

www.abrisatechnologies.com



Display Solutions for the World's Electronic Display Industry





About Abrisa Technologies

We are Abrisa Technologies – Your Total Solution Partner



🖌 Abrisa Industrial Glass (AIG), Santa Paula, CA – <u>ISO Cert</u>

This 100,000+ sq. ft. manufacturing facility is dedicated to solution-based, industrial flat glass manufacturing, products and services, including screenprinting, etching, cutting and edging, CNC machining, higher level assembly, and more.

★ ZC&R Coatings for Optics (ZC&R), Torrance, CA – ISO Cert

This 21,000 sq. ft. manufacturing facility offers custom and OEM precision coating solutions for optical thin film products. ZC&R's PVD and ION-assist depositions provide a wide range of standard and custom coatings to meet our customer's ever evolving needs.



About Abrisa Technologies



Abrisa Technologies' broad scope of design and manufacturing capabilities, vertical integration, and single-point accountability allows you to put your trust in one company for supply chain simplicity, convenience, reduced cost of ownership, and delivery of verified and certified product(s) every time.

- Float & Specialty HIE[™] Glasses in mm to meter sizes
- Specializing in Ultra-Thin Glass as low as 0.03 mm Borosilicate & Aluminosilicates
- Fabrication for Shape & Features to Your Specific Needs
- Chemical or Heat Strengthening for Damage Resistance
- Coatings for Filtering, Throughput Reflection & Conductivity
- Screen Printing for Electrical Connectivity, Branding & Displays
- Value-Added Assembly Films, Chemistry, ID Marking, Laser Cut Gaskets & Masks



About Abrisa Technologies

Your Total Solution Partner

We listen to our customers' wholistic needs.

As **Your Total Solution Partner**, we offer a unique suite of specialized expertise, volume manufacturing experience, vertically integrated capabilities, and services to fulfill your display needs, now and into the future.

It begins with understanding your market challenges, applications, and collaborating with you from concept to production, every step of the way. Customers know they can rely on Abrisa Technologies for:

- Expertise in Both Glass Technology & Optical Coatings
- Manufacturable Solutions with Optimized Fitness-for-Use
- Over 40 Years of Experience in Volume Manufacturing
- Unique & Integrated Capabilities for Ready-to-Install Solutions
- Total Solution Product Verification & Certification
- Program, Inventory management & Other Commercial Services
- Innovation & Production Needs, Now & for Years to Come





Abrisa Technologies' Display Solutions

Abrisa Technologies offers complete display glass solutions for:

- Combo Scanner/Information Displays
- Avionics/Vehicular Navigation Displays
- Outdoor & Field Portable Displays
- Biocompatible Medical Instrument Displays
- Wearables, 3-D Augmented (AR), Virtual Reality (VR)
- Large Heads-Up, Video Wall & Gaming Displays
- Interactive Touch Control Panel Displays
- Hospitality Mirror/Display Combinations



Well-stocked inventory of strengthened and un-strengthened glass:

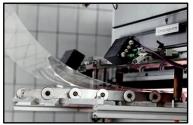
- **Glass Selection:** Strengthened HIE[™] Aluminosilicates, Borosilicates, Low/Non-Alkaline, Cut-to-Order Float glass with & without Anti-Reflection (AR) Coating, Non-Glare & Specialty Ultra-Thin (< 0.2mm) Technology Glass
- Performance Criteria: Optical, Thermal, Chemical, Electrical & Mechanical Properties
- Sizes: mm's to 0.03mm Thick, Displays from mm's to meters. Large Sheet Sizes Available for Fabrication Versatility

Total Solutions - Glass Fabrication, Strengthening, Coatings, Graphics & Value-Add:

- **Fabrication:** Waterjet & Precision CNC for Custom Formats & Registered Features for Airtight Seals
- **Damage Resistance:** Chemical Strengthening, Heat Toughening or Tempering on Large Selection of Glass
- Optical Coating: Thin film Coating Solutions (Anti-Reflective, ITO, Filter, UV/IR Block, Oleo/Hydrophobic)
- Screen Printing: Graphics, Bus Bars, Aesthetic & Branding
- Ready-to-Install Services: Optical, Aesthetic & Safety Films, Mounting Tape & Gaskets, Masking, Laser Marking ID



