

Air Quality Monitoring Equipment

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : MaWTF, Ma Wan	Date of Calibration: 23-Oct-20
Location ID: A1 Site Boundary	Next Calibration Date: 22-Jan-21
	Technician: Felix

CONDITIONS

Sea Level Pressure (hPa):	1011.40	Corrected Pressure (mm Hg):	759
Temperature (°C):	24	Temperature (K):	297

CALIBRATION ORIFICE

Make: Tisch	Qstd Slope: 2.11508
Model: TE-5025A	Qstd Intercept: -0.02962
Calibration Date: 11/9/2020	Expiry Date: 11/9/2021

CALIBRATIONS

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m ³ /min)	I (chart)	IC (corrected)	LINEAR REGRESSION
18	5.40	-6.00	11.400	1.613	61.00	61.10	Slope = 32.5454 Intercept = 8.0074 Corr. coeff.: 0.9991
13	4.30	-4.70	9.000	1.435	54.00	54.09	
10	3.30	-3.70	7.000	1.267	49.00	49.08	
7	2.00	-2.50	4.500	1.019	41.00	41.07	
5	1.10	-1.60	2.700	0.792	34.00	34.05	

Calculations:

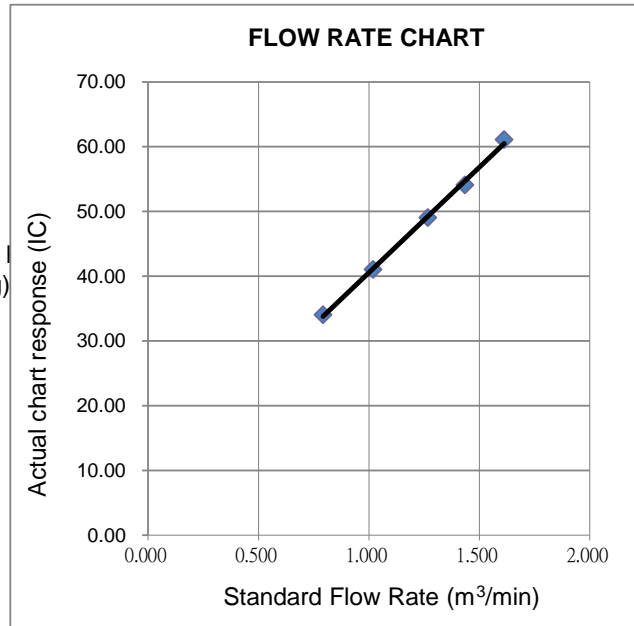
$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate
 IC = corrected chart response
 I = actual chart response
 m = calibrator Qstd slope
 b = calibrator Qstd intercept
 Ta = actual temperature during calibration (deg K)
 Pa = actual pressure during calibration (mm Hg)
 Tstd = 298 deg K
 Pstd = 760 mm Hg

For subsequent calculation of sampler flow:
 $1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$

m = sampler slope
 b = sampler intercept
 I = chart response
 Tav = daily average temperature
 Pav = daily average pressure



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MaterialLab

Report no. : 921436CA195379

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CALIBRATION CERTIFICATE OF SINGLE-PAN BALANCE

Client Supplied Information

Client : Fugro Technical Services Ltd.

Address : 5 Lok Yi Street, 17 M.S. Castle Peak Road, Tai Lam, Tuen Mun, N.T.

Manufacturer : Sartorius Capacity : 150 (g)

Model no. : LA130S-F Discrimination : 0.0001 (g)

Serial no. : 90104309 Operating range : 149.9999 (g)

Equipment ID. : C-065-5 Type : Without Built-in Mass

Location : General Chemical Laboratory of FTS

Next calibration due date : Full Check : 08-Apr-2021 Repeatability Check : 08-Oct-2019

Laboratory Information

Equipment ID. of weight set : R-030-29

Class of weight set : E2

Equipment ID. of psychrometer : R-067-67

Date of calibration : 09-Apr-2019

Temperature during test : 25 - 25 °C Relative humidity during test : 62 - 60 %

Method used : In house method R-C-082

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Calibration results:

Departure from nominal value

Reading (g)	Correction (g)
5.0001	-0.0001
15.0000	0.0000
30.0001	-0.0001
45.0001	-0.0001
60.0003	-0.0003
75.0002	-0.0002
90.0003	-0.0003
105.0004	-0.0005
120.0003	-0.0004
135.0002	-0.0003
150.0002	-0.0003
--	--

Note:

When the sign of the correction is positive (+) the amount should be added to the balance reading to give the correct value and when negative (-) subtracted from it.

