



MICRO PRECISION CALIBRATION PTE LTD
BLOCK 5008 ANG MO KIO AVENUE 5 #07-02/03
TECHPLACE II SINGAPORE 569874
65 67484384



Certificate of Calibration

Date: Jul 13, 2020

Cert No. 551220083694803

Customer:

WATERS PACIFIC PTE LTD

1 SCIENCE PARK ROAD, #02-08 THE CAPRICORN
SINGAPORE SCIENCE PARK II
SINGAPORE 117528

Work Order #: SG-11014146

MPC Control #: 7322788

Asset ID: 2097

Gage Type: LOAD BOX

Manufacturer: CHROMA

Model Number: S14-03

Size: N/A

Temp/RH: 22.0°C / 52.0%

Location: Calibration performed at MPC facility

Serial Number: 7322788

Department: N/A

Performed By: SENGTHYE CHEW

Received Condition: OPERATIONAL

Returned Condition: REPORT OF VALUE

Cal. Date: May 02, 2020

Cal. Interval: 12 MONTHS

Cal. Due Date: May 02, 2021

Calibration Notes:

The user shall determine the suitability of the equipment for its intended use. The calibration status is defined as Report of Value.

See attached data. (1 page)

Calibration performed for Flextronics Pte Ltd.

This supersedes Certificate Number 551220083592483

Standards Used to Calibrate Equipment

I.D.	Description.	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
CA8094	MULTIMETER	3458A	2823A25888	HEWLETT PACKARD	Jan 10, 2021	1-12015829011-1

Procedures Used in this Event

Procedure Name	Description
CHROMA 190XX PRODUCT	Using a Load Box to Verify Hipot Tester, Chroma 190XX Product, Jun-16-2016

Calibrating Technician:


SENGTHYE CHEW

QC Approval:


JUN CALIMAG

STATEMENTS OF PASS OR FAIL CONFORMANCE: The uncertainty of measurement has been taken into account when determining compliance with specification, as per ILAC-G8:03/2009. All measurements and test results guard banded to ensure the probability of false-accept does not exceed 2% in compliance with ANSI/NCCL Z540.3-2006 and in case without guard banded the probability of false-accept depending on test uncertainty ratio.

THE CALIBRATION REPORT STATUS:

PASS- Term used when compliance statement is given, and the measurement result is PASS.

PASS²- Term used when compliance statement is given, and the measurement result is conditional passed or PASS².

FAIL- Term used when compliance statement is given, and the measurement result is FAIL.

FAIL²- Term used when compliance statement is given, and the measurement result is conditional failed or FAIL².

REPORT OF VALUE - Term used when reported measurement is not requiring compliance statement in report.

ADJUSTED- When adjustments are made to an instrument which changes the value of measurement from what was measured as found to new value as left.

LIMITED - When an instrument fails calibration but is still functional in a limited manner.

The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%, unless otherwise stated. This calibration report complies with ISO/IEC 17025:2017 and ANSI/NCCL Z540.3. Calibration cycles and resulting due dates were submitted/approved by the customer. Any number of factors may cause an instrument to drift out of tolerance before the next scheduled calibration. Recalibration cycles should be based on frequency of use, environmental conditions and customer's established systematic accuracy. All standards are traceable to SI through the National Institute of Standards and Technology (NIST) and/or recognized national or international standards laboratories. Services rendered include proper manufacturer's service instruction and are warranted for no less than thirty (30) days. The information on this report pertains only to the instrument identified, this may not be reproduced in part or in a whole without the prior written approval of the issuing MP Calibration Laboratory.



Calibration Report of Chroma S14-03 Load Box

MPC Control #:	7322788	Serial Number:	7322788
Asset ID:	2097	Calibration Date:	May 02, 2020

Resistance Check

Function Tested	Nominal	As Found	As Left	Uncertainty ($\pm$)
PASS	50 m Ω	51.00 m Ω	51.00 m Ω	0.00070 m Ω
PASS	450 k Ω	448.26 k Ω	448.26 k Ω	0.0081 k Ω
FAIL	150 m Ω	149.00 m Ω	149.00 m Ω	0.0021 m Ω
FAIL	400 k Ω	399.61 k Ω	399.61 k Ω	0.0072 k Ω

The user shall determine the suitability of the equipment for its intended use. The calibration status is defined as **Report of Value**.

The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%, unless otherwise stated.

- End of Calibration Report -