

# TOLERANCE CHART

**Materials:** Ohara, Corning, Schott, Heraeus

**Diameter Range:** 5-200mm

**Geometric Types:** Aspheres, Spherical Lenses, Windows, Wedges, Prisms, Cylinders, Freeforms

Attribute	Standard	Precision	High Precision
Glass Material ( $n_d, v_d$ )	$\pm 0.001, \pm .8\%$	$\pm 0.0005, \pm .5\%$	Design for melt
Diameter (mm)	$\pm 0.1$	$\pm 0.025$	$\pm 0.015$
Center Thickness (mm)	$\pm 0.1$	$\pm 0.050$	$\pm 0.025$
Sag (mm)	$\pm 0.050$	$\pm 0.025$	$\pm 0.010$
Clear Aperture	80%	90%	95%
Radius (larger of two)	$\pm 0.2\%$ or 5 fr	$\pm 0.1\%$ or 3 fr	$\pm 0.025$ or 1 fr
Irregularity-Interferometer (waves, PV)	1	0.5	0.1
Irregularity-Profilometer (microns.PV)	$\pm 1$	$\pm 0.5$	$\pm 0.1$
Wedge Lens (ETD, mm)	0.050	0.010	0.005
Scratch Dig	60-40 to 80-50	40-20	10-5 to 20-10
Surface Roughness ( $\text{\AA}$ RMS)	50	20	10