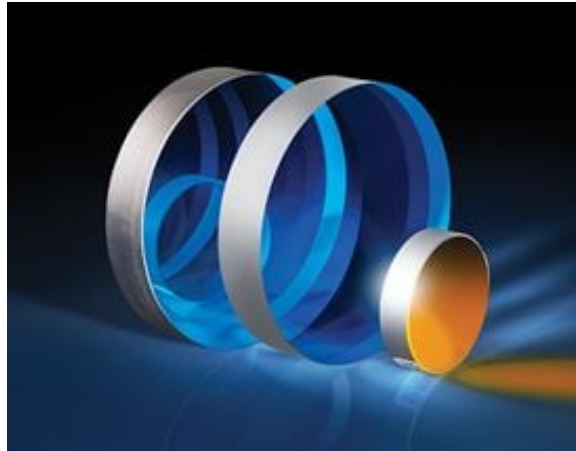


TECHSPEC® 4" Dia. Protected Aluminum, $\lambda/20$ Flat ZERODUR®

#48-118-522



TECHSPEC® Precision Optical Flat Mirrors는 간섭 계측, 이미징 시스템, 레이저 어플리케이션, 광경로 굴절 및 오토콜리메이션 용도에 사용하기 적합한 제품입니다. 모든 미러는 $\lambda/10$ 및 $\lambda/20$ 표면 평탄도를 비롯해 다양한 코팅 및 기판 옵션을 이용할 수 있습니다. 첫 번째 기판 옵션인 ZERODUR®는 노란색의 유리 세라믹 기판으로서 극히 낮은 열팽창 계수를 특징으로 하며, 온도 변화에 민감한 용도에 사용하기 적합합니다. 두 번째 기판 옵션인 Fused Silica는 광학적으로 투명한 기판으로서 뛰어난 내마모성 및 내구성을 특징으로 하기 때문에 거친 환경에서 사용하기 안성맞춤입니다.

[TECHSPEC® \$\lambda/10\$ and \$\lambda/20\$ Precision Optical Flats](#)는 테스트 및 측정 용도에 사용할 수 있습니다.

참고: 표면 평탄도 사양은 코팅 공정 이전 단계에서 측정됩니다.

General

Note:	Flatness is specified as Peak to Valley
Type:	Flat Mirror

Physical & Mechanical Properties

Diameter (mm):	101.60 +0.0/-1.02
Back Surface:	Commercial Polish
Diameter Tolerance (inches):	+0.0/-0.04
Clear Aperture CA (mm):	91.44
Thickness (mm):	19.10 ±1.5
Thickness Tolerance (mm):	±1.5

Optical Properties

Surface Flatness (P-V):	$\lambda/20$
Substrate:	ZERODUR®
Surface Quality:	60-40
Coating Specification:	R _{avg} >85% @ 400 - 700nm R _{avg} >90% @ 400 - 2000nm
Coating:	Protected Aluminum (400-2000nm)
Coating Type:	Metal
Wavelength Range (μm):	0.4 - 2
Wavelength Range (nm):	400 - 2000
Damage Threshold, Reference:	0.3 J/cm ² @ 532nm & 1064nm, 10ns



June 21, 2025

To Whom It May Concern,

This document certifies that the product stated below has been reviewed as requested by Edmund Optics:

재고 번호	제품설명
48-118-522	4" Dia. Protected Aluminum, $\lambda/20$ Flat ZERODUR®

This item is EU RoHS (2015/863/EU) compliant without the use of exemptions.

This certification means that:

- EO's suppliers have confirmed the material composition of this product.
- EO has implemented rigorous procedures to document this compliance.
- The information provided may, or may not, be based upon actual test data, or on information from our Vendors, Raw Material Suppliers or Subcontractors.



Jay Budd, Director of Corporate Compliance

June 21, 2025

Edmund Optics Inc. - 101 E Gloucester Pike, Barrington, NJ 08007 | 1-800-363-1992 | Compliance@edmundoptics.com

June 21, 2025

재고 번호	제품설명
48-118-522	4" Dia. Protected Aluminum, $\lambda/20$ Flat ZERODUR®

Edmund Optics certifies that all articles included in this shipment are in compliance with the terms and conditions of this order. The company also certifies that the articles included in this shipment are in accordance to all agreed upon specifications and quality assurance provisions. Please call 1-800-363-1992 should any questions arise from this shipment.