Abrisa Technologies' Display Solutions



Ultra-Thin SCHOTT AS 87 eco Aluminosilicate Glass



<u>SCHOTT D 263® T eco</u> <u>Ultra-Thin Glass</u>



PRO-NG[™] 120 HIE[™] Non-Glare Glass



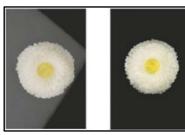
SCHOTT Borofloat® 33 Borosilicate Float Glass



Semi-Transparent Mirrors for Hidden Displays



Dead Front Panels for Backlit User Interfaces



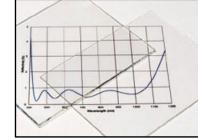
Low Reflection & Non-Glare Glass Solutions



<u>Total Solutions for</u> <u>Ready-to-Install Enhancement</u> Glass



Vehicular Information Display & Interface Applications



Sensor & Scanner Window Solutions



CleanVue[™] Pro Oleophobic & Hydrophobic Coating Solutions



Large 84" Diagonal HI-OD™ Screen Printed Display Glass Solutions



Abrisa Technologies' Display Solutions



Thin & Ultra-Thin Lightweight Mirrors (0.1mm – 0.55mm)





On-Demand Laser Cut Gaskets & Masks



Laser Marked Display Graphics On-Demand



Low Sparkle Non-Glare Glass



PRO-HC-VIS1 Anti-Abrasion Hard Coat Clear Glass



Ultra-Thin Glass Fabrication & Coating

In-Stock Ultra-Thin HIE[™] Aluminosilicate & Borosilicates

Ultra-Thin Glass Material	Thickness Availability	
HIE™ Strengthened Aluminosilicates		
SCHOTT AS 87 eco	0.1, 0.145, 0.21, 0.25 & 0.33 mm	
Corning [®] Gorilla [®] Glass 3	0.4, 0.55, 0.8, 1.1, 1.5 & 2.0 mm	
AGC Dragontrail™	0.8 & 1.1 mm	
Low or Non-Alkaline Borosilicates		
SCHOTT D263® T eco	0.03, 0.05, 0.07, 0.1, 0.145, 0.175, 0.21, 0.25, 0.3, 0.4, 0.5, 0.55, 0.7, 0.9, 1.0, 1.1 mm	
Corning [®] Eagle XG [®]	0.7 & 1.1 mm	
AGC EN-A1	0.3, 0.5 & 0.7 mm	



Specialty Ultra-Thin Material (< 0.2mm) Processing:

- Complex Shape Fabrication
- HIE[™] Special Materials Strengthening
- Optical Coating (Including Glass & Silicon Wafers)
- Screen Printing (Graphics, Conductive/Bus Bars)
- Applied Films, Gaskets, Oleophobics/Hydrophobics





Feature Products & Applications

Thinner, Lighter, Stronger

More and more applications are requiring thinner, lighter and stronger glass with enhanced flexibility and/or damage resistance. Virtual & augmented reality platforms, wearables, displays, scanners, touch pads, and windows are typical applications requiring this rugged ultra-thin glass while the reduction in weight improves portability.

