TISCH Environmental

RECALIBRATION DUE DATE:
November 20, 2018

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	November 20, 2017	**Rootsmeter S/N:** 438320	**Ta:** 294	°K
Operator:	Jim Tisch		**Pa:** 756.9	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **2456**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4440	3.2	2.00
2	3	4	1	1.0260	6.4	4.00
3	5	6	1	0.9130	7.8	5.00
4	7	8	1	0.8680	8.8	5.50
5	9	10	1	0.7190	12.7	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
1.0052	0.6961	1.4209	0.9958	0.6896	0.8814
1.0010	0.9756	2.0095	0.9915	0.9664	1.2465
0.9991	1.0943	2.2467	0.9897	1.0840	1.3936
0.9978	1.1495	2.3563	0.9884	1.1387	1.4616
0.9926	1.3805	2.8418	0.9832	1.3675	1.7628
QSTD	**m=**	**2.07133**	**QA**	**m=**	**1.29703**
	b=	**-0.01892**		**b=**	**-0.01173**
	r=	**0.99995**		**r=**	**0.99995**

Calculations

Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

For subsequent flow rate calculations:

Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

Qa= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg

Key
ΔH: calibrator manometer reading (in H2O)
ΔP: rootsmeter manometer reading (mm Hg)
Ta: actual absolute temperature (°K)
Pa: actual barometric pressure (mm Hg)
b: intercept
m: slope

RECALIBRATION
US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

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MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Date of Calibration: 5-Oct-17
Location : KTD1a
Next Calibration Date: 4-Jan-18
Brand: Tisch
Technician: Toby Wan
Model: TE-5170 S/N: 4037

CONDITIONS

Sea Level Pressure (hPa):	1013.3	Corrected Pressure (mm Hg):	760
Temperature (°C):	29	Temperature (K):	302

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.12779
Model:	TE-5025A	Qstd Intercept:	-0.04273
Calibration Date:	18-Jan-17	Expiry Date:	18-Jan-18
S/N:	2154		

CALIBRATIONS

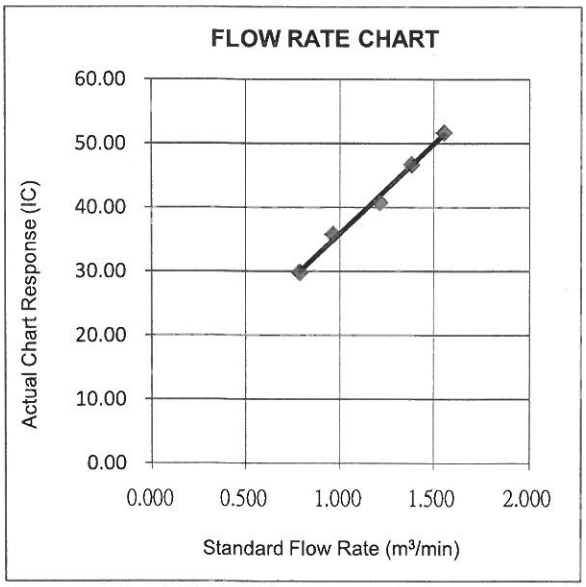
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	5.00	-5.80	10.800	1.554	52.00	51.65	Slope =	27.8838
13	3.90	-4.60	8.500	1.381	47.00	46.69	Intercept =	8.0325
10	2.90	-3.60	6.500	1.210	41.00	40.73	Corr. coeff.=	0.9968
7	1.70	-2.40	4.100	0.965	36.00	35.76		
5	1.00	-1.70	2.700	0.787	30.00	29.80		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[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)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



CHOI KAM HO
Project Consultant

Report Date: 5th October, 2017

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MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Date of Calibration: 5-Oct-17
Location : KTD2a
Next Calibration Date: 4-Jan-18
Brand: Tisch
Technician: Toby Wan
Model: TE-5170 S/N: 3838

CONDITIONS

Sea Level Pressure (hPa):	1013.3	Corrected Pressure (mm Hg):	760
Temperature (°C):	29	Temperature (K):	302

