

# CERTIFICATE OF CALIBRATION

Issued By: Calibration Testing Solutions

Certificate Number: 328817.3.1.1

Date of Issue: 15 January 2025



0783



Calibration Testing Solutions  
Markham Lane  
Duckmanton  
Chesterfield  
S44 5HS

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Approved Signatory

L. Todd

**Customer:** PPT Group UK Ltd T/A Mecmesin  
Slinford  
RH13 0SZ

**Date Received:** 14 January 2025

**Instrument** CTSi Ref: 328817.3.1.1  
Description: Digital Multimeter (5.5 digit) Customer Ref: TM0003  
Manufacturer: Hewlett Packard  
Model Number: 3478A  
Serial Number: 2619A45735  
Procedure Number / Version: 2044 / 3.00 LT/N

## Environmental Conditions

Temperature: 20 °C ± 2 °C  
Mains Voltage: 240 V ± 10 V  
Mains Frequency: 50 Hz ± 1 Hz

## Comments

The instrument is calibrated in accordance to manufacturer's operators manual.  
Instrument calibrated using a Multi-Product Calibrator into the Front Input tmls  
The Resistance was calibrated using Decade and Non-Decade Resistance Boxes.

The stated uncertainties include the contributions of the unit under test.

## Calibration Information

The instrument was calibrated against laboratory standards whose values are traceable to recognised National Standards. The uncertainty limits quoted refer to the measured values only, with no account being taken of the instruments ability to maintain its calibration.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k=2$ , providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

The results found only apply to the item calibrated.

**Calibrated By:** L. Todd

**Date of Calibration:** 15 January 2025

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Accredited Calibration Laboratory No. 0783

Certificate Number

328817.3.1.1

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## AS FOUND RESULTS

Test Title	Applied Value	Reading	Tolerance	Uncertainties
<b>DC Voltage</b>				
30mV DC Range	29.0000mV	29.0007mV	14.1uV	6.08uV
300mV DC Range	290.000mV	290.018mV	25.3uV	24.8uV
30V DC Range	29.0000V	28.9999V	2.4mV	1.79mV
300V DC Range	290.000V	289.999V	22.3mV	19.9mV
<b>Linearity</b>				
3V DC Linearity	-2.90000V	-2.89991V	194uV	179uV
3V DC Linearity	-2.50000V	-2.49992V	170uV	156uV
3V DC Linearity	-2.00000V	-1.99993V	140uV	127uV
3V DC Linearity	-1.50000V	-1.49994V	110uV	98.0uV
3V DC Linearity	-1.00000V	-0.99996V	80uV	69.0uV
3V DC Linearity	-0.50000V	-0.49998V	50uV	40.0uV
3V DC Linearity	0.50000V	0.49998V	50uV	40.0uV
3V DC Linearity	1.00000V	0.99996V	80uV	69.0uV
3V DC Linearity	1.50000V	1.49994V	110uV	98.0uV
3V DC Linearity	2.00000V	1.99993V	140uV	127uV
3V DC Linearity	2.50000V	2.49991V	170uV	156uV
3V DC Linearity	2.90000V	2.89991V	194uV	179uV
<b>AC Voltage</b>				
300mV AC @ 60Hz	290.000mV	289.721mV	1.5mV	291uV
3V AC @ 60Hz	2.90000V	2.89785V	14.4mV	1.05mV
30V AC @ 60Hz	29.0000V	28.9726V	143.7mV	13.4mV
30V AC @ 1kHz	29.0000V	28.9892V	65mV	13.4mV
30V AC @ 10kHz	29.0000V	28.9799V	65mV	13.4mV
30V AC @ 25kHz	29.0000V	28.9790V	89.4mV	63.9mV
30V AC @ 45kHz	29.0000V	28.9745V	89.4mV	63.9mV
300V AC @ 60Hz	290.000V	289.867V	1.6V	291mV
<b>DC Current</b>				
300mA DC Range	290.000mA	290.041mA	475uA	40.3uA
3A DC Range	0.90000A	0.90022A	1.5mA	380uA
3A DC Range	2.90000A	2.90563A	29.3mA	1.08mA
<b>AC Current</b>				
300mA AC @ 60Hz	290.000mA	290.021mA	2.5mA	668uA
3A AC @ 60Hz	0.90000A	0.89966A	15.1mA	2.08mA
3A AC @ 60Hz	2.90000A	2.90823A	45.1mA	6.68mA
<b>Resistance: 4-wire</b>				
30R Range	10.0000Ω	10.0057Ω	7.5mR	5.85mR
300R Range	100.000Ω	100.005Ω	22mR	12.5mR
3kR Range	1.00000kΩ	0.99988kΩ	180mR	125mR
30kR Range	10.0000kΩ	9.9988kΩ	1.8R	1.25R
300kR Range	100.000kΩ	99.998kΩ	18R	12.5R
<b>Resistance: 2-wire</b>				
3MR Range	1.00000MΩ	0.99994MΩ	196R	155R
30MR Range	10.0000MΩ	9.9993MΩ	8.8kR	280R

END OF TEST DATA