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SAMPLE

Calibration Certificate

Client's name	○○○○
Client's address	○○○○○○○○
Article	Non-automatic electronic weighing instrument
Type	○○○○
Serial number	○○○○
Manufacturer	○○○○○○○○
Calibration item	Mass(balance)
Calibration method	Per our calibration manual (Document No.MJB-03)
Instruments used by calibration	Standard instruments(Refer to attached data sheet)
Date of acceptance	6 Jan. 2020
Date of calibrated	6 Jan. 2020
A place of calibration	○○○○ ○○○○○○○○
The place where the article used	○○○○○○○○
Ambient condition	As per attached data sheet

This is to certify that the calibration result of the above article are as shown in the attached sheets.

Date of issue : 6 Jan. 2020

10-31 Akagawa 2-chome Asahi-ku Osaka, Japan
MURAKAMI KOKI CO., LTD.
The calibration authority
村上 昇

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1. Specification

Kind of balance	Single range instrument
Maximum capacity / Acutual scale interval	120 g / 0.1 mg
Temperature characteristic	1.50 ppm/K
Accuracy class	----
Sensitivity adjustment	Bult-in calibration weights.
Remarks 1	A preload is carried out.
Remarks 2	Indication before calibration 100.0106 g Indication after calibration 99.9999 g

2. Ambient condition

	Before	Middle 1	Middle 2	After	Change
Temperature	23.3 ℃	23.4 ℃	23.4 ℃	23.5 ℃	0.2 ℃
Humidity	59.0 %			59.0 %	0.0 %
Atmospheric pressure	1004.0 hPa			1004.0 hPa	0.0 hPa

3. Uncertainty evaluation

a) Repeatability

No.	Load	Indication	Deviation
1	60 g	59.9999 g	-0.0001 g
2	60 g	59.9999 g	-0.0001 g
3	60 g	60.0000 g	0.0000 g
4	60 g	59.9999 g	-0.0001 g
5	60 g	59.9999 g	-0.0001 g
6	60 g	59.9999 g	-0.0001 g

Standard deviation 0.04 mg

Uncertainty dispersion v_w 0.0017 mg^2

b) Rounded error

Uncertainty dispersion v_r 0.0017 mg^2

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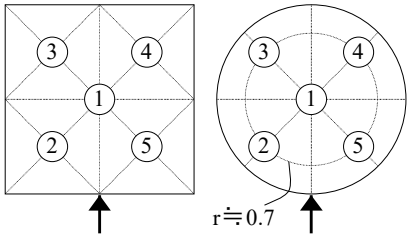
c) Off-center loading

Load 60 g

Position	Indication	Difference
1.Center	59.9999 g	
2.Ahead on the left	59.9998 g	-0.0001 g
3.Rear on the left	59.9999 g	0.0000 g
4.Rear on the right	60.0001 g	0.0002 g
5.Ahead on the right	60.0001 g	0.0002 g



Maximum difference 0.0002 g

Relative uncertainty dispersion v_e 4.12E-13

d) Trueness

No.	Tare	Load	Correction value	Indication	Deviation
1	0 g	120 g	-0.194 mg	119.9999 g	+0.00009 g
2	0 g	30 g	-0.053 mg	29.9999 g	-0.00005 g
3	0 g	60 g	-0.106 mg	59.9999 g	+0.00001 g
4	0 g	90 g	-0.142 mg	89.9999 g	+0.00004 g
5	50 g	30 g	-0.053 mg	30.0000 g	+0.00005 g
6	50 g	60 g	-0.106 mg	59.9999 g	+0.00001 g

e) Temperature effect

Temperature change 0.2 ºC

Ingredient of thermometer uncertainty 1.0 ºC

Temperature characteristic 1.50 ppm/K

Relative uncertainty dispersion v_T 2.70E-13

f) Weight used by calibration

Load	Uncertainty dispersion v_s
120 g	2.62E-02 mg²
30 g	9.26E-03 mg²
60 g	1.21E-02 mg²
90 g	3.19E-02 mg²
30 g	9.26E-03 mg²
60 g	1.21E-02 mg²

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4. Calibration results

Tare	Nominal value W	Deviation	Expanded uncertainty U	Degrees of feedom	Coverage factor k
0 g	120 g	+0.09 mg ±	0.40 mg	≧ 10	2
0 g	30 g	-0.05 mg ±	0.23 mg	≧ 10	2
0 g	60 g	+0.01 mg ±	0.27 mg	≧ 10	2
0 g	90 g	+0.04 mg ±	0.41 mg	≧ 10	2
50 g	30 g	+0.05 mg ±	0.23 mg	≧ 10	2
50 g	60 g	+0.01 mg ±	0.27 mg	≧ 10	2

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Standard instruments

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Nominal value	Mark	Conventional mass value		Expanded uncertainty	Uncertainty by buoyancy	Uncertainty by aging	Uncertainty by standard
100 g		-0.14 mg	±	0.14 mg	0.00 mg	0.08 mg	0.11 mg
50 g		-0.107 mg	±	0.090 mg	0.002 mg	0.052 mg	0.069 mg
20 g	1	-0.054 mg	±	0.072 mg	0.001 mg	0.042 mg	0.055 mg
20 g	2	0.019 mg	±	0.072 mg	0.001 mg	0.042 mg	0.055 mg
10 g		0.001 mg	±	0.054 mg	0.000 mg	0.031 mg	0.041 mg

The expanded uncertainty corresponds to a level of confidence of approximately 95 % with a coverage factor k being equal to 2.

End of the certificate.