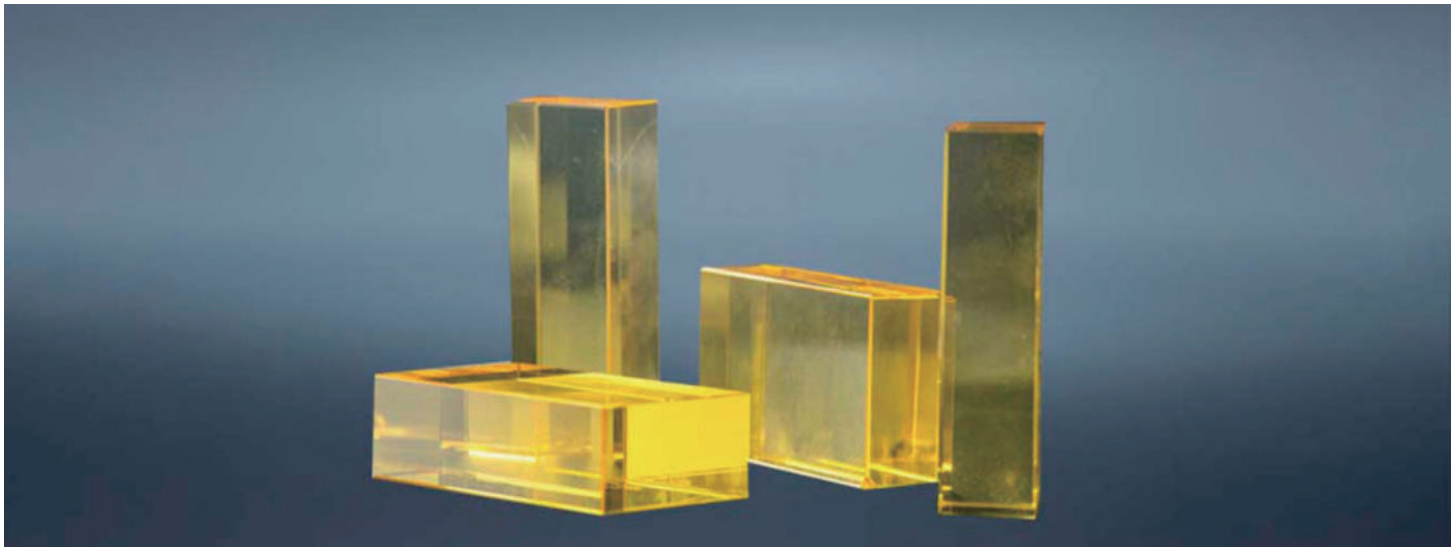
SFG10 Silicate Glass



DESCRIPTION

SFG10 silicate glass has high UV cutoff and infrared cut-off capability, it can be used as a laser cavity materials to absorb one micron and unwanted UV and IR radiation in high energy laser systems with high repetition rates.

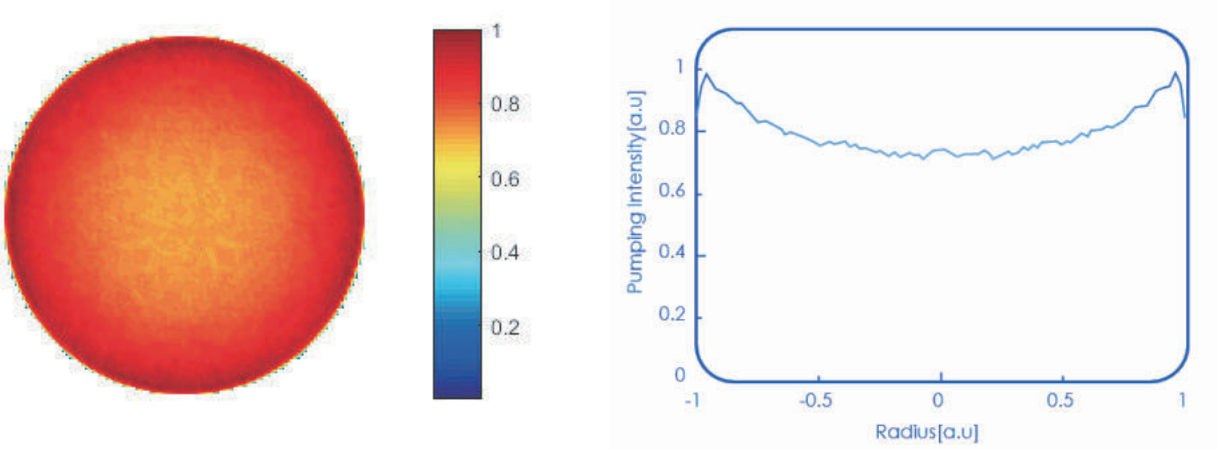
FEATURES

- High optical density
- High transmittance of visible light
- Excellent light absorption characteristics

