

## SUPRASIL® 313



### Highlights

- Direct formed Near-Net-Shape ingot
  - Production process cost optimized to maximize yield
  - Fine ground on request
- Broad transmission range from the UV to the IR
- OH Content  $\leq 250$  ppm
- Low absorption\*
  - Absorption at 1064 nm:  $\leq 3$  ppm/cm

### Index homogeneity

#### Striation

- No striations in the primary functional direction, i.e. striae class A according to MIL-G-174-B

#### Index ( $\Delta n$ )

- In the basic version the homogeneity of Suprasil® 313 is not specified and not measured [typically less than  $10 \cdot 10^{-6}$ ].
- Index homogeneity can be custom tailored to specifications on request at additional cost.

### Fluorescence

- None
- At stimulation with light at a wavelength of  $\lambda = 254$  nm (Hg low pressure lamp and Schott UG 5 filter) and visual inspection.

### Residual strain

- $\leq 5$  nm/cm
- The residual strain value is specified over 90% of the diameter or edge length of a fine ground piece, or 80% of a raw formed ingot.

### Bubbles and inclusions<sup>1)</sup>

#### Bubble Grade

- Grade 0 (according to DIN 58927)

#### Bubbles according to DIN ISO 10110

- $1 / 1 \cdot 0.08$  for  $100 \text{ cm}^3$

#### Inclusions

- None

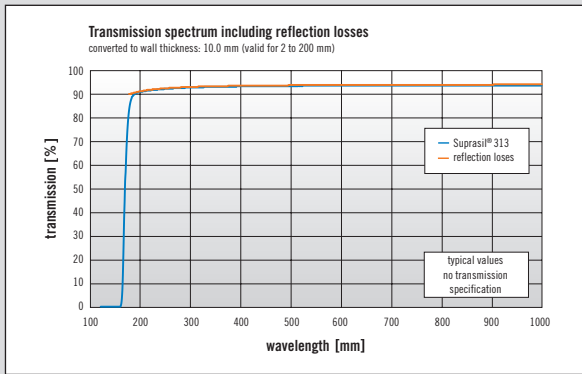
1) Bubbles and inclusions < 0.08 mm diameter are not counted.

### Application range

Suprasil® 313 may be used for optics requiring high transmission and low absorption from UV to IR combined with low bubble & inclusion content. Optics may include windows, lenses, laser debris shields and mirror substrates.

## Typical transmission graph

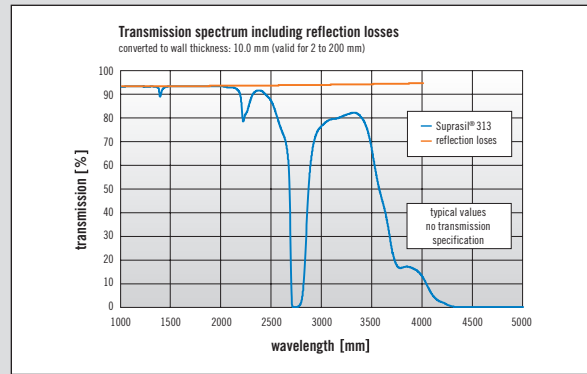
(including reflection losses) for a wall thickness of 10 mm



### Decadic absorption coefficient at 200 nm

$k_{200} < 0.0025 \text{ cm}^{-1}$  (typical)  
 $k_{200} < 0.005 \text{ cm}^{-1}$  (specified)

Internal transmission  $T = 10^{-kd}$   
 and  $d =$  wall thickness



### Infrared absorption (typical)\*

■ OH absorption  
 absorption at  $1064 \text{ nm}^{1), 2)} \leq 3 \text{ ppm/cm}$

- 1) Kondilenko & Co-Workers, Gintzon Lab, Stanford University, private communication, 2005
- 2) Dr. Mühlig, IPHT Jena

\* Data was taken under laboratory conditions. Actual data may differ. Customer is recommended to test under his own environmental conditions.

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