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Data Sheet

August 12, 2026

HP / AGILENT

HP / Agilent 16453A Dielectric Material Test Fixture

HP / Agilent 16453A Dielectric Material Test Fixture The 16453A is a dielectric material test fixture used with HP/Agilent precision impedance / material analyzers to measure permittivity (dielectric constant) of solid dielectric materials. It provides a controlled electrode geometry for parallel-plate style dielectric tests. The 16453A is a dielectric material test fixture used with HP/Agilent precision impedance / material analyzers to measure permittivity (dielectric constant) of solid dielectric materials. It provides a controlled electrode geometry for parallel-plate style dielectric tests.



MODEL

**HP / Agilent
16453A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

16453A

LISTING

<https://aumictechlabs.com/products/16453a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The HP/Agilent 16453A Dielectric Material Test Fixture is a parallel plate measurement instrument for characterizing the dielectric properties of solid materials. It employs a flexible electrode that automatically conforms to the material surface, eliminating manual adjustment and ensuring consistent electrode contact across the measurement area. The fixture connects to impedance analyzers including the Keysight E4991A, E4991B, Agilent 4291A/B, and HP 4291A to measure dielectric constant and loss tangent. Its self-adjusting electrode design provides reliable results across a broad frequency spectrum without the parallelism constraints of fixed-electrode

fixtures. Technical Specifications Frequency Range: 1 MHz to 1.0 GHz DC Bias Voltage: ± 40 V maximum AC+DC Voltage: ± 42 V peak maximum Material Thickness: 0.3 mm to 3 mm Material Diameter: ≥ 15 mm Measured Properties: Dielectric constant and loss tangent Electrode Type: Flexible, self-adjusting Measurement Method: Parallel plate capacitive Connector Type: Precision coaxial Key Features Flexible electrode automatically conforms to sample surface geometry Eliminates manual parallelism adjustment required in competing fixtures Operates from 1 MHz to 1.0 GHz, spanning RF to microwave frequencies Supports simultaneous DC bias (± 40 V) with AC excitation (± 42 V peak) Compact form factor: 130 mm (H) $\times$ 50 mm (W) $\times$ 60 mm (D), weighing 600 g Wide operating temperature range: -55°C to $+200^{\circ}\text{C}$ Tolerates humid environments up to 95% RH at wet bulb $< 40^{\circ}\text{C}$ Typical Applications Dielectric property characterization in material research Quality control testing of insulators and polymer films Permittivity and loss tangent measurement in electronics manufacturing Frequency-dependent dielectric analysis across RF bands Compatibility & Integration The fixture integrates with Keysight E4991A, E4991B, Agilent 4291A/B, and HP 4291A impedance analyzers. Relative complex permittivity is calculated by the analyzer firmware (e.g., option 002). Connection via precision coaxial connectors ensures impedance-matched signal transmission.

Features & description

From manufacturer datasheet

Features

- Dedicated dielectric material electrode fixture
 - Designed for HP/Agilent material/impedance analyzer systems
 - Parallel-plate style measurement geometry
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Applications

- Dielectric constant / permittivity of solid materials
- Material characterization with compatible impedance analyzers
- R&D and QA of insulating materials

16453A Characteristics / Specifications

PARAMETER	VALUE
Model	16453A
Manufacturer	HP / Agilent
Instrument Type	Dielectric Material Test Fixture
Alias	16453A; Agilent 16453A; HP 16453A; Keysight 16453A
Fixture type	Dielectric material test fixture
Measurement class	permittivity / dielectric constant of solids
Compatible instruments class	HP/Agilent material and impedance analyzers Notes Detailed electrode diameter, frequency, and thickness limits should be confirmed from the 16453A operation note / material analyzer accessory literature shipped with the fixture.

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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Specifications

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Notes
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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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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.