

SCHOTT® AS 87 is an aluminosilicate glass composition suitable to chemical strengthening (via an ion exchange treatment) to offer after ion exchange treatment a high level of mechanical impact and bending strength, as well as high resistance to scratches.

Applications

- Display cover glass
- CIS (Camera imaging)
- FPS (Fingerprint sensor)
- Touch panel glass

Technical Properties

Formats in mm (other formats on request)	500 x 400 440 x 360
Thickness in μm	50 - 300
Thickness tolerance in μm	± 10
TTV in μm	≤ 10
Warp* in μm	$\leq 100 - \leq 1000$
Roughness in nm	< 0.5

*depending on thicknesses

Thermal Properties

Coefficient of expansion α (20 °C; 300 °C) in 10^{-6}K^{-1} (Static measurement)	8.73
Transformation temperature T_g in °C	621
Annealing point (10^{13} dPa s) in °C	633
Softening point ($10^{7.6}$ dPa s) in °C	872
Thermal conductivity $\lambda_{(25\text{ °C})}$ W/(m K)	0.96
Specific heat capacity C_p (20°C; 100°C) in KJ/(kg K)	0.84

Electrical Properties

Frequency	1 MHz	1 GHz	2 GHz	3 GHz
Dielectric constant (Permittivity) ϵ_r	7.74	7.38	7.35	7.34
Loss tangent $\tan \delta$ (approx.)	0.011	0.010	0.012	0.012
Electrical volume resistivity ρ_D for A.C. at 50 Hz	$v = 250\text{ °C}$ in $10^6 \Omega \text{ cm}$			1.5
	$v = 350\text{ °C}$ in $10^4 \Omega \text{ cm}$			8.9

Chemical Strengthening ¹⁾

Compressive stress (CS) capability in MPa	> 850
Depth of layer (DoL) capability in μm	> 50

Chemical Properties

Hydrolytic resistance class	HGB 2
Acid resistance class	S 4
Alkali resistance class	A 1

Mechanical Properties

Density ρ in g/cm^3	2.46
Young's modulus E in kN/mm^2	74
Shear modulus in kN/mm^2	30
Poisson's ratio	0.215
Knoop hardness HK 0.1/20	500 (640*)
Vickers hardness HV 0.2/25	550 (680*)

*hardness measured at chemical strengthened condition

Optical Properties

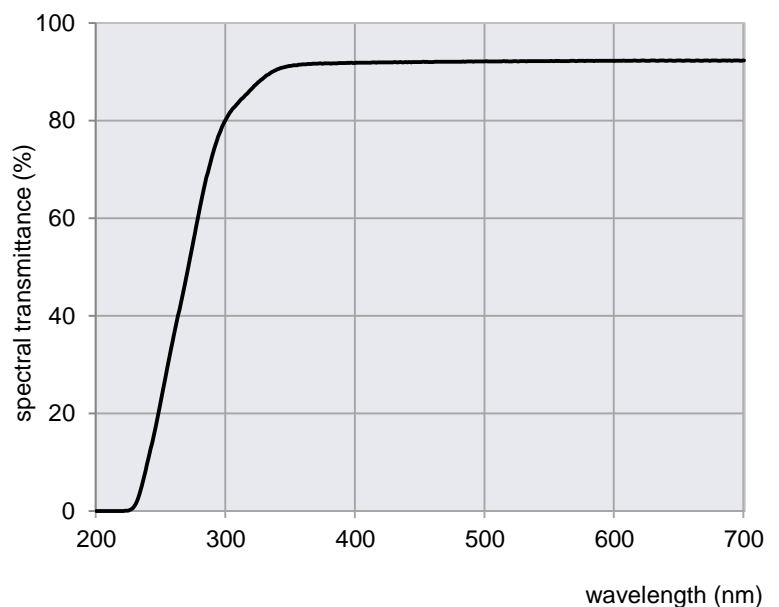
Refractive index (as drawn) n_D	1.505
Photoelastic constant in nm/cm/MPa	29.2

Spectral Transmittance $\tau(\lambda)$ – Individual Values

t_{254} in %	28.4
t_{380} in %	91.7
$t_{632.8}$ in %	92.3
t_{1064} in %	92.1

Spectral Transmittance

(Glass thickness = 0.3mm)



¹⁾ Strengthening parameters depend on applications and glass thicknesses. For more professional advices, please consult SCHOTT.