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.12779
Model:	TE-5025A	Qstd Intercept:	-0.04273
Calibration Date:	18-Jan-17	Expiry Date:	18-Jan-18
S/N:	2154		

CALIBRATIONS

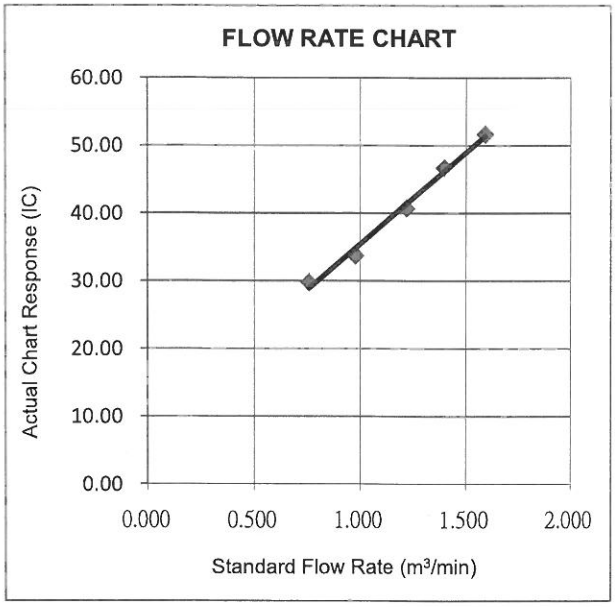
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	6.70	-4.60	11.300	1.589	52.00	51.65	Slope =	27.1114
13	5.60	-3.10	8.700	1.397	47.00	46.69	Intercept =	8.3150
10	4.40	-2.20	6.600	1.219	41.00	40.73	Corr. coeff.=	0.9959
7	3.10	-1.10	4.200	0.977	34.00	33.77		
5	2.30	-0.20	2.500	0.758	30.00	29.80		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[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)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



CHOI KAM HO
Project Consultant

Report Date: 5th October, 2017

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MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Date of Calibration: 5-Oct-17
Location : KER1b
Next Calibration Date: 4-Jan-18
Brand: Tisch
Technician: Toby Wan
Model: TE-5170 S/N: 3482

CONDITIONS

Sea Level Pressure (hPa):	1013.3	Corrected Pressure (mm Hg):	760
Temperature (°C):	29	Temperature (K):	302

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.12779
Model:	TE-5025A	Qstd Intercept:	-0.04273
Calibration Date:	18-Jan-17	Expiry Date:	18-Jan-18
S/N:	2154		

CALIBRATIONS

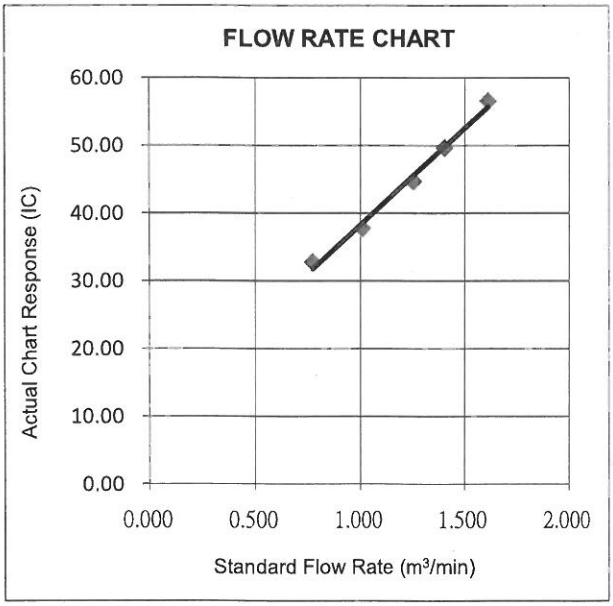
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	7.50	-4.10	11.600	1.610	57.00	56.62	Slope =	28.6210
13	6.00	-2.80	8.800	1.405	50.00	49.67	Intercept =	9.6516
10	5.30	-1.70	7.000	1.255	45.00	44.70	Corr. coeff.=	0.9954
7	4.00	-0.50	4.500	1.010	38.00	37.75		
5	3.10	0.50	2.600	0.773	33.00	32.78		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[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)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



