Ultra-Thin SCHOTT AS 87 eco Aluminosilicate Glass

Schott AS 87 eco is an ultra-thin aluminosilicate glass with extremely high levels of bending and impact strength and superior scratch resistance. It is an excellent choice for use as cover or enhancement glass on low profile displays, touch sensors and other applications where thickness and weight are a concern. Abrisa Technologies also provides the material with optional HIE™ chemical strengthening for even higher levels of Knoop and Vicker’s hardness, perfect for applications with high contact and frequent handling. Custom fabrication to size and shape, optical coatings, screen printed graphics and oleo/hydrophobic coatings Total Solutions are available from Abrisa Technologies.

Benefits:
- Ultra-Thin for Low Profile Designs
- Optional HIE™ Strengthening
- High Impact Damage Resistant
- Excellent Clear Visual Quality
- Broad Transmission Range (UVB to IR)
- RoHS and REACH Compliant

Sheet Sizes:
- 19.685" x 15.748" (500 mm x 400 mm)

Thicknesses:
- Ranging from 70 - 350 microns
- Stock thicknesses include: 0.100, 0.145*, 0.210*, 0.250* and 0.300* mm

*available chemically strengthened

Applications:
- Cover Glass for Displays & Touch Panels
- Fingerprint Sensor (FPS)
- Ultra-Thin Glass Applications
- Medical & Bio-Medical
- Automotive Interiors
- Camera Imaging (CIS)
### Mechanical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density $\rho$ in g/cm³ (annealed at 40 °C/h)</td>
<td>2.46</td>
</tr>
<tr>
<td>Young's modulus $E$ in kN/mm²</td>
<td>73.3</td>
</tr>
<tr>
<td>Torsion $G$ modulus in kN/mm²</td>
<td>30.1</td>
</tr>
<tr>
<td>Poisson's ratio $\mu$</td>
<td>0.216</td>
</tr>
<tr>
<td>Knoop hardness HK 0.1/20</td>
<td>500/560*</td>
</tr>
<tr>
<td>Vickers hardness HV 0.2/25</td>
<td>550/630*</td>
</tr>
</tbody>
</table>

### Thermal Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTE (Coefficient of thermal expansion) $\alpha$ in $10^{-6} \cdot K^{-1}$ (20 °C; 300 °C)</td>
<td>8.7</td>
</tr>
<tr>
<td>Mean specific heat capacity $c_p$ in J/(g·K) (20 °C to 100 °C)</td>
<td>0.84</td>
</tr>
<tr>
<td>Transformation temperature $T_g$ in °C</td>
<td>621</td>
</tr>
<tr>
<td>Viscosity lg $\eta$ in dPAs</td>
<td>Temp in °C</td>
</tr>
<tr>
<td>Strain point 14.5</td>
<td>594</td>
</tr>
<tr>
<td>Annealing point 13.0</td>
<td>633</td>
</tr>
<tr>
<td>Softening point 7.6</td>
<td>872</td>
</tr>
</tbody>
</table>

### Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrolytic resistance class</td>
<td>HGB 2</td>
</tr>
<tr>
<td>Acid resistance class</td>
<td>S 4</td>
</tr>
<tr>
<td>Alkali resistance class</td>
<td>A 1</td>
</tr>
</tbody>
</table>
**Ultra-Thin SCHOTT AS 87 eco Aluminosilicate Glass**

**Touch Displays • Biometric & Image Sensors • Cover Glass**

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**Electrical Properties**

<table>
<thead>
<tr>
<th></th>
<th>Dielectric constant $\varepsilon_r$ at $\vartheta = 25^\circ C$</th>
<th>Dissipation factor $\tan \delta$ at $\vartheta = 25^\circ C$</th>
<th>Conductivity at $\vartheta = 25^\circ C$, direct current in S/cm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>at 1 MHz</td>
<td>at 1 MHz</td>
<td>$5.6 \cdot 10^{-12}$</td>
</tr>
<tr>
<td></td>
<td>7.7</td>
<td>138 $\cdot 10^{-4}$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>at 1 GHz</td>
<td>133 $\cdot 10^{-4}$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7.2</td>
<td>172 $\cdot 10^{-4}$</td>
<td></td>
</tr>
</tbody>
</table>

**Optical Properties**

<table>
<thead>
<tr>
<th></th>
<th>Refractive index as drawn $n_0$</th>
<th>Abbe value $\nu_e$</th>
<th>Transmittance values $\tau (\lambda)$ in %, thickness 0.175 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$1.5040 \pm 0.0015$</td>
<td>59.5</td>
<td>254 nm: 46.3, 380 nm: 91.5, 632.8 nm: 92.1, 1064 nm: 92.2</td>
</tr>
</tbody>
</table>

**Options**

**Coatings:**
- Custom V-Coat, Multi-band, Broadband AR
- AR Coatings to MIL-C-14806 A
- ITO/IMITO for EMI Shielding, Heater, LC Devices
- Custom SWP, LWP, Bandpass, UV & NIR Blocker
- Broad/Narrowband Scanning Mirror Coatings
- Deposition onto Filters, Silicon & Other Materials
- Autoclavable, Bio or Chemically Compatible

**Substrates:**
- Fabrication to Shape & Size
  - Cut & Seam or Circle Ground to Size & Shape
  - Precision CNC - Holes, Bevels, Steps, Notches
- Damage Resistant Substrates
  - HIE™ Aluminosilicates
  - AGC Dragontrail™
  - Corning® Gorilla®
  - SCHOTT AS 87
  - Chemically Strengthened Soda Lime Float
- Low Expansion Chemically Resistant Substrates
  - SCHOTT Borofloat® 33
- Ultra Thin and Wafer Substrates
  - AGC EN-A1
  - Corning® 0211 & Eagle XG®
  - SCHOTT AF32, D263® & AS 87
- Other
  - Applied Films & Tints
  - Gasket Application
  - Edge Treatment/Blackening

**Easy-to-Clean & Anti-Fog Solutions:**
- Oleo/Hydrophobic Options
- ITO Heater, HTAF Anti-Fog Solutions

**Graphics & Bus Bars:**
- Color Matched Epoxy Ink
- Non-Conductive Ink
- High Temperature Frit Ink
- Deadfront Ink - Partially Transmissive
- Infrared IR Transmitting Ink
- Silver Epoxy, Silver Frit, CrNiAu Bus Bars
Ultra-Thin SCHOTT AS 87 eco Aluminosilicate Glass

Touch Displays ● Biometric & Image Sensors ● Cover Glass

Glass Fabrication

Abrisa Technologies is a globally recognized technology glass fabrication and optical thin film coating company with expertise in high volume manufacturing and engineering capabilities, delivering Total Solutions that provide excellent performance, fitness-for-use and economies of scale.

Our US based, state-of-the-art ISO 9001:2015 and ITAR registered facilities include Abrisa Industrial Glass (AIG) located in Santa Paula, CA and ZC&R Coatings for Optics (ZC&R) located in Torrance CA. These two divisions produce solutions from cut-to-order coated glass components to custom complex and ready-to-install fabricated, strengthened, optically coated, electronically enabled and branded sub-assemblies.

Our high-quality Total Solutions are in use in a variety of industries and markets including Micro-Electronics, Defense and Avionics, Display, Industrial Automation, Optical Sensors and imaging, Photonics, Medical/Dental, Life Science Analytics and more.

Coating Deposition

CNC Machining

Strengthening - Chemical & Heat

Screen Printing of Graphics

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