Repeatability of reading

Reading (g)	Standard deviation of reading (g)	Max. difference between successive reading (g)
5.0001	0.00010	0.0002
75.0002	0.00008	0.0002
150.0002	0.00007	0.0002

CA-R-124 (12/12/2008)

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CAL29/0717

FUGRO TECHNICAL SERVICES LIMITED

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MaterialLab

Report no. : 921436CA195379

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Effect of off-centre loading

A mass of approximately 50 (g) was placed at various positions of the weighing pan. The differences in balance readings are given in the table.

Centre	Front	Rear	Left	Right	Maximum difference (g)
0.0000	0.0002	-0.0001	-0.0002	0.0005	0.0007

Hysteresis

Load (g)	Hysteresis (g)
100.0001	less than 0.0002

Tare check

Tare load (g)	Balance reading with 99.9999 (g)	Error (g)
50.0000	100.0000	0.0001

Uncertainty of weighing (correction is applied) = \pm 0.0004 g at 95% confidence level, with a coverage factor of **2.09**

The uncertainty of weighing is the tolerance band within which 95% balance readings will fall after appropriate correction is applied

Limit of performance for the balance (no correction is applied) = \pm 0.0010 g

The limit of performance is the tolerance band within which 95% balance readings will fall.

Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The reported hysteresis value is an average from three trials. In each trial, an extra mass was added to bring the balance reading close to full capacity after the specified load was placed on the pan. Hysteresis value is the difference of the readings of the specified load, before the extra mass was added and after it has been removed.
3. The uncertainty for departure from nominal value is \pm **0.0004 g**

Checked by : Hung Date : 13-4-2019 Approved Signatory : E.T. Young Date : 13-4-2019
CA-R-124 (12/12/2008) Leung Kwok Tai (Assistant Manager)

** End of Report **



Report No. : 921436CA202374

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WORKSHEET FOR REPEATABILITY TEST OF BALANCE

Client Supplied Information

Client : Fugro Technical Services Limited

Calibration Item -	Description	: BALANCE
	Manufacturer	: Sartorius
	Model No.	: LA130S-F
	Serial No.	: 90104309
	Equipment ID.	: C-065-5
	Capacity	: 150 (g)
	Discrimination	: 0.0001 (g)
	Type	: [<input checked="" type="checkbox"/>] Top Loading [<input type="checkbox"/>] Analytical

COPY

Laboratory Information

Calibrating Equipment -	Description	: Masses
	Equipment ID.	: R-030-29

Data of calibration : 25-Nov-2020 / Ambient Temperature : 24 °C Relative Humidity : 57 %

Calibration Location : General Chemical Laboratory of FTS

Method Used : CSIRO Publication "The Calibration of Balances" by David B. Prowse

In-house testing procedure no. : R-C-082

1. Results of Previous Calibration (Last Full Check)

Report No. of last full check : 921436CA195379

Calibration date of last full check : 09-Apr-2019

Value of σ_1 : 0.000103 (g)

(σ_1 is the maximum standard deviation found on the repeatability tests in the last full check)



2. Repeatability test

2.1 Repeatability of reading near to zero

M, near to zero = 5.0000 (g)

No.	Pan load	Reading (g)		Difference, mi - zi (g)	No.	Pan load	Reading (g)		Difference, mi - zi (g)
1	O	z ₁ =	0.0000	5.0001	6	O	z ₆ =	0.0000	5.0000
	M	m ₁ =	5.0001			M	m ₆ =	5.0000	
2	O	z ₂ =	0.0000	5.0001	7	O	z ₇ =	0.0000	5.0000
	M	m ₂ =	5.0001			M	m ₇ =	5.0000	
3	O	z ₃ =	0.0000	5.0000	8	O	z ₈ =	0.0000	5.0001
	M	m ₃ =	5.0000			M	m ₈ =	5.0001	
4	O	z ₄ =	0.0000	5.0001	9	O	z ₉ =	0.0000	5.0000
	M	m ₄ =	5.0001			M	m ₉ =	5.0000	
5	O	z ₅ =	0.0000	5.0001	10	O	z ₁₀ =	0.0000	5.0001
	M	m ₅ =	5.0001			M	m ₁₀ =	5.0001	

