

Suprasil 310

Synthetic multi step quartz tube



Product Overview

Suprasil 310 is a fully synthetic fused silica with a stable OH content ~200ppm. Suprasil 310 is designed for highest efficiency UV/VUV lamp applications. The tube is fabricated using the unique Heraeus multi-step process (S-ZUG).

Key Features

- highest purity
- highest solarization resistance
- very low bubble content
- nearly blemish free surface
- wide range of geometries

Applications (e.g.)

- Xe-excimer lamp (172nm)

Geometrical Data

Outer Diameter (OD) [mm]	Tolerance [mm] ¹	Wall Thickness Range [mm]
7 - ≤ 17	± 0.3	≥ 0.8 - ≤ 3.5
> 17 - ≤ 25	± 0.4	≥ 1.0 - ≤ 4.5
> 25 - ≤ 30	± 0.5	≥ 1.2 - ≤ 4.5
> 30 - ≤ 35	± 0.6	> 1.2 - ≤ 4.5
> 35 - ≤ 40	± 0.8	> 1.2 - ≤ 4.5
> 40 - ≤ 50	± 1.0	≥ 2.0 - ≤ 4.5
> 50 - ≤ 60	± 1.3	≥ 2.0 - ≤ 4.5
> 60 - ≤ 90	± 2.0	≥ 2.0 - ≤ 4.5

Wall Thickness (WT) [mm]	Tolerance [mm]	Cumulative length of bubbles ²
≥ 0.5 - ≤ 1.2	± 0.2	< 2.0%
> 1.2 - ≤ 2.0	± 0.3	< 2.5%
> 2.0 - ≤ 2.8	± 0.4	< 3.0%
> 2.8 - ≤ 3.7	± 0.5	< 3.5%
> 3.7 - ≤ 4.5	± 0.6	< 4.0%

Feature	Area	Tolerance	Note
Ovality	manufactured length	< ½ OD tolerance	
Siding	manufactured length	< ½ OD tolerance	
Bow	all dimensions	< 1.0mm / 1m < 1.5mm / 1m	not annealed annealed
Length	-	+ 20mm / - 0mm	snap cut ³

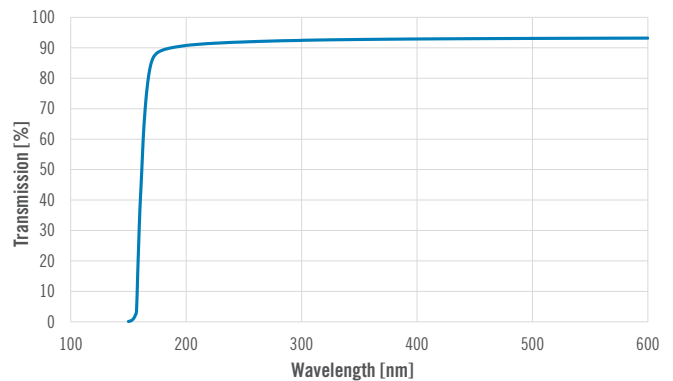
¹ Additional sizes and tolerances are available on request

² Bubbles < 0.5 mm length and < 0.08 mm width are not counted

³ Other cutting methods on request

Optical Properties

Typical transmission values for 2mm wall thickness



Wavelength [nm]	172	200	254	360
Transmission [%]	88	91	92	93

Visual Features

Tolerance

Inclusions	none
Surface Impurities (adherent)	none
Outside surface distortion	none
Discoloration	none

Chemical Properties

OH Content [ppm]	~ 200 no change in OH content through annealing										
Chemical Impurities [ppm]	Li	Na	K	Mg	Ca	Fe	Cu	Cr	Mn	Al	Ti
	0.01	0.05	0.01	0.005	0.05	0.02	0.01	0.005	0.005	0.05	0.05

Physical Properties

Softening Temperature	~ 1600°C
Annealing Temperature	~ 1120°C
Strain Temperature	~ 1025°C
Viscosity at 1300°C	~ 11.4 dPas
Maximum Working Temperature	continuous operation ~ 950°C short-term operation ~ 1200°C
Density	2.2 g/cm ³

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The data given here is correct as of July 2021 and is subject to change.

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