

DATA SHEET

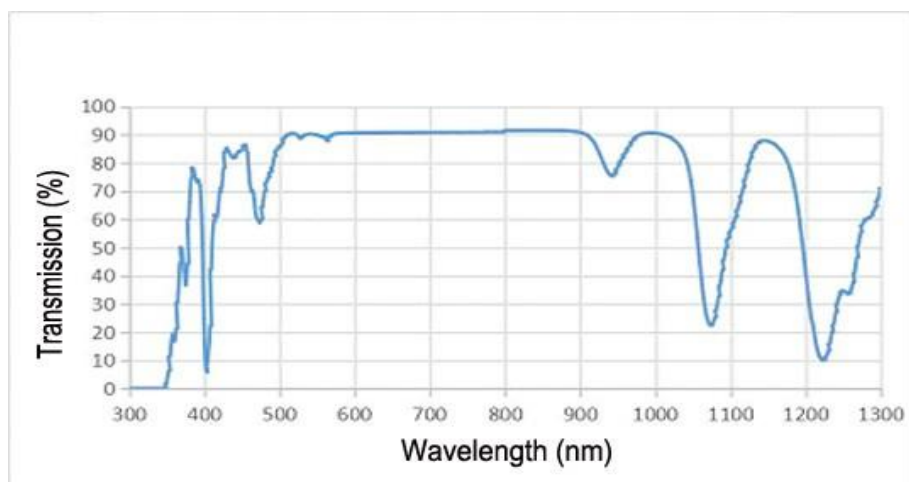
Samarium Doped Glass

The Material Properties of Samarium Doped Glass 10%

The samarium doped glass is new type of dual end cutoff focusing cavity glass, which is used in laser emitter components. The glass is processed through optical cold processing to form a focusing cavity (also called as laser flow tube). After processing, the chemical strengthening is necessary to increase the laser flow tube strength. The function of the focusing cavity in the laser module is to concentrate the light energy emitted by the Krypton lamp onto the laser rod, which is then transformed into a 1064nm continuous laser through the energy level transition of the laser rod. The absorption of ultraviolet light in a krypton lamp by a laser rod will generate color centers, making the laser unable to function properly; In addition, the radiation of 1064nm light in the Krypton lamp consumes a portion of the particles in the upper level of the laser, reducing the output of the laser, known as the pump out effect.

The samarium doped glass can absorb ultraviolet light generated by krypton lamps, as well as 1064nm near-infrared light. It can effectively improve the reliability, lifespan, and laser radiation efficiency of laser components.

3mm Transmission Curve



1. Expansion coefficient: $10.4 \times 10^{-6}/K$ (room temperature $\sim 300^\circ C$)
2. Refractive index: $ND=1.5755$
3. Softening point: $526^\circ C$
4. Annealing point: $470^\circ C$
5. Strengthening process: Strengthened in tempering furnace, soaked by potassium nitrate.

The glass material comply with EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.