

Highest-Advantaged, Premium Glass for High-Performance Displays

Corning® Lotus™ NXT Glass is our highest-advantaged glass, specially formulated for high-temperature processing. It is designed to withstand high-temperature processing requirements with exceptional dimensional stability, resulting in heightened resolutions, more energy-efficient displays, and better yields. Lotus™ NXT Glass features a High Young's Modulus, High UV transmission, and our highest annealing point.

Product & Material Information

Corning® Lotus™ NXT Glass is produced to the following type specifications:

| Product Specifications | |
|------------------------|--|
| Maximum Size | Gen 10 Substrate |
| Major Thicknesses | 0.3 mm, 0.4 mm, 0.5 mm, 0.6 mm, 0.7 mm |
| Thickness Tolerance | ± 0.02 mm |
| Thickness Ranges | ≤ 9µm (150mm Moving Window) |
| Edges | R-Beveled |
| Corner Cuts | 1.5 ± 1.0 mm |
| Orientation Corner(s) | Various |
| Squareness | ± 0.3mm |
| Sheet Warp | ≤ 0.20 mm |
| Waviness | Cut off: 0.8-8 mm ≤ 0.06 µm |
| | Cut off: 0.8-25 mm ≤ 0.33 µm |

| Substrate Inspection & Packaging | |
|----------------------------------|---|
| Scratch & Stain | Pattern Surface <i>None visible using 5K lux or 10K lux</i> |
| | Back Surface <i>1.5K or 5K Limit Sample using 1.5K lux</i> |
| Inclusions | ≤ 0.1 mm |
| Edge Chips | ≤ 1.0 mm |
| Edge Cracks | None visible using 1.5K lux |
| Packaging | Polypropylene Slotted Cases (= < 730 x 920mm) |
| | Corning® DensePak® (products larger than 730 x 920mm) |
| Quality Area | Scratch, stain and inclusion fault criteria apply to all except a border area on each substrate which has a width of 10 mm. |

| Material Information | | |
|-----------------------|--|----------------------------|
| Glass Type | Alkaline Earth Boro-Aluminosilicate | |
| Forms Available | Fusion Drawn Sheet | |
| Principle Uses | Substrates for High-Performance Displays | |
| Mechanical Properties | Density (20°C) | 2.59 g/cm ³ |
| | Young's Modulus | 83 GPa |
| | Shear Modulus | 34 GPa |
| | Poisson's Ratio | 0.23 |
| Thermal Expansion | Coefficient of Thermal Expansion (0 - 300°C) | 35 x 10 ⁻⁷ / °C |
| Viscosity | Softening Point (10 ^{7.6} poises) | 1043°C |
| | Annealing Point (10 ¹³ poises) | 806°C |
| | Strain Point (10 ^{14.5} poises) | 752°C |
| Electrical Properties | Log ₁₀ Volume Resistivity | at 25°C 25.7 ohm-cm |
| | | at 250°C 14.3 ohm-cm |
| | | at 500°C 9.4 ohm-cm |
| | Dielectric Constant (20°C, 1kHz) | 6.17 |
| | Loss Tangent (20°C, 1kHz) | 0.15% |

| | | |
|--------------------|-----------------------------------|-------------------------------------|
| Optical Properties | Refractive Index (at 589.3nm) | 1.526 |
| | Dispersion Constant | 61.7 |
| | Birefringence Constant | 283 (nm/cm) / (kg/mm ²) |
| | Transmittance (from 400 to 800nm) | >90% |

| Visual Inspection | | | | | |
|-------------------|--|--------------|------------|----------|----------|
| | Pattern Surface | Back Surface | Inclusions | Chips | Cracks |
| Environment | Darkened Clean Room | | | | |
| Light Source | Halogen (10K lux), Halogen (5K lux), or Fluorescent (1.5K lux) | | | | |
| Brightness | 5K or 10K lux | 1.5K lux | 1.5K lux | 1.5K lux | 1.5K lux |
| Method | Automated | | | | |

| Dimensional Measurement | | | | | | | | | | |
|-------------------------|------|-----------|---------|------------|--------------------|------------|------|----------|----------------------|---|
| | Size | Thickness | Chamfer | Corner Cut | Orientation Corner | Squareness | Warp | Waviness | Compaction Variation | |
| Laser Gauge | X | X | | | | X | | | | |
| Calipers | X | | | | | | | | | |
| Micrometer | | X | | | | | | | | |
| Scale Loupe | | | X | X | X | | | | | |
| Squareness Gauge | | | | | | X | | | | |
| Warp Gauge | | | | | | | X | | | |
| Prolifometer | | | | | | | | X | | |
| Compaction Gauge | | | | | | | | | | X |

| Chemical Durability | | | |
|---|--------|------|-----------------------------------|
| <i>Chemical durability is measured via weight loss per surface area after immersion. Values are highly dependent upon actual testing conditions. Unless otherwise noted, concentrations refer to weight percent</i> | | | |
| Reagents | Time | Temp | Weight Loss (mg/cm ²) |
| HCl - 5% | 24 hrs | 95°C | 0.04 |
| HNO ₃ - 1M | 24 hrs | 95°C | 0.03 |
| HF - 10% | 20 min | 20°C | 5.81 |
| 110BHF | 5 min | 30°C | 0.34 |
| 1HF:10HNO ₃ | 3 min | 20°C | 1.67 |
| 1HF:100HNO ₃ | 3 min | 20°C | 0.17 |
| DI H ₂ O | 24 hrs | 95°C | 0.00 |
| Na ₂ CO ₃ - 0.02N | 6 hrs | 95°C | 0.10 |
| NaOH - 5% | 6 hrs | 95°C | 1.46 |

| Thermal Conductivity | | | |
|---|----------------------------------|-----------------------|------------------------|
| <i>Thermal conductivity is a calculated value, and is equal to the product of the thermal diffusivity multiplied by specific heat multiplied by density of the glass.</i> | | | |
| Temp (°C) | Diffusivity (cm ² /s) | Specific Heat(J/g-°K) | Conductivity (W/cm-°K) |
| 23 | 0.0061 | 0.759 | 0.0116 |
| 100 | 0.0060 | 0.820 | 0.0130 |
| 200 | 0.0057 | 0.903 | 0.0137 |
| 300 | 0.0057 | 0.965 | 0.0150 |
| 400 | 0.0056 | 1.010 | 0.0159 |
| 500 | 0.0056 | 1.044 | 0.0159 |