



Singapore Dynamic Optonics Pte Ltd (ISO 9001:2015 certified)  
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LENSES			PRISMS		
Range From (Diameter in mm):	Ø2mm to Ø250mm		Range From ( Hypotenuse Size x Wall ):	5x5 to 50x50	
Precision Category:	Standard	High	Precision Category:	Standard	High
Surface Form (90% CA): 3/ - (A):	0.5F to 1F	0.2F to 0.5F	Surface Form (90% CA): 3/ - (A):	1(0.5) to 2(1.0)	0.5(0.1) to 1(0.3)
Surface Quality (Mil-PRF-13830B):	40-20 to 80-50	10-5 to 60-40	Surface Quality (Mil-PRF-13830B):	40-20 to 80-50	10-5 to 60-40
Surface Quality (ISO: 10110 5/ N x A):	0.04 to 0.4	0.016 to 0.16	Surface Quality (ISO: 10110 5/ N x A):	0.16 to 0.25	0.016 to 0.1
Centering Error: 4/-:	>1'	<15" - 30"	Roof edge sharpness:	1 micron sharp edge 500x microscope	
Dimension Accuracy - Center Thickness:	± 0.05mm	±0.01mm to 0.05mm	Dimension Tolerance:	± 0.1mm	± 0.05mm
Dimension Accuracy - Diameter Tolerance:	± 0.05mm	±0.01mm to 0.05mm	Total Beam Deviation:	1' to 3'	15" to 30"
Dimension Accuracy - Sag Height Tolerance:	± 0.05mm	±0.01mm to 0.05mm	Pyramidal Error:	1' to 3'	15" to 30"
Radius Range - R1.2mm to infinity:	Testplate or Interferometer		Transmitted Wavefront Deformation:	0.6F to 1F	0.2F to 0.5F
Lens Profile - Roughness:	3-5 Å to 10-15 Å		Roughness:	3-5 Å to 10-15 Å	
CYLINDRICAL LENSES			Angular Accuracy - Roof angle:	5" to 3'	1" to 30"
Diameter Circular Rod:	< Ø100		Angular Accuracy - 45° & 90°:	30" to 3'	3" to 30"
Diameter Rectangular Rod:	< 100 x 100		Angular Accuracy - 22.5°, 30° & 60°:	1' to 3'	5" to 30"
Center Thickness with Tolerance:	>1.3mm ±0.02mm		Random Angle:	1' to 3'	15" to 30"
Sag Height with Tolerance:	>2mm ±0.02mm				
Radius Range:	2.1 to 350mm				
Wedges and Parallelism:	1'				
Others (Surface Form/Quality):	3(0.5), 3x0.1				
WINDOWS / FILTERS/ FLAT MIRRORS					
Range From (In Diameter Or Diagonal):	2.0mm - 200mm				
Precision Category:	Standard	High			
Surface Form (90% CA): 3/ - (A):	1(0.5) to 2(1.0)	0.5(0.1) to 1(0.5)			
Transmitted Wavefront Deformation:	0.6F to 1F	0.2F to 0.5F			
Parallelism:	1'	1"			
Total Beam Deviation:	1'	1"			
Dimension Tolerance:	±0.1	±0.03			
Surface Quality (Mil-PRF-13830B):	40-20 to 80-50	10-5 to 60-40			
Surface Quality (ISO: 10110 5/ N x A):	0.16 to 0.4	0.016 to 0.16			
BONDING					
Doublet, Triplet	Beam Deviation +/-15" TWD 0.4F				
Beam Splitter	Beam Deviation +/-15" TWD 0.4F				
Porro-Abbe Prism (w/ image rotation control)	Image rotation +/-10'				
Trichroic (Phillip) prism assembly (RGB)	Internal "X" alignment<0.005mm,180°±10"				
X- Cube (RGB)	Internal "X" alignment<0.005mm,180°±10"				
TIR Air Gap Prism	Air gap 0.005 +/-0.002				
OTHERS					
Profiling, Truncating:	Single components or bonded doublets/triplets				
Edge Blackening:	Black Epoxy paint (proprietary)				
Sub Assembly (Opto-Mechanical):	Eyepiece, Binocular, Magnifier, Scopes: - On and off axis MTF testing, pressure-tightness test, tightening force controlled at ≤50Nm, Purity 99.99% nitrogen filled. - Image quality(coma, astigmatism,chromatic correction, vignetting, reflection, image obliquenes, eccentricity - Rotation torque testing, Optical axis eccentricity testing, Transmission and reflection eccentricity testing, Aberration testing (spherical aberration, astigmatism and coma), TWD of lens testing according to ISO 10110-14				
Mechanical Parts:	Black Anodised - Local and Malaysia sourcing				
Environmental / Testing:	Adhesion, Abrasion, High-Low Temperature, Humidity, Salt Spray, Salt Fog				
Coating Spectral:	Transmission or Reflection, @180nm to 3300nm, at AOI angles 8° to 65° (up to 90°, depend on part geometry)				
General:	ISO 9001: 2015, ANSI/ASME Y14.5, ISO-10110, MIL-C-48497A, MIL-STD-810, MIL-PRF-13830B, MIL-C-675C				
Capability Matrix for ASPHERES					
Material:	Optical Glass / Chalcogenide		Optical Glasses		
Type:	Molded (Imaging)		Molded (HP)		
Diameter:	Ø3mm to Ø20mm	Ø20mm to Ø40mm	e.g. 25mm	Ø10-15mm	Ø150-200mm
Center Thickness:	± 0.01mm	± 0.03mm	-	-	-
Diameter Tolerance:	± 0.01mm	± 0.03mm	-	-	-
*Not for Molded - Slope Error (per mm):	-	-	-	0.4-0.6µm	0.8-1.0µm
Surface Figure PV:	≤ 1µm	≤ 2µm	0.25µm	1-2µm	0.8-1.5µm
Surface Roughness Accuracy PV:	≤ 0.5µm	≤ 1µm	0.6µm	-	-
Centering Error:	60"	60"	30"	30"	120"
Coaxiality Surface Decenter:	≤ 5µm	≤ 5µm	3µm	-	-
Surface Quality:	40-20	60-40	40-20	40-20	80-50
AR Coating:	AR <0.5%	AR <0.5%	AR <0.5%	-	-
Refractive Index (Nd) Tolerance:	± 0.0008	± 0.0008	± 0.0005	-	-
Abbe Number (Vd) Tolerance:	± 0.8%	± 0.8%	0.50%	-	-
Surface Defects:	5/ A x 0.016 conditionally		-	-	-
Metrology (Measuring equipment)					
Digimatic Micrometer: For diameter measuring, accuracy up to 0.001mm					
Digimatic Indicator: For thickness and height measuring, accuracy up to 0.001mm					
Digimatic Caliper: For length and height measuring, accuracy up to 0.01mm					
Centering Scope: For centering error, beam deviation checking. Accuracy up to 15 seconds					
Autocollimator: For all angular measuring, beam deviation. Accuracy up to 5 seconds					
Zygo Interferometer: Surface form, TWD, angular (45 & 90) and Parallelism measuring. Surface Accuracy form 0.1F and angular up to 0.01 seconds					