Report Date: 5th October, 2017

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MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Location : KER1b
Brand: Tisch
Model: TE-5170 S/N: 3482

Date of Calibration: 4-Jan-18
Next Calibration Date: 3-Apr-18
Technician: Toby Wan

CONDITIONS

Sea Level Pressure (hPa):	1016.7	Corrected Pressure (mm Hg):	763
Temperature (°C):	19	Temperature (K):	292

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.12779
Model:	TE-5025A	Qstd Intercept:	-0.04273
Calibration Date:	18-Jan-17	Expiry Date:	18-Jan-18
S/N:	2154		

CALIBRATIONS

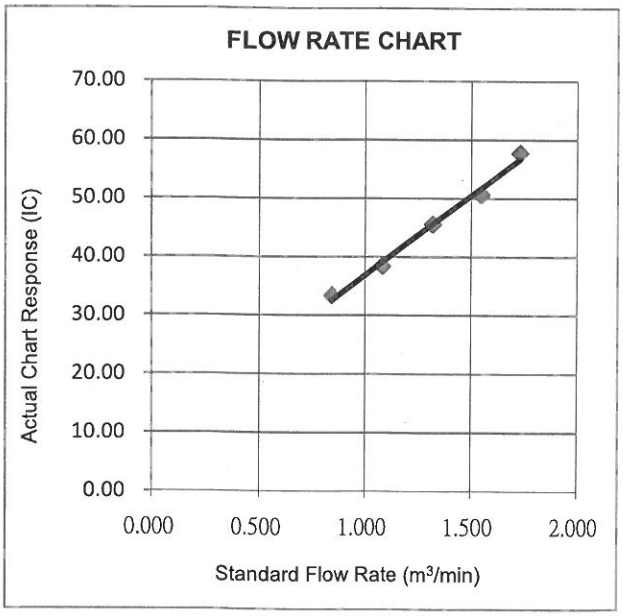
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	4.80	-8.10	12.900	1.729	57.00	57.70	Slope =	27.0898
13	3.70	-6.60	10.300	1.547	50.00	50.61	Intercept =	9.7861
10	2.50	-5.00	7.500	1.323	45.00	45.55	Corr. coeff.=	0.9954
7	0.90	-4.10	5.000	1.084	38.00	38.46		
5	0.00	-3.00	3.000	0.844	33.00	33.40		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[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)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



CHOI KAM HO
Project Consultant

Report Date: 4th January, 2018

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MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Location : KTD1a
Brand: Tisch
Model: TE-5170 S/N: 4037

Date of Calibration: 4-Jan-18
Next Calibration Date: 3-Apr-18
Technician: Toby Wan

CONDITIONS

Sea Level Pressure (hPa):	1016.7	Corrected Pressure (mm Hg):	763
Temperature (°C):	19	Temperature (K):	292

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.12779
Model:	TE-5025A	Qstd Intercept:	-0.04273
Calibration Date:	18-Jan-17	Expiry Date:	18-Jan-18
S/N:	2154		

CALIBRATIONS

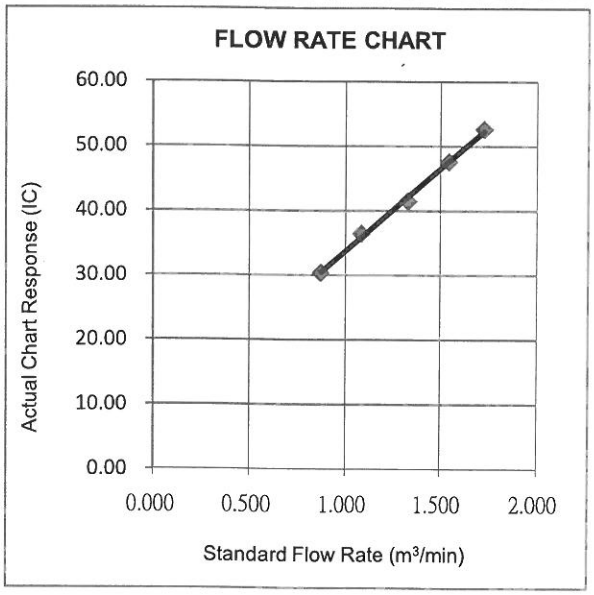
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	4.90	-8.00	12.900	1.729	52.00	52.64	Slope =	25.5019
13	3.60	-6.70	10.300	1.547	47.00	47.57	Intercept =	8.2352
10	2.40	-5.20	7.600	1.332	41.00	41.50	Corr. coeff.=	0.9985
7	1.00	-4.00	5.000	1.084	36.00	36.44		
5	0.10	-3.10	3.200	0.871	30.00	30.37		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[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)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



