Technical Datasheet 510

optoSiC+ XY10G

ultra-high performance 10mm aperture generic scanning mirrors

optoSiC® XY10G 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 <10.0mm aperture.

These mirrors are manufactured from the optoSiC+ grade of 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 is paramount.

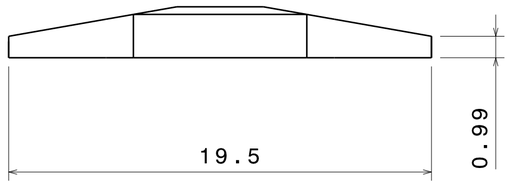
optoSiC® XY10G generic scanning mirrors are available polished at either 1/4, or 1/8λ PV @632.8nm flatness* and either coated with UltraMAX R for CO_2, opto-1064 R for 1064nm Nd:YAG, opto-HR Visible 390-710nm, opto-532 R for 532nm, opto-355 R for 355nm or Dualband opto-1064/532 R for 1064/532nm.

---

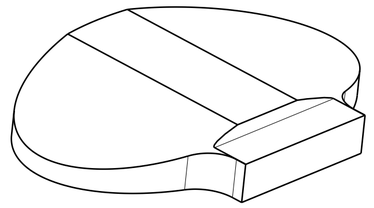
optoSiC+ XY10G Generic Scanning Mirror Specifications:

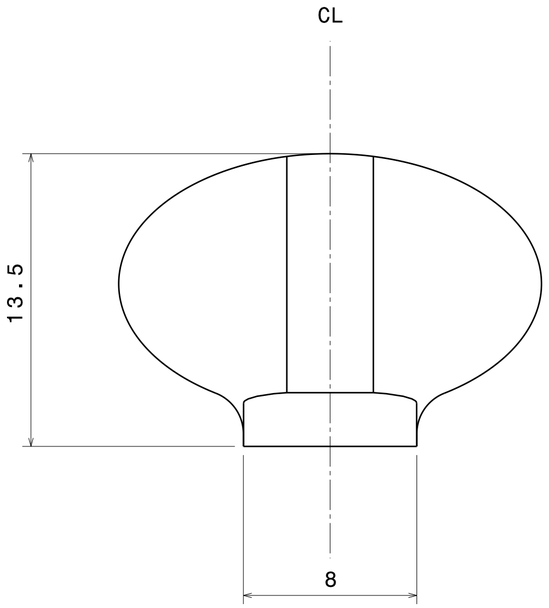
Density	>3.16g/cm^3		
Flexural Strength	510 Mpa (DIN EN 843-1)		
Compressive Strength	2200 MPa		
Young's Modulus [E]	420 Gpa (DIN EN 843-2)		
Poisson's Ratio	0.17 n		
Surface Roughness	Ra. ≥0.3273nm (pre-coated)		
CTE	4.1 α [10^{-6}/°K] 20-500°C (DIN EN 821-1)		
	X	Y	
Mass (g)*	1.194	1.653	
Moment of Inertia (g*cm.2)**	0.222	0.222	
Resonant Frequency (kHz)**	26.546	9.628	*(1st bending)*
	47.261	25.702	*(1st twisting)*
Dynamic Flatness (λ)**	<1/51	<1/18	
	(at λ = 632.8nm per 100,000 rad/sec^2)		
Central Angle of Incidence (°)	45	37.5	
X-Y Separation	13.0mm		
X-Tilt	-15°		
Mechanical Scan Angle	±10°		
Aperture	10.0mm full beam (collimated)		

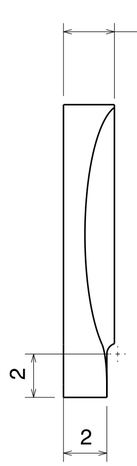
**Over 90% of the reflective surface from the centre point* ***Modelled using CATIA, Patran and ANSYS softwares*



