

SCHOTT D 263[®] T eco Ultra-Thin Glass

Miniaturization • Mobility • Microfluidics • Opto-Electronics

Glass Fabrication



Coating Deposition



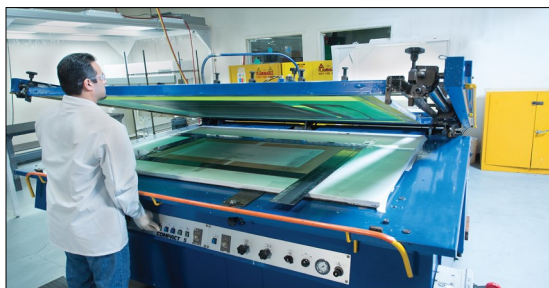
CNC Machining



Strengthening - Chemical & Heat



Screen Printing of Graphics



Abrisa Technologies, a member of HEF Photonics, 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 in Santa Paula, CA and ZC&R Coatings for Optics 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 Total Solutions serve a variety of markets including Micro-Electronics, Defense and Avionics, Display, Industrial Automation, Optical Sensors, Imaging, Photonics, Medical & Dental, Life Science and more.



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D263 04_23



Your Total Solution Partner

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SCHOTT D 263[®] T eco is a clear, lightweight, low fluorescence, borosilicate glass available from Abrisa Technologies in thicknesses from 0.03 mm to 1.1 mm with excellent transmission and high chemical resistance. The glass is made with the SCHOTT specific down-draw method that results in excellent surface finish and low surface roughness typically < 1 nm rms range. Abrisa Technologies specializes in ultra-thin glass fabrication and optical coating as well as, screen printing, laser marking, oleo/hydrophobic coating, and other value added services.

D 263[®] T eco makes an excellent choice for ultra lightweight mobility and scanning applications, ultra-low profile displays and devices, micro-electronics, sensors, chemical process resistant slides, and sample platforms.

Applications:

- Lightweight Windows and Mirrors for Mobility
- Wafer-Based Micro-Optics for AR/VR and Telecom
- Optical Caps for Sensors and Diodes
- Ultra-Thin ITO Heaters and Bus Bars
- Biotech Sample and Slide Surfaces
- Sunlight and Heat Resistant In-Cabin Displays
- Low Profile Displays/Human Interface
- Low Alkali Mobility for Active Matrix Displays
- Ultra-Thin Cover Glass
- Additive Optical/Mechanical Attributes

Sheet Sizes:

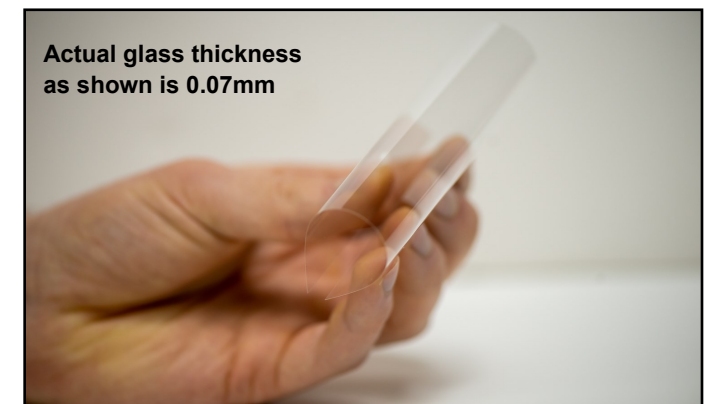
- 510 mm x 430 mm > 0.2 mm (Thickness)
- 440 mm x 360 mm ≤ 0.2 mm (Thickness)



Actual part size is 3mm x 3mm

Thickness	Thickness Tolerance*
0.03 mm**	±10 µm
0.05 mm**	±10 µm
0.07 mm**	±10 µm
0.1 mm	±10 µm
0.145 mm	±10 µm
0.175 mm	±10 µm
0.21 mm	±15 µm
0.25 mm	±15 µm
0.3 mm	±15 µm
0.4 mm	±15 µm
0.5 mm	±15 µm
0.55 mm	±15 µm
0.7 mm	±20 µm
0.9 mm	±25 µm
1.0 mm	±30 µm
1.1 mm	±30 µm