2.2 Repeatability of reading at half capacity

M, at half capacity = 75.0000 (g)

No.	Pan load	Reading (g)		Difference, mi - zi (g)	No.	Pan load	Reading (g)		Difference, mi - zi (g)
1	O	z ₁ =	0.0000	75.0005	6	O	z ₆ =	0.0000	75.0005
	M	m ₁ =	75.0005			M	m ₆ =	75.0005	
2	O	z ₂ =	0.0000	75.0005	7	O	z ₇ =	0.0000	75.0005
	M	m ₂ =	75.0005			M	m ₇ =	75.0005	
3	O	z ₃ =	0.0000	75.0004	8	O	z ₈ =	0.0000	75.0004
	M	m ₃ =	75.0004			M	m ₈ =	75.0004	
4	O	z ₄ =	0.0000	75.0005	9	O	z ₉ =	0.0000	75.0004
	M	m ₄ =	75.0005			M	m ₉ =	75.0004	
5	O	z ₅ =	0.0000	75.0005	10	O	z ₁₀ =	0.0000	75.0003
	M	m ₅ =	75.0005			M	m ₁₀ =	75.0003	



Report No. : 921436CA202374

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2. Repeatability test

2.3 Repeatability of reading at full capacity

M, at full capacity = 149.9999 (g)

No.	Pan load	Reading (g)		Difference, mi - zi (g)	No.	Pan load	Reading (g)		Difference, mi - zi (g)
1	○	z ₁ =	0.0000	150.0005	6	○	z ₆ =	0.0000	150.0006
	M	m ₁ =	150.0005			M	m ₆ =	150.0006	
2	○	z ₂ =	0.0000	150.0005	7	○	z ₇ =	0.0000	150.0006
	M	m ₂ =	150.0005			M	m ₇ =	150.0006	
3	○	z ₃ =	0.0000	150.0006	8	○	z ₈ =	0.0000	150.0005
	M	m ₃ =	150.0006			M	m ₈ =	150.0005	
4	○	z ₄ =	0.0000	150.0005	9	○	z ₉ =	0.0000	150.0005
	M	m ₄ =	150.0005			M	m ₉ =	150.0005	
5	○	z ₅ =	0.0000	150.0006	10	○	z ₁₀ =	0.0000	150.0006
	M	m ₅ =	150.0006			M	m ₁₀ =	150.0006	

3. Results of repeatability test

σ of readings near to zero : 0.000052 g σ₁ in last full check : 0.000103 g

σ of readings at half capacity : 0.000071 g

σ of readings at full capacity : 0.000053 g

Maximum value of σ is greater than σ₁ : No.

Yes - carry out a full check

σ = [Σ(r_i-r)² / (n-1)]^{1/2} , where i = 1, ..., 10 , r = mean value in the column "Difference".

or minimum σ = dx/n^{1/2} , where n=10 and dx is the discrimination of balance.

Note :

A full check should be carried out at least once every three years.

A full check must be carried out if the value of σ was increased in a repeatability test.

A repeatability test was carried out once every six months.

Pass	<input checked="" type="checkbox"/>
Fail	<input type="checkbox"/>
N/A	<input type="checkbox"/>

Remarks:

1. The equipment used in this calibration has traceable accuracy to National Primary Standards.

2 Recommended next calibration date : 24-May-2021

3. The balance was recommended to carry out a full check.

Tick the appropriate.

Tested by: R. Anasco Date: 25-NOV-2020 Checked by: C. Summary Date: 1-DEC-2020

CA-W-85 (25/04/97)

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CALIBRATION REPORT OF WIND METER

Project: Contract No. SPW 07/2020	Date of Calibration: 28-Mar-2021
Location: Yuen Long Sewage Treatment Works	Next Calibration Date: 27-Sep-2021
Brand: Global Water	Technician: Sam Fong
Model: GL500-7-2	Serial No: 2012000974
Anemometer	
Brand: Benetech	Equipment ID: 08
Model: GM816	
Procedures:	
1. Wind Still Test:	The wind speed sensor was held by hand until stabilized.
2. Wind Speed Test:	The wind meter was calibrated in-situ and compared with the Anemometer.
3. Wind Direction Test:	The wind meter was calibrated in-situ and compared with a marine compass from four directions.

