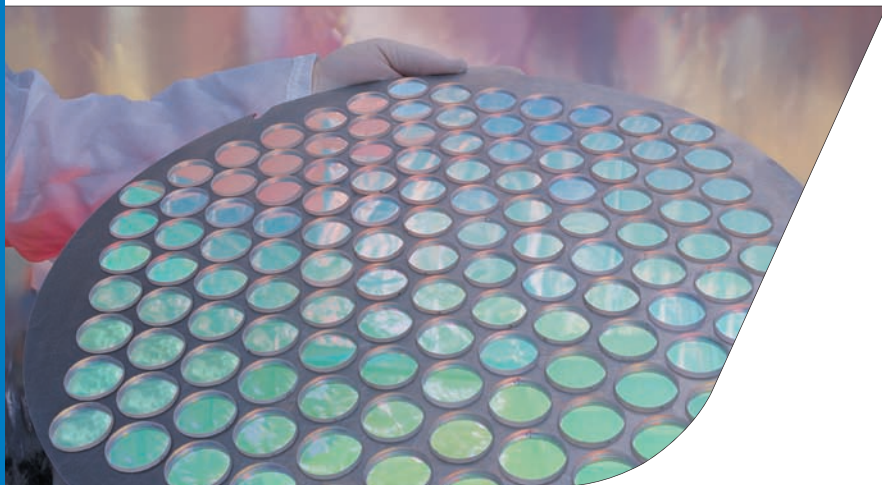


# Optics | MIRRORS, BEAMSPLITTERS AND PLATE POLARIZERS

Surface Tolerances	Precision	Laser Grade	Manufacturing Limit
Surface quality (scratch-dig)	40-20	10-5	5-2
Surface roughness (Å, RMS)	20	5	1
Flat irregularity (waves, P-V @ 633 nm)	$\lambda/2$	$\lambda/10$	$\lambda/25$
Dimensional Tolerances	Commercial	Precision	Manufacturing Limit
Diameter (mm)	+0.000/-0.250	+0.000/-0.125	+0.000/-0.010
Length & Width (mm)	$\pm 0.050$	+0.000/-0.125	+0.000/-0.010
Thickness (mm)	$\pm 0.250$	$\pm 0.125$	$\pm 0.005$
Wedge	$\leq 5$ arc min	$\leq 1$ arc sec	$\leq 0.5$ arc sec
Clear aperture (%)	85	90	95
Spherical Tolerances	Commercial	Precision	Manufacturing Limit
Spherical irregularity (waves, P-V @ 633 nm)	$\lambda/2$	$\lambda/5$	$\lambda/100$
Spherical radius (fringes)	5	3	0.5
Centration (edge thickness difference, mm)	0.05	0.01	0.005



- High laser damage threshold
- Sputtered or E-Beam options
- Low absorption options
- Flat and spherical substrates available
- Manufacturing dimensions from 3 mm to 600 mm
- For materials see pgs 6-7

The general tolerance specifications above provide a guideline regarding manufacturing capabilities for uncoated optics ranging in size from 3- 600 mm. The manufacturing limits are not absolute and may vary depending on material; tighter tolerances may be possible. Part specific tolerances may vary. All specifications do not need to be from single column.