Ø19 mm Polaris® Fixed Monolithic Mirror Mount



POLARIS-19S50/M

Specifications

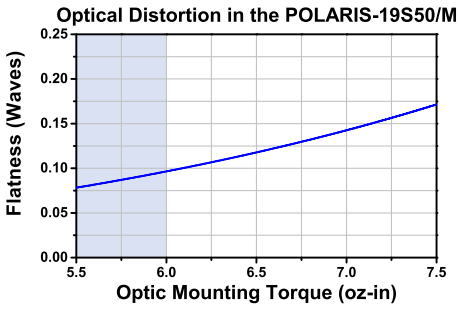
POLARIS-19S50/M	
Optic Size Accommodated	Ø19 mm
Optic Thickness (Min)	2 mm (0.08")
Beam Height[a]	50 mm (1.97")
Beam Deviation[b]	<2 µrad
Clear Aperture	Ø17.1 mm (0.68")
Recommended Optic Mounting Torque	5.5 – 6 oz-in for 6 mm Thick Optics
Vacuum Compatibility[c]	10^{-9} Torr at 25 °C with Proper Bake Out; 10^{-5} Torr at 25 °C without Bake Out Grease Vapor Pressure: 10^{-13} Torr at 20 °C, 10^{-5} Torr at 200 °C Epoxy Meets Low Outgassing Standards NASA ASTM E595 and Telcordia GR-1221
Cleaning[d]	Passivated per ASTM-967
Operating Temperature Range	-30 to 200 °C
Mounting	Bottom-Located M6 x 1.0 Tap
Alignment Pin Holes	Two Ø2 mm Alignment Pin Holes Around Mounting Tap Location (See Drawing Below)

a. Measured From the Base of the Mount to the Center of the Optic (Optic Sold Separately)
b. After a 12.5°C temperature cycle, the beam returns to within 2 µrad of its original position.
c. All POLARIS-19S50/M mounts are vacuum compatible, assembled in a clean environment, and double vacuum bagged. Contact techsupport@thorlabs.com for details.
d. Chemically Cleaned Using the AAA Passivation Method and Ultrasonically Cleaned in Isopropyl Alcohol

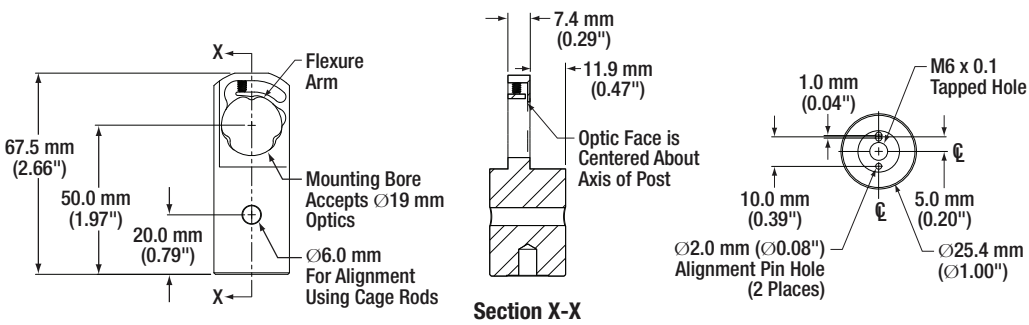
Optic Installation

The Polaris fixed mirror mount is fabricated from a single piece of 303 stainless steel because of its relatively low coefficient of thermal expansion. When mounting, we recommend using components fabricated from the same material, such as our POLARIS-CA1 Clamping Arm.

Ensure that there is no grease, dirt, or dust in the optic bore or on the optic itself. Remove any particulates with clean compressed air (CA4-US) and/or clean with acetone or methanol. The optic is installed from the back of the mount though the use of the flexure arm and setscrew combination. A torque of 5.5 – 6.0 oz-in is ideal for holding the optic while minimizing distortion on the mirror surface. Use a torque driver (TD24) to dial in the exact required torque. The blue line in the graph to the right shows the effect increasing amounts of torque have on the surface of a Ø19 mm, 6 mm thick mirror mounted in the POLARIS-19S50/M.



Drawing



The mount includes two Ø2 mm alignment pin features for setting a precise mounting location and angle. A standard DIN 7-m6 Ground Dowel Pin (Ø2.002 mm to 2.008 mm x 0.050" ± 0.005" deep) is recommended.