ABRISA	ABRISA		ABRISA
HEF [®] PHOTONICS Your Total Solution Partner	MIICANOLOGIII	TICKNOLOGIUS	ATEC & NOLOGIES
	HEF [®] PHOTANICS Your Total Solution Partner	HEF"PHOTONICS Your Total Solution Partner	HEF*PHOTONICS Your Total Solution Partner
SCHOTT D 263 [®] T eco Ultra-Thin Glass	SCHOTT BOROFLOAT® 33 Borosilicate Float Glass	Ultra-Thin SCHOTT AS 87 eco Aluminosilicate Glass	PRO-NG™ 120 - HIE™ Non-Glare Aluminosilicate
Miniaturization • Mobility • Microfluidics • Opto-Electronics	Optical Windows • Image Sensing • Hot Mirrors • Filters • 3D • Displays	Touch Displays • Biometric & Image Sensors • Cover Glass	High-Contact • Wide-Angle Viewing • Sunlight Readable • Portable
BCHOTT D3X ¹ Feo is a certa spintward; low fourse:creace bounded by manual and the spintward of the spintward for the spintward in the spin spin spin spin spin spin spin spin	BORDET Carl ²³ 35 a 4 V/4 Hit transport location is exaster waters transfer state for the dispose. It is a constrained by deviationer waters in which is a field for bound manufacture of waters, and other response to 500 K 200	CHOIT of Var Die van due hier due indernie kaar wat de van de	Advise Trebrokowie (1990) Advis (12), tech los fordaren (15) ¹⁰ , Trebrokowie (12), disk los fordaren (14) ¹⁰ directoria hin, dystewych (1 minder i directoria hin, dystewych (1 minder i directoria hin, dystewych (1 minder i directoria hin)), tek renz HE ¹⁰ arengtherand roso, dare nuterial is kine form randkar in oedd r. starybitrusjeff readdaity wie wiesin grafi addre in oedd r. starybitrusjeff readdaity in key PRO-NO ¹⁰ 120 al keide for ruspected or to Hy-onix minder in oedd r. starybitrusjeff readdaity in key renzem (1 minder), starybitrusjeff readdaity in key PRO-NO ¹⁰ 120 al keide for ruspected or to Hy-onix minder in oedd r. starybitrusjeff readdaity in key Diblejfe J. funktickof Applications: Diblejfe J. funktickof Applications:
Applications: 0.3 mm a 15 µm • Lightweight Windows and Mirrors for Mobility 0.4 mm a 15 µm • Werke Readed MicroCyclics for ARVR and Telecom 0.5 mm a 15 µm • Optical Caps for Sensors and Diodes 0.5 mm a 15 µm • Optical Caps for Sensors and Diodes 0.7 mm a 20 µm	Optical Quality Biorelificate Glass High TransparencyColor Houtral Hond Spectral Range U/-VIS-NIR High Add Spectral Range U/-VIS-NIR High Thermal Restance (Socia & Graderi U) 10 Tom	Optional Hite: "Simplifying High Impact Damage Related Excellent Clear Yourd Dawlify Broad: Transmission Range (V/IB to III) Related and Excellent	Ruggedzed Portable Devices Other steers, finichneses, coatings Locolept Menning & Nangation Systems In-Uehick Wide-Angel Displays Oddoc Suscipt Resolution Darlings
Ultra-Thin ITO Heaters and Bus Bars 0.9 mm ±25 µm	Crack Resistant to Sharp Impact <u>7.50 to 13.00 mm</u> ± 0.20 mm ± 0.30 mm	Sheet Sizes:	High-Contact Touch Control Pads General Properties: (Typical)
Biotech Sample and Slide Surfaces 1.0 mm ±30 µm 1.1 mm ±30 µm 1.1 mm ±30 µm 1.1 mm	Low Themal Expansion for Tight Seals Applications: Broad UV-VIS-NIR Transmission:	 19.685" x 15.748" (500 mm x 400 mm) Applications: 	Lightweight, Sim Profile Hand-Helds PRO-NG** 120 Single Side Property Non-Glare
Low Profile Displays/Human Interface	Outdoor VIS-NIR Image Sensing	Cover Glass for Displays & Touch Panels Stock Thicknesses: r These can be chemically attend/hereel Screen Protectors for Mobile Devices	Gloss Value 120 ±20
Low Alkali Mobility for Active Matrix Displays Actual glass thickness as shown is 0.07mm	True Color* Medical Imaging	O.100 mm (0.0035" - 0.0043") Fingerprint Sensor	Extra-Thin & Lightweight Transmission >89%
Ultra-Thin Cover Glass	High Intensity Lighting & Curing Filters	D 145" mm (0.0053" - 0.0061") Uthe-Thin Glass Applications	HIE **Ultra-Strong & Scratch Resistant Reflection (photopic) ~8%
Additive Optical/Mechanical Attributes	Heated 3D Additive Build Platforms	 0.145' mm (0.0053 - 0.0061) Medical & Bio-Medical 	Wide-Angle Non-Glare Density (g/cm ²) 2.48
Sheet Sizes:	Industrial Sight Glass View Ports	 0.210" mm (0.0076" - 0.0088") Automotive Interiors 	Excelent Resolution Reduced Fingeronint Visibility Resolution (line/mm pair) 14.25
 510 mm x 430 mm > 0.2 mm (Thickness) 	Specialty Ruggedized Displays	0.250" mm (0.0092" - 0.0104") Camera Imaging	reduced rangelplank volumey
400 mm x 300 mm s 0.2 mm (Thickness) Abrins Technologies 200 South Hallock Drive, Santa Pauls, CA 13010 • (877) 822-7472 www.abrisatechnologies.com • Info@abrisatechnologies.com	Abriss Technologies • 200 South Hallock Drw, Santa Paula, CA 3300 • (877) 622-7472 www.abrisatechnologies.com • info@abrisatechnologies.com	0.339° mm (0.0124° - 0.0138) Admiss Technologies 208 could histock Drive, Santa Paula, CA3380 + (877) 622-1472 www.akintatechnologies.com + sofogliadrisatechnologies.com	Abrisa Technologies + 200 South Hallock Drive, Santa Paula, CA 53060 + (877) 522-7472 www.abrisatechnologies.com + info@otrisatechnologies.com
LEARN MORE	LEARN MORE	LEARN MORE	LEARN MORE