Wind Still Test:

Wind Speed (m/s)
0.00

Wind Speed Test:

Global Water (m/s)	Anemometer (m/s)
1.2	1.0
1.5	1.4
2.8	3.0

Wind Direction Test:

	Marine Compass (o)
358	358
266	264
154	150
243	244

Wan Ka Ho
Project Consultant

Report Date: 1/4/2021

Noise Monitoring Equipment

Report no.: 203258CA201298(6)

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CALIBRATION CERTIFICATE OF SOUND LEVEL METER

Client Supplied Information

Client : Fugro Technical Services Ltd.

Project : Calibration Services

Details of Unit Under Test, UUT

Description	: Sound Level Meter									
Manufacturer	: Casella									
Model No.	: <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>Meter</td> <td>Microphone</td> <td>Preamplifier</td> </tr> <tr> <td>CEL-63X</td> <td>CE-251</td> <td>CEL-495</td> </tr> <tr> <td>1488302</td> <td>03348</td> <td>003036</td> </tr> </table>	Meter	Microphone	Preamplifier	CEL-63X	CE-251	CEL-495	1488302	03348	003036
Meter	Microphone	Preamplifier								
CEL-63X	CE-251	CEL-495								
1488302	03348	003036								
Serial No.	: <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>Meter</td> <td>Microphone</td> <td>Preamplifier</td> </tr> <tr> <td>CEL-63X</td> <td>CE-251</td> <td>CEL-495</td> </tr> <tr> <td>1488302</td> <td>03348</td> <td>003036</td> </tr> </table>	Meter	Microphone	Preamplifier	CEL-63X	CE-251	CEL-495	1488302	03348	003036
Meter	Microphone	Preamplifier								
CEL-63X	CE-251	CEL-495								
1488302	03348	003036								
Equipment ID	: N/A									
Next Calibration Date	: 13-Jul-2021									
Specification Limit	: EN 61672-1: 2003 Class 1									

Laboratory Information

Details of Reference Equipment -

Description	: B & K Acoustic Multifunction Calibrator 4226 (Traditional free field setting)
Equipment ID.	: R-108-1
Date of Calibration	: 14-Jul-2020
Calibration Location	: Calibration Laboratory of FTS Ambient Temperature : 20±2 °C
Method Used	: By direct comparison

Calibration Results :

Parameters	Mean Value (dB)	Specification Limit(dB)
A-weighting frequency response	4000Hz	2.6 to -0.6
	2000Hz	2.8 to -0.4
	1000Hz	1.1 to -1.1
	500Hz	-1.8 to -4.6
	250Hz	-7.2 to -10.0
	125Hz	-14.6 to -17.6
	63Hz	-24.7 to -27.7
	31.5Hz	-37.4 to -41.4
Differential level linearity	94dB-104dB	± 0.6
	104dB-114dB	± 0.6

Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The mean value is the average of four measurements.
3. For calibration: Reference SPL are 94, 104 & 114dB, range setting is 20-140dB & time weighting is fast
4. The UUT complies with EN 61672-1: 2003 Class 1 sound level meter for the above measurement.
5. The values given in this Calibration Certificate only relate to the values at the time of the test and any uncertainties will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling or the capability of any other laboratory to repeat the measurement.

Checked by : William Date : 21-7-2020 Certified by : K.T. Leung Date : 21-7-2020
 CA-R-297 (22/07/2009) Leung Kwok Tai (Assistant Manager)

** End of Report **

Report no.: 203258CA202302(2)

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CALIBRATION CERTIFICATE OF SOUND LEVEL METER

Client Supplied Information

Client : Fugro Technical Services Ltd.

Project : Calibration Services

Details of Unit Under Test, UUT

 Description : Sound Level Meter
 Manufacturer : Casella

	Meter	Microphone	Preamplifier
Model No.	CEL-63X	CE-251	CEL-495
Serial No.	1488304	03876	002752

Equipment ID : N-62

Next Calibration Date : 29-Oct-2021

Specification Limit : EN 61672-1: 2003 Class 1

Laboratory Information

Details of Reference Equipment -

 Description : B & K Acoustic Multifunction Calibrator 4226 (Traditional free field setting)
 Equipment ID. : R-108-1

Date of Calibration : 30-Oct-2020

Calibration Location : Calibration Laboratory of FTS Ambient Temperature : 20±2 °C

Method Used : By direct comparison Relative Humidity : <80% R.H.