ISOMETRIC VIEW

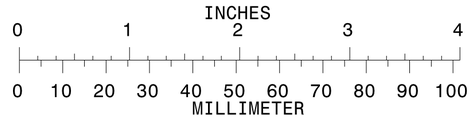






2. TOLERANCES NOT STATED:
   LENGTHS <50mm = ±0.2mm
   LENGTHS >50mm AND <75mm = ±0.3mm

1. PART SYMMETRICAL AROUND CENTRE LINE



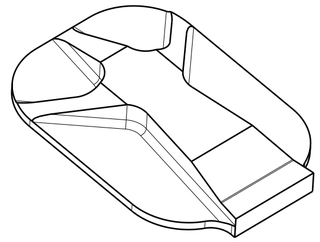
COMPUTER PRODUCED DRAWING USING CATIA V5. NO MANUAL ALTERATION

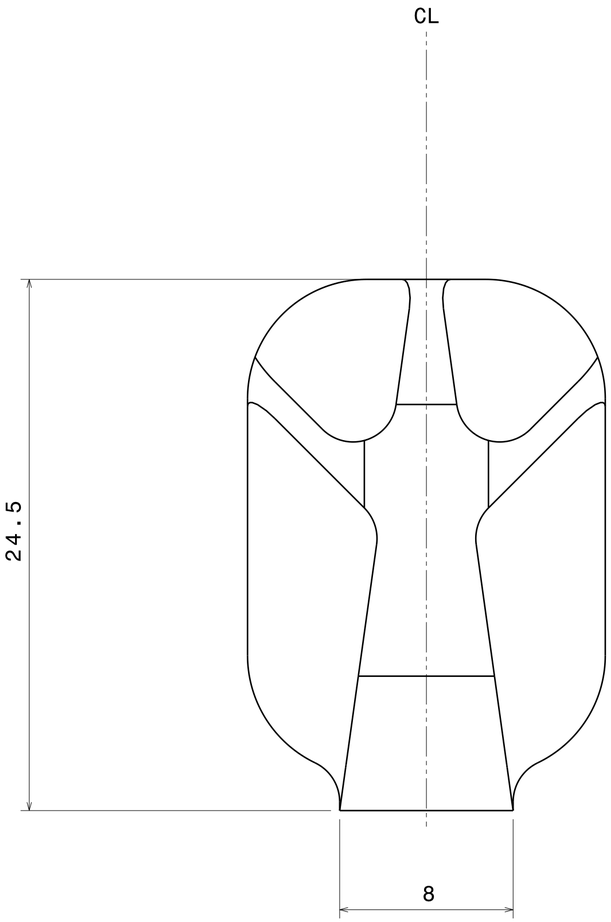
This document and all information contained herein is the sole property of optoSiC GmbH. No intellectual property rights are granted by the delivery of this document or the disclosure of its content. This document shall not be reproduced or disclosed to a third party without the express written consent of optoSiC GmbH. This document and its content shall not be used for any purpose other than that for which it is supplied. The statements made herein do not constitute an offer. They are based on the mentioned assumptions and are expressed in good faith. Where the supporting grounds for these statements are not shown, optoSiC GmbH will be pleased to explain the basis thereof.
© optoSiC GmbH(2008) All rights reserved.Confidential and proprietary document.

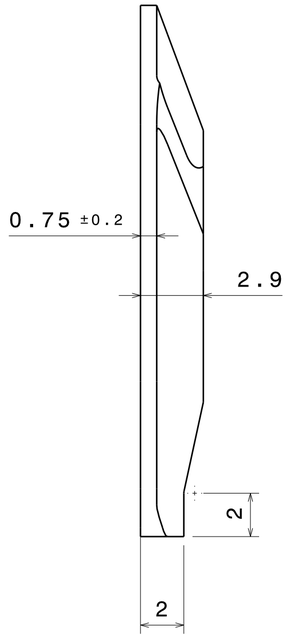
LIMITS NOT STATED: ISO 8015		SURFACE FINISH:		FIRST ANGLE PROJECTION	
		NAME	DATE	MATERIAL NUMBER:	
	DRAWN	ASPINDLE	08.09.2008	optoSiC+	
	STRESS	RATCLIFFE	08.09.2008	SCALE: 5:1	SIZE A2
	APPROVED	HASTINGS	09.09.2008	SHEET: 01 / 01	

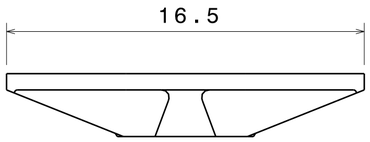
TITLE	DRAWING NUMBER	ISSUE
MIRROR X10	X10G-001-080909	A

ISOMETRIC VIEW
NOT TO SCALE



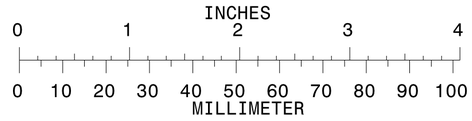






2. TOLERANCES NOT STATED:
   LENGTHS <50mm = ±0.2mm
   LENGTHS >50mm AND <75mm = ±0.3mm

1. PART SYMMETRICAL AROUND CENTRE LINE



COMPUTER PRODUCED DRAWING USING CATIA V5. NO MANUAL ALTERATION

This document and all information contained herein is the sole property of optoSiC GmbH. No intellectual property rights are granted by the delivery of this document or the disclosure of its content. This document shall not be reproduced or disclosed to a third party without the express written consent of optoSiC GmbH. This document and its content shall not be used for any purpose other than that for which it is supplied. The statements made herein do not constitute an offer. They are based on the mentioned assumptions and are expressed in good faith. Where the supporting grounds for these statements are not shown, optoSiC GmbH will be pleased to explain the basis thereof.
© optoSiC GmbH(2008) All rights reserved.Confidential and proprietary document.

LIMITS NOT STATED: ISO 8015	SURFACE FINISH: √			FIRST ANGLE PROJECTION	
		NAME	DATE	MATERIAL NUMBER:	
	DRAWN	ASPINDLE	08.09.2008	optoSiC+	
	STRESS	RATCLIFFE	08.09.2008	SCALE: 5:1	SIZE A2
	APPROVED	HASTINGS	09.09.2008	SHEET: 01 / 01	
TITLE: MIRROR Y10				DRAWING NUMBER: Y10G-001-080909	A (ISSUE)