

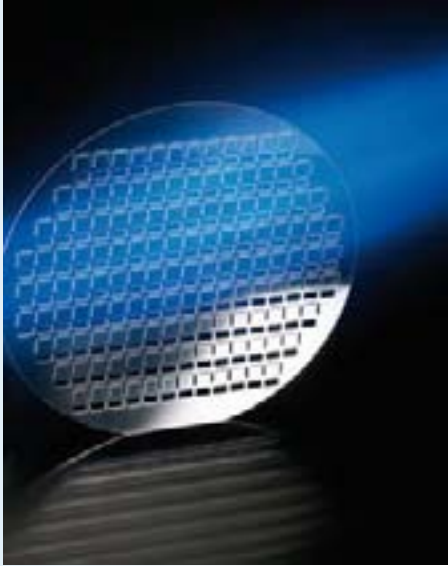
Glass Wafer from SCHOTT

precisely polished and structured substrates



SCHOTT
glass made of ideas

Polished and structured Wafer made of glass from SCHOTT – your choice for specific substrate needs with special requirements!



Standard materials for the Wafer from SCHOTT are:

- Borofloat® 33
- Fused Silica Lithosil®
- D 263 T
- AF 45
- B 270™

Choosing the material is the first step to design the right wafer for your application. As a speciality glass manufacturer SCHOTT offers glass types in different chemical compositions manufactured by various hot forming methods.

Main characteristics of Lithosil®:

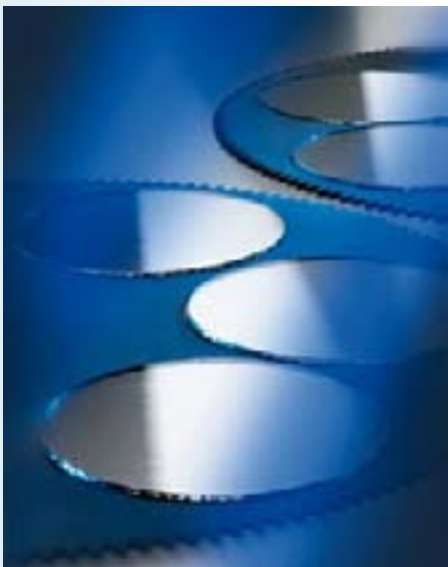
- High laser durability
- Excellent transmission
- Low fluorescence
- High resistance to chemical solvents
- Bubbles and inclusions 1/1 x 0.063 (according ISO 10110-3)

Main characteristics of Borofloat® 33:

- Low thermal expansion coefficient close to Silicon
($\alpha_{20^{\circ}\text{C} - 300^{\circ}\text{C}} = 3.25 \times 10^{-6} \text{ K}^{-1}$)
- Excellent transparency
- High thermal resistance
- High resistance to chemical solvents
- Available in various thickness: 0.7; 1.1 to 7.5 mm

Main characteristics of AF 45:

- Low thermal expansion coefficient ($\alpha_{20^{\circ}\text{C} - 300^{\circ}\text{C}} = 4.5 \times 10^{-6} \text{ K}^{-1}$)
- Alkali-free in synthesis
- Excellent transmission
- High thermal resistance
- Available in very thin thickness from 0.05 – 0.5 mm



SCHOTT provides its Wafer in standard sizes of 4", 6" and 8" in various shapes (round, squares) with thicknesses from 0.05 to 7.7 mm. In case of requests differing to these standard dimensions, please contact our sales team, we are encouraged to fulfill your specific inquiry!



Main characteristics of D 263 T:

- Thermal expansion coefficient close to ceramic
($\alpha_{20^{\circ}\text{C} - 300^{\circ}\text{C}} = 7.2 \times 10^{-6} \text{ K}^{-1}$)
- Excellent transmission
- High chemical resistance
- Available in many thickness from 0.03 – 1.1 mm

Main characteristics of B 270™:

- Thermal expansion coefficient at ($\alpha_{20^{\circ}\text{C} - 300^{\circ}\text{C}} = 7.2 \times 10^{-6} \text{ K}^{-1}$)
- Excellent transmission
- High solarization stability
- Available in many thickness from 0.8 – 10 mm

Our production lines have integrated all **capabilities** for the processing of Wafer:

- Edge treatment, alt. with flat or notch acc. to SEMI-standards
- Grinding
- Lapping
- Polishing
- Structuring
- Metrology
- Clean Room Packaging

Our **expertise in polishing** makes our products unique!

