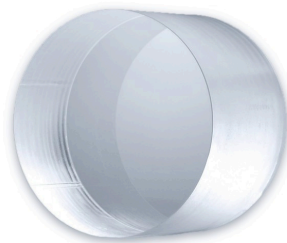


S-Series High-Transmission Synthetic Quartz

Specification Datasheet · TopRays Quartz Materials

The S series is a fully synthetic fused quartz with a stable hydroxyl (OH) content of about 200 ppm, designed for high-efficiency UV / VUV (ultraviolet / vacuum ultraviolet) lamp applications. The tubing is produced with our proprietary multi-step S-ZUG process.



Key Features

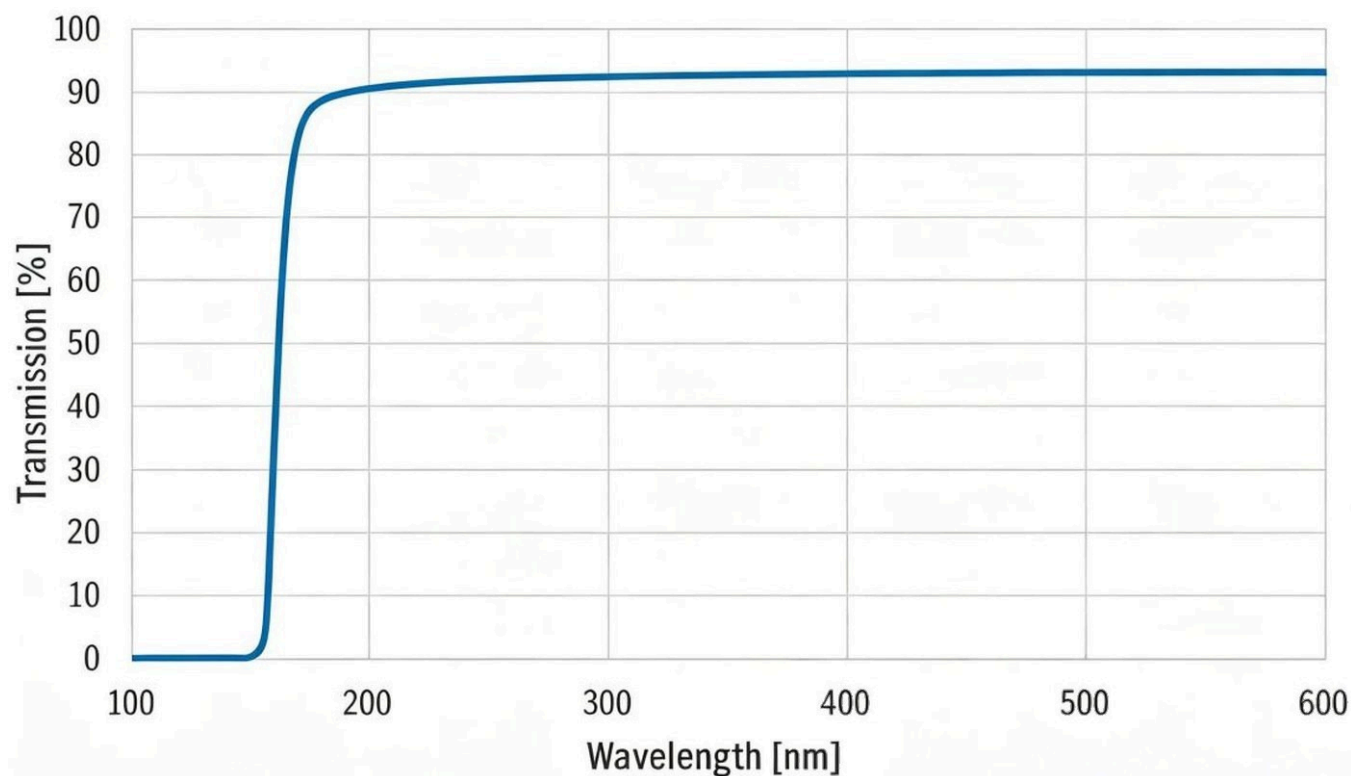
- Very high purity
- Excellent radiation (solarization) stability
- Extremely low bubble content
- Nearly defect-free surface
- Wide range of sizes available

Typical Applications

- Xenon excimer lamps (172 nm)

Optical Properties

Wavelength [nm]	172	200	254	360
Transmission [%] (2 mm wall)	88	91	92	93



OD

OD range [mm]	Tolerance [mm]	Wall thickness range [mm]
$7 \leq OD \leq 17$	± 0.3	$\geq 0.8 \leq 3.5$
$17 < OD \leq 25$	± 0.4	$\geq 1.0 \leq 4.5$
$25 < OD \leq 30$	± 0.5	$\geq 1.2 \leq 4.5$
$30 < OD \leq 35$	± 0.6	$> 1.2 \leq 4.5$
$35 < OD \leq 40$	± 0.8	$> 1.2 \leq 4.5$
$40 < OD \leq 50$	± 1.0	$\geq 2.0 \leq 4.5$
$50 < OD \leq 60$	± 1.3	$\geq 2.0 \leq 4.5$
$60 < OD \leq 90$	± 2.0	—

Wall Thickness

Wall thickness WT range [mm]	Tolerance [mm]	Max. total bubble length ²
$\geq 0.5 \leq 1.2$	± 0.2	$< 2.0\%$
$> 1.2 \leq 2.0$	± 0.3	$< 2.5\%$
$> 2.0 \leq 2.8$	± 0.4	$< 3.0\%$
$> 2.8 \leq 3.7$	± 0.5	$< 3.5\%$
$> 3.7 \leq 4.5$	± 0.6	$< 4.0\%$

Form & Length Tolerances

Item	Scope	Tolerance	Notes
Ovality	Fabricated length	< ½ OD tolerance	—
Axial bow (edge skew)	Fabricated length	< ½ OD tolerance	—
Bow	All sizes	< 1.0 mm / m	Not annealed
Bow	All sizes	< 1.5 mm / m	Annealed
Length	—	+20 mm / -0 mm	Cut and broken

Appearance

Item	Requirement
Inclusions	None
Surface contamination	None
Outer surface deformation	None
Discoloration / stains	None

Notes

- ¹ Other sizes and tolerances available on request
- ² Bubbles shorter than 0.5 mm and narrower than 0.08 mm are not counted
- ³ Other cutting methods available on request

Chemical Properties

OH content	Li	Na	K	Mg	Ca	Fe	Cu	Cr	Mn	Al	Ti
~200 (unchanged by annealing)	0.01	0.05	0.1	0.005	0.05	0.02	0.01	0.005	0.005	0.05	0.05

Unit: ppm (µg/g)

Physical Properties

Parameter	Value
Softening point	~1600 °C
Annealing point	~1120 °C
Strain point	~1025 °C
Viscosity at 1300 °C	11.4 dPas
Maximum working temperature	Continuous: ~950 °C; short-term: ~1200 °C
Density	2.2 g/cm ³