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Data Sheet

August 8, 2026

HP / AGILENT

HP / Agilent 16452A Liquid Test Fixture

The HP / Agilent / Keysight 16452A is a liquid dielectric test fixture that measures dielectric constant and impedance of liquid materials using the parallel-plate method. Liquid is sandwiched between nickel-plated electrodes to form a capacitor measured by a 4-terminal-pair LCR meter or impedance analyzer from 20 Hz to 30 MHz. Interchangeable spacers set electrode gaps of 0.3 / 0.5 / 1.0 / 2.0 mm with liquid volumes from about 3.4 ml to 6.8 ml. Liquid permittivity (ϵ_r' , ϵ_r'') and capacitance measurement; insulating oils and chemical liquids characterization; dielectric materials research; frequency-swept liquid impedance analysis. Manufacturer: Hewlett-Packard / Agilent / Keysight Instrument Type: Liquid Dielectric Test Fixture 20 Hz–30 MHz; 30 Vrms; parallel-plate liquid cell Prefer Keysight 16452A operation manual. Do not exceed 30 Vrms. Use furnished shorting plate/spacer for SHORT compensation. Requires external LCR/impedance analyzer.



MODEL

**HP / Agilent
16452A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

16452A

LISTING

<https://aumictechlabs.com/products/16452a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The HP/Agilent 16452A Liquid Test Fixture is a parallel plate capacitor cell designed for precise impedance and dielectric characterization of liquid materials. It connects to compatible LCR meters and impedance analyzers to measure capacitance, dielectric constant (ϵ_r' , ϵ_r''), and impedance across a broad frequency range. The fixture accommodates sample volumes under 10 mL through interchangeable spacers and operates across extended temperature ranges with

appropriate test leads, making it suitable for research, development, and quality control in materials characterization.

Technical Specifications

Measurement Principle: Parallel plate method

Frequency Range: 20 Hz to 30 MHz (operating frequency dependent on connected instrument)

Operating Temperature: -20°C to 125°C (fixture); 0°C to 55°C (16048A leads); -20°C to 125°C (16048G/H + 1250-2375 leads)

Maximum Operating Voltage: 30 Vrms

Electrode Diameter: Ø 38 ±0.5 mm

Electrode Gap: Variable via interchangeable spacers (1.3 mm, 1.5 mm, 2.0 mm, 3.0 mm)

Sample Capacity: <10 mL; examples include 3.4 mL (0.3 mm gap), 3.8 mL (0.5 mm gap), 4.8 mL (1.0 mm gap), 6.8 mL (2.0 mm gap)

Connector: 4-Terminal Pair SMA

Dimensions: 85 mm (H) × 85 mm (W) × 37 mm (D)

Weight: 1.4 kg

Key Features

- Measures capacitance and dielectric loss in non-conductive liquids
- Variable electrode spacing accommodates samples with different dielectric properties
- 4-terminal configuration eliminates lead inductance and resistance errors
- Suitable for low-permittivity, low-conductivity materials only; not designed for ionic or saline solutions

Typical Applications

- Material characterization across research and quality control workflows
- Dielectric property determination from 20 Hz to 30 MHz
- Temperature-dependent impedance measurements from -20°C to 125°C

Compatibility & Integration

Compatible with Agilent 4263B, 4284A (obsolete), 4285A, Keysight E4980A, E4990A, and Keysight 4294A (limited frequency range). Requires 4-terminal BNC test leads (16048A, 16048G/H + 1250-2375).

Features & description

From manufacturer datasheet

Features

• Frequency: 20 Hz to 30 MHz • Method: parallel-plate liquid dielectric cell • Max operating voltage: 30 Vrms (± 42 V peak class) • Electrode size: $\varnothing 38 \pm 0.5$ mm • Gaps/spacers: 0.3 / 0.5 / 1.0 / 2.0 mm (gap repeatability ± 12 μ m class) • Liquid volume: ≈ 3.4 / 3.8 / 4.8 / 6.8 ml by spacer • Operating temperature: -20 °C to $+125$ °C class • Body: Ni-plated Fe-Co-Ni; ceramic insulator; Viton O-rings • Terminals: 4-terminal-pair SMA; SMA-BNC adapter furnished • Dimensions: 85 × 85 × 37 mm; weight 1.4 kg • Short residual (1.3 mm shorting plate): $L_s \approx 20$ nH; $R_s \approx 0.5$ Ω • Compatible: LCR meters / impedance analyzers with 4TP (e.g. via 16048A/G/H)

16452A Characteristics / Specifications

PARAMETER	VALUE
Model	16452A
Manufacturer	Hewlett-Packard / Agilent / Keysight
Instrument Type	Liquid Dielectric Test Fixture
Family	Keysight Impedance Accessories
Alias	HP 16452A; Agilent 16452A Electrical / Mechanical 20 Hz–30 MHz; 30 Vrms; parallel-plate liquid cell Operational Notes Prefer Keysight 16452A operation manual. Do not exceed 30 Vrms. Use furnished shorting plate/spacer for SHORT compensation. Requires external LCR/impedance analyzer.
Frequency	20 Hz to 30 MHz
Method	parallel-plate liquid dielectric cell
Max operating voltage	30 Vrms (± 42 V peak class)
Electrode size	$\varnothing 38 \pm 0.5$ mm
Gaps/spacers	0.3 / 0.5 / 1.0 / 2.0 mm (gap repeatability ± 12 μ m class)
Liquid volume	≈ 3.4 / 3.8 / 4.8 / 6.8 ml by spacer
Operating temperature	-20 °C to $+125$ °C class
Body	Ni-plated Fe-Co-Ni; ceramic insulator; Viton O-rings
Terminals	4-terminal-pair SMA; SMA-BNC adapter furnished
Dimensions	85 × 85 × 37 mm; weight 1.4 kg
Short residual (1.3 mm shorting plate)	$L_s \approx 20$ nH; $R_s \approx 0.5$ Ω
Compatible	LCR meters / impedance analyzers with 4TP (e.g. via 16048A/G/H)

16452A Specifications

PARAMETER	VALUE
HP / Agilent 16452A Liquid Test Fixture	Overview
Key Features	- Frequency: 20 Hz to 30 MHz
Technical Specifications	Model: 16452A
Electrical / Mechanical	20 Hz–30 MHz; 30 Vrms; parallel-plate liquid cell

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	–20 °C to +125 °C class - Body: Ni-plated Fe-Co-Ni; ceramic insulator; Viton O-rings - Terminals: 4-terminal-pair SMA; SMA-BNC adapter furnished - Dimensions: 85 × 85 × 37 mm; weight 1.4 kg - Short re
Operating Temperature	–20 °C to +125 °C class - Body: Ni-plated Fe-Co-Ni; ceramic insulator; Viton O-rings - Terminals: 4-terminal-pair SMA; SMA-BNC adapter furnished - Dimensions: 85 × 85 × 37 mm; weight 1.4 kg - Short re
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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

Specifications

PARAMETER	VALUE
Model	16452A
Manufacturer	Hewlett-Packard / Agilent / Keysight
Instrument Type	Liquid Dielectric Test Fixture
Family	Keysight Impedance Accessories
Alias	HP 16452A; Agilent 16452A

Electrical / Mechanical

20 Hz-30 MHz; 30 Vrms; parallel-plate liquid cell

Operational Notes

Prefer Keysight 16452A operation manual. Do not exceed 30 Vrms. Use furnished shorting plate/spacer for SHORT compensation. Requires external LCR/impedance analyzer.

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.