

Keysight Technologies  
E1715A 3-Axis Compact  
Interferometer with  
Low Non-Linearity

## Keysight E1715A 3-Axis Compact Interferometer with Low Non-Linearity



The Keysight E1715A 3-Axis Compact Interferometer employs Keysight's advanced monolithic optics design technology to meet the pointing stability requirements of modern laser metrology systems. The Keysight E1715A incorporates integral remote sensors with ST connectors, eliminating the need for separately mounted remote sensors. Plastic or glass optical fiber with mating ST connectors are available from Keysight in a variety of fiber lengths.

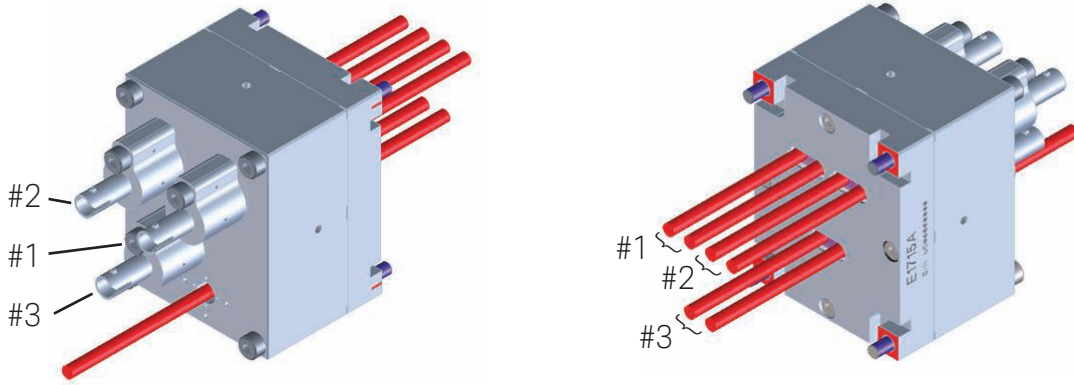
In addition to the standard configuration, the Keysight E1715A is available in three optional versions—one excluding the remote sensors for customers who wish to provide their own sensors, one version that includes an input bending mirror, and a third version that combines both of these options.

### Key Features:

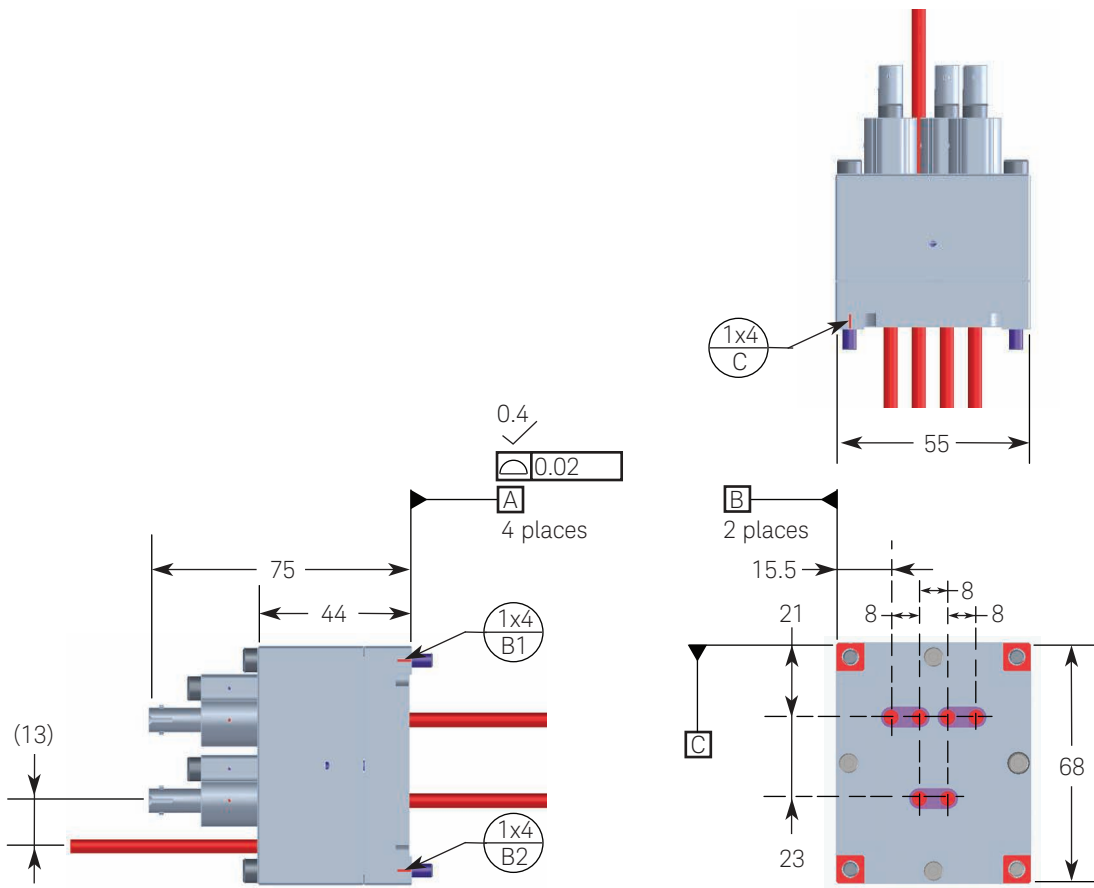
- two mounting configurations, hardware included
- 416 stainless steel housing for low thermal expansion
- outputs are coupled to a 400-micron fiber with NA of 0.39
- excellent beam angle accuracy relative to machined datums