Calibration Results :

Parameters	Mean Value (dB)	Specification Limit(dB)
A-weighting frequency response	4000Hz	1.5 2.6 to -0.6
	2000Hz	1.3 2.8 to -0.4
	1000Hz	-0.1 1.1 to -1.1
	500Hz	-3.5 -1.8 to -4.6
	250Hz	-8.9 -7.2 to -10.0
	125Hz	-16.4 -14.6 to -17.6
	63Hz	-26.4 -24.7 to -27.7
	31.5Hz	-39.4 -37.4 to -41.4
Differential level linearity	94dB-104dB	0.0 ± 0.6
	104dB-114dB	0.0 ± 0.6

Remarks :

- The equipment used in this calibration is traceable to recognized National Standards.
- The mean value is the average of four measurements.
- For calibration: Reference SPL are 94, 104 & 114dB, range setting is 20-140dB & time weighting is fast.
- The UUT does comply with EN 61672-1: 2003 Class 1 sound level meter for the above measurement.
- The values given in this Calibration Certificate only relate to the values at the time of the test and any uncertainties will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling or the capability of any other laboratory to repeat the measurement.

 Checked by : William Date : 4-11-2020 Certified by : K.T. Leung Date : 4-11-2020
 CA-R-297 (22/07/2009) Leung Kwok Tai (Assistant Manager)

** End of Report **

Report no.: 203258CA201871(1)

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CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client : Fugro Technical Services Ltd.

Project : Calibration Services

Client Supplied Information

Details of Unit Under Test, UUT

Description : Sound Calibrator
 Manufacturer : Casella (Model CEL-120/1)
 Serial No. : 5230736
 Equipment ID : N-18
 Next Calibration Date : 07-Sep-2021
 Specification Limit : EN 60942: 2003 Class 1

Laboratory Information

Details of Calibration Equipment

Description : Reference Sound level meter
 Equipment ID. : R-119-1
 Calibration Date : 08-Sep-2020
 Calibration Location : Calibration Laboratory of FTS Ambient Temperature : 20±2 °C
 Method Used : By direct comparison Relative Humidity : <80% R.H.

Calibration Results :

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit(dB)
94dB	0.1 dB	±0.4dB
114dB	0.2 dB	

Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The mean value is the average of four measurements.
3. The unit under test complies with the specification limit.
4. The values given in this Calibration Certificate only relate to the unit-under-test and the values measured at the time of the test. Any uncertainties quoted will not include allowances for the environmental changes, variation and shock during transportation, or the capability of any other laboratory to repeat the measurement.

Checked by : William Date : 10-9-2020 Certified by : K. T. Leung Date : 12-9-2020
 CA-R-297 (22/07/2009) Leung Kwok Tai (Assistant Manager)

** End of Report **

Report no.: 203258CA201298(3)

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CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client Supplied Information

Client : Fugro Technical Services Ltd.

Project : Calibration Services

Details of Unit Under Test, UUT

Description : Sound Calibrator
 Manufacturer : Casella (Model CEL-120/1)
 Serial No. : 5230758
 Equipment ID : N/A
 Next Calibration Date : 13-Jul-2021
 Specification Limit : EN 60942: 2003 Type 1

Laboratory Information

Description : Reference Sound level meter
 Equipment ID. : R-119-1
 Date of Calibration : 14-Jul-2020 Ambient Temperature : 20±2 °C
 Calibration Location : Calibration Laboratory of FTS
 Method Used : By direct comparison

Calibration Results :

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit(dB)
94dB	-0.3 dB	±0.4dB
114dB	-0.3 dB	

Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The mean value is the average of four measurements.
3. The equipment does comply with the specification limit.
4. The values given in this Calibration Certificate only relate to the values at the time of the test and any uncertainties will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling or the capability of any other laboratory to repeat the measurement.