CHOI KAM HO
Project Consultant

Report Date: 4th January, 2018

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MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Location : KTD2a
Brand: Tisch
Model: TE-5170 S/N: 3838

Date of Calibration: 4-Jan-18
Next Calibration Date: 3-Apr-18
Technician: Toby Wan

CONDITIONS

Sea Level Pressure (hPa):	1016.7	Corrected Pressure (mm Hg):	763
Temperature (°C):	19	Temperature (K):	292

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.12779
Model:	TE-5025A	Qstd Intercept:	-0.04273
Calibration Date:	18-Jan-17	Expiry Date:	18-Jan-18
S/N:	2154		

CALIBRATIONS

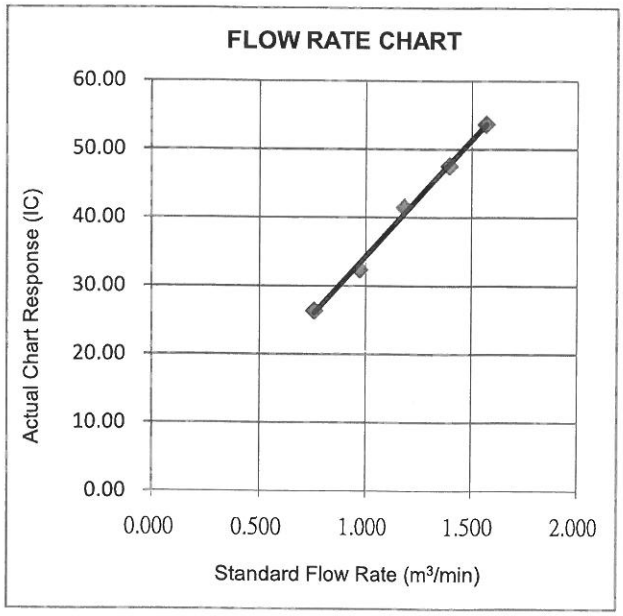
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	5.50	-5.10	10.600	1.569	53.00	53.65	Slope =	34.0537
13	4.50	-3.90	8.400	1.399	47.00	47.57	Intercept =	0.2281
10	3.30	-2.70	6.000	1.185	41.00	41.50	Corr. coeff.=	0.9981
7	2.40	-1.60	4.000	0.972	32.00	32.39		
5	1.40	-1.00	2.400	0.757	26.00	26.32		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[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)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



CHOI KAM HO
Project Consultant

Report Date: 4th January, 2018

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MateriaLab

Report no.: 172379CA171674

CALIBRATION CERTIFICATE OF SOUND LEVEL METER

Client Supplied Information

Client : MateriaLab Consultants Ltd.

Address : Room 723 & 725, 7F., Block B Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Chung, N.T.

Project : Calibration Services

Details of Unit Under Test, UUT

Description	:	Sound Level Meter
Manufacturer	:	Casella
Model No.		Casella (Model no. CEL-63X(meter), CEL-251(microphone), CEL-495(Preamplifier))
Serial No.	:	1057034 (meter), 01308 (microphone), 002672 (Preamplifier))
Next Calibration Date	:	30-Jul-2018
Specification Limit	:	EN 61672: 2003 Type 1

Laboratory Information

Description : B & K Acoustic Multifunction Calibrator 4226 (Traditional free field setting)

Equipment ID. : R-108-1

Date of Calibration : 31-Jul-2017 Ambient Temperature : 22 °C

Calibration Location : Calibration Laboratory of MateriaLab

Method Used : By direct comparison

Calibration Results :

