SCHOTT Xensation® Cover 3D
Lithium Alumino-Silicate Glass for Capacitive Touch Technologies

Xensation® is the answer to all of your cover and touch technology needs. SCHOTT is unique in being able to offer the broadest range of high-quality glass types for all cover and touch applications, including capacitive, resistive, optical and acoustic. Xensation® Cover 3D is a high-quality, easy to shape lithium alumino-silicate glass with outstanding resistance to breakage and scratches for capacitive touch technologies. Discover Germany’s newest Xensation®.

Key-Benefits of Xensation® Cover 3D

- Low Tg facilitates more efficient 3D cover glass precision molding processes for unique, innovative device design opportunities
- Extremely high impact and bending strength enables thinner, sleeker and more sensitive devices without compromising on strength
- High scratch resistance and tolerance for superior aesthetic appeal and durability
- Pristine, display grade cover glass for a clear, elegant visual quality

In capacitive touchscreen technology, electrodes generate a weak electrical field that changes when touched. A controller determines the exact position of the touch by analyzing this change.

Xensation® Cover 3D is produced using SCHOTT’s unique microfloat process.
**Thermal Properties**

- **Thermal Conductivity** $\lambda$ (25 °C) 1.22 W/(m·K)
- **Specific Heat Capacity** $C_p$ (20 °C, 100 °C) 0.9 J/(g·K)
- **Coefficient of Mean Linear Thermal Expansion** $\alpha$ (20 °C, 300 °C) $8.5 \cdot 10^{-6}$ K$^{-1}$
- **Transformation Point** Tg 505 °C
- **Annealing Point** (10$^{13}$ dPas) 515 °C
- **Softening Point** (10$^{10}$ dPas) 720 °C
- **Working Point** (10$^{4}$ dPas) 1070 °C

**Electrical Properties**

<table>
<thead>
<tr>
<th>Frequency MHz</th>
<th>Dielectric Constant $\epsilon'$</th>
<th>Loss Tangent $\tan \delta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7.60</td>
<td>0.0064</td>
</tr>
<tr>
<td>54</td>
<td>7.37</td>
<td>0.0063</td>
</tr>
<tr>
<td>480</td>
<td>7.35</td>
<td>0.0082</td>
</tr>
<tr>
<td>825</td>
<td>7.22</td>
<td>0.0088</td>
</tr>
<tr>
<td>912</td>
<td>7.22</td>
<td>0.009</td>
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<tr>
<td>1977</td>
<td>7.18</td>
<td>0.01</td>
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<tr>
<td>2170</td>
<td>7.17</td>
<td>0.01</td>
</tr>
<tr>
<td>2986</td>
<td>7.15</td>
<td>0.01</td>
</tr>
</tbody>
</table>

- Electric Volume Resistivity $\rho_D$ for A.C. at 50Hz
  - $\nu = 250 °C$ 1.8 $\cdot 10^6$ cm$^{-1}$
  - $\nu = 350 °C$ 6.5 $\cdot 10^4$ cm$^{-1}$

*These values are no guaranteed data - for customer orientation only.

**Chemical Properties**

- **Hydrolytic resistance acc. to DIN ISO 719**
  - Hydrolytic class HGB 2
  - Equivalent of alkali (Na$_2$O) per gram of glass grains in µg/g 41
- **Acid resistance acc. to DIN 12116**
  - Acid class S 3
  - Half surface weight loss after 6 hours in mg/dm$^2$ 10
- **Alkali resistance acc. to DIN ISO 695**
  - Class A 1
  - Surface weight loss after 3 hours in mg/dm$^2$ 41

**Optical Properties**

<table>
<thead>
<tr>
<th>Refractive Index</th>
<th>588 nm</th>
<th>633 nm</th>
<th>780 nm</th>
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<tbody>
<tr>
<td>Core Glass</td>
<td>1.527</td>
<td>1.525</td>
<td>1.520</td>
</tr>
<tr>
<td>Compression Layer</td>
<td>KNO$_3$ pure</td>
<td>1.533</td>
<td>1.530</td>
</tr>
<tr>
<td></td>
<td>Mixture Salt</td>
<td>1.531</td>
<td>1.528</td>
</tr>
</tbody>
</table>

- **Transmittance** $\tau$ (Glass Thickness 0.7mm)
  - 840 nm > 91 %
  - 560 nm > 91 %
  - 380 nm > 90 %
- **Photoelastic Constant** 27.4 nm/cm/MPa

**Mechanical Properties**

- **Density** 2.49 g/cm$^3$
- **Young’s Modulus** E 83 kN/mm$^2$
- **Poisson’s Ratio** 0.225
- **Shear Modulus** 34 kN/mm$^2$
- **Knoop Hardness** HK 0.1/20
  - Non-strengthened 590
  - Strengthened 740
- **Vickers Hardness** HV 0.2/20
  - Non-strengthened 640
  - Strengthened 690

**Chemical Strengthening**

- **Compressive Stress** capable > 700 MPa
- **Depth of Layer** capable > 120 µm
- **4-Point Bending Strength** cap. > 600 MPa

**Sheet Dimensions**

- **Sheet Size****: 1150 x 950 mm
- **Thickness Range**: 0.5 - 2.0 mm

**Other sizes on request.**