



# optoSiC+ XY20G

## *ultra-high performance 20mm aperture generic scanning mirrors*

optoSiC® XY20G generic scanning mirrors are designed using optoSiC GmbH’s protected spine and rib structure as a one-size-fits-all approach for either left- or right-handed laser scanning systems using a symmetrical Y (or second) mirror at <20.0mm aperture.

These mirrors are manufactured from optoSiC+ grade Silicon Carbide to give optimum stiffness, dynamic flatness and high resonant frequencies under high torque loadings while offering very low Moment of Inertia for all scanning applications where processing speed and performance is paramount.

optoSiC® XY20G generic scanning mirrors are available polished at either 1/4, or 1/8λ PV @632.8nm flatness\* and either coated with UltraMAX R for CO<sub>2</sub>, opto-1064 R for 1064nm Nd:YAG, opto-HR Visible 390-710nm, opto-532 R for 532nm, opto-355 R for 355nm or Dualband opto-1064/532 R for 1064/532nm.

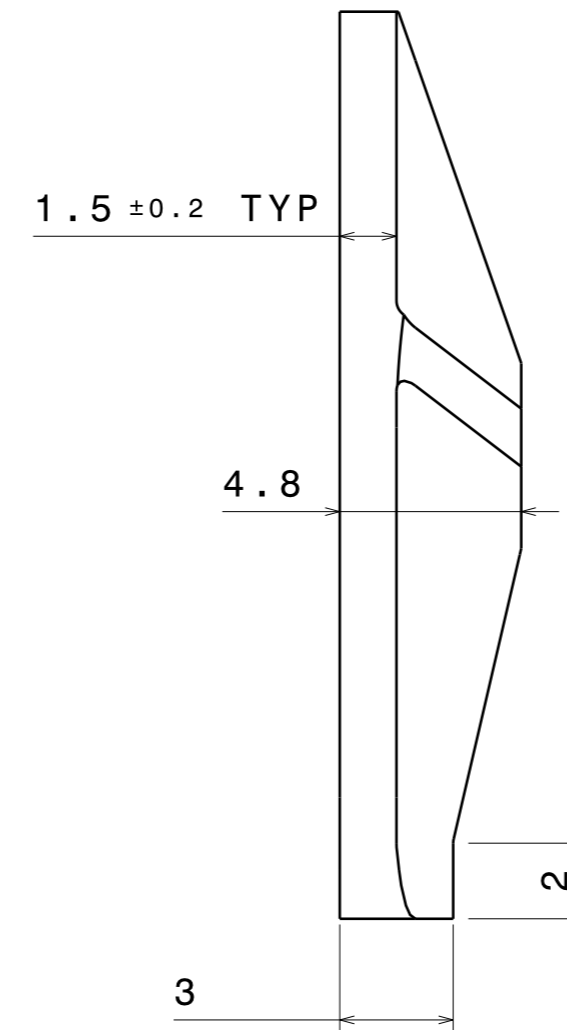
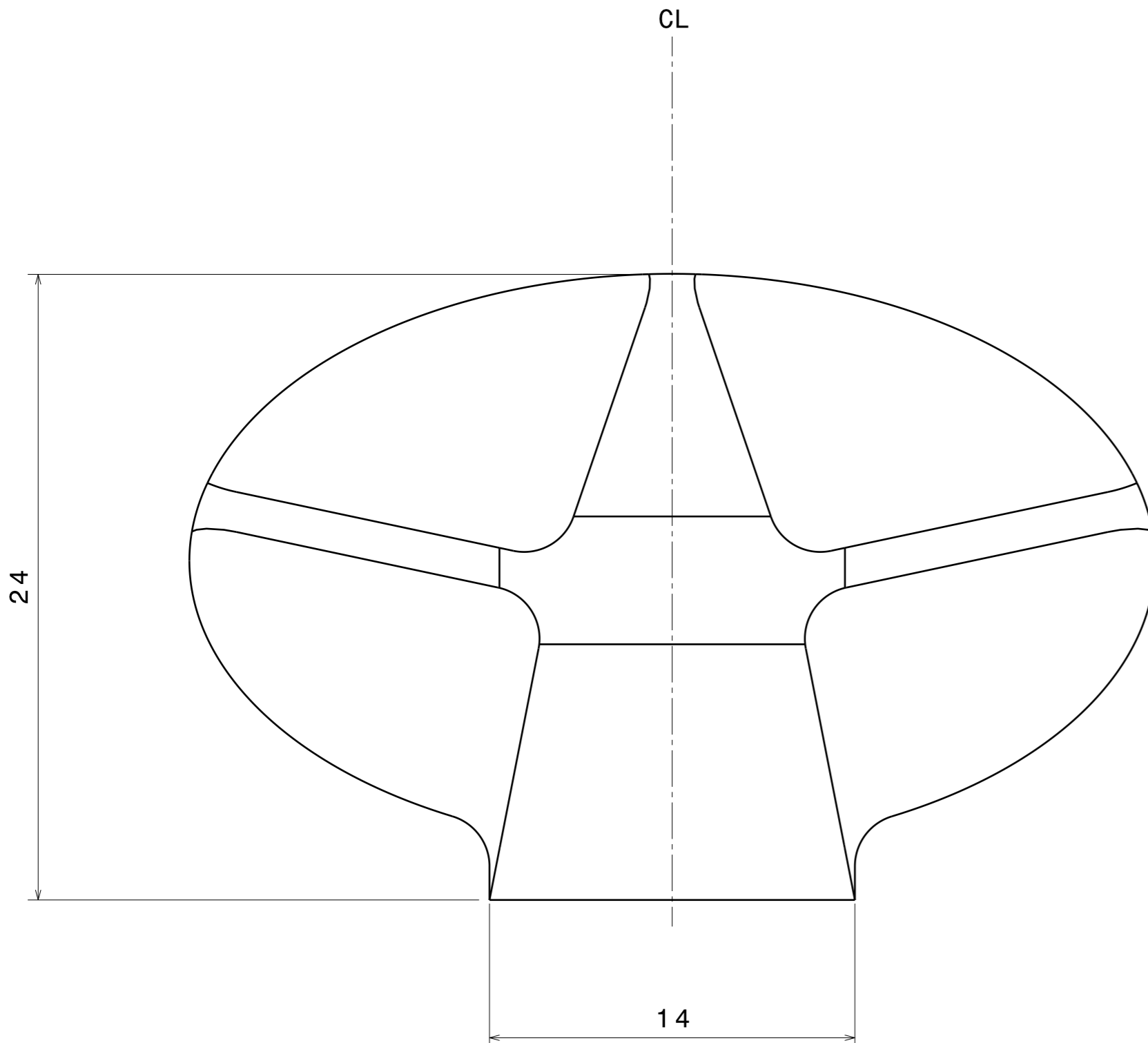
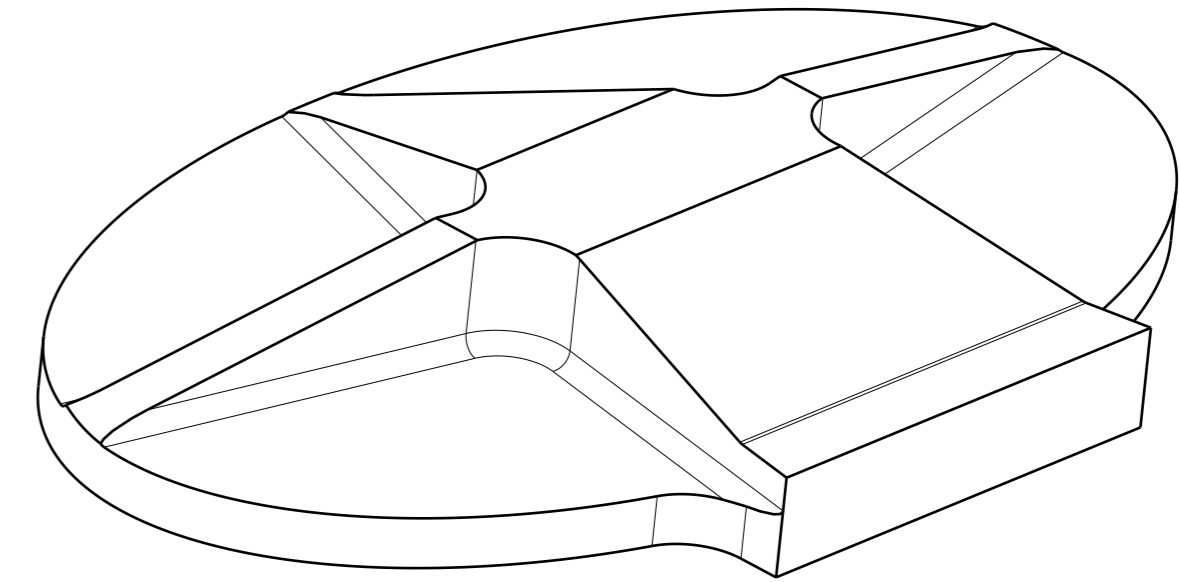
### optoSiC+ XY20G Generic Scanning Mirror Specifications:

Density	>3.16g/cm <sup>3</sup>		
Flexural Strength	510 Mpa (DIN EN 843-1)		
Compressive Strength	2200 MPa		
Young’s Modulus [E]	420 Gpa (DIN EN 843-2)		
Poisson’s Ratio	0.17 n		
Surface Roughness	Ra. ≥0.3273nm (pre-coated)		
CTE	4.1 α [10 <sup>-6</sup> /°K] 20-500°C (DIN EN 821-1)		
	X	Y	
Mass (g)**	5.022	6.755	
Moment of Inertia (g*cm.2)**	3.097	3.097	
Resonant Frequency (kHz)**	12.987	5.049	(1 <sup>st</sup> bending)
	18.938	12.745	(1 <sup>st</sup> twisting)
Dynamic Flatness (λ)**	<1/43	<1/21	
	(at λ = 632.8nm per 10,000 rad/sec <sup>2</sup> )		
Central Angle of Incidence (°)	45	37.5	
X-Y Separation	24.0mm		
X-Tilt	-15°		
Mechanical Scan Angle	±10°		
Aperture	20.0mm full beam (collimated)		

\*Over 90% of the reflective surface from the centre point

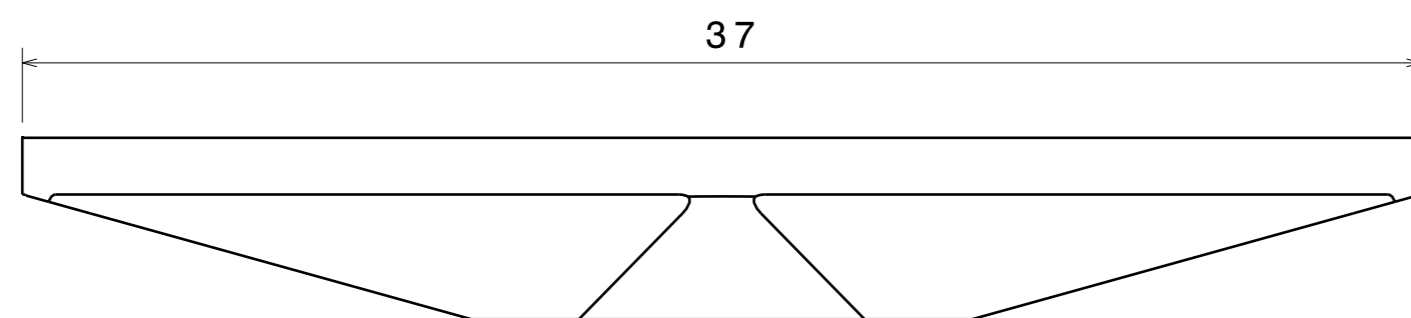
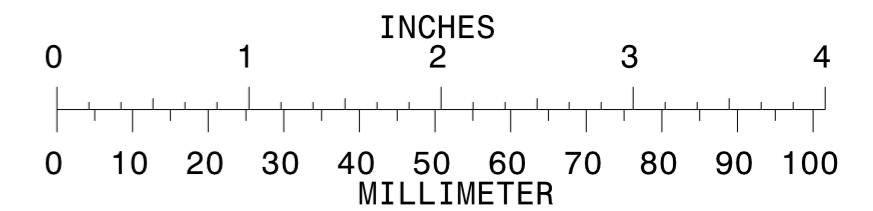
\*\*Modelled using CATIA, Patran and ANSYS softwares