Jeff Harvey- EVP of Operations



June 21, 2025

To Whom It May Concern,

This document certifies that the product stated below has been reviewed as requested by Edmund Optics:

재고 번호	제품설명
48-118-522	4" Dia. Protected Aluminum, λ/20 Flat ZERODUR®

This item does not contain any of the substances listed on the Reach SVHC list as of 21 January 2025 in quantities exceeding 0.1% weight by weight.

Please note the following:

- Entry 11 of Annex V of the REACH regulation EC 1907/2006 as amended by regulation 987/2008, exempts "non-hazardous" glass components from registration.
- Items considered to be packing materials and which do not form part of, or are not required for the operation of, the product, are not considered to be within scope of this declaration.
- EO does not routinely analyze products for substances not purposely added or specified within the design specifications, drawings and assembly procedures.

This certification means that:

- EO's suppliers have confirmed the material composition of this product.
- EO has implemented rigorous procedures to document this compliance.
- The information provided may, or may not, be based upon actual test data, or on information from our Vendors, Raw Material Suppliers or Subcontractors.



Jay Budd, Director of Corporate Compliance
June 21, 2025

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NOTES:

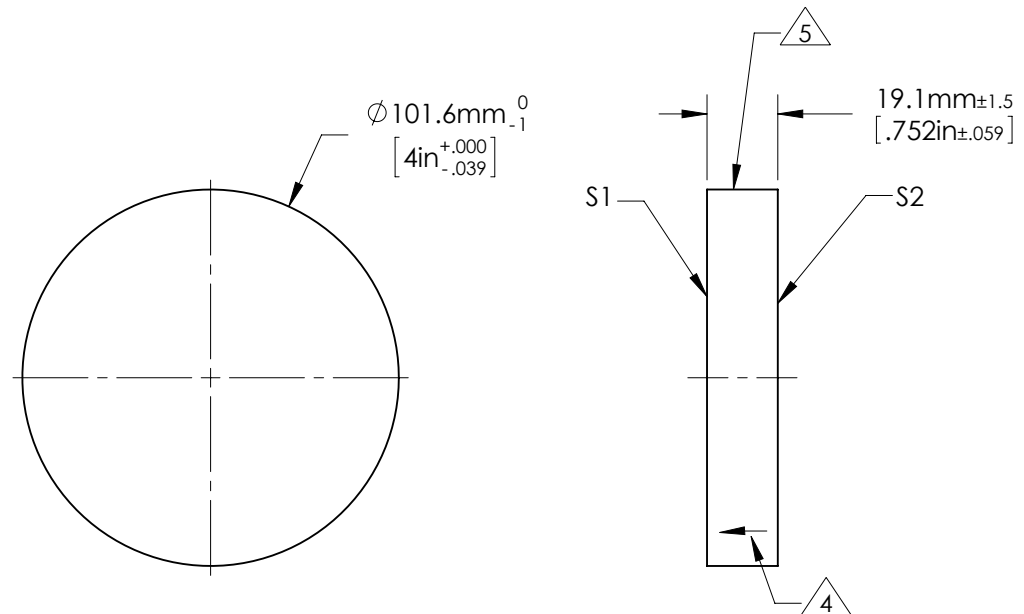
- 1. ALLOWABLE OPTICAL MATERIAL:
SCHOTT: ZERODUR 542/562
- 2. SURFACE S2 TO BE PARALLEL WITH SURFACE S1 TO < 3 ARCMIN
- 3. COATING (APPLY ACROSS COATING APERTURE)

S1: PROTECTED ALUMINUM
Ravg ≥ 85% 400-700nm @ 0° AOI


S2: NONE

4. ARROW ON EDGE POINTING TOWARDS SURFACE S1.

5. FINE GROUND SURFACE



FOR INFORMATION ONLY:
DO NOT MANUFACTURE PARTS TO THIS DRAWING

	S1	S2	EFL (AT 587.6nm)	NA	 Edmund Optics®	
SHAPE	PLANO	PLANO				
SURFACE ACCURACY AT 632.8nm	1/20 WAVE	NA			TITLE	1/20λ Optical Flat, Zerodur, 4inch Diameter PROTECTED ALUMINUM
SURFACE QUALITY	60 - 40	COMMERCIAL POLISH	BFL (AT 587.6nm)	NA	DWG NO	48118-522
CLEAR APERTURE	ϕ 91.4	ϕ 91.4				
BEVEL MAX FACE	1.0 x 45°	1.0 x 45°	ALL DIMS IN	mm		