BRISA

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



· Low Profile Displays/Human Interface

- Low Alkali Mobility for Active Matrix Displays
- Ultra-Thin Cover Glass
- Additive Optical/Mechanical Attributes

Sheet Sizes:

Applications:

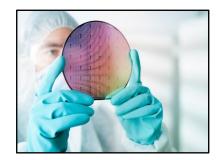
- 510 mm x 430 mm > 0.2 mm (Thickness)
- 440 mm x 360 mm ≤ 0.2 mm (Thickness)

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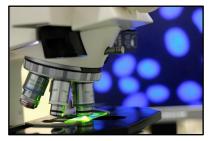


Applications:

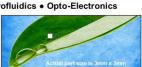
- Lightweight Windows & Mirrors
- Wafer-Based Micro-Optics
- Optical Caps for Sensors & Diodes
- Ultra-Thin ITO Heaters & Bus Bars
- Biotech Sample & Slide Surfaces
- Heat Resistant In-Cabin Displays
- Low Profile Human Interface
- Low Alkali Active-Matrix Displays
- Ultra-Thin Cover Glass
- Additive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





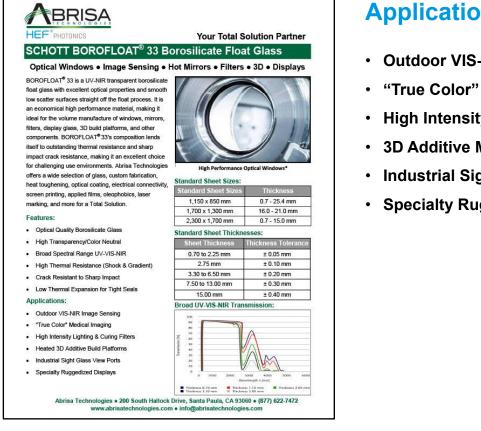


Thickness Tolerance ±10 µm ±10 µm ±10 µm ±10 µm ±10 µm ±10 µm ±15 µm ±15 µm ±15 µm ±15 µm ±15 µm ±15 µm ±20 µm ±25 µm ±30 µm ±30 um (acc. to SEMLME 1530 GBIR) - ** Special Request Only Actual glass thickness wn is 0.07mm





