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Data Sheet

August 14, 2026

HP / AGILENT

HP / Agilent 3456A 6 1/2 Digit Digital Multimeter

HP Agilent 3456A 6.5 Digit Digital Voltmeter The HP 3456A is a 6.5-digit integrating digital voltmeter using Multi-Slope II conversion for DC voltage, true-RMS AC voltage, and 2-wire/4-wire ohms. OEM specification summaries list DCV ranges 0.1 V to 1000 V with 100 nV resolution on the 0.1 V range, ACV to 700 V rms class, resistance to 1 GΩ, and math functions including statistics, dB/dBm, and pass/fail. Precision DC metrology and transfer measurements, AC voltage characterization, high-resistance measurements, ratio measurements (DCV/DCV, ACV/DCV), and automated voltmeter applications over HP-IB. The HP 3456A is a 6.5-digit integrating digital voltmeter using Multi-Slope II conversion for DC voltage, true-RMS AC voltage, and 2-wire/4-wire ohms. OEM specification summaries list DCV ranges 0.1 V to 1000 V with 100 nV resolution on the 0.1 V range, ACV to 700 V rms class, resistance to 1 GΩ, and math functions including statistics, dB/dBm, and pass/fail. Precision DC metrology and transfer measurements, AC voltage characterization, high-resistance measurements, ratio measurements (DCV/DCV, ACV/DCV), and automated voltmeter applications over HP-IB.



MODEL

HP / Agilent 3456A

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

3456A

LISTING

<https://aumictechlabs.com/products/3456a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The HP/Agilent 3456A is a 6 1/2 digit digital multimeter engineered for precision measurement in calibration labs, R&D, and manufacturing environments. This microprocessor-based, fully guarded

instrument delivers 100 nanovolts resolution at 48 readings per second and achieves $\pm 0.0008\%$ + 2 counts accuracy on the 10 V range over 24 hours at $23^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The 3456A combines high-speed burst capability - up to 330 readings per second - with ultra-low periodic measurement intervals down to one reading every fifteen minutes, making it equally suited to benchtop use and integration into automated test systems.

Technical Specifications

DC Voltage: 0.1 V to 1000 V across five ranges

AC RMS Voltage: 1 V to 1000 V across four ranges; true RMS measurements from 10 Hz to 250 kHz

Resistance: 100 Ω to 1 G Ω across eight ranges with 2-wire and 4-wire capability; 500 nA current source with 10 M Ω parallel resistance

Resolution: 100 nV at 48 readings per second (6 1/2 digits); up to 10 μV at 330 readings per second (3 1/2 or 4 1/2 digits)

Stability: 2 ppm over 24-hour period

Integration Time: Selectable 1, 10, or 100 power line cycles (PLC) for noise rejection

Temperature Coefficient: Specified as (% of reading + number of counts)/ $^{\circ}\text{C}$, varying with digit count and AC/DC ratios

Key Features

Offset Compensated Ohms (OC Ω) for enhanced resistance measurement accuracy

Selectable display digits: 2, 3, 4, 5, or 6

AUTO-ZERO feature for improved stability

Math functions include scaling, limit testing (Pass/Fail), nulling, percent error, dB, and dBm calculations

Program memory stores up to 1400 bytes of instrument command strings

Reading storage capacity: 350 readings, or 348 with 8-byte command string

Configurable settling time for measurement optimization

Typical Applications

Transfer standard measurements requiring high repeatability

Precision voltage and resistance measurements in metrology

High-speed automated test sequences

Long-duration periodic monitoring

Compatibility & Integration

HP-IB (IEEE-488) interface standard for remote programmability and system integration

Front panel indicators display HP-IB status during remote operation

Hardware scanner advance provides TTL signal upon measurement completion

3456A Characteristics / Specifications

PARAMETER	VALUE
Resolution Maximum	6.5 digits
DCV Ranges	0.1 V, 1 V, 10 V, 100 V, 1000 V
DCV Resolution On 0.1 V Range	100 nV
DCV Resolution On 1000 V Range	1 mV
DCV Accuracy Example 0.1 V Class	0.0112% + 24 counts (cal bulletin example)
DCV Accuracy Example 1 V Class	0.0102% + 4 counts
DCV Accuracy Example 10 V Class	0.0101% + 2 counts
DCV Accuracy Example 100 V Class	0.0104% + 3 counts
DCV Accuracy Example 1000 V Class	0.0222% + 2 counts
Resistance Ranges	0 ohm to 1 G Ω in 8 ranges
ACV Ranges Class	0 to 700 V rms in 4 ranges
ACV Frequency Coverage Class	25 Hz to 250 kHz in accuracy tables
Input Resistance Low DCV Ranges	greater than 10 G Ω class
Measurement Functions	DCV, ACV, ACV+DCV, 2-wire ohms, 4-wire ohms
Ratio Modes	DCV/DCV, ACV/DCV, ACV+DCV/DCV
Ohms Modes Shifted	2-wire and 4-wire offset-compensated ohms
Math Functions	% Error, Scale, Pass/Fail, dB, dBm, Null, Thermistor, Statistics
Filter	selectable digital/analog filter
Integration	selectable NPLC class integrating converter
Interface	HP-IB programmable
Self Test	front-panel analog/digital/guard checks
Form Factor	full-width rack/bench DVM

3456A Specifications

PARAMETER	VALUE
HP Agilent 3456A 6.5 Digit Digital Voltmeter	Overview
Selectable 4.5 / 5.5 / 6.5 digit resolution	2-wire and 4-wire ohms plus offset-compensated ohms
Technical Specifications	Resolution Maximum: 6.5 digits

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
Resolution Maximum	6.5 digits
DCV Ranges	0.1 V, 1 V, 10 V, 100 V, 1000 V
DCV Resolution On 0.1 V Range	100 nV
DCV Resolution On 1000 V Range	1 mV
DCV Accuracy Example 0.1 V Class	0.0112% + 24 counts (cal bulletin example)
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Resistance Ranges	0 ohm to 1 GΩ in 8 ranges
ACV Ranges Class	0 to 700 V rms in 4 ranges
ACV Frequency Coverage Class	25 Hz to 250 kHz in accuracy tables
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Measurement Functions	DCV, ACV, ACV+DCV, 2-wire ohms, 4-wire ohms
Ratio Modes	DCV/DCV, ACV/DCV, ACV+DCV/DCV
Ohms Modes Shifted	2-wire and 4-wire offset-compensated ohms
Math Functions	% Error, Scale, Pass/Fail, dB, dBm, Null, Thermistor, Statistics
Filter	selectable digital/analog filter
Integration	selectable NPLC class integrating converter
Interface	HP-IB programmable
Self Test	front-panel analog/digital/guard checks
Form Factor	full-width rack/bench DVM
Notes	
Range and accuracy examples from HP 3456A operating literature and military calibration bulletin summaries. Use the instrument specification table in the operating/service manual for the authoritative ±(% reading + counts) matrix at the selected digits and NPLC.	

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.