*(acc. to SEMI MF 1530 GBIR) - ** Special Request Only



Actual glass thickness as shown is 0.07mm

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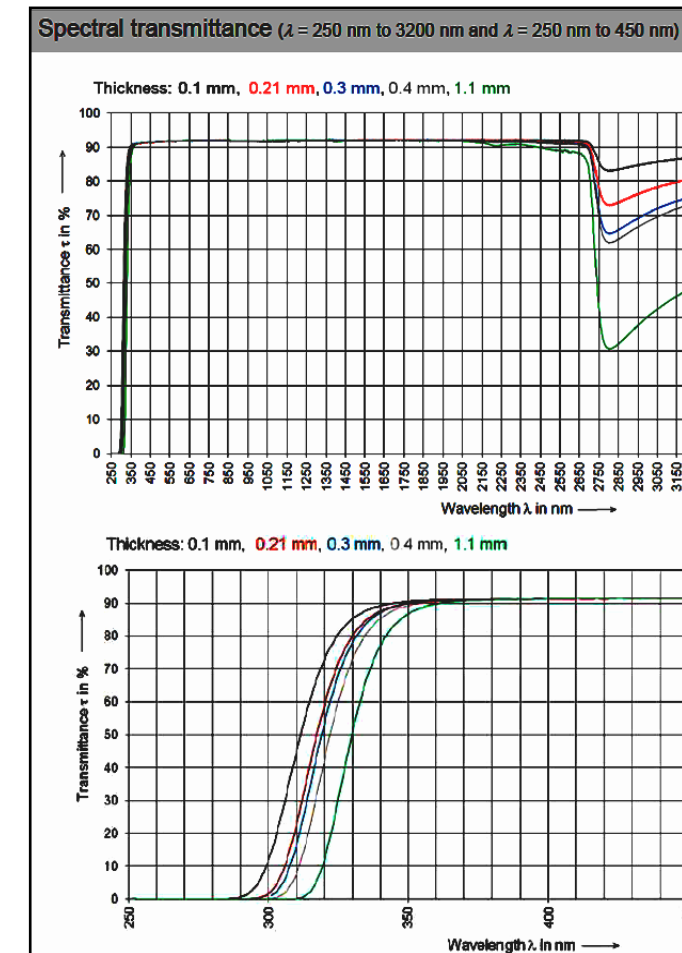
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Optical Properties		
Abbe Value	55	
Luminous Transmittance τ_{vD65} in% ($d = 1.1\text{mm}$)	91.7 ± 0.3	
Thermal Properties	Viscosity	Temperature
Viscosities and corresponding temperatures	$\lg \eta$ in dPas	ϑ in °C
Strain Point	14.5	529
Annealing Point	13.0	557
Transformation Temperature T_g in °C	557	
Coefficient of Thermal Expansion α (20 °C; 300 °C) in 10^{-6}K^{-1} (Static Measurement)	7.2	
Mean Specific Heat Capacity c_p (20 °C to 100 °C) in J/(g · K)	0.8	
Mechanical Properties		
Density ρ in g/cm^3 (annealed at 40° C/h)	2.51	
Stress Optical Coefficient C in $1.02 \cdot 10^{-12} \text{m}^2/\text{N}$	3.4	
Young's Modulus E in kN/mm^2	72.9	
Poisson's Ration μ	0.21	
Torsion Modulus G in kN/mm^2	30	
Knoop Hardness HK 0.1/20	470	
Vickers Hardness HV 0.2/25	510	
Chemical Properties		
Hydrolytic Resistance acc. To DIN ISO 719	Hydrolytic Class HGB 1	
Equivalent of alkali (Na_2O) per gram of glass grains in $\mu\text{g/g}$	20	
Acid Resistance acc to DIN ISO 12116	Acid Class S 2	
Half surface weight loss after 6 hours in mg/dm^2	1.4	
Alkali Resistance acc. To DIN ISO 695	Class A 2	
Surface weight loss after 3 hours in mg/dm^2	88	
Electrical Properties		
Dielectric Constant ϵ_r (at $\vartheta = 25 \text{ °C}$)	6.7	
Dissipation factor $\tan \delta$ (at $\vartheta = 25 \text{ °C}$)	$61 \cdot 10^{-4}$	

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Transmittance



Designation	Wavelength (nm)	Refractive Index
n_g	436	1.5354
n_F^1	480	1.5305
n_F	486	1.5300
n_e	546	1.5255
n_d	587.5	1.5231
n_D	589.3	1.5230
n_C^1	644	1.5209
n_C	656	1.5204

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® Eagle XG®
 - SCHOTT AF32, D263[®] T eco & AS 87
- **Other**
 - Applied Films & Tints
 - Gasket Application
 - Edge Treatment/Blackening
 - Laser Marking (QR & Barcodes, S/N)

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
- Dead Front Ink - Partially Transmissive
- Infrared IR Transmitting Ink
- Silver Epoxy, Silver Frit, CrNiAu Bus Bars