

# Laser Marked Display Graphics On-Demand

Serial, Part, LOT Numbers • QR • Barcodes • Branding • Icons

## Glass Fabrication



## Coating Deposition



## CNC Machining



## Strengthening - Chemical & Heat



## Screen Printing of Graphics



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.



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Your Total Solution Partner

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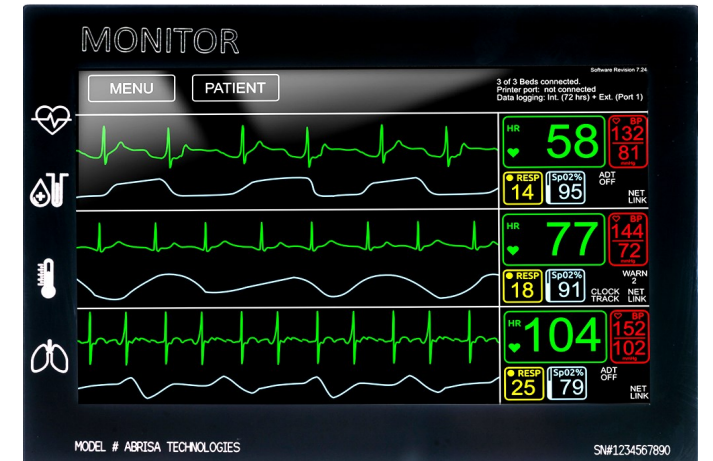
Abrisa Technologies has added 2 new laser engraving processes to their value-added, ready-to-install glass fabrication service capabilities. The company now provides in-house:

- **CO<sub>2</sub> laser engraving “marking” of select coated and uncoated glass**
- **Laser etched graphics, icons and unique identifiers (QR codes and barcodes)**

These two methods of laser engraving and etching add to the company’s Total Solution approach of single-point accountability for fabricated specialty glass components.

**CO<sub>2</sub> Laser Engraving “Marking” of Select Coated & Uncoated Glass:** Laser engraving directly onto select coated or uncoated glass creates human readable, non-removeable identification and LOT tracking information for traceability without any added profile or chemistry constraints or concerns. The marking can be done on the edge or face. The alpha-numeric can be 2.8 mm to 7.1 mm in height and can be specified in one of three popular font options.

**Laser Etched Graphics:** Selective removal of screen-printed ink on glass is ideal when unique identifiers such as machine readable QR codes or barcodes are desired to be incorporated into the face or border graphics of the glass component. The laser etched graphics approach is an effective option to support on-demand display glass graphics and unique identifiers which can vary by platform or part yet still take advantage of a common display glass blank for reduced inventory costs.



## Laser Marked Graphics On-Demand Supports:

- Use of Lower Cost Common Blanks
- Display Manufacturing with High Mix
- Template Files for On-Demand Graphics

## Unique Identifiers and QR Codes For:

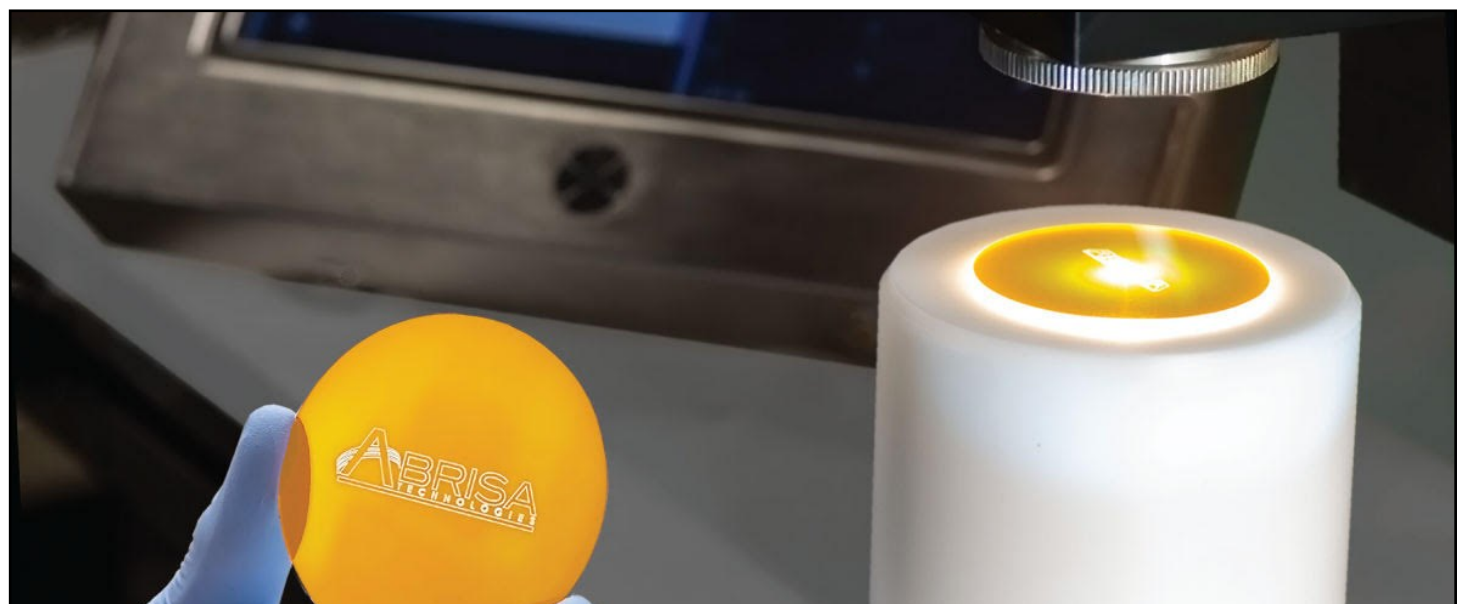
- Serial Number and LOT Tracking
- Access to User’s Manual/Video
- Website Warranty Registration



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Text



Part Number



Bar Code/Lot Number



QR Code



Branding



Symbol

| Font    | 8pt       | 12pt      | 20pt             |
|---------|-----------|-----------|------------------|
| Calibri | 124579001 | 124579001 | <b>124579001</b> |
| Arial   | 124579001 | 124579001 | <b>124579001</b> |
| Tahoma  | 124579001 | 124579001 | <b>124579001</b> |

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## Substrates to be Marked

- Materials Processed: Borofloat® or Soda Lime
- Shape of Surface to be Marked: Flat (No Marking on Radius)
- Surfaces to be Marked: Faces or Flat Edge
- Finish on Edge: Ground or Pencil Polished
- Minimum Size of Part: 3" Long Marked
- Maximum Size of Part: 36" in any Dimension
- Minimum Thickness of Glass: 3mm
- Maximum Thickness of Glass: No Limit
- Optional: Marking Through Select Non-Metallic and non IR Reflective Coatings

## Marking Location on Part

- Edge Horizontal Location: 2mm min. from the Start of any Corner or Radius
- Edge Vertical Location: Centered (Standard) Custom Upon Request
- Face Horizontal/Vertical Location: Min. 2" from any Edge or Corner

## Graphical Options

- Available Fonts: Arial, Tahoma or Calibri
- Minimum Font Size: 8 Point - 2.8mm High, (0.11") High
- Maximum Font Size: 20 Point - 7.1mm High, (0.28") High
- Standard Font Size: 12 Point, Text Character Limited
- Character String "may be" Limited by Font Size or Marking Surface
- Ablation Depth: Nominal 0.003" - 0.004" Typical
- Other Marking Ablation Depths may be Possible - Consult Factory
- Other Logo, Barcode, Patterning Upon Special Request

## 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
  - 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