

High-Energy Nd:YAG Q-Switched Pulsed Laser

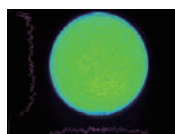
SGR-Extra series lasers have been developed since 2007 as high energy nanosecond laser systems which is suitable for laser peening, pump source, film damage detection, plasma physics, etc.

SGR-Extra series lasers provide the customization service. Specifications such as wavelength, repetition rate, energy, pulse width, beam profile, SLM are all available for customization. Beamtech also developed and gained much experience on burst mode technique and vehicular applications during this process. As a result, Beamtech provides the ideal laser source solution for the customer in various applications.

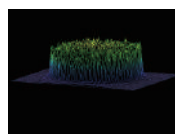
For industrial applications, particularly in laser shock peening, the SGR-Extra series, with its high energy output, optical shielding design, ultra-uniform beam output, high engineering reliability, and long-term operational stability, offers high-reliability and cost-effective laser solutions.

Features

- Excellent Beam Quality with Near-Flat-Top Uniform Distribution
- Unique Resonator Design Ensuring Uniform Output Beam
- Pulse Energy up to 50J with High Peak Power Density
- Robust Structure Design with High Stability
- Customization version available (Wavelength/Rep Rate/Pulse Width/Mode Options)



Near field @1064nm



10-lamp Pumping Cavity for Good Uniformity and High Efficiency



Beam Tubing Shielding for Long-term Operation



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Applications

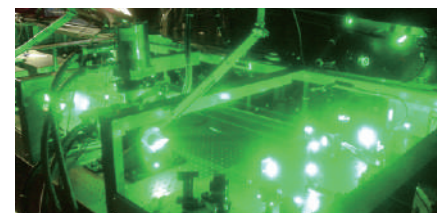
- Laser Shock Peening(LSP)
- Plasma Diagnostics
- Pumping Ti:Sapphire Femtosecond Laser
- Nonlinear Optics
- Laser-produced Plasma
- Laser-material Interaction
- Laser Driving Flyer
- Laser Ranging
- Laser Cleaning



Laser Shock Peening



Plasma Diagnostics for Tokamak



Pumping Source for Ti sapphire



Laser Shock Peening System



Specifications

Models ¹	SGR-Extra -04	SGR-Extra -06	SGR-Extra -08	SGR-Extra -10	SGR-Extra -12	SGR-Extra -15	SGR-Extra -20	SGR-Extra -25	SGR-Extra -30	SGR-Extra -40	SGR-Extra -50
Wavelength ²	1064nm, 532nm										
Repetition Rate	20,30,50Hz	5,10Hz	5,10Hz	5,10Hz	5Hz	5Hz	2Hz	2Hz	5Hz	2Hz	2Hz
Pulse Energy@1064nm	3-4J	6J	8J	10J	12J	15J	20J	25J	30J	40J	50J
@532nm	1.5--2J	3J	4J	5J	6J	8J	10J	13J	15J	20J	25J
Pulse Width@ 1064nm ³	9~12ns, 15~20ns(optional)			10~13ns, 15~20ns(optional)					12~15ns, 15~20ns(optional)		
Divergence ⁴	≤0.5mrad for VRM, ≤4mrad for MM			≤0.3mrad for VRM, ≤4mrad for MM							
Peak to Average	≤1.8:1			≤1.7:1			≤1.6:1				
Polarization	Linear, 100:1								Cross		
Energy Stability(RMS)	≤1%										
Power Drift(RMS)@1064nm	≤5%										
Pointing Stability (RMS)	≤20μrad										
Jitter(RMS)	≤1ns										
Linewidth <small>Standard</small>	<1cm ⁻¹										
<small>Injection Seeded</small>	<0.003cm ⁻¹										
Spatial Profile <small>Near Field</small>	>70% (VRM)										
<small>Far Field</small>	>95% (VRM)										

1. All specifications, unless otherwise stated, are for Q-Switched 1064nm operation and are subject to change without notice.
2. SHG, THG & FHG are available for optional.

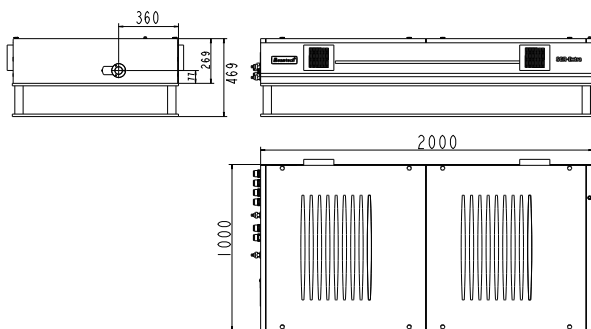
3. Full width half max (FWHM). The rising time can be cut down to <5-10ns by slicer for optional.

4. Full angle at 1/e² of the peak.

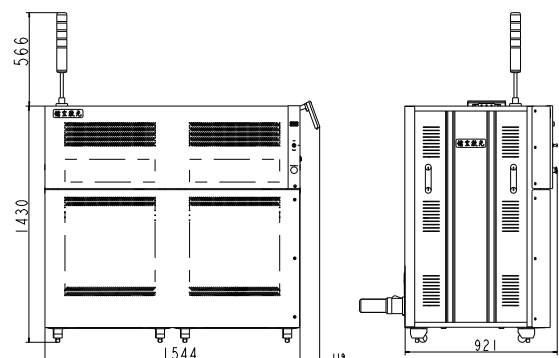
Mechanical and Utilities

Size(L×W×H) (mm)	Customization
Electrical Service	380V-50Hz, 3-phase
Water Service	Distilled Water, Chiller
Operating Temperature	10-30°C
Storage Temperature	0-40°C

Dimensions



Laser head(Customization)



Power Supply