# ISOMETRIC VIEW



2. TOLERANCES NOT STATED:  
 LENGTHS <50mm = ±0.2mm  
 LENGTHS >50mm AND <75mm = ±0.3mm  
 HOLE DIAMETERS <25mm = ±0.2mm

1. PART SYMMETRICAL AROUND CENTRE LINE



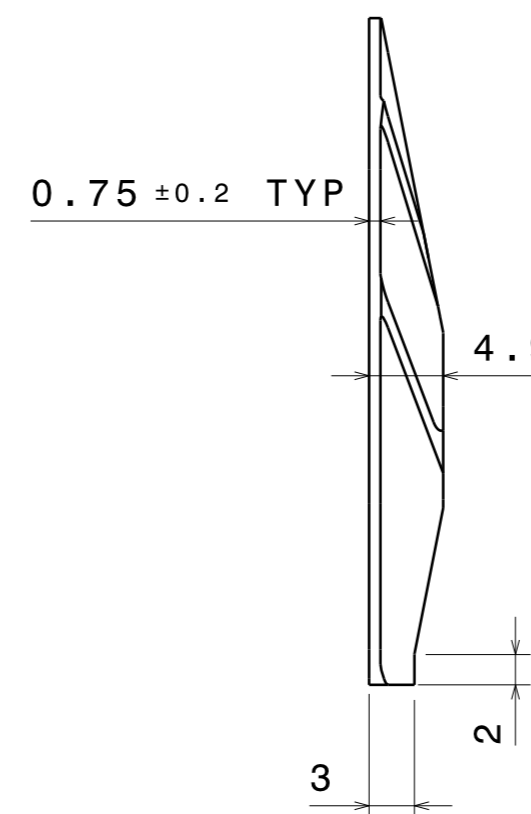
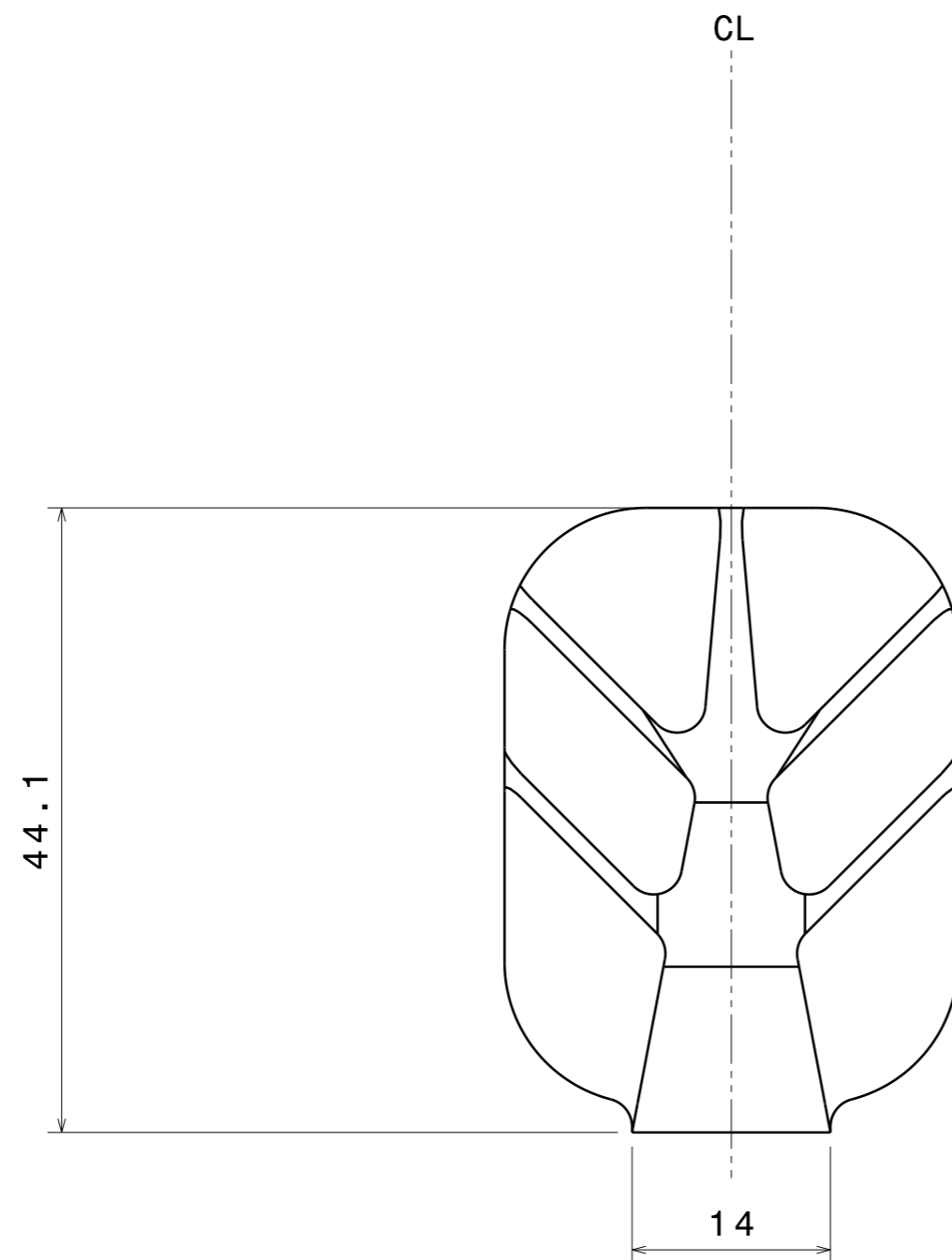
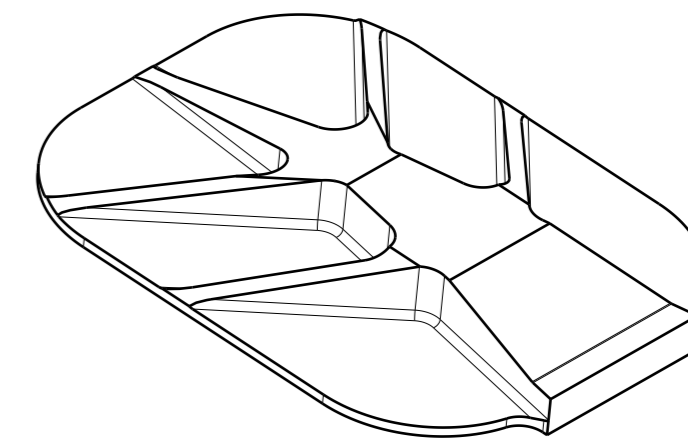
COMPUTER PRODUCED DRAWING USING CATIA V5. NO MANUAL ALTERATION

