



MICRO PRECISION CALIBRATION PTE LTD
BLOCK 5008 ANG MO KIO AVENUE 5 #07-04
TECHPLACE II SINGAPORE 569874
65 67484384



Certificate of Calibration

Date: February 21, 2019

Cert No. 551220082826617

Customer:

GES SINGAPORE PTE LTD
28 MARSILING LANE
SINGAPORE 739152

Work Order #: SG-11010042

MPC Control #: 97013
Asset ID: NA
Gage Type: DC ELECTRONIC LOAD
Manufacturer: CHROMA
Model Number: 63103A
Size: N/A
Temp/RH: 24.2°C / 42 %
Location: Calibration performed at Customer's facility

Serial Number: 97013
Department: N/A
Performed By: SENGTHYE CHEW
Received Condition: IN TOLERANCE
Returned Condition: IN TOLERANCE
Cal. Date: February 21, 2019
Cal. Interval: 12 MONTHS
Cal. Due Date: February 21, 2020

Calibration Notes:

Please refer to the attached calibration data. (1 page).

Standards Used to Calibrate Equipment

I.D.	Description.	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
AP4205	MULTIMETER	3458A	2823A17096	HEWLETT PACKARD	Oct 10, 2019	551220081610396
CV0251	SYSTEM DC POWER SUPPLY	6031A	MY41000451	AGILENT	Nov 15, 2019	551220081677253
DB8884	CALIBRATOR	5500A	7520009	FLUKE	Sep 13, 2019	551220081558522
CH2324	CURRENT SHUNT	34330A	0804	AGILENT	Sep 7, 2019	551220081550644

Procedures Used in this Event

Procedure Name	Description
33K1-4-3058-1	DC ELECTRONIC LOAD, 28-Feb-2-2014

Calibrating Technician:


SENGTHYE CHEW

QC Approval:


JULES PHILIPPE AGPANGAN

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA's Publication and NIST Technical Note 1297, 1994 Edition. Services rendered comply with ISO/IEC 17025:2017, ANSI/NCCL Z540-1-1994, ANSI/NCCL Z540.3-2006, MPC Quality Manual, MPC CSD and with customer purchase order instructions.

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. The information on this report, pertains only to the instrument identified.

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. This report may not be reproduced in part or in a whole without the prior written approval of the issuing MPC lab.



Chroma 63103A/6314A Electronic Load Plug-In Module

Procedure: **6310 SERIES**
ID Number: **97013**
Asset Number: **NA**

Order Number: **SG-11010042**
Serial Number: **97013**
Calibration Date: **February 21, 2019**

CCL & CCH Mode

Range	Nominal Value	Lower Limit	As Found	As Left	Error	Upper Limit	Result	Uncertainty ($\pm$)
6 A	2.00000 A	1.9860 A	1.9876 A	1.9876 A	0.62000 %	2.0140 A	PASS	0.00042 A
6 A	4.00000 A	3.9840 A	3.9867 A	3.9867 A	0.33250 %	4.0160 A	PASS	0.00084 A
6 A	6.00000 A	5.9820 A	5.9869 A	5.9869 A	0.21833 %	6.0180 A	PASS	0.0013 A
20 A	10.00000 A	9.9500 A	9.9859 A	9.9859 A	0.14100 %	10.0500 A	PASS	0.0021 A
20 A	20.00000 A	19.9400 A	19.9843 A	19.9843 A	0.07850 %	20.0600 A	PASS	0.0042 A

CV Mode

Range	Nominal Value	Lower Limit	As Found	As Left	Error	Upper Limit	Result	Uncertainty ($\pm$)
16 V	5.00000 V	4.98150 V	4.9996 V	4.9996 V	0.00800 %	5.01850 V	PASS	0.000038 V
16 V	10.00000 V	9.97900 V	9.9997 V	9.9997 V	0.00300 %	10.02100 V	PASS	0.000076 V
16 V	15.00000 V	14.97650 V	14.9995 V	14.9995 V	0.00333 %	15.02350 V	PASS	0.00021 V
80 V	20.00000 V	19.91000 V	20.0003 V	20.0003 V	0.00150 %	20.09000 V	PASS	0.00026 V
80 V	40.00000 V	39.90000 V	40.0005 V	40.0005 V	0.00125 %	40.10000 V	PASS	0.00048 V
80 V	60.00000 V	59.89000 V	60.0011 V	60.0011 V	0.00183 %	60.11000 V	PASS	0.00070 V
80 V	80.00000 V	79.88000 V	80.0014 V	80.0014 V	0.00175 %	80.12000 V	PASS	0.00092 V

Just 12-Mar-19
JASON AGDAYANI