SCHOTT Borofloat[®] 33 **Borosilicate Float Glass**





- Outdoor VIS-NIR Image Sensing
- "True Color" Medical Imaging
- High Intensity Lighting & Curing
- 3D Additive Manufacturing Platforms
- Industrial Sight Glass & View Ports
- Specialty Ruggedized Displays











Ultra-Thin SCHOTT AS 87 eco Aluminosilicate Glass



- · 0.145* mm (0.0053" 0.0061")
- 0.210* mm (0.0076" 0.0088")
- · 0.250* mm (0.0092" 0.0104")
- 0.330* mm (0.0124" 0.0136")

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Applications:

- Cover Glass Displays & Touch Panels
- UAV/Drone Applications
- Screen Protector for Mobile Devices
- Fingerprint Sensors
- Ultra-Thin Glass Applications
- Medical & Bio-Medical
- Automotive Interiors
- Camera Imaging







- Ultra-Thin Glass Applications
- Medical & Bio-Medical
- Automotive Interiors
- · Camera Imaging



PRO-NG[™] – Non-Glare Aluminosilicate Glass



Your Total Solution Partner

Formats & Options:

Thickness 1.1 mm
Other sizes, thicknesses, coatings

Sheet Sizes up to 400 x 500 mm

request - Consult Factory

PRO-NG™ 120

Property

Gloss Value

Transmission

Density (g/cm3)

Reflection (photopic)

Resolution (line/mm pair)

& oleophobics may be available upon

General Properties: (Typical)

Single Side

Non-Glare

120 ±20

>89%

~8%

2 48

14.25

PRO-NG™ 120 - HIE™ Non-Glare Aluminosilicate

High-Contact • Wide-Angle Viewing • Sunlight Readable • Portable

Abrisa Technologies' PRO-NG[™] 120, High-Ion Exchange (HIE[™]) non-glare aluminosilicate provides 120 gloss level glare reduction in an extra-thin, lightweight format with up to 6x the strength of standard soda lime float. This new HIE[™] strengthened non-glare material is Ideal for installed or portable displays with large viewing angles and/or in need of bright/sunlight readability where thinner profile, lightweight, and enhanced durability is key. PRO-NG[™] 120 is ideal for tuggedized or high-contact displays used in cockpit, cabin, portable field instruments, signature pads, and industrial equipment control panels where both management of glare and high clarity, low haze viewing of the display is key.

Display & Indicator Applications:

- Ruggedized Portable Devices
- In-Cockpit Monitoring & Navigation Systems
- In-Vehicle Wide-Angle Displays
- Outdoor Sunlight Readable Displays
- High-Contact Touch Control Pads

Lightweight, Slim Profile Hand-Helds

Features:

- Extra-Thin & Lightweight
- HIE™Ultra-Strong & Scratch Resistant
- Wide-Angle Non-Glare
- Excellent Resolution
- Reduced Fingerprint Visibility

Applications:

- Ruggedized Portable Displays
- In-Cockpit Navigation Systems
- In-Vehicle Wide Angle Displays
- Sunlight Readable Displays
- High-Contact Touch Control Pads
- · Lightweight, Slim Hand-Helds







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Medical/Instruments

Medical/Lab Displays & Platforms



- Bio-Compatible Coatings & Glass
- White/Pantone Color Matching
- Damage Resistant HIE[™] Glass
- Heated & Anti-Fogging Windows
- Thin Glass Slide Fabrication & Coating
- Laser Etched Unique Identifiers: QR, LOT & S/N
- Easy-to-Clean Surfaces
- Safety Enhancements





Interactive Control Panels

Interactive Touch/Control Panels/Displays



- Ready-to-Install Panels
- Scratch Resistant HIE[™] Materials
- Ultra-Thin 0.1mm Coated Glass
- Tactile Touch 3D Glass Features
- Precision Insets & Panel Features
- Gray, Filtered Glass & Coatings
- Smudge Resistant Solutions
- Color Matched Branding





