

D 263 THIN BOROSILICATE GLASS

D 263 is a low alkali borosilicate glass which is produced by melting the purest raw materials. As such, it is very resistant to chemical attack. D 263 with its specific properties and large range of different thicknesses with tight tolerances is exceptionally well suited for a number of applications including: liquid crystal displays, optoelectronics, touch control panels, sensor, electroluminescent displays and solar cells. Due to a special down draw production process, D 263 glass sheets are marked by fire-polished surfaces; this glass type can be used without ground and polished surfaces.

The subsequent properties are based primarily upon the measuring results of the very latest standards and measuring methods. Schott retains the right to change the data in keeping with the latest technical standards. Numerical values stated without tolerance are reference values of an average production quality.

PRODUCT FEATURES

- Large thickness range (30µm....1.1mm)
- Excellent flatness
- Easy to cut
- High luminous transmittance

CHEMICAL DATA

| | |
|---|-----|
| • Hydrolytic Resistance (DIN ISO 719) | 1 |
| Equivalent of Alkali (Na ₂ O) per gram of glass grains in µg/g | 20 |
| • Acid Resistance (DIN 12116) | 2 |
| Half Surface Weight Loss after 6 hours in mg/dm ² | 1.4 |
| • Alkali Resistance (DIN ISO 695-A) | 2 |
| Surface Weight Loss after 3 hours in mg/dm ² | 88 |

MECHANICAL PROPERTIES

| | |
|------------------------------------|-------------------------|
| • Density (@ 20°C/68°F) | 2.51 g/cm ³ |
| • Modulus of Elasticity | 72.9 kN/mm ² |
| • Knoop Hardness HK ₁₀₀ | 590 |

| | |
|---|-------------------------|
| • Poisson's Ratio | 0.208 |
| • Stress Optical Coefficient (1.02 · 10 ⁻¹² m ² /N) | 3.4 |
| • Torsion Modulus | 30.1 kN/mm ² |

ELECTRICAL PROPERTIES

| | |
|---|----------------------------|
| • Dielectric Constant (@ 1 MHz) | 6.7 |
| • Dielectric Loss Factor (@ 1 MHz) | 61 x 10 ⁻⁴ |
| • Electric Volume Resistivity for A.C. 50Hz (ρ) | |
| @ 250°C | 1.6 · 10 ⁸ Ω cm |
| @ 350°C | 3.5 · 10 ⁶ Ω cm |

OPTICAL PROPERTIES

| | |
|---|-------------------------|
| • Refractive Indices at 20°C (68°F) | |
| n _e (λ = 546 nm) | 1.5255 |
| n _d (λ = 588 nm) | 1.5231 |
| • Dispersion (n _F - n _C) | 96.0 x 10 ⁻⁴ |
| • Abbe Value (v _e) | 55 |
| • Luminous Transmittance (τ _{vD65}) (Glass thickness 1.1mm) | 91.7% |

THERMAL PROPERTIES

| | |
|--|----------------------------|
| • Linear Thermal Coefficient of Expansion α (20-300°C/ 68-572°F) | 7.2 x 10 ⁻⁶ /°K |
| • Transformation Temperature T _g | 557°C/1035°F |
| • Strain Point (10 ^{14.5} dPa·s) | 529°C/984°F |
| • Annealing Point (10 ¹³ dPa·s) | 557°C/1035°F |
| • Softening Point (10 ^{7.6} dPa·s) | 736°C/1357°F |
| • Mean Specific Thermal Capacity c _p 20-100°C | 0.82 kJ/(kg·°K) |

All data are intended to be used as guidelines, unless otherwise stated. Please contact Schott should you have additional technical questions.

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SHEET SIZES AND TOLERANCES

| Nominal thickness [mm] | Gross length [mm] | Gross width [mm] | Net width (quality width) [mm] | Parallelism 1) [%] | Squareness 1) [%] |
|---------------------------|----------------------|---------------------|--------------------------------------|-----------------------|----------------------|
| 0.03 | 440 ± 10 | approx. 420 | 300 +10 / -0 | - | - |
| 0.05 | 440 ± 10 | | 360 +10 / -0 | - | - |
| 0.10 – 1.10 | 440 ± 10 | | 360 +10 / -0 | ≤ 0.5 | ≤ 1.0 |

1) In % of measured edge length

STANDARD THICKNESS, DEVIATION AND WARP

| Nominal thickness 1) [mm] | Thickness tolerance | Thickness variation ΔD (deltaD) | Flatness deviation Warp |
|------------------------------|---------------------|--|--|
| | Variation in lot | Within sheet, across draw direction | Referenced to standard size |
| | [mm] | [μm] | [mm] |
| 0.030 | ± 0.008 | ≤ 10 | Due to the low stiffness sheet flatness deviation (warp) is not specified. |
| 0.050 | ± 0.010 | ≤ 10 | |
| 0.100 | ± 0.015 | ≤ 20 | |
| 0.210 | ± 0.020 | ≤ 20 | ≤ 2.5 |
| 0.250 | ± 0.020 | ≤ 20 | ≤ 2.5 |
| 0.300 | ± 0.020 | ≤ 20 | ≤ 0.6 |
| 0.400 | ± 0.020 | ≤ 20 | ≤ 0.6 |
| 0.500 | ± 0.050 | ≤ 25 | ≤ 0.6 |
| 0.550 | ± 0.050 | ≤ 25 | ≤ 0.6 |
| 0.700 | ± 0.050 | ≤ 30 | ≤ 0.7 |
| 1.100 | ± 0.050 | ≤ 40 | ≤ 0.8 |

1) Custom thicknesses may be manufactured upon request.

TRANSMISSION CURVE (1.1 mm)

