

Appendix F Water Quality Equipment Calibration Certificate



專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA070063
Date of Issue : 16 July 2021
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit C, 11/F, Ford Glory Plaza
37-39 Wing Hong Street
Cheung Sha Wan, Kowloon, Hong Kong
Attn: Mr. Nelson TSUI

PART B – DESCRIPTION

Name of Equipment : Multi Water Quality Checker U-53
Manufacturer : Horiba
Serial Number : L20550GA
Date of Received : Jul 12, 2021
Date of Calibration : Jul 14, 2021
Date of Next Calibration^(a) : Oct 13, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H ⁺ B
Dissolved Oxygen	APHA 21e 4500-O G
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D – CALIBRATION RESULTS^(b,e)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.04	0.04	Satisfactory
7.42	7.46	0.04	Satisfactory
10.01	10.17	0.16	Satisfactory

Tolerance of pH should be less than ± 0.20 (pH unit)

(2) Temperature

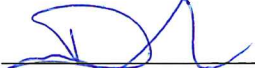
Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
18.5	19.62	1.12	Satisfactory
29	30.10	1.10	Satisfactory
36	36.26	0.26	Satisfactory

Tolerance limit of temperature should be less than ± 2.0 (°C)

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Remark(s) :-

- ^(a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.
^(b) The results relate only to the calibrated equipment as received
^(c) The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
^(d) "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
^(e) The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.


LEE Chun-ning, Desmond
Senior Chemist



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PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
1.80	1.41	-0.39	Satisfactory
3.86	3.71	-0.15	Satisfactory
6.07	6.50	0.43	Satisfactory
7.81	8.01	0.20	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.50 (mg/L)

(4) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.85	-1.50	Satisfactory
20	20.31	1.55	Satisfactory
30	31.54	5.13	Satisfactory

Tolerance limit of salinity should be less than ± 10.0 (%)

(5) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.00	--	Satisfactory
10	10.40	4.0	Satisfactory
20	19.20	-4.0	Satisfactory
100	97.90	-2.1	Satisfactory
800	829.00	3.6	Satisfactory

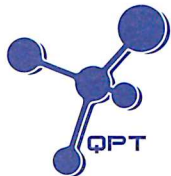
Tolerance limit of turbidity should be less than ± 10.0 (%)

~ END OF REPORT ~

Remark(s): -

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA060061
Date of Issue : 17 June 2021
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit C, 11/F, Ford Glory Plaza
37-39 Wing Hong Street
Cheung Sha Wan, Kowloon, Hong Kong
Attn: Mr. Nelson TSUI

PART B – DESCRIPTION

Name of Equipment : Multi Water Quality Checker U-53
Manufacturer : Horiba
Serial Number : UHB5F2BB
Date of Received : Jun 11, 2021
Date of Calibration : Jun 16, 2021
Date of Next Calibration^(a) : Sep 15, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H ⁺ B
Dissolved Oxygen	APHA 21e 4500-O G
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D – CALIBRATION RESULTS^(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.09	0.09	Satisfactory
7.42	7.34	-0.08	Satisfactory
10.01	9.89	-0.12	Satisfactory

Tolerance of pH should be less than ± 0.20 (pH unit)

(2) Temperature


Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
18.0	18.2	0.2	Satisfactory
28.0	29.3	1.3	Satisfactory
37	38.0	1.0	Satisfactory

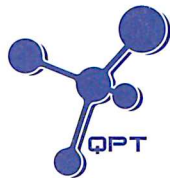
Tolerance limit of temperature should be less than ± 2.0 (°C)

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LEE Chun-ning, Desmond
Senior Chemist



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PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
2.00	1.75	-0.25	Satisfactory
4.77	4.31	-0.46	Satisfactory
6.43	6.22	-0.21	Satisfactory
7.71	7.47	-0.24	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.50 (mg/L)

(4) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	10.03	0.30	Satisfactory
20	21.38	6.90	Satisfactory
30	32.49	8.30	Satisfactory

Tolerance limit of salinity should be less than ± 10.0 (%)

(5) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.41	--	Satisfactory
10	10.00	0.0	Satisfactory
20	20.20	1.0	Satisfactory
100	100.80	0.8	Satisfactory
800	828.00	3.5	Satisfactory

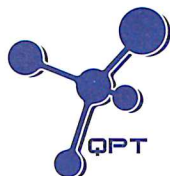
Tolerance limit of turbidity should be less than ± 10.0 (%)

~ END OF REPORT ~

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA050037
Date of Issue : 18 May 2021
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit C, 11/F, Ford Glory Plaza
37-39 Wing Hong Street
Cheung Sha Wan, Kowloon, Hong Kong
Attn: Mr. Nelson TSUI

PART B – DESCRIPTION

Name of Equipment : Multi Water Quality Checker U-53
Manufacturer : Horiba
Serial Number : S2A98W8H
Date of Received : May 11, 2021
Date of Calibration : May 18, 2021
Date of Next Calibration^(a) : Aug 17, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

<u>Parameter</u>	<u>Reference Method</u>
pH at 25°C	APHA 21e 4500-H ⁺ B
Dissolved Oxygen	APHA 21e 4500-O G
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D – CALIBRATION RESULTS^(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.18	0.18	Satisfactory
7.42	7.56	0.14	Satisfactory
10.01	9.99	-0.02	Satisfactory

Tolerance of pH should be less than ± 0.20 (pH unit)

(2) Temperature


Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
17	17.85	0.85	Satisfactory
25	25.57	0.57	Satisfactory
39	38.86	-0.14	Satisfactory

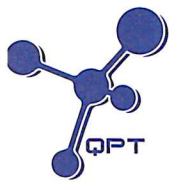
Tolerance limit of temperature should be less than ± 2.0 (°C)

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LEE Chun-ning, Desmond
Senior Chemist

**REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION**Report No. : BA050037
Date of Issue : 18 May 2021
Page No. : 2 of 2**PART D – CALIBRATION RESULTS (Cont'd)****(3) Dissolved Oxygen**

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
1.52	1.57	0.05	Satisfactory
3.08	3.28	0.20	Satisfactory
5.03	4.56	-0.47	Satisfactory
8.12	7.65	-0.47	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.50 (mg/L)**(4) Salinity**

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.31	-6.90	Satisfactory
20	18.66	-6.70	Satisfactory
30	28.56	-4.80	Satisfactory

Tolerance limit of salinity should be less than ± 10.0 (%)**(5) Turbidity**

Expected Reading (NTU)	Displayed Reading ⁽¹⁾ (NTU)	Tolerance ⁽²⁾ (%)	Results
0	0.00	--	Satisfactory
10	9.81	-1.9	Satisfactory
20	18.70	-6.5	Satisfactory
100	97.6	-2.4	Satisfactory
800	846	5.8	Satisfactory

Tolerance limit of turbidity should be less than ± 10.0 (%)

~ END OF REPORT ~

Remark(s): -⁽¹⁾ "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.⁽²⁾ The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.