



Corning® Eagle XG® Glass Wafers

Material Description

Corning® EAGLE XG® delivers dimensional stability and exceptionally clean, smooth, flat surfaces. The Alkaline earth boro-aluminosilicate composition includes no added heavy metals, reducing the environmental impact of manufacturing. It also features exceptional thinness, helping to completely avoid the potential environmental and health hazards associated with panel thinning.

Wafer Options

Coresix produces Eagle XG® wafers to all SEMI Standards including dimensional, flat and notch specifications. In addition, we offer custom specifications designed to your unique needs including, alignment marks, holes, pockets, edge profile, thickness, flatness, surface quality, cleanliness or any other details critical to your application.

Wafer Specifications

| Attribute | Standard | Best |
|---------------------------|-------------------------------------|----------------------|
| Diameter | 50.8, 76.2, 100, 150, 200, 300, 450 | Custom Diameters |
| Diameter Tolerance | +/- 200µm | +/- 50 µm |
| Thickness | .7, 1.1, 1.75, 2.25, 2.75, 3.3 | Custom .45mm - 1.1mm |
| Thickness Tolerance | +/- 5% | +/- 5 µm |
| Thickness Variation (TTV) | <20µm | <1µm |
| Scratch and Dig | 60/40 | 5/2 |
| Roughness (RMS) | <7Å | <3Å |
| Warp | <400µm | <30µm |
| Flatness | λ per Inch TIR | λ/10 per Inch TIR |

Electrical Properties

| | |
|--------------------------------------|---------------------------|
| Log ₁₀ Volume Resistivity | at 250°C - 12.9 ohm-cm |
| | at 500°C - 8.8 ohm-cm |
| Dielectric Constant (20°C, 1kHz) | 6.17 |
| Loss Tangent (20°C, 1kHz) | 0.15% |

Mechanical Properties

| | |
|--|--------------|
| Density (20°C) | 2.38 g/cc |
| Young's Modulus | 73.6 GPa |
| Shear Modulus | 30.1 GPa |
| Poisson's Ratio | 0.23 |
| Vickers Hardness (200gm load, 25 sec dwell) | 640 |

Thermal Properties

Thermal Expansion

| | |
|-------------------|--|
| (0-300°C) | $31.7 \times 10^{-7} / ^\circ\text{C}$ |
| Room Temp | $35.5 \times 10^{-7} / ^\circ\text{C}$ |
| To Settling Point | (25 - 675°C) |

Thermal Conductivity

| Temp (°C) | Specific Heat (J/g-K) | Thermal Diffusivity (cm ² /sec) | Thermal Conductivity (W/cm-K) |
|--------------|-----------------------------|--|-------------------------------------|
| 23 | 0.768 | 0.00601 | 0.0109 |
| 100 | 0.896 | 0.00572 | 0.0122 |
| 200 | 0.998 | 0.00546 | 0.0129 |
| 300 | 1.067 | 0.00530 | 0.0134 |
| 400 | 1.110 | 0.00522 | 0.0137 |
| 500 | 1.154 | 0.00518 | 0.0142 |

Optical Properties

| Optical Wavelength | Refractive Index |
|--------------------|------------------|
| 435.8 nm | 1.5198 |
| 467.8 nm | 1.5169 |
| 480 nm | 1.5160 |
| 508.6 nm | 1.5141 |
| 546.1 nm | 1.5119 |
| 589.3 nm | 1.5099 |
| 643.8 nm | 1.5078 |