Checked by : William Date : 21-7-2020 Certified by : E. J. Leung Date : 21-7-2020
 CA-R-297 (22/07/2009) Leung Kwok Tai (Assistant Manager)

** End of Report **

Report No. : 212769CA211145

Page 1 of 1

CALIBRATION CERTIFICATE OF ANEMOMETER

Client Supplied Information

Client : Fugro Technical Services Limited

Project : Calibration Services

Details of Unit Under Test, UUT

Description : Anemometer

Manufacturer : SENSOR

Model No. : AR816

Serial No. : 2136513

Equipment ID.: NA

Next Calibration Date : 30-May-2022

Laboratory Information

Details of Reference Equipment –

Description : Reference Anemometer

Equipment ID.: R-101-4

Date of Calibration : 31-May-2021 Ambient Temperature : 22 °C

Calibration Location : Calibration Laboratory of FTS

Method Used : In-house Method R-C-279

Calibration Results :

Reference Reading (m/s)	UUT Reading (m/s)	Error (m/s)
1.99	2.0	0.0
4.00	4.3	0.3
6.01	6.3	0.3
7.99	8.2	0.2
10.03	9.9	-0.1

Remark :

1. The equipment being used in this calibration is traceable to recognized National Standards.
2. The reported readings in this calibration are an average from 10 trials.
3. The expanded uncertainty is 0.5 m/s with a coverage factor of 2 at a confidence level of 95%.

Checked by : William Date : 2-6-2021 Certified by : P.T. Leung Date : 2-6-2021

CA-R-297 (22/07/2009)

Leung Kwok Tai (Assistant Manager)

**** End of Report ****

Water Quality Monitoring Equipment



Report No. : 142626WA210725



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Report on Calibration of YSI EXO-3 Multi-parameter Water Quality Meter**Information Supplied by Client**

Client : Fugro Technical Services Limited (MCL)

Client's address : Rm. 723-726, 7/F, Profit Industrial Building, No. 1-15, Kwai Fung Crescent, Kwai Chung, N.T.

Sample description : One YSI EXO-3 Multi-parameter Water Quality Meter

Client sample ID : Serial No. 19E100634

Test required : Calibration of the YSI EXO-3 Multi-parameter Water Quality Meter

Laboratory Information

Lab. sample ID : WA210725/1

Date sample received : 30/03/2021

Date of calibration : 19/04/2021

Next calibration date : 18/07/2021

Test method used : In-house comparison method

Note : This report refers only to the sample(s) tested.

Report No. : 142626WA210725

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Results :

D. Temperature calibration

Thermometer reading, °C	Meter reading, °C
23.8	23.312

E. Turbidity calibration

Turbidity, N.T.U.			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
0	-	-	± 0.5
4	4.47	+0.47	± 0.6
8	8.36	+0.36	± 0.8
40	40.28	+0.28	± 3.0
80	79.42	-0.58	± 4.0

F. Chlorophyll calibration

Chlorophyll reading at 24.247°C for Std. solution (62.5ug/L)		
Theoretical (ug/L) (Temp.-compensated)	Measured	Deviation
62.5	63.45	+0.95

Certified by : Chan Hoi Yan
 Approved Signatory : CHAN Hoi Yan, Winnie
 Assistant Manager

Date : 7-5-2017
 ** End of Report **

Note : This report refers only to the sample(s) tested.

Report No. : 142626WA210725(1)



Page 1 of 3

Report on Calibration of YSI EXO-3 Multi-parameter Water Quality Meter**Information Supplied by Client**

Client : Fugro Technical Services Limited (MCL)

Client's address : Rm. 723-726, 7/F, Profit Industrial Building, No. 1-15,
Kwai Fung Crescent, Kwai Chung, N.T.

Sample description : One YSI EXO-3 Multi-parameter Water Quality Meter

Client sample ID : Serial No. 19E100633

Test required : Calibration of the YSI EXO-3 Multi-parameter Water Quality Meter

Laboratory Information

Lab. sample ID : WA210725/2

Date sample received : 30/03/2021

Date of calibration : 19/04/2021

Next calibration date : 18/07/2021

Test method used : In-house comparison method

Note : This report refers only to the sample(s) tested.

Report No. : 142626WA210725(1)

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Results :

D. Temperature calibration

Thermometer reading, °C	Meter reading, °C
21.5	20.979

E. Turbidity calibration

Turbidity, N.T.U.			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
0	-	-	± 0.5
4	4.41	+0.41	± 0.6
8	8.09	+0.09	± 0.8
40	40.25	+0.25	± 3.0
80	80.34	+0.34	± 4.0

Certified by

: Chan Hoi Yan
 Approved Signatory : CHAN Hoi Yan, Winnie
 Assistant Manager

Date

** End of Report **

: 7-5-2021

Note : This report refers only to the sample(s) tested.

