



Melar-100 (Double Paths) Nd:glass laser MOPA system installed at CAS in 2005

Melar Series Large Energy Nd: Glass Laser System

In 2005, Beamtech built the first table-top Melar system with 100J output energy at 527nm for CAS (Chinese Academy of Sciences). After 3 years experimental application by using this pump laser, in 2008, the research group of CAS achieved Peta watts high peak power and high intensity laser output of femto second Ti:sapphire laser system.

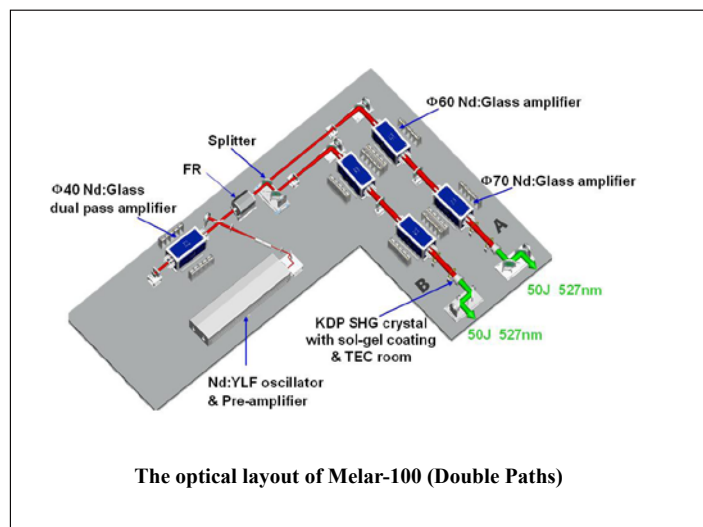
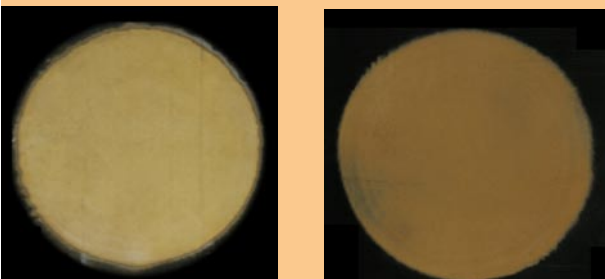
The advanced technologies of Melar series Nd:glass MOPA system, such as single-longitude mode diode-pumped Nd:YLF oscillator, apodizing apertures beam homogenization technique and large energy pumping cavity with ASE restraining technology have been demonstrated their contributions to both output energy and beam quality (the fill factor >0.8). The maximum output energy from each rod amplifier chain of Melar system is around 300J ($\Phi 100\text{mm}$ spot size) with 10~30ns pulse duration. The 1000J compact Nd:glass disk amplifiers and 0.1pps high repetition rate 50J system are under development.

Beamtech also supplies large energy Nd:glass laser accessories, parts and power deliveries for your table-top laser system building up.

Features and applications

- High accuracy multiplex synchronizer with anti electromagnetic interference design
- Heavy electricity security and warning system
- Beam homogenization technology
- Nd:Glass rod thermal compensation and pumping uniformization technologies
- Long life time static vacuum space filter
- Pump for Ti:sapphire lasers
- Laser peening and scientific research applications

$\Phi 65\text{mm}$ Beam pattern of 100J@1053nm & 50J@527nm lasers





Melar-20 Nd: glass laser
MOPA system installed at CAS in 2008

The main specifications of Melar series Nd:Glass laser

Model	Max output energy	Beam size	Divergence	Beam uniformity (fill factor)	Shot-to-shot stability* ¹	Pulse duration* ²	Pulse jitter* ³
Melar-20	20J@1053nm 10J@527nm	Φ35mm	0.2mrad	≥0.75	3%	~15ns	<1ns
Melar-50	50J @ 1053nm 25J @ 527nm	Φ55mm	0.1mrad	≥0.8	3%	~15ns	<1ns
Melar-100	100J @ 1053nm 50J @ 527nm	Φ65mm	0.1mrad	≥0.8	3%	~15ns	<1ns
Melar-200	200J @ 1053nm 100J @ 527nm	Φ85mm	0.05mrad	≥0.8	3%	~15ns	<1ns
Melar-300	300J @ 1053nm 150J @ 527nm	Φ95mm	0.05mrad	≥0.8	3%	~15ns	<1ns

*1: Pulse-to-pulse stability of RMS for 99% of pulses, measured over a 4-hour period with temperature variations of less than ±3°C.
 *2: Up to 30ns pulse duration and 1ns pulse duration can be achieved by optional.
 *3: RMS jitter from Q-switch sync pulse.

We supply large energy Nd:Glass laser accessories and parts for your table top laser build up.

DPSS Nd:YLF oscillator & pre-amplifier	Large energy pumping chambers	KDP harmonic generation crystal with sol-gel coating & TEC room	Flash lamp	Power delivery	Faraday isolator
Wavelength: 1053nm Energy: 1mJ~500mJ Repetition rate: 1pps Pulse duration: 10-30ns Single-longitude mode	Large energy pumping chambers for Φ20mm, Φ40mm, Φ60mm, Φ70mm, Φ90mm, Φ100mm Nd:glass rod.	Φ40mm--Φ120mm KDP crystal with sol-gel coating & TEC room.	Φ18mm-Φ20mm(ID), 0.4m~1m arc length.	The max. discharge energy is 40KJ with 300us (FWHM) from each PFN for 4 to 6 lamps (series connected).	Aperture: Φ20-Φ100mm Wavelength: 1053nm Max. extinction: >30dB Center rotation angle: 45°±1°



ISO9001: 2000 Certified



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