Wearables/Virtual Reality

Wearables/Virtual Reality Displays



- Lightweight, Low Profile
- Flexible, Small, Ultra-Thin
- Thin 0.1mm Glass Shaping & Coating
- Near-to-Eye Coated Optics & Filters
- Singulated, Diced & Coated Wafers
- Press Fit Mounting Tolerances
- Flush Mounted "Infinity" Edges
- Ready-to-Install Packaging





Avionics/Defense Displays

Avionics/Defense/Simulation/Indicators



- HIE[™] Strengthened Materials
- ITO Coated EMI Shields & Heaters
- Bus Bars: Frit, CrNiAu, Silver Epoxy
- Anti-Glare, Photopic AR & Coatings
- HUD, Trim, Green, Red, NIR Filters & B/S
- Laser Etched LOT # & Graphics
- Precision Radii Corners & Chamfers
- Solar Load Reduction



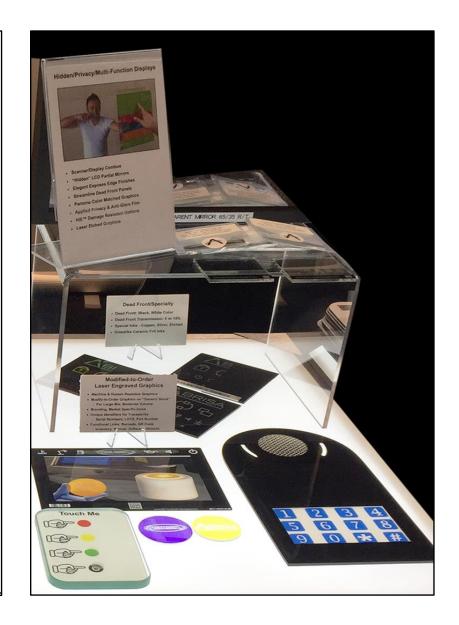


Hospitality/Mirror Displays

"Hidden/Privacy/Multi-Function Displays"



- Scanner/Display Combos
- "Hidden" LCD Partial Mirrors
- Elegant Exposes Edge Finishes
- Streamline Dead Front Panels
- Pantone Color Matched Graphics
- Applied Privacy & Anti-Glare Film
- HIE[™] Damage Resistant Options
- Laser Etched Graphics



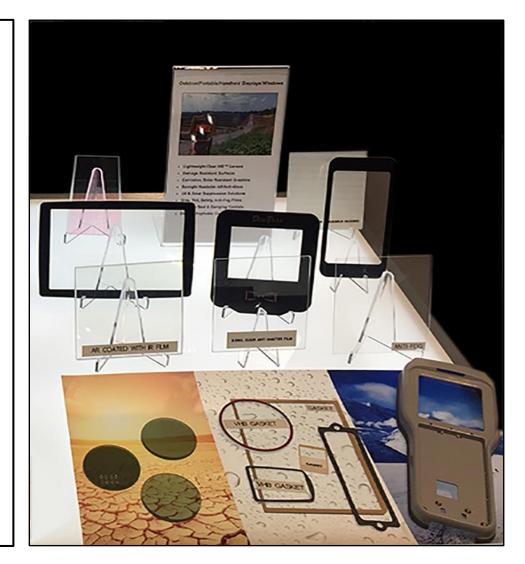


Outdoor & Portable

Outdoor/Portable/Handheld Displays/Windows



- Lightweight Clear HIE[™] Lenses
- Damage Resistant Surfaces
- Corrosion, Solar Resistant Graphics
- Sunlight Readable AR/Anti-Glare
- UV & Solar Suppression Solutions
- Gray, Tint, Safety, Anti-Fog Films
- Moisture Seal & Damping Gaskets
- Oleo/Hydrophobic Coatings



