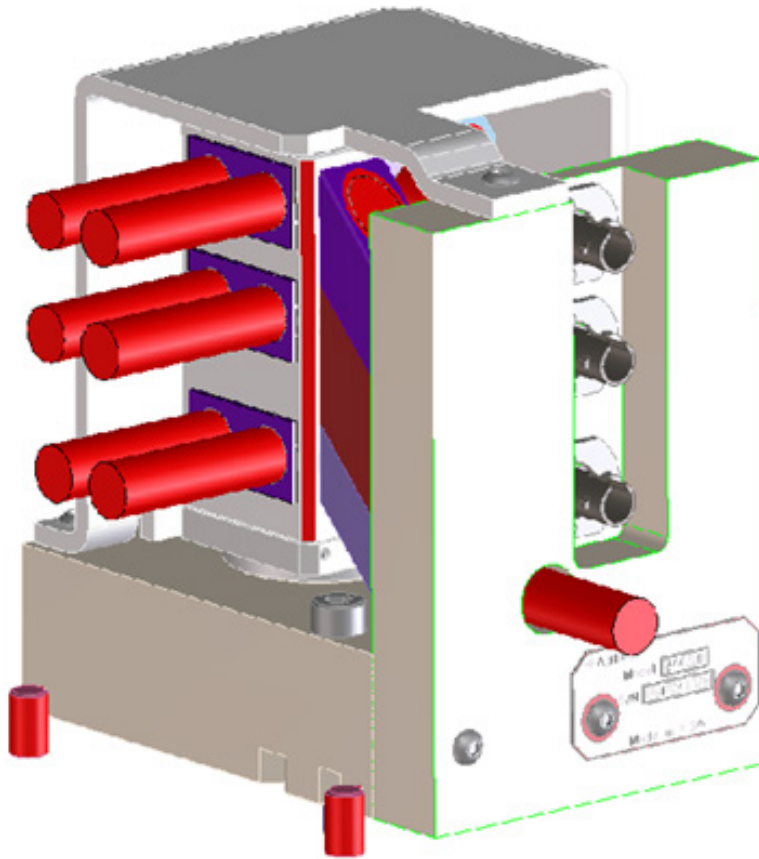# Keysight Z4422B Three-Axis Plane Mirror Interferometer

The Keysight Technologies, Inc. Z4422B three-axis plane mirror interferometer features pre-aligned optical sensors, excellent beam parallelism, low non-linearity error and low thermal drift. Machined datums aid in positioning the unit and reduce alignment effort.
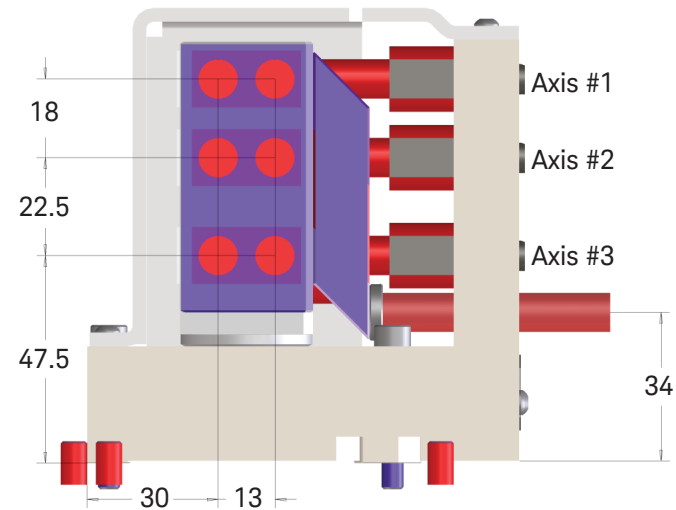
Key features

– Non-linearity error ± 1 nm
– Accommodates 9 mm and smaller input beam
– High (~1 kHz) mechanical resonance frequency
– λ/4 optical resolution
– Less than 10 nm/°C thermal drift

Z4422B Three-Axis Plane Mirror Interferometer showing one face positioned against 2 of the 3 customer supplied datum pins.

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Key specifications

Options	Desciption
Weight	1.95 kg (4.3 lbs)
Dimensions (L x W x H)	100.3 mm x 66 mm x 97 mm (without cover)
	100.3 mm x 66 mm x 104.3 mm (with cover)
Materials	Baseplate: Passivated 416 stainless steel
	Optics: BK-7
Natural frequency	~ 1 kHz
Mounting interface	Fasteners: M5 x 0.8 Captive SHCS
	Surface profile: 0.02 mm
	Surface finish: 0.4 µm
Beam diameter	9 mm maximum visible
Resolution	Optical: $\lambda/4$
	Linear: 0.15 nm using 1024x resolution extension
Thermal drift due to glass path length imbalance	10 nm/°C or less
Non-linearity error	± 1 nm
Optical efficiency (input power divided by axis output power)	Typical for Axes #1 and Axis #2: 18%
	Typical for Axis #3: 13%
	Worst case for Axes #1 and Axis #2: 13%
	Worst case for Axis #3: 10%
Measure point tolerance	Mean: ± 0.15 mm
	Deviation: ± 0.05 mm
Input beam cone angle	< 1 mrad
Beam parallelism	Axis #1 to Axis #2: < 25 µrad
	Axis #1 to Axis #3: < 100 µrad
Operating temperature	19 °C to 26 °C
Measurement mirror recommendation	Reflectivity: > 92%
	Flatness: $\lambda/20$

Z4422B beam position in mm and axis numbering

For more details on Keysight interferometry systems, components and ordering information please visit www.keysight.com/find/lasers

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