SGR-Extra series lasers

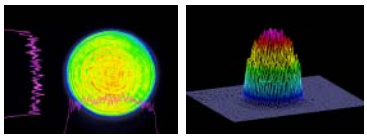
High energy Nd:YAG Q-switched lasers

SGR-Extra series lasers have been developed since 2007 as high energy nano-second laser systems which are suitable for laser peening, pump source, plasma physics, etc. By using unique beam homogenization technology and ASE suppression technology, SGR-Extra series fundamental wavelength energy is up to 50J with pulse width 10-20ns.

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. For the industrial field, especially for laser shock peening application, the temperature control, beam tubing shielding and high efficiency pumping chamber laser engineering techniques guarantee the whole system with significant industrial grade reliability.

Features

- Excellent beam quality, Super-Gaussian uniform distribution
- High output energy up to 50 J@1064 nm
- 10-20 ns pulse width, high peak power
- Robust design, high reliability, shock-proof design
- Local and remote control interface with compatibility
- Customization version available



Near field @1064nm

10-lamp Pumping Cavity for Good Uniformity and High Efficiency

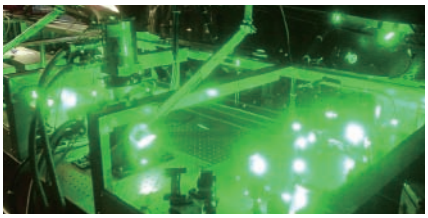
Beam Tubing Shielding for Long-term Operation

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

Beamtech®
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TÜVRheinland Certificated

TÜV CERT ISO9001:2015

Specifications

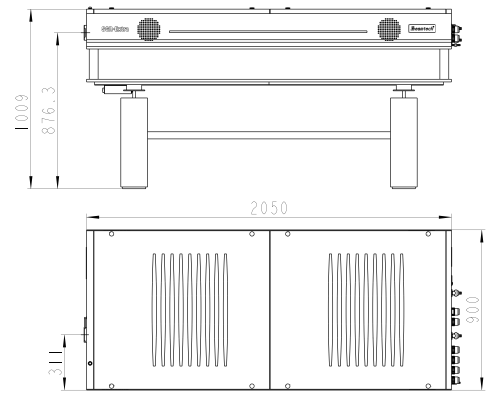
Models[1]	SGR Extra-04	SGR Extra-06	SGR Extra-08	SGR Extra-10	SGR Extra-12	SGR Extra-15	SGR Extra-20	SGR Extra-25	SGR Extra-30-D	SGR Extra-40-D	SGR Extra-50-D
Wavelength[2]	1064nm										
Rep Rate	20,30,50Hz	5,10Hz	5,10Hz	5,10Hz	5Hz	5Hz	2Hz	2Hz	5Hz	2Hz	2Hz
Pulse Energy at 1064nm	3-4J	6J	8J	10J	12J	15J	20J	25J	30J	40J	50J
Pulse Width at 1064nm[3]	10~12ns, 15~20ns(optional)								12~15ns, 15~20ns(optional)		
Divergence[4]	≤0.5mrad for VRM, ≤4mrad for MM										
Peak to Average	≤1.8:1										
Polarization	Linear 100:1								Cross		
Energy Stability[5](RMS)	<1%										
Power Drift(RMS)	<5%										
Pointing Stability	<50μrad										
Jitter[6](RMS)	<1ns										
Warm Up Time[7]	<5min										

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 angel at $1/e^2$ of the peak.
5. Dev. to average (shot to shot for 99% of pulses).
6. With respect to external trigger.
7. Time to full energy.

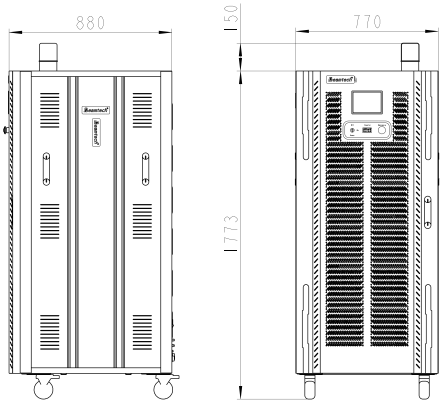
Mechanical and Utilities

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

Dimensions



SGR-Extra-15



Power Supply

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