

## Purasil V

Electrically melted single step synthetic quartz tube



### Product Overview

Purasil V is an electrically fused synthetic quartz made from synthetic granulate, which is purified by the Heraeus refinement process. Purasil V is designed for highest efficiency and high-volume UV/VUV lamp applications. The tube is fabricated using the Heraeus single-step process (V-ZUG).

### Key Features

- high purity
- high solarization resistance
- low bubble content
- tight tolerances

### Applications (e.g.)

- VUV low pressure lamp (185nm)
- medium pressure lamp
- UV/VUV sleeve

### Geometrical Data

Outer Diameter (OD) [mm]	Tolerance [mm] <sup>1</sup>	Wall Thickness Range [mm]
10 - ≤ 12	± 0.3	≥ 1.0 - ≤ 2.0
> 12 - ≤ 17	± 0.3	≥ 1.0 - ≤ 2.5
> 17 - ≤ 23	± 0.3	≥ 1.0 - ≤ 4.0
> 23 - ≤ 28	± 0.4	≥ 1.0 - ≤ 5.0
> 28 - ≤ 40	± 0.4	≥ 1.0 - ≤ 6.0
> 40 - ≤ 45	± 0.5	≥ 1.0 - ≤ 6.0
> 45 - ≤ 55	± 0.5	> 1.4 - ≤ 4.5
> 50 - ≤ 55	± 0.5	> 1.5 - ≤ 4.0
> 55 - ≤ 60	± 0.5	> 1.5 - ≤ 3.5

Wall Thickness (WT) [mm]	Tolerance [mm]	Cumulative length of bubbles <sup>2</sup>
≥ 1.0 - ≤ 2.0	± 0.15	< 6 %
> 2.0 - ≤ 4.0	± 0.30	< 6 %
> 4.0 - ≤ 6.0	± 0.40	< 6 %

Feature	Area	Tolerance	Note
Ovality	OD > 10 - ≤ 20mm	≤ 0.25mm	
	OD > 20 - ≤ 46mm	≤ 0.50mm	
	OD > 46 - ≤ 60mm	≤ 0.60mm	
Siding	manufactured length	< ½ WT tolerance	(e.g. ± 0.20 WT = siding of 0.20)
Bow	all dimensions	< 1.5mm / 1m	annealed
Length	-	+ 20mm / - 0mm	snap cut <sup>3</sup>

<sup>1</sup> Additional sizes and tolerances are available on request

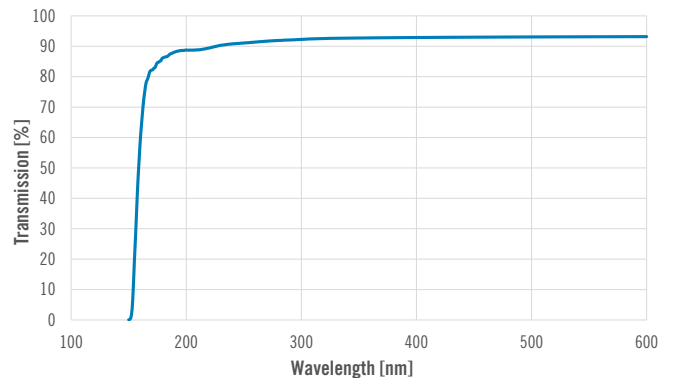
<sup>2</sup> Bubbles < 10 mm length and < 0.1 mm width are not counted

<sup>3</sup> Other cutting methods on request

<sup>4</sup> Visual defects ≤ 0.1 mm are not counted

### Optical Properties

Typical transmission values for 2mm wall thickness



Wavelength [nm]	185	200	215	230	254
Transmission [%]	86	88	89	90	91

### Visual Features

Tolerance <sup>4</sup>

Inclusions	none
Surface Impurities (adherent)	none
Open Bubbles	none
Devitrification	≤ 1.0mm; max. 3 pcs / 1m

### Chemical Properties

OH Content [ppm]	~ 100										
Chemical Impurities [ppm]	Li	Na	K	Mg	Ca	Fe	Cu	Cr	Mn	Al	Ti
	0.01	0.05	0.02	0.005	0.05	0.05	0.01	0.05	0.01	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 <sup>3</sup>

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