



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: Apr 17, 2020

Cert No. 551220083573676

### Customer:

WATERS PACIFIC PTE LTD

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

Work Order #: SG-11014032

MPC Control #: 12333783  
Asset ID: 93372  
Gage Type: ANALYTICAL BALANCE  
Manufacturer: A&D  
Model Number: HR-200  
Size: N/A  
Temp/RH: 22.2°C / 47.1%  
Location: Calibration performed at Customer's facility

Serial Number: 12333783  
Department: N/A  
Performed By: ZHIYUAN LIM  
Received Condition: IN TOLERANCE  
Returned Condition: IN TOLERANCE  
Cal. Date: April 17, 2020  
Cal. Interval: 6 MONTHS  
Cal. Due Date: October 17, 2020

### Calibration Notes:

Performance Test Passed. See attached data (2 Pages).

Calibration performed at GES SINGAPORE PTE LTD.

### Standards Used to Calibrate Equipment

| I.D.   | Description. | Model    | Serial | Manufacturer               | Cal. Due Date | Traceability #  |
|--------|--------------|----------|--------|----------------------------|---------------|-----------------|
| CC6564 | WEIGHT SET   | CLASS F1 | CC6564 | TRUEMASS                   | Oct 10, 2021  | M1910081S       |
| AW9382 | WEIGHT SET   | CLASS 1  | 10X7   | RICE LAKE WEIGHING SYSTEMS | Jun 7, 2020   | 551220083057969 |

### Procedures Used in this Event

Procedure Name  
MPC-WEI-001 Rev. 04

Description  
Weighing Instruments, General, rev04, Jan-23-2020

Calibrating Technician:

ZHIYUAN LIM

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.

The status of compliance with the acceptance criteria is reported as:

PASS - Compliant with specification.

FAIL - Not compliant with specification.

FAIL<sup>2</sup> - The measured value is not within the acceptance limits. However, a portion of the expanded uncertainty of measurement at 95% is within the specified tolerance.

PASS<sup>2</sup> - The measured value is within acceptance limits. However, a portion of the expanded uncertainty of measurement at 95% exceeds the specified tolerance.

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 Method 6-Guard Bands based on Test Uncertainty Ratio. 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 A&D HR-200 Analytical Balance

|                         |                                  |
|-------------------------|----------------------------------|
| MPC Control #: 12333783 | Serial Number: 12333783          |
| Asset ID: 93372         | Calibration Date: April 17, 2020 |

### Repeatability Test

| Range      | Nominal   | Lower Limit | As Found  | As Left   | Upper Limit | Result | Uncertainty (±) |
|------------|-----------|-------------|-----------|-----------|-------------|--------|-----------------|
| 210.0000 g | 5.0000 g  | 4.9999 g    | 5.0000 g  | 5.0000 g  | 5.0001 g    | PASS   | NA              |
| 210.0000 g | 75.0000 g | 74.9999 g   | 75.0000 g | 75.0000 g | 75.0001 g   | PASS   | NA              |