Parameters		Mean Value (dB)	Specification Limit(dB)
A-weighing frequency response	4000Hz	2.5	2.6 to -0.6
	2000Hz	0.5	2.8 to -0.4
	1000Hz	-1.0	1.1 to -1.1
	500Hz	-4.5	-1.8 to -4.6
	250Hz	-10.0	-7.2 to -10.0
	125Hz	-17.4	-14.6 to -17.6
	63Hz	-27.3	-24.7 to -27.7
	31.5Hz	-40.0	-37.4 to -41.4
Differential level linearity	94dB-104dB	0.0	± 0.6
	104dB-114dB	0.0	± 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 weighing is fast
4. The equipment complies with EN 61672: 2003 Type 1 sound level meter for the above measurement.

Checked by : _____ Date : 2-8-2017 Certified by : _____ Date : 2-8-2017

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

Kwok Chi Wa (Assistant Manager)

** End of Report **

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MateriaLab

Report no.: 161966CA170482

CALIBRATION CERTIFICATE OF SOUND LEVEL METER

Client Supplied Information

Client : MateriaLab Consultants Ltd.

Address : Room 723 & 725, 7/F., Block B Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Chung, N.T.

Project : Calibration Services

Details of Unit Under Test, UUT

Description	:	Sound Level Meter
Manufacturer	:	Casella
Model No.		Casella (Model no. CEL-63X(meter), CEL-251(microphone), CEL-495(Preamplifier))
Serial No.	:	3756127 (meter), 00937 (microphone), 002712 (Preamplifier))
Next Calibration Date	:	28-Feb-2018
Specification Limit	:	EN 61672: 2003 Type 1

Laboratory Information

Description : B & K Acoustic Multifunction Calibrator 4226 (Traditional free field setting)

Equipment ID. : R-108-1

Date of Calibration : 01-Mar-2017 Ambient Temperature : 22 °C

Calibration Location : Calibration Laboratory of MateriaLab

Method Used : By direct comparison

Calibration Results :

Parameters		Mean Value (dB)	Specification Limit(dB)
A-weighing frequency response	4000Hz	-0.2	2.6 to -0.6
	2000Hz	0.8	2.8 to -0.4
	1000Hz	0.1	1.1 to -1.1
	500Hz	-3.0	-1.8 to -4.6
	250Hz	-8.4	-7.2 to -10.0
	125Hz	-15.8	-14.6 to -17.6
	63Hz	-25.9	-24.7 to -27.7
	31.5Hz	-38.3	-37.4 to -41.4
Differential level linearity	94dB-104dB	0.0	± 0.6
	104dB-114dB	0.0	± 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 weighing is fast
4. The equipment does comply with EN 61672: 2003 Type 1 sound level meter for the above measurement.

Checked by : _____ Date : 3-3-2017 Certified by : _____ Date : 3.3.2017

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

Chan Chun Wai (Manager)

** End of Report **

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MateriaLab

Report no.: 161966CA170279

CALIBRATION CERTIFICATE OF SOUND LEVEL METER

Client Supplied Information

Client : MateriaLab Consultants Ltd.

Address : Room 723 & 725, 7/F., Block B Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Chung, N.T.

Project : Calibration Services

Details of Unit Under Test, UUT

Description	:	Sound Level Meter (N-29)
Manufacturer	:	Casella
Model No.		Casella (Model no. CEL-63X(meter), CEL-251(microphone), CEL-495(Preamplifier))
Serial No.	:	3756036 (meter), 01308 (microphone), 003048(Preamplifier))
Next Calibration Date	:	06-Feb-2018
Specification Limit	:	EN 61672: 2003 Type 1

Laboratory Information

Description : B & K Acoustic Multifunction Calibrator 4226 (Traditional free field setting)

Equipment ID. : R-108-1

Date of Calibration : 07-Feb-2017 Ambient Temperature : 22 °C

Calibration Location : Calibration Laboratory of MateriaLab

Method Used : By direct comparison

Calibration Results :

