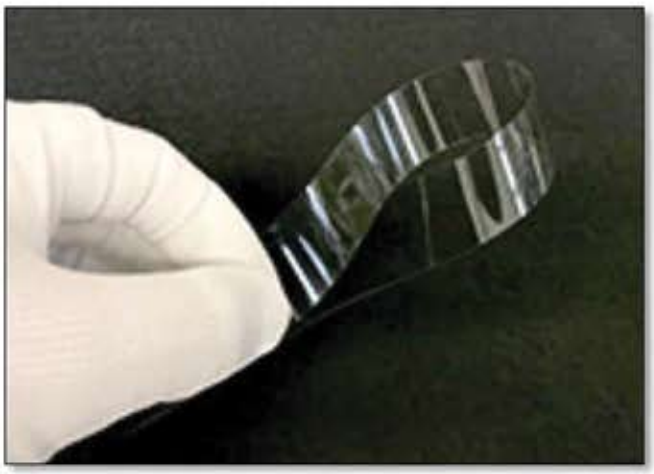
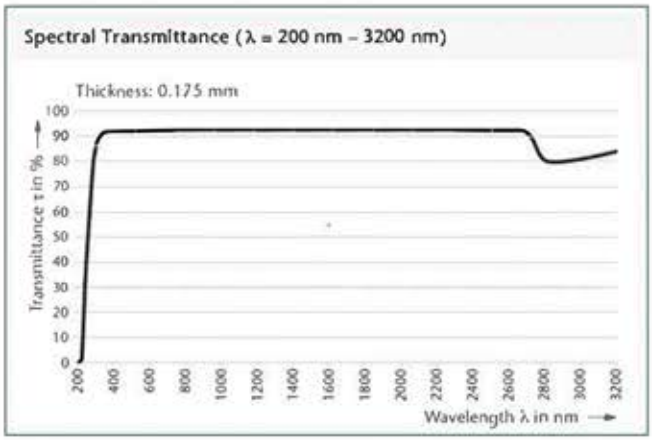
Ultra-Thin SCHOTT AS 87 eco Aluminosilicate Glass

Touch Displays • Biometric & Image Sensors • Cover 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)

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Mechanical Properties	Measurement
Density ρ in g/cm³ (annealed at 40 °C/h)	2.46
Young's modulus E in kN/mm²	73.3
Torsion G modulus in kN/mm²	30.1
Poisson's ratio μ	0.216
Knoop hardness HK 0.1/20	500/560*
Vickers hardness HV 0.2/25	550/630*
Thermal Properties	
CTE (Coefficient of thermal expansion) α in $10^{-6} \cdot K^{-1}$ (20 °C; 300 °C)	8.7
Mean specific heat capacity *cp* in J/(g · K) (20 °C to 100 °C)	0.84
Transformation temperature Tg in °C	621
Viscosity lg η in dPas	Temp in ° C
Strain point 14.5	594
Annealing point 13.0	633
Softening point 7.6	872
Chemical Properties	
Hydrolytic resistance class	HGB 2
Acid resistance class	S 4
Alkali resistance class	A 1

ABRISA TECHNOLOGIES

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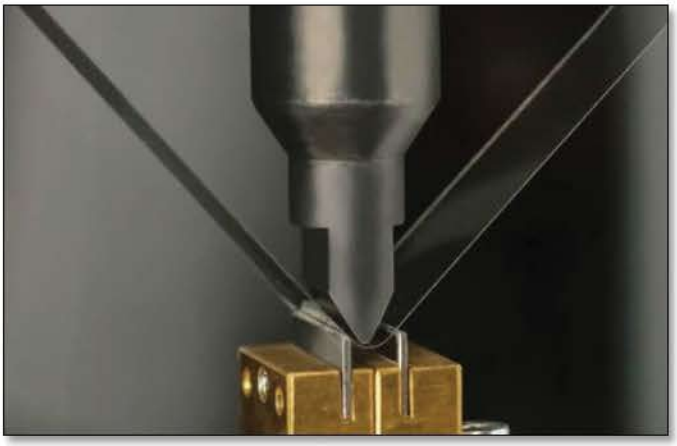

High Impact & Bend Strength

Optical Properties	
Refractive index as drawn n_D	1.5040 ± 0.0015
Abbe value v_e	59.5
Transmittance values τ (λ) in %, thickness 0.175 mm	
254 nm	46.3
380 nm	91.5
632.8 nm	92.1
1064 nm	92.2

Electrical Properties	
Dielectric constant ε_r at ϑ = 25°C	
• At 1 MHz	7.7
• At 1 GHz	7.3
• At 5 GHz	7.2
Dissipation factor tan δ at ϑ = 25°C	
• At 1 MHz	$138 \cdot 10^{-4}$
• At 1 GHz	$133 \cdot 10^{-4}$
• At 5 GHz	$172 \cdot 10^{-4}$
Conductivity at ϑ = 25°C, direct current in S/cm	$5.6 \cdot 10^{-12}$

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

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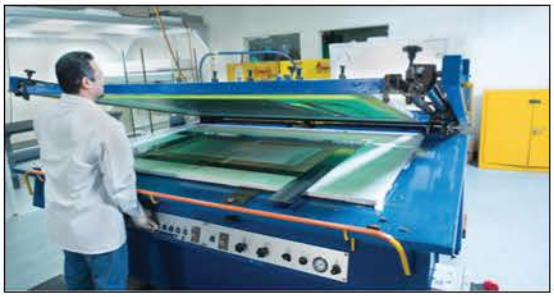
Glass Fabrication

Coating Deposition

CNC Machining

Strengthening - Chemical & Heat

Screen Printing of Graphics



Abrisa Technologies is a recognized global supplier of high quality, fabricated glass components, optical thin film coatings, and custom glass solutions for a wide variety of industries.

US based, Abrisa Industrial Glass fabrication facility in Santa Paula, CA and ZC&R Coatings for Optics facility in Torrance, CA serve diverse industries such as microelectronics and displays, semiconductor, military, automotive, aerospace, medical, biomedical and scientific R&D.

We provide custom specialty flat glass and coating products for applications such as: flat panel display, touch and gesture recognition; visible to IR imaging and surveillance; entertainment, indoor and outdoor lighting; advanced instrumentation; and photonics.

ABRISA TECHNOLOGIES

CERTIFIED ISO 9001:2015 COMPANY

International Traffic in Arms Regulations Compliant ITAR

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