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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 10704A

HP Agilent Keysight 10704A Single Beam Retroreflector The 10704A is the measurement cube-corner retroreflector paired with the 10705A single-beam interferometer. OEM 5964-6190E and 10705A product pages list 10704A mass 10.5 g (0.4 oz), beam diameter 6 mm or less, and low-mass siblings 10713C 1/2-inch cube corner 1.4 g (0.05 oz) and 10713D 1/4-inch 0.2 g (0.007 oz). 10705A itself is 85.5 g (3 oz), fundamental optical resolution $\lambda/2$ (316.5 nm / 12.5 μ in), system resolution $\lambda/64$ (10 nm) with 32x electronics or $\lambda/512$ (1.2 nm) with 256x, and includes one 10704A as the reference plus two quarter-wave plates. A second 10704A completes the measurement path. The 10704A is the measurement cube-corner retroreflector paired with the 10705A single-beam interferometer. OEM 5964-6190E and 10705A product pages list 10704A mass 10.5 g (0.4 oz), beam diameter 6 mm or less, and low-mass siblings 10713C 1/2-inch cube corner 1.4 g (0.05 oz) and 10713D 1/4-inch 0.2 g (0.007 oz). 10705A itself is 85.5 g (3 oz), fundamental optical resolution $\lambda/2$ (316.5 nm / 12.5 μ in), system resolution $\lambda/64$ (10 nm) with 32x electronics or $\lambda/512$ (1.2 nm) with 256x, and includes one 10704A as the reference plus two quarter-wave plates. A second 10704A completes the measurement path. Limited-space single-axis interferometer measurements on disk-drive and compact stage axes with the 10705A.



MODEL

**Agilent / Keysight
10704A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

10704A

LISTING

<https://aumictechlabs.com/products/10704a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Keysight 10704A is a cube corner retroreflector engineered for single-beam laser interferometry measurements. This optical component reflects incident laser beams back along their original axis, enabling precision positioning and dimensional metrology when integrated with compatible interferometer systems, laser heads, and control electronics. Designed for beam diameters of 6 mm or less, the 10704A weighs 10.5 g and features optical elements bonded to stainless steel housings using low volatility UHV-compatible adhesive, making it suitable for vacuum environments.

Technical Specifications
Product Type: Cube corner retroreflector
Measurement Application: Single-beam interferometry
Beam Diameter Compatibility: 6 mm or less
Weight: 10.5 g (0.4 oz)
Construction Material: Stainless steel housing with optically contacted elements; bonding adhesive rated for UHV applications
Mounting: Precision-engineered for beam steering and alignment

Key Features
Compact form factor minimizes probe mass in dynamic measurement applications
UHV-compatible construction enables use in vacuum or controlled atmosphere systems
Designed for integration with PC and VMEbus-compatible measurement architectures
Optical performance optimized for pairing with the Keysight 10705A single-beam interferometer

Typical Applications
Semiconductor manufacturing (wafer steppers, step-and-scan lithography tools)
Precision machine tool positioning and error mapping
Aerospace and defense component metrology
3D package dimensional verification
Coordinate measuring machines (CMMs)
Flat panel display production metrology
Research-level laser interferometry

Compatibility & Integration
The 10704A requires a complete system comprising a laser head, interferometer electronics, and control software. Primary integration is with the Keysight 10705A interferometer. The retroreflector mounts within measurement fixtures designed to position it along the optical axis. Alternative cube corner options include the 10713C (1/2 inch) and 10713D (1/4 inch) for applications with different mounting constraints or mass requirements.

10704A Characteristics / Specifications

PARAMETER	VALUE
Model	10704A
Instrument Type	Single-beam interferometer retroreflector
Mass	10.5 g (0.4 oz)
Beam Diameter	6 mm or less
Paired Interferometer	10705A single-beam interferometer
Interferometer Mass	85.5 g (3 oz) for 10705A
Optical Resolution	$\lambda/2$ (316.5 nm, 12.5 uin) with 10705A
System Resolution Thirty Two	$\lambda/64$ (10 nm, 0.4 uin) with 32x electronics
System Resolution Two Fifty Six	$\lambda/512$ (1.2 nm, 0.047 uin) with 256x electronics
Low Mass Half Inch	10713C 1.4 g (0.05 oz)
Low Mass Quarter Inch	10713D 0.2 g (0.007 oz)
Reference Reflector	one 10704A included with 10705A plus two quarter-wave plates
Second Reflector	a second 10704A required to complete the measurement path
Mount	10710B
Axes	1
Literature	Keysight 5964-6190E and 10705A product page
Manufacturer	HP Agilent Keysight
Wavelength Class	633 nm HeNe
Application	low-mass confined-space linear measurement
Turned Configuration	yes on 10705A
Plane Mirror Mode	requires removing a quarter-wave plate at the factory (C01 class)
Form Factor	housed cube corner
System Role	measurement reflector
Documentation Type	OEM laser optics datasheet
Use Case	disk-drive and compact stage metrology

10704A Specifications

PARAMETER	VALUE
HP Agilent Keysight 10704A Single Beam Retroreflector	Overview
Applications	Limited-space single-axis interferometer measurements on disk-drive and compact stage axes with the 10705A.
Key Features	Cube-corner reflector for 10705A
Technical Specifications	Model: 10704A

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Notes

From Keysight 5964-6190E and 10705A/10704A product pages (10.5 g, 6 mm beam, 10713C/D masses, 10705A 85.5 g and $\lambda/2$ / $\lambda/64$ / $\lambda/512$). Alignment tolerances are in the laser and optics manual, not invented here.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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NIST-traceable calibration · SAM registered ·
30-day returns
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.