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LIMITS NOT STATED: ISO 8015		SURFACE FINISH: ✓		FIRST ANGLE PROJECTION 	
	NAME	DATE	MATERIAL NUMBER: optoSiC+		
	DRAWN	ASPINDLE	10.08.2008		
	STRESS	RATCLIFFE	10.08.2008	SCALE: 5:1	SIZE A2
	APPROVED	HASTINGS	14.08.2008	SHEET: 01 / 01	

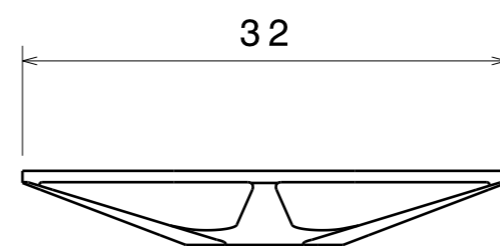
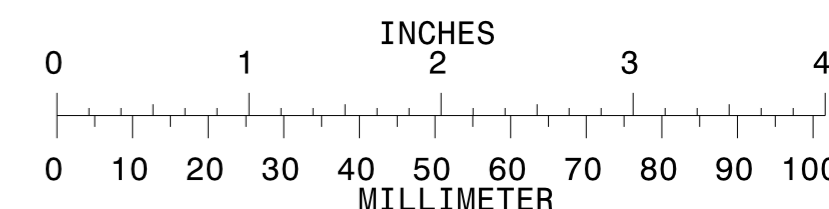
TITLE <b>MIRROR X20</b>			DRAWING NUMBER X20G-001-080814		
<b>A</b>					
ISSUE					

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LIMITS NOT STATED: ISO 8015		SURFACE FINISH: ✓		FIRST ANGLE PROJECTION 	
DRAWN		NAME ASPINDLE	DATE 10.08.2008	MATERIAL NUMBER: optoSiC+	
STRESS		RATCLIFFE	10.08.2008	SCALE: 2:1	SIZE A2
APPROVED		HASTINGS	14.08.2008	SHEET: 01 / 01	

TITLE <b>MIRROR Y20</b>		DRAWING NUMBER Y20G-001-080814	
<b>A</b>		ISSUE	