

Technologies

# CNC processing

		Standard	Precision
<b>Dimensions [ISO 10110-1]</b>			
Diameter	mm	8 - 250	4 - 250
Tolerance	mm	± 0.10	± 0.05
Center thickness	mm	2 - 60	2 - 60
Tolerance	mm	± 0.10	± 0.05
<b>Surface form [ISO 10110-1; 12]</b>		<b>geometry dependent up to</b>	
Radius of curvature – local cc	mm	15	
Clear aperture	% of Ø	95	90
Clear aperture surface slope	degree	75	50
<b>Surface form tolerances (ISO 10110-5) and Aspheric surfaces (ISO 10110-12)</b> 3/ A (B, C) RMSx < D; “lambda” = E; slope < F; slope integration length = G; spatial sampling resolution = H; see also ISO 14999-4			
Tolerance of radius of curvature	%	± 0.10	± 0.05
Sagitta deviation <sup>1</sup> – A (Power)	fringe/ µm	30 - 10 (7.5 - 2.5)	3 (0.75)
Irregularity <sup>2</sup> – B (PV)	fringe/ µm	10 - 4 (2.5 - 1)	1 (0.3)
Rotational invariant irregularity – C	fringe/ µm	4 - 1.5 (1.0 - 0.4)	0.5 (0.14)
RMS irregularity – RMSi – D	fringe/ µm	3 - 1.2 (0.75 - 0.3)	0.3 (0.09)
Slope tolerance <sup>3</sup> – F	arc sec/ mrad	180 (0.90)	40 (0.20)
<b>Centration [ISO 10110-6] 4/ σ ( L )</b>			
Edge thickness variation (defines tilt angle)	µm	25	15
Tilt angle of the aspheric surface to the second surface – σ	arc min	2.50	1
Lateral displacement of the aspheric to the edge of the lens – L	mm	0.02	0.01
Lateral displacement of the aspheric to the second surface – L	mm	0.03	0.02
<b>Surface imperfections [ISO 10110-7; 5/ N x A; L N “ x A”]</b>			
Dig – N x A <sup>1</sup>		2 x 0.40	2 x 0.10
Scratches – L N “ x A” <sup>1</sup>		L2 x 0.10	L2 x 0.06
MIL – Scratch / Dig		40 – 20	20 – 10
<b>Surface texture [ISO 10110-8]</b>			
Surface roughness – Rq	nm	3.00	1.50
<b>Measurement</b>			
Full-surface interferometric measurement		optional	

1. Depends on the diameter. Listed values are for a diameter of 50 mm. Reference wavelength λ=546.07 nm.  
 2. Often also called the PV - error of the measured surface. Means the total surface deviation corrected for Sagitta error (power).  
 3. Depends on the diameter and the surface curvature. Normal measured length of 1mm.

