

SCHOTT AS 87 eco

SCHOTT AS 87 eco is an aluminosilicate glass suited for chemical strengthening (via an ion exchange treatment) that offers a high level of mechanical impact resistance and bending strength, as well as high resistance to scratches.

Applications

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

Technical Properties

| | |
|--------------------------------------|---|
| Formats in mm x mm ¹⁾ | 500 x 400 440 x 360 |
| Thickness in μm | 100, 145, 175, 210, 250, 330, 350, 400 |
| Thickness tolerance in μm | ± 10 |
| TTV ²⁾ in μm | ≤ 10 |
| Warp ²⁾ in μm | $\leq 100 - \leq 1000$ |
| Roughness in nm | < 0.5 |

Thermal Properties

| | |
|--|------|
| CTE (Coefficient of thermal expansion) α in $10^{-6} \cdot \text{K}^{-1}$ (20°C; 300°C) | 8.7 |
| Mean specific heat capacity cp in $\text{J}/(\text{g} \cdot \text{K})$ (20°C to 100°C) | 0.84 |
| Transformation temperature Tg in °C | 621 |

Viscosity $\lg \eta$ in $\text{dPa} \cdot \text{s}$ Temperature in °C

| | |
|----------------------|-----|
| Strain point 14.5 | 594 |
| Annealing point 13.0 | 633 |
| Softening point 7.6 | 872 |

Electrical Properties

| | | |
|---|----------|----------------------|
| Dielectric constant ϵ_r (at $\vartheta = 25^\circ\text{C}$) | at 1 MHz | 7.7 |
| | at 1 GHz | 7.3 |
| | at 5 GHz | 7.2 |
| Dissipation factor $\tan \delta$ (at $\vartheta = 25^\circ\text{C}$) | at 1 MHz | $138 \cdot 10^{-4}$ |
| | at 1 GHz | $133 \cdot 10^{-4}$ |
| | at 5 GHz | $172 \cdot 10^{-4}$ |
| Conductivity (at $\vartheta = 25^\circ\text{C}$, direct current) | in S/cm | $5.6 \cdot 10^{-12}$ |

¹⁾ other formats upon request

²⁾ depending on thicknesses

³⁾ strengthening parameters depend on applications and glass thicknesses; for more professional advices, please consult SCHOTT

⁴⁾ hardness measured at chemical strengthened condition

Chemical Strengthening³⁾

| | |
|---|---------|
| Capability of Compressive Stresses (CS) in MPa | > 850 |
| Capability of Depth of Layer (DoL) 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 (annealed at 40°C/h) | 2.46 |
| Young's modulus E in kN/mm^2 | 73.3 |
| Torsion G modulus in kN/mm^2 | 30.1 |
| Poisson's ratio μ | 0.216 |
| Knoop hardness HK 0.1/20 | 500 (560 ⁴⁾) |
| Vickers hardness HV 0.2/25 | 550 (630 ⁴⁾) |
| Photoelastic constant C in $(\text{nm}/\text{cm})/\text{MPa}$ | 29.0 |

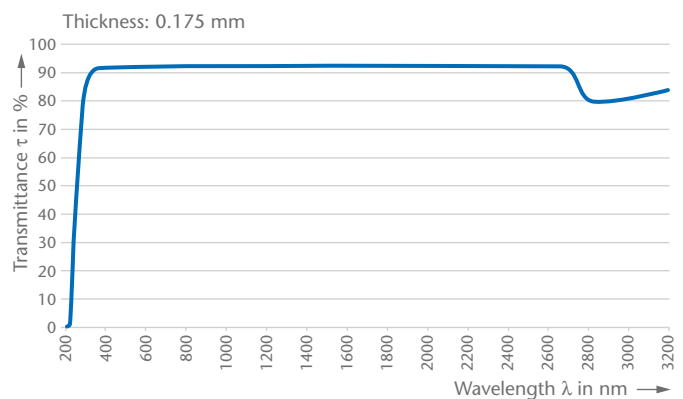
Optical Properties

| | |
|-----------------------------------|---------------------|
| Refractive index (as drawn) n_D | 1.5040 ± 0.0015 |
| Abbe value v_e | 59.5 |

Transmittance values $\tau(\lambda)$ in %, thickness 0.175 mm

| | |
|----------|------|
| 254 nm | 46.3 |
| 380 nm | 91.5 |
| 632.8 nm | 92.1 |
| 1064 nm | 92.2 |

Spectral Transmittance ($\lambda = 200 \text{ nm} - 3200 \text{ nm}$)



Advanced Optics
 SCHOTT North America, Inc.
 400 York Avenue
 Duryea, PA 18642
 USA
 Phone 407-288-7695
 dave.vanderpool@us.schott.com

www.us.schott.com/advanced_optics

SCHOTT
 glass made of ideas