TTV/Parallelism

Defect characteristics:

Edge/Chamfer:

Roughness (RMS):

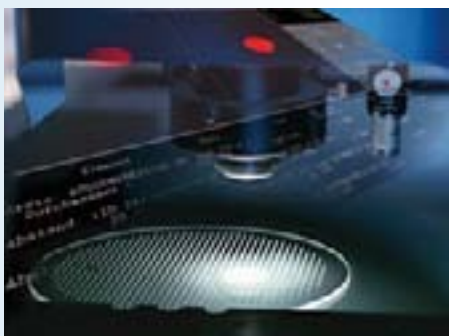
very low total thickness variation <10 μm / 5 μm / 2 μm

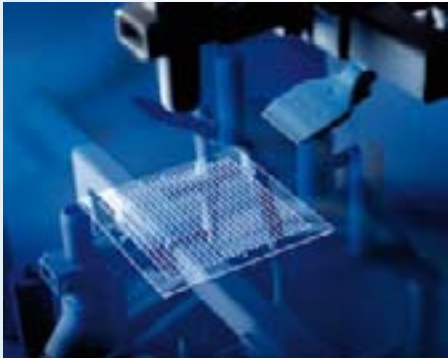
scratch/dig (MIL-0-13830A) 20/10, 10/5

optimized edge profile as C-shape edge, chamfer 30°/45°

Notch and orientation flat according to SEMI-standards

<1.5 nm / <1 nm





Expertise in Structuring!

With the **Sandblasting** technology and the **Ultrasonic drilling** process SCHOTT has established a variety of capabilities to provide specific solutions for structured Glass Wafer.

Wafer thickness range

Different hole configurations

Locational Tolerance

Min. Hole Diameter

US-Drilling

400 µm up to 3 mm

round holes preferable

+/- 85 µm*

400 µm

Sandblasting

30 µm up to 1.5 mm

round and rectangular holes,
caverns and channels

+/- 60 µm*

100 µm

* Tightened tolerances upon request

Zero defect quality can be realised and guaranteed with high qualified measuring equipment such as 3D-coordinate measuring machine, Kugler Interferometer, etc.



Certificate

Corporate Function Management Systems
Independent Certification Body
of the

Schott AG

hereby certifies that

SCHOTT AG

Business Segment „Glass for Special Applications“
Hüttenstraße 1
D-31073 Grünenplan

with the sites Grünenplan und Eschershausen

has established and maintains a

Quality Management System

for

Production, Services and Sales of the product
groups Antireflective, Architectural,
Electronics/Biotech, Ophthalmic and
Applications

The results of an Audit have verified that this Management System meets the
requirements of the following standard:

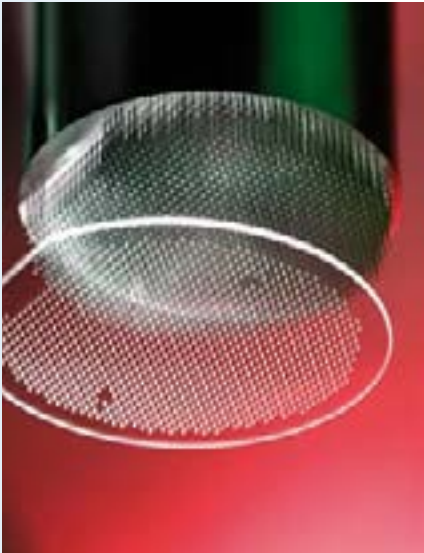
EN ISO 9001:2000

This certificate is valid until:
Certificate Registration No.:
März, Germany 20th June 2006



We have the capability of clean room production and wafer can be inspected under clean room conditions (class 1.000) and packed in professional wafer shipment boxes. The quality control is realised according to **ISO 9001-2000**.

Choose from any dimensions listed in this datasheet or specify your requirements. We are focussed on a **customer oriented production** and our sales department will provide you all additionally needed information.



Benefits

- Application specific usage of glass material (Fused Silica Lithosil®, Borofloat® 33, AF 45, D 263 T, B 270™, ...)
- Expertise in polishing, unique surface qualities
- Clean room compatible packaging of ready-to-use substrates
- Structured wafer with excellent tolerances
- Customer specific products meeting all requirements and industry standards (e.g. SEMI)
- Integrated production steps corresponding to all requirements of ISO 9001:2000

Applications

Polished wafer are used for

- MicroOptics
- MEMS (pressure sensors, accelerometers, ...)
- Wafer Level Packaging (Image Sensor packaging, ...)
- Biotechnology (microfluids, DNA analysis, ...)
- and many other customer specific applications



Advanced Materials

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