APPLICATIONS

Diffuse-reflection Pumping Cavity

Two key technologies have been used in the pumping cavity. Firstly, SFG-silicate glass is used as a filter to prevent the color centers and reduce the thermal effects in the laser medium. Moreover, SFG-silicate glass has a strong absorption at the emission peak of Nd3+, which is helpful to reduce the radial ASE and increase the stored energy in gain medium. Secondly, the reflector is diffuse type. By optimizing the pumping structure, uniform pumping distribution and high pumping efficiency are achieved, which is very important for good beam quality. This kind of pumping cavity is a perfect choice for high-energy laser system with high repetition.



Pumping distribution on the cross section of laser rod in a four-lamp pumped cavity

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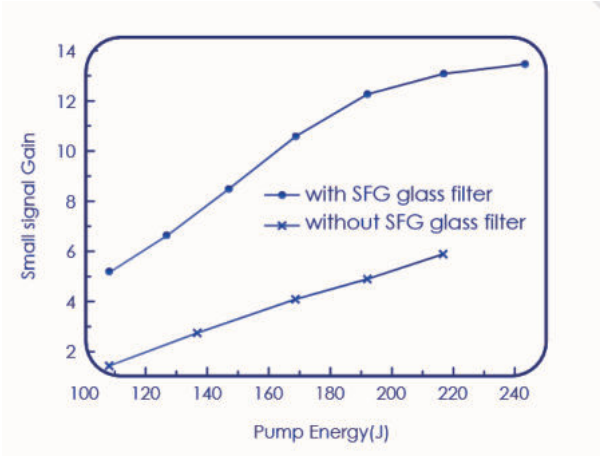
The laser cavity for Nd^{3+}:YAG rod



Laser gain with and without glass filter (18mm Nd^{3+}:YAG rod)

PARAMETER

OPTICAL SPECIFICATIONS

Properties	Value
UV Cutoff (5mm,2% transmission) (nm)	350
IR Cutoff (nm)	2500
Refractive Index (d 589.3nm)	1.563
Refractive Index (1053nm)	1.57
Abbe Value	56.6

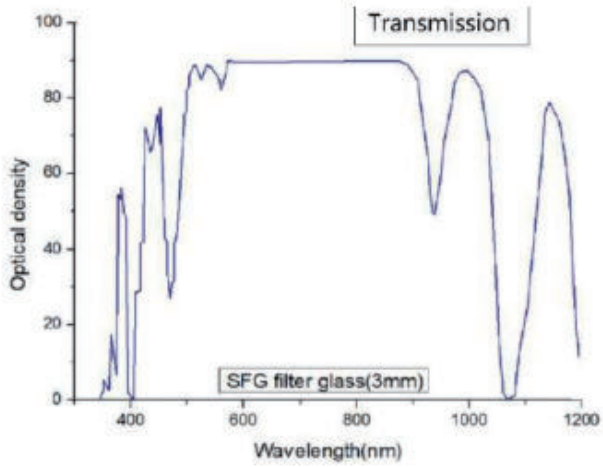
THERMAL SPECIFICATIONS

Properties	Value
Transformation Temp. (℃)	490
Softening Temp. (℃)	540
Coeff.of Linear Thermal Expansion (10^{-7} /K) (30~100℃)	87
Coeff.of Linear Thermal Expansion (10^{-7} /K) (30~300℃)	100
Thermal Conductivity (25 ℃) (W/mK)	1.1

OTHER SPECIFICATIONS

Properties	Value
Density (g/cm^3)	2.87
Dw(H2O 98℃) ($mg/(cm^2/day)$)	0.109

SPECTRA



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