The standard deviation was found to be: 0.0000 g

### Linearity Test or Test for Errors of Indication

| Range      | Nominal    | Lower Limit | As Found   | As Left    | Upper Limit | Result | Uncertainty (±) |
|------------|------------|-------------|------------|------------|-------------|--------|-----------------|
| 210.0000 g | 0.2000 g   | 0.1998 g    | 0.2000 g   | 0.2000 g   | 0.2002 g    | PASS   | 0.000070 g      |
| 210.0000 g | 0.5000 g   | 0.4998 g    | 0.5000 g   | 0.5000 g   | 0.5002 g    | PASS   | 0.000070 g      |
| 210.0000 g | 1.0000 g   | 0.9998 g    | 1.0000 g   | 1.0000 g   | 1.0002 g    | PASS   | 0.000070 g      |
| 210.0000 g | 2.0000 g   | 1.9998 g    | 2.0000 g   | 2.0000 g   | 2.0002 g    | PASS   | 0.000070 g      |
| 210.0000 g | 3.0000 g   | 2.9998 g    | 3.0000 g   | 3.0000 g   | 3.0002 g    | PASS   | 0.000074 g      |
| 210.0000 g | 4.0000 g   | 3.9998 g    | 4.0000 g   | 4.0000 g   | 4.0002 g    | PASS   | 0.000074 g      |
| 210.0000 g | 5.0000 g   | 4.9998 g    | 5.0000 g   | 5.0000 g   | 5.0002 g    | PASS   | 0.000074 g      |
| 210.0000 g | 6.0000 g   | 5.9998 g    | 6.0000 g   | 6.0000 g   | 6.0002 g    | PASS   | 0.000082 g      |
| 210.0000 g | 10.0000 g  | 9.9998 g    | 10.0000 g  | 10.0000 g  | 10.0002 g   | PASS   | 0.000082 g      |
| 210.0000 g | 50.0000 g  | 49.9998 g   | 50.0000 g  | 50.0000 g  | 50.0002 g   | PASS   | 0.00011 g       |
| 210.0000 g | 100.0000 g | 99.9998 g   | 100.0000 g | 100.0000 g | 100.0002 g  | PASS   | 0.00017 g       |
| 210.0000 g | 200.0000 g | 199.9998 g  | 200.0000 g | 200.0000 g | 200.0002 g  | PASS   | 0.00031 g       |

### Eccentricity Test

| Function Tested | Nominal   | Lower Limit | As Found  | Deviation from Center | Upper Limit | Result | Uncertainty (±) |
|-----------------|-----------|-------------|-----------|-----------------------|-------------|--------|-----------------|
| Center          | 70.0000 g | 69.9998 g   | 70.0000 g | 0.0000 g              | 70.0002 g   | PASS   | NA              |
| Front Left      | 70.0000 g | 69.9998 g   | 70.0000 g | 0.0000 g              | 70.0002 g   | PASS   | NA              |
| Back Left       | 70.0000 g | 69.9998 g   | 70.0000 g | 0.0000 g              | 70.0002 g   | PASS   | NA              |
| Back Right      | 70.0000 g | 69.9998 g   | 70.0000 g | 0.0000 g              | 70.0002 g   | PASS   | NA              |
| Front Right     | 70.0000 g | 69.9998 g   | 70.0000 g | 0.0000 g              | 70.0002 g   | PASS   | NA              |

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22 APR 2020

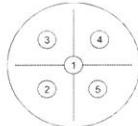
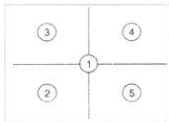


## Calibration Report of A&D HR-200 Analytical Balance

|                |          |                   |                |
|----------------|----------|-------------------|----------------|
| MPC Control #: | 12333783 | Serial Number:    | 12333783       |
| Asset ID:      | 93372    | Calibration Date: | April 17, 2020 |

### Positions of Load for Test of Eccentricity

- 1 Center
- 2 Front Left
- 3 Back Left
- 4 Back Right
- 5 Front Right



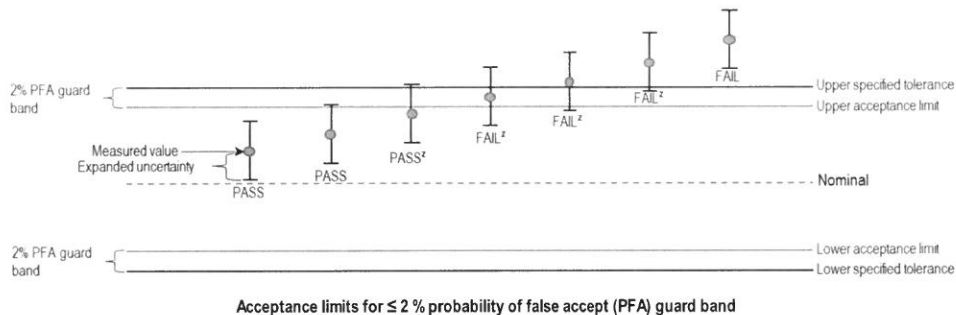
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This calibration report complies with ISO/IEC 17025:2017 and ANSI/NCSL Z540.3 Method 6-Guard Bands based on Test Uncertainty Ratio.

- End of Calibration Report -

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22 APR 2020