



ABRISA Technologies

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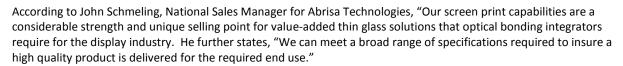
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Abrisa Technologies Provides Custom Screen Printing for Ultra-thin Glass on Touch Panels and Displays

Santa Paula, CA – Abrisa Technologies can provide custom screen printing on ultra-thin High Ion-Exchange (HIE) glass for touch panel and display applications, meeting a variety of unique requirements required by optical bonding manufacturers. In fact, Abrisa Technologies can supply the rugged, chemically strengthened HIE glass in thicknesses of 0.5 mm up to 2.0 mm for the following applications:

- Liquid crystal, flat panel, plasma, and touch panel displays
- Heated and anti-static windows
- Transparent EMF, EMI EMC, RFI, and HF shielded glass
- Instrumentation
- Electronic displays
- GPS systems
- Outdoor displays
- Heater panels



- Part-to-part consistency (registration, print thickness and resolution)
- Edge printing to within ±0.010" tolerance
- Step printing to create offset layered print
- Extremely good line definition, tight tolerance up to ±0.005"
- Depending upon artwork, feature-to-feature registration is exact to print; or within a tolerance up to ±0.004"
- Opacity of print is dictated by color and print thickness in addition to ink type (epoxy or frit). Typically, black would have an optical density between 2.5 to 3.5 or greater

All screen printing is performed at Abrisa Technologies on either a semi-automatic or automated printer in a class 1,000 or 10,000 cleanroom. The platform selected is dependent upon the particular specification requirement. Inks are available in multiple colors, including metallics and range from low temperature epoxies to high temperature frits.



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Page 2 - Screen Printing

Large format screen printing is available on substrate sizes as large as $72^{\prime\prime}$ x $54^{\prime\prime}$ (1828 mm x 1371 mm) while the minimum size for screen printing is $0.3^{\prime\prime}$ x $0.3^{\prime\prime}$ (7.6mm 7.6 mm).

Low Temperature Epoxy Polyester Ink:

- Resolution can print as fine as 0.127 mm (0.005")
- Thickness single pass (10 μm to 12 μm) & double pass (25 μm to 60 μm)

High Temperature Frit Ink - more durable and scratch resistant:

- Resolution can print as fine as 0.3 mm (0.012")
- Thickness <0.051 mm (0.002") single pass (35 μm to 60 μm)

In addition to providing HIE thin glass and screen printing, Abrisa Technologies can also provide other value-added custom glass fabrication services and coatings in order to provide a "plug and play" solution for optical bonders such as:

- Custom Edge Work
- Cutting & Opposed Drilling of the HIE Substrate
- Application of Indium Tin Oxide (ITO) and Index-Matched (IMITO) Coatings
- Anti-Reflective (AR), Conductive AR, IR Blockers & UV Coatings
- Bus Bars

According to Susan Hirst, General Manager at Abrisa Technologies, "Our goal is to provide optical bonders with a total solution. We want to provide the chemically strengthened HIE thin glass, we want to fabricate it by cutting, screen printing, edging, and/or drilling it, and... we want to provide the optical coating(s) such as ITO, IMITO AR, UV or IR." She further states, "We want to be a high quality, one-stop precision manufacturer that optical bonding manufacturers can rely upon for a custom product that meets all of their requirements."

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