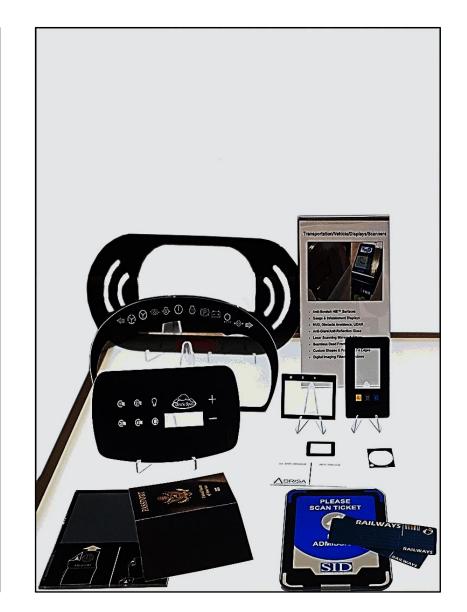


Scanner/Display Combos

Transportation/Vehicle/Displays/Scanners



- Anti-Scratch HIE[™] & Hard Coat Surfaces
- Gauge & Infotainment Displays
- HUD, Obstacle Avoidance, LiDAR
- Anti-Glare/Anti-Reflection Glass
- Laser Scanning Mirrors & Filters
- Seamless Dead Front Control Panels
- Custom Shapes & Precision Fit Edges
- Digital Imaging Filters & Windows





Select Markets We Serve



Display – Digital, Immersive & Interactive Displays

- Damage Resistant HIE[™] Thin & Ultra-Thin Aluminosilicates
- Hidden LCD Mirrors, Dead Front Graphics
- Sunlight Readable Coatings & UV/IR Blockers
- Near-to-Eye Display Partial Transmitters
- Ultra-Thin, Lightweight & Flexible Glass





Micro-Opto/Semiconductor – Wafer Components, Process Tools

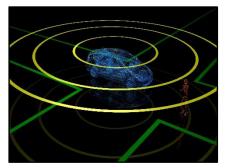
- Transparent Conductive Coatings (ITO/IMITO)
- Anti-Reflective, Metallic, Filter & Dichroic Coatings
- · Wafers, Coatings, Bus Bars, Dicing
- Protective & Epoxy Compatible Coatings
- · Cleanroom Protocol, Ultrasonic Cleaning

Medical/Dental/Bio – 3D Imaging, Surgical, Biosensors

- Bio/Chemical Compatible Components
- Autoclavable Mirrors & Windows
- Heated Biocompatible Sample Windows
- Wavelength Selective Filters
- AR, Filter & Scanner Coatings



Select Markets We Serve



Imaging/Sensors – Security/Threat, Lidar (autonomous), Traffic

- Wide View 0-52° Sensor Windows
- Broad Spectrum Windows UV/VIS, VIS/NIR, SWIR
- Damage Resistant HIE[™] Glass
- Dead Front Control Panels
- Oleo/Hydrophobic Solutions Cleanable Solutions





Industrial - 3D Printing, Machine Vision, Process Control

- Laser Scan Mirrors & Windows
- Bandpass & Contrast Enhancement Filters
- Low Expansion ED Printing Build Platforms
- UV Transmissive Coatings for Curing
- Ultra-Thin Touch Panel Glass

Defense/Avionics – Controls, Targeting, Threat Detection, Simulation

- EMI Shielded ITO Enhancement Glass
- SWP, Covert, Blackout, Signal Selective Filters
- Non-Glare (NG) Glass & Damage Resistant HIE™ Glass
- HUD/HMD Beam Splitters, Scanning Mirrors
- Anti-Fog (ITO) Heated Transparencies



Glass Fabrication



Coating Deposition



CNC Machining



Strengthening Chemical & Heat



Screen Printed Graphics



Abrisa Industrial Glass (AIG) 200 S. Hallock Drive Santa Paula, CA 93060 Tel: +1 (877) 622-7472 Toll Free Tel: +1 (805) 525-4902 Fax: +1 (805) 525-8604 info@abrisatechnologies.com

orders@abrisa.com



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Contact Us



Get a Quote

ZC&R Coatings for Optics (ZC&R) 1401 Abalone Avenue Torrance, California 90501 Tel: +1 (800) 426-2864 **Toll Free** Tel: +1 (310) 381-3060 Fax: +1 (805) 525-8604 **info@abrisatechnologies.com ZCRorders@abrisa.com**