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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 55280B

HP Agilent Keysight 55280B Linear Measurement Kit The 55280B Linear Measurement Kit supplies the optics for linear displacement and velocity on a 5530 Laser Calibration System. OEM Keysight 55280B datasheet 5990-9311 and 55280B product pages list a 10766A linear interferometer, two 10767A linear retroreflectors, mounting hardware, and a transit case. Range is up to 40 m (130 ft) with linear optics and up to 80 m (260 ft) long-range class. Operating 0 to 40 C (32 to 104 F). Wavelength compensation: E1738A air sensor plus or minus 0.4 ppm; in vacuum plus or minus 0.1 ppm (plus or minus 0.02 ppm class). Optical resolution 1 nm (0.04 uin) with 10766A linear optics, 0.5 nm (0.02 uin) with 10706A/B plane-mirror optics, 0.25 nm (0.01 uin) with 10716A high-resolution plane-mirror optics (10716A aperture 12.7 mm vs 5519A 11 mm). The 55280B Linear Measurement Kit supplies the optics for linear displacement and velocity on a 5530 Laser Calibration System. OEM Keysight 55280B datasheet 5990-9311 and 55280B product pages list a 10766A linear interferometer, two 10767A linear retroreflectors, mounting hardware, and a transit case. Range is up to 40 m (130 ft) with linear optics and up to 80 m (260 ft) long-range class. Operating 0 to 40 C (32 to 104 F). Wavelength compensation: E1738A air sensor plus or minus 0.4 ppm; in vacuum plus or minus 0.1 ppm (plus or minus 0.02 ppm class). Optical resolution



MODEL

**Agilent / Keysight
55280B**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

55280B

LISTING

<https://aumictechlabs.com/products/55280b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight 55280B Linear Measurement Kit is a precision measurement component of the Keysight 5530 Laser Calibration System, engineered to measure linear displacement and velocity along machine travel paths. It enables characterization of positioning accuracy, repeatability, and directional errors in numerically-controlled machine tools and coordinate measuring machines. The 55280B is functionally identical to the 55280A but excludes the transit case.

Technical Specifications

Measurement Range: 40 meters (130 feet) total across all axes
Laser Type: Helium-Neon, continuous wave, two-frequency heterodyne
Wavelength: 632.99137 nm nominal (vacuum) for 5517A/B/BL/C/CL/D/DL; 632.99139 nm nominal (vacuum) for 5517EL/FL/GL
Wavelength Accuracy: ± 0.1 ppm (vacuum, 3 sigma, lifetime); ± 0.02 ppm with factory calibration to MIL-STD 45663
Wavelength Stability: ± 0.002 ppm per hour (typical, vacuum); ± 0.02 ppm lifetime (vacuum)
Laser Polarization: f1 (lower frequency) horizontal; f2 (higher frequency) vertical
Safety Classification: Class II laser (21 CFR 1040.10 and 1040.11)
MTBF: >50,000 hours typical
Heat Dissipation: 23 W operating, 35 W warm-up
Magnetic Field Strength: ≤ 5.25 milliGauss at 4.6 m from laser head surface (non-operating)
Cabling Clearance: 12 cm beyond back of 5517A; 10.16 cm beyond back of 5517B/BL/C/CL/D/DL/EL/FL/GL

Key Features

Bidirectional measurement approach for assessing backlash and lost motion
Error compensation capability for CNC machine tools and DRO positioning systems
Requires unbroken beam path during measurement
Includes linear interferometer (10766A), two linear retroreflectors (10767A), two bases (10784A), three height adjusters (10785A), and three ~100 mm posts

Typical Applications

Machine tool positioning accuracy verification
Coordinate measuring machine calibration
Repeatability and backlash assessment
Positioning system error documentation and compensation

Compatibility & Integration

Works with Keysight 5530, Agilent 5530, Agilent 5529, Hewlett Packard 5529, Hewlett Packard 5528, and Keysight 5529B (Basic Laser System) platforms.

55280B Characteristics / Specifications

PARAMETER	VALUE
Model	55280B
Instrument Type	Linear displacement and velocity optics kit
Host System	5530 Laser Calibration System
Interferometer	10766A linear interferometer
Retroreflectors	two 10767A linear retroreflectors
Linear Range	up to 40 m (130 ft) with linear optics
Long Range	up to 80 m (260 ft) long-range class
Operating Temperature	0 to 40 C (32 to 104 F)
Air Sensor Uncertainty	E1738A plus or minus 0.4 ppm
Vacuum Uncertainty	plus or minus 0.1 ppm (plus or minus 0.02 ppm class)
Linear Resolution	1 nm (0.04 uin) with 10766A
Plane Mirror Resolution	0.5 nm (0.02 uin) with 10706A/B
High Res Plane Mirror	0.25 nm (0.01 uin) with 10716A
Aperture Sixteen	10716A aperture 12.7 mm versus 5519A 11 mm
Literature	Keysight 5990-9311 55280B datasheet
Manufacturer	HP Agilent Keysight
Included Hardware	mounting hardware and transit case
Measurement	linear displacement and velocity
Thermal Drift	long-term tests over hours or days
Wavelength Class	633 nm HeNe laser head
Application Class	NC machine tool and CMM compensation
Documentation Type	OEM linear measurement kit datasheet
System Role	linear optics set for 5530
Use Case	positioning accuracy along an axis
Related Angular	55290A angular position measurement kit

55280B Specifications

PARAMETER	VALUE
HP Agilent Keysight 55280B Linear Measurement Kit	Overview
Key Features	10766A interferometer plus two 10767A retroreflectors
Technical Specifications	Model: 55280B

General Specifications & Supplementary Characteristics

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Application Class	NC machine tool and CMM compensation
Documentation Type	OEM linear measurement kit datasheet
System Role	linear optics set for 5530
Use Case	positioning accuracy along an axis
Related Angular	55290A angular position measurement kit Notes From Keysight 55280B datasheet 5990-9311 and 55280B product pages (10766A/10767A contents, 40 m/80 m, 0 to 40 C, E1738A 0.4 ppm, 1/0.5/0.25 nm resolutions). Do not invent straightness or squareness figures; those are other 5528x kits.

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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Application Class	NC machine tool and CMM compensation
Documentation Type	OEM linear measurement kit datasheet
System Role	linear optics set for 5530
Use Case	positioning accuracy along an axis
Related Angular	55290A angular position measurement kit

Notes

From Keysight 55280B datasheet 5990-9311 and 55280B product pages (10766A/10767A contents, 40 m/80 m, 0 to 40 C, E1738A 0.4 ppm, 1/0.5/0.25 nm resolutions). Do not invent straightness or squareness figures; those are other 5528x kits.

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.