



Cerium- and Samarium-doped Laser Cavity Filter Glasses for Flow Tubes

Laser Cavity Filter Glass

S7000, S7005 and S7010N

Product Information

SCHOTT Laser Cavity Filter Glasses are the ideal materials for flow tubes. They can be used as filter media in the laser cavity of flash lamp pumped solid-state laser systems. Laser Cavity Filter Glasses transmit the ideal pumping bands while filtering undesired UV radiation and parasitic lasing.

As laser cavity flow tubes, they improve beam amplification in a highly efficient way and safely protect the laser medium from solarization and heat.

Forms of Supply

We offer polished filter plates and cut blanks.

Advantages

- Protects laser medium from UV and IR light
- Absorption of parasitic laser radiation
- Customized designs are possible
- Improves laser efficiency

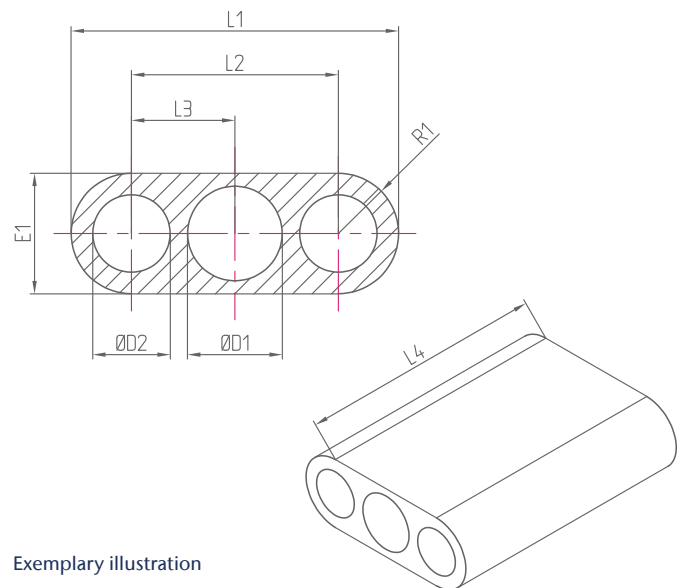
Applications

- Medical/Cosmetic Applications
- High Power Applications
- LIDAR (long distance measurement)

Materials

SCHOTT Laser Cavity Filter Glasses:

- S7000
- S7005
- S7010N



Exemplary illustration

Laser Cavity Filter Glass

S7000, S7005 and S7010N

Product Information

S7000 is a clear, cerium doped glass usable as laser cavity material. It is also available to serve as a cut-off material.

S7005 is a laser cavity material with 5% doping of samarium oxide (Sm_2O_3). It is typically used for tube walls thicker than 6 mm.

S7010N is a laser cavity material with 10% doping of samarium oxide. This glass is recommended for most applications.

SCHOTT offers a complete line of these commercial silicate filter glasses and can produce a full range of doping levels for specific applications.

Forms of Supply

The glass is available as polished filter plates and cut blanks.

Optical Properties

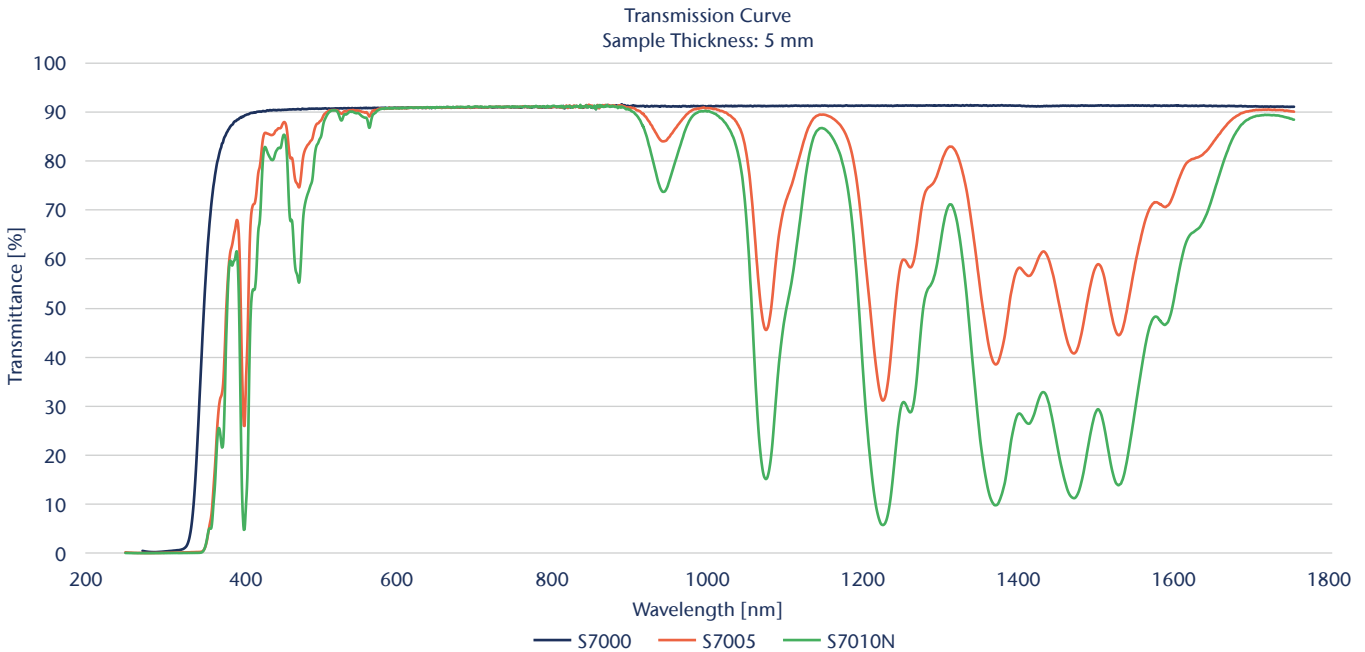
	S7000	S7005	S7010N
n_d	1.5632	1.5623	1.5597
v_d	55.3	55.1	55.3
$n_{1054 \text{ nm}}$ (calculated)	1.553	1.552	1.549
$n_{1540 \text{ nm}}$ (calculated)	1.550	1.549	1.547

Physical Properties

	S7000	S7005	S7010N
Density ρ [g/cm^3]	2.88	2.88	2.88
Thermal Conductivity $\lambda_{25^\circ\text{C}}$ [$\text{W}/(\text{m}\cdot\text{K})$]	0.84	0.84	0.84
Thermal Conductivity $\lambda_{90^\circ\text{C}}$ [$\text{W}/(\text{m}\cdot\text{K})$]	0.92	0.92	0.92
Young's Modulus E [$10^3 \text{ N}/\text{mm}^2$]	78	79	78
Poisson's Ratio μ	0.25	0.25	0.25
Thermal Expansion $\alpha_{(+20/+300^\circ\text{C})}$ [$10^{-6}/\text{K}$]	11.3	11.4	11.4
Transformation Temperature T_g [$^\circ\text{C}$]	454	456	453

Chemical Properties

	S7000	S7005	S7010N
Water Loss in 50°C Water [$\text{mg}/(\text{cm}^2\cdot\text{d})$]	0.011	0.012	0.013
SR	1.0	1.0	1.0
AR	1.0	1.0	1.0
FR	0	0	0
CR	1	1	1



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SCHOTT
glass made of ideas

