

## D 263 THIN BOROSILICATE GLASS

D 263 is a low alkali borosilicate glass that 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, sensors, 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 <sub>2</sub> 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 <sup>2</sup>	1.4
Alkali Resistance (DIN ISO 695-A)	2
Surface Weight Loss after 3 hours in mg/dm <sup>2</sup>	88

### MECHANICAL PROPERTIES

Density (@ 20°C/68 °F)	2.51 g/cm <sup>3</sup>
Modulus of Elasticity	72.9 kN/mm <sup>2</sup>
Knoop Hardness HK <sub>100</sub>	590

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

### ELECTRICAL PROPERTIES

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

### OPTICAL PROPERTIES

Refractive Indices at 20°C (68°F)	
n <sub>e</sub> (λ = 546 nm)	1.5255
n <sub>d</sub> (λ = 588 nm)	1.5231
Dispersion (n <sub>F</sub> - n <sub>C</sub> )	96.0 x 10 <sup>-4</sup>
Abbe Value (v <sub>e</sub> )	55
Luminous Transmittance (τ <sub>VD65</sub> ) (Glass thickness 1.1mm)	91.7%

### THERMAL PROPERTIES

Linear Thermal Coefficient of Expansion α (20-300°C/ 68-572°F)	7.2 x 10 <sup>-6</sup> /°K
Transformation Temperature T <sub>g</sub>	557°C/1035°F
Strain Point (10 <sup>14.5</sup> dPa•s)	529°C/984°F
Annealing Point (10 <sup>13</sup> dPa•s)	557°C/1035°F
Softening Point (10 <sup>7.6</sup> dPa•s)	736°C/1357°F
Mean Specific Thermal Capacity c <sub>p</sub> 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 [mm]	Squareness [mm]
0.03	440 ± 10	approx. 420	300 +10 / -0	-	-
0.05	440 ± 10		360 +10 / -0	-	-
0.10 – 0.55	440 ± 10		360 +10 / -0	≤ 0.5	≤ 1.0
0.7 – 1.10	440 ± 10	approx. 440	430 +10 / -0	≤ 0.5	≤ 1.0

\* In % of measured edge length

## STANDARD THICKNESS, DEVIATION AND WARP

Nominal thickness **	Thickness tolerance	Thickness variation ΔD (deltaD)	Flatness deviation Warp
	Variation in lot	Within sheet, across draw direction	Referenced to standard size
[mm]	[mm]	[μm]	[mm]
0.030	± 0.008	≤ 10	Due to the low stiffness of very thin and big sized sheets, flatness deviation (warp) is not specified for these thicknesses.
0.050	± 0.010	≤ 10	
0.100	± 0.015	≤ 20	
0.145	± 0.015	≤ 20	
0.175	± 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

\*\* Custom thicknesses may be manufactured upon request.

## TRANSMISSION CURVE (1.1 mm)