Keysight Technologies E1715A 3 Axis Compact Interferometer - Specifications	
<b>Product Configuration</b>	
E1715A standard E1715A option 030 E1715A option 040	Interferometer, 3-axis, Compact, Low Non-Linearity Exclude Remote Fiber Optic Sensors Input Bending Mirror, 3-positions
<b>Optical Specifications</b>	
Beam Diameter	f 4 mm, maximum (visible)
Optical Resolution	$\lambda/4$ with plane mirror
Non-linearity Error	$\pm 0.5$ nm
Output Efficiency typical of all axes worst case for all axes	18% 12%
Measure Point Tolerance Absolute	$\pm 0.5$ mm
Input Beam Cone Angle (IBCA) straight thru beam without input bending mirror (standard) turned input beam with input bending mirror (option 040)	< 1 mrad < 10 mrad
Beam Parallelism Axis #1 - Axis #2 Axis #1 - Axis #3	< 25 $\mu$ rad < 25 $\mu$ rad
Measurement Mirror Recommendations Reflectivity Flatness	>92% $\lambda/20$ (over beams)
<b>Environmental Specifications</b>	
Operating Temperature Range	18°C to 26°C
Thermal Drift due to Glass Path Imbalance	< 10 nm/°C
<b>Mechanical Specifications</b>	
Weight	~0.4 kg
Materials: Housing Optics	416 Stainless Steel (CTE: $9.9 \times 10^{-6}$ mm/mm/°C) NBK-7 Optical Grade Glass (CTE: $7.1 \times 10^{-6}$ mm/mm/°C) *CTE: Coefficient of Thermal Expansion
Adhesives	Low Volatility (Vacuum Grade)
Fasteners	Qty 4, M4 x 0.7 mm socket head screws, captive, included
Resonance Frequency	$\geq 5$ KHz
Dimensions Standard model	see drawings below 75 mm x 55 mm x 65 mm (LxWxH)
Recommended customer frame Surface Profile Surface Finish Mount torque	0.02 mm 0.40 $\mu$ m 2.37 N-m (Avoid damage on the surface of the datums.)

