>90%												
Beam Diameter[6](mm)		10	12	12	12	12	15	15	15	15	17	17	20	20
Divergence[7]		≤0.5mrad												
Pointing Stability		<50μrad												
Jitter[8](RMS)		<1ns												
Linewidth	Standard	$<1cm^{-1}$												
	Injection Seeded	$<0.003cm^{-1}$												

Models[1]		SGR-S400	SGR-S500	SGR-S600	SGR-S800
Repetition Rate (Hz)		10	20,30,50	20,30	20
Energy (mJ)	1064nm	400	500	600	800
	532nm	200	250	300	400
	355nm	100	100	150	200
	266nm	40	40	50	80
Divergence[7]		≤0.7mrad	≤0.5mrad	≤0.5mrad	≤0.5mrad
Beam Diameter[6]		8mm			
Other Specifications		Please refer to the table above			

1. All specifications, unless otherwise stated, are for Q-Switched 1064nm operation and are subject to change without notice.
2. Dev. to average (shot to shot for 99% of pulses).
3. Average for 8 hours with room temperature variation less than ±3°C .
4. Full width half max (FWHM).
5. Near field profiles measuared at 1m from laser output. Far field profiles measured at the focal plane, least squares fit to Gaussian profile.
6. Measured at the laser output.
7. Full angle at $1/e^2$ of the peak.
8. With respect to external trigger.

Mechanical and Utilities

Models		SGR-S	SGR-10	SGR-20/30/40	SGR-50/60
Size(LxWxH) (mm)	Laser Head	1172×365×291	1172×365×291	1163×410×291	1163×410×291
	Power Supply	580×540×200	580×540×200	804×682×921	804×682×921
Electrical Service		220V-50Hz-16A	220V-50Hz-16A	220V-50Hz-16A	380V-50Hz-25A
RoomTemperature		5~30℃			
Length	Control Line	3m			
	Power Line	1.8m			
	Umbilical Line	3m			

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