



High Precision Optics Series

HiPO Vacuum Viewports for Laser Applications

- Excellent optical quality: $\lambda/10$ for laser applications
- Variety of optical materials for various spectral applications
- High performance anti-reflective coating for maximum energy transfer
- Interchangeable windows for versatile use
- Designed for high vacuum and ultra-high vacuum applications



Technical Data

- Flange material stainless steel 316L
- Flange type KF, CF and ISO/nominal diameter: 25 to 63
- Max. operating temperature 150 °C permanent, 200 °C temporary
- Max. heating/cooling rate 3 K/min
- Helium leak rate $< 5.0 \cdot 10^{-10}$ mbar l/s

HiPO Series Extreme

Highest quality viewports for maximal transmission at common laser wavelengths.

- Optical quality flatness $\lambda/10$, scratch-dig 10-5, $R_{avg} < 0.5 \%$
- View diameter 20 mm

Optical material	Coating range	Laser damage threshold for 10 ns, 10 Hz		
		energy density	wavelength	beam diam.
UV fused silica	261 ... 266 nm	2 J/cm ²	266 nm	Ø0.271 mm
	350 ... 450 nm	10 J/cm ²	355 nm	Ø0.170 mm
Borosilicate	400 ... 700 nm	7.5 J/cm ²	532 nm	Ø0.491 mm
	523 ... 532 nm	10 J/cm ²	532 nm	Ø0.226 mm
	610 ... 860 nm	7.5 J/cm ²	810 nm	Ø0.133 mm
	700 ... 1100 nm	7.5 J/cm ²	810 nm	Ø0.133 mm
	1047 ... 1064 nm	10 J/cm ²	1064 nm	Ø0.459 mm
	523 ... 532 nm	5 J/cm ²	532 nm	Ø0.245 mm
	1047 ... 1064 nm	10 J/cm ²	1064 nm	Ø0.459 mm

HiPO Series Standard

Standard material with broad-band anti-reflection coating for UV – VIS applications

- Optical quality flatness $\lambda/10$, scratch-dig 20-10, $R_{avg} < 1 \%$
- View diameter 20 mm/45 mm

Optical material	Coating range
UV fused silica	uncoated
	290 ... 370 nm
	350 ... 700 nm
	650 ... 1050 nm
	1050 ... 1620 nm
Borosilicate	uncoated
	350 ... 700 nm
	650 ... 1050 nm
	1050 ... 1620 nm

HiPO Series Infrared

High quality crystal optics for applications in the infrared spectrum

- Optical quality flatness 1λ or less, scratch-dig 40-20, $R_{avg} < 2 \%$
- View diameter 20 mm

Optical material	Transmission range
Zinc selenide	600 nm...16 µm 8...12 µm coating
Silicon	1.2...9 µm 3...5 µm coating
Calcium fluoride	180 nm...8 µm
Barium fluoride	200 nm...11 µm 3...5 µm coating
Germanium	2...16 µm 8...12 µm coating
Sapphire	150 nm...5 µm