CALIBRATION CERTIFICATE

This document certifies that the instrument detailed below has been calibrated according to Valeport Limited's Standard Procedures, using equipment with calibrations traceable to UKAS or National Standards.

Calibration Certificate Number:

61134

Instrument Type:

MODEL 106

Instrument Serial Number:

67738

Calibrated By:

N.PADDON

Date:

11TH NOVEMBER 2019

Signed:

N. Paddon

Full details of the results from the calibration procedure applied to each fitted sensor are available, on request, via email. This summary certificate should be kept with the instrument.

A large, stylized number '50' in a bold, sans-serif font, with a small square icon above the '0'.

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www.valeport.co.uk

VAT No. CB 165 8753 67
Registered in England No. 1950444





a xylem brand

9940 Summers Ridge Road
San Diego, CA 92121
Tel: (858) 546-8327
support@sontek.com

Certificate of Calibration

TEST REPORT

Serial Number	5906
System Type	M9
System Orientation	Down
Compass Type	Sontek
Compass Offset (degrees)	N/A
Communications Output	RS232
Recorder Size (GB)	14.9
Firmware Version	4.02
Date Tested	05/23/2017

POWER TEST

Command Mode (W):	0.17	Range : 0.00 – 0.30
Sleep Mode (W):	N/A	Range : N/A
Ping Mode - 18V (W):	2.67	Range : 1.50 – 3.50
Power Check		PASS

NOISE TEST

Beam 1 – 3.0 MHz (counts)	95
Beam 2 – 1.0 MHz (counts)	96
Beam 3 – 3.0 MHz (counts)	95
Beam 4 – 1.0 MHz (counts)	101
Beam 5 – 3.0 MHz (counts)	93
Beam 6 – 1.0 MHz (counts)	95
Beam 7 – 3.0 MHz (counts)	91
Beam 8 – 1.0 MHz (counts)	100
Beam Vertical – 500KHz (counts)	88
Noise Test	PASS

VERIFICATION

Velocity Check	PASS
Transmit Output	PASS
Sensitivity	PASS
Temperature Sensor	PASS
Compass Heading Check	PASS
Compass Level Check	PASS
Burn-in (24 hrs)	PASS
Load Default Parameters	DONE

OPTIONS

Bottom Track	Installed
SmartPulse HD TM	Enabled
Stationary	Disabled
GPS Compass Integration	Disabled
RiverSurveyor	Enabled
HydroSurveyor	Disabled

Verified by: **ainthasane**

This report was generated on 5/24/2017.

ATTENTION: New Warranty Terms as of March 4, 2013:

This system is covered under a two year limited warranty that extends to all parts and labor for any malfunction due to workmanship or errors in the manufacturing process. The warranty is valid only if you properly maintain and operate this system under normal use as outlined in the User's Manual. The warranty does not cover shortcomings that are due to the design, or any incidental damages as a result of errors in the measurements.

SonTek will repair and/or replace, at its sole option, any product established to be defective with a product of like type. CLAIMS FOR LABOR COSTS AND/OR OTHER CHARGES RESULTING FROM THE USE OF SonTek GOODS AND/OR PRODUCTS ARE NOT COVERED BY THIS LIMITED WARRANTY.

SonTek DISCLAIMS ALL EXPRESS WARRANTIES OTHER THAN THOSE CONTAINED ABOVE AND ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE. SonTek DISCLAIMS AND WILL NOT BE LIABLE, UNDER ANY CIRCUMSTANCE, IN CONTRACT, TORT OR WARRANTY, FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING BUT NOT LIMITED TO LOST PROFITS, BUSINESS INTERRUPTION LOSSES, LOSS OF GOODWILL, OR LOSS OF BUSINESS OR CUSTOMER RELATIONSHIPS.

If your system is not functioning properly, first try to identify the source of the problem. If additional support is required, we encourage you to contact us immediately. We will work to resolve the problem as quickly as possible.

If the system needs to be returned to the factory, please contact SonTek to obtain a Service Request (SR) number. We reserve the right to refuse receipt of shipments without SRs. We require the system to be shipped back in the original shipping container using the original packing material with all delivery costs covered by the customer (including all taxes and duties). If the system is returned without appropriate packing, the customer will be required to cover the cost of a new packaging crate and material.

The warranty for repairs performed at an authorized SonTek Service Center is one year.