Parameters		Mean Value (dB)	Specification Limit(dB)
A-weighing frequency response	4000Hz	1.5	2.6 to -0.6
	2000Hz	0.9	2.8 to -0.4
	1000Hz	-0.5	1.1 to -1.1
	500Hz	-3.9	-1.8 to -4.6
	250Hz	-9.3	-7.2 to -10.0
	125Hz	-16.7	-14.6 to -17.6
	63Hz	-26.8	-24.7 to -27.7
	31.5Hz	-39.3	-37.4 to -41.4
Differential level linearity	94dB-104dB	0.0	± 0.6
	104dB-114dB	0.0	± 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 weighing is fast
4. The equipment does comply with EN 61672: 2003 Type 1 sound level meter for the above measurement.

Checked by : _____ Date : 9-2-2017 Certified by : _____ Date : 9.2.2017

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

Chan Chun Wai (Manager)

** End of Report **

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MateriaLab

Report no.: 172379CA171674(1)

CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client Supplied Information

Client : MateriaLab Consultants Ltd.

Address : Room 723 & 725, 7F., Block B Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Chung, N.T.

Project : Calibration Services

Details of Unit Under Test, UUT

Description	:	Sound Calibrator
Manufacturer	:	Casella (Model no. CEL-120/1)
Serial No.	:	0255083
Next Calibration Date	:	30-Jul-2018
Specification Limit	:	±0.5dB

Laboratory Information

Description : Reference Sound Level Meter

Equipment ID. : R-119-1

Date of Calibration : 31-Jul-2017 Ambient Temperature : 21 °C

Calibration Location : Calibration Laboratory of MateriaLab

Method Used : By direct comparison

Calibration Results :

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit (dB)
94dB	0.1 dB	±0.5dB
114dB	0.1 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.

Checked by : _____ Date : 2-8-2017 Certified by : _____ Date : 4-8-2017

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

Kwok Chi Wa (Assistant Manager)

** End of Report **

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MateriaLab

Report no.: 172379CA171150(1)

CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client Supplied Information

Client : MateriaLab Consultants Ltd.

Project : Calibration Services

Details of Unit Under Test, UUT

Description	:	Sound Calibrator
Manufacturer	:	Casella (Model no. CEL-120/1)
Serial No.	:	5230736
Equipment ID	:	FY-SLC-01
Next Calibration Date	:	31-May-2018
Specification Limit	:	EN 60942: 2003 Type 1

Laboratory Information

Description : Reference Sound level meter

Equipment ID. : R-119-1

Date of Calibration : 01-Jun-2017 Ambient Temperature : 22 °C

Calibration Location : Calibration Laboratory of MateriaLab

Method Used : By direct comparison

Calibration Results :

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit(dB)
94dB	0.1 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.

Checked by : _____ Date : 5-6-2017 Certified by : _____ Date : 5.6.2017

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

Chan Chun Wai (Manager)

** End of Report **

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MateriaLab

Report No. : 161966CA171055

CALIBRATION CERTIFICATE OF ANEMOMETER

Client Supplied Information

Client : MateriaLab Consultants Ltd.

Project : Calibration Services

Details of Unit Under Test, UUT

Description : Anemometer

Manufacturer : Benetech

Model No. : GM816

Serial No. : 13372555

Equipment ID. : N/A

Next Calibration Date : 09-May-2018

Laboratory Information

Details of Reference Equipment –

Description : Reference Anemometer

Equipment ID. : R-101-4

Date of Calibration : 10-May-2017 Ambient Temperature : 22 °C

Calibration Location : Calibration Laboratory of MateriaLab

Method Used : By direct Comparison

Calibration Results :

Reference Reading (m/s)	UUT Reading (m/s)	Error (m/s)
2.00	2.0	0.0
3.98	3.9	-0.1
5.98	5.4	-0.6
8.01	7.0	-1.0
10.01	8.8	-1.2

Remark :

1. The equipment being used in this calibration is traceable to recognized National Standards.

Checked by : _____ Date : 12-5-2017 Certified by : _____ Date : 12.5.2017

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

Chan Chun Wai (Manager)

** End of Report **