## E1715A Standard Configuration

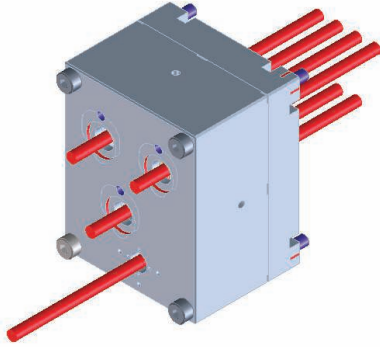


Standard Configuration: Axis Numbering

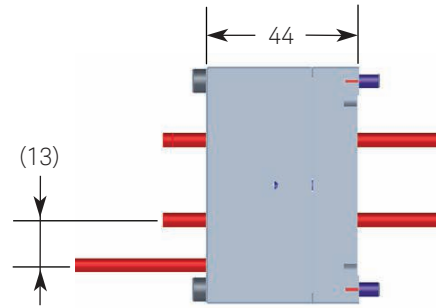


Standard Configuration Dimensions and Beam Pattern  
all dimensions in mm

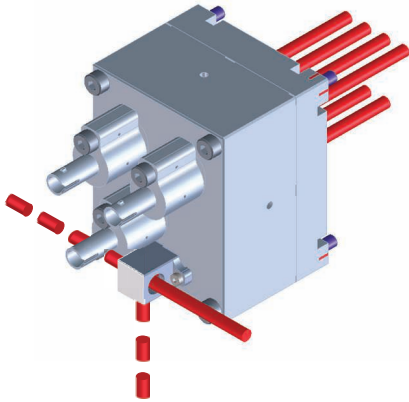
## E1715A Optional Configurations



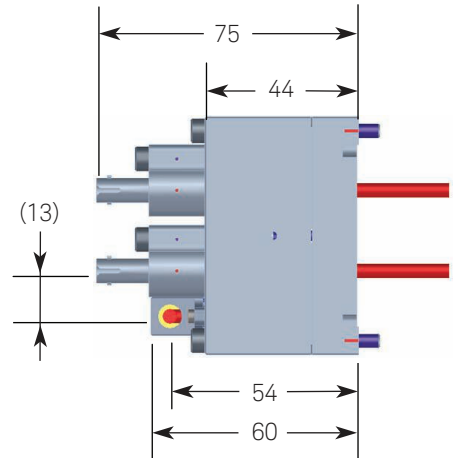
Option 030 -  
Exclude Remote Fiber Optic Sensors



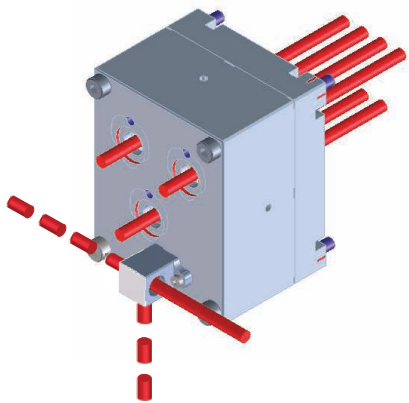
Option 030 Dimensions



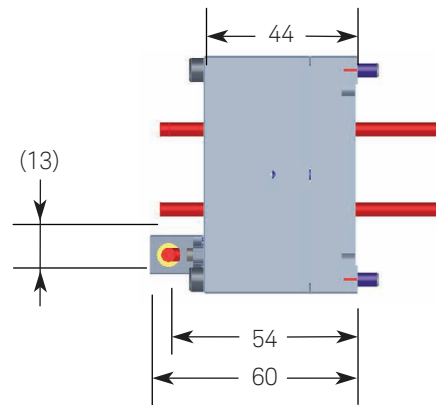
Option 040 -  
Include Input Bending Mirror, 3 Positions



Option 040 Dimensions



Option 030 + Option 040



Option 030+040 Dimensions

**myKeysight**

myKeysight

[www.keysight.com/find/mykeysight](http://www.keysight.com/find/mykeysight)

A personalized view into the information most relevant to you.

**Three-Year Warranty**

[www.keysight.com/find/ThreeYearWarranty](http://www.keysight.com/find/ThreeYearWarranty)

Keysight's commitment to superior product quality and lower total cost of ownership. The only test and measurement company with three-year warranty standard on all instruments, worldwide.



**Keysight Assurance Plans**

[www.keysight.com/find/AssurancePlans](http://www.keysight.com/find/AssurancePlans)

Up to five years of protection and no budgetary surprises to ensure your instruments are operating to specification so you can rely on accurate measurements.



[www.keysight.com/quality](http://www.keysight.com/quality)

Keysight Technologies, Inc.  
DEKRA Certified ISO 9001:2008  
Quality Management System



**Keysight Channel Partners**

[www.keysight.com/find/channelpartners](http://www.keysight.com/find/channelpartners)

Get the best of both worlds: Keysight's measurement expertise and product breadth, combined with channel partner convenience.

[www.keysight.com/find/lasers](http://www.keysight.com/find/lasers)

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at: [www.keysight.com/find/contactus](http://www.keysight.com/find/contactus)

**Americas**

Canada	(877) 894 4414
Brazil	55 11 3351 7010
Mexico	001 800 254 2440
United States	(800) 829 4444

**Asia Pacific**

Australia	1 800 629 485
China	800 810 0189
Hong Kong	800 938 693
India	1 800 112 929
Japan	0120 (421) 345
Korea	080 769 0800
Malaysia	1 800 888 848
Singapore	1 800 375 8100
Taiwan	0800 047 866
Other AP Countries	(65) 6375 8100

**Europe & Middle East**

Austria	0800 001122
Belgium	0800 58580
Finland	0800 523252
France	0805 980333
Germany	0800 6270999
Ireland	1800 832700
Israel	1 809 343051
Italy	800 599100
Luxembourg	+32 800 58580
Netherlands	0800 0233200
Russia	8800 5009286
Spain	0800 000154
Sweden	0200 882255
Switzerland	0800 805353
	Opt. 1 (DE)
	Opt. 2 (FR)
	Opt. 3 (IT)
United Kingdom	0800 0260637

For other unlisted countries:  
[www.keysight.com/find/contactus](http://www.keysight.com/find/contactus)  
(BP-07-10-14)