

Certificate of Calibration - Wind Monitoring Station

Description: Yau Lai Estate, Bik Lai House

Manufacturer: <u>Davis Instruments</u>

Model No.: Davis7440

Serial No.: <u>MC01010A44</u>

Equipment No.: SA-03-04

Date of Calibration <u>17-Aug-2024</u>

Next Due Date <u>17-Feb-2025</u>

1. Performance check of Wind Speed

Wind Sp	peed, m/s	Difference D (m/s)		
Wind Speed Reading (V1)	Anemometer Value (V2)	D = V1 - V2		
0.0 0.0		0.0		
1.5	1.6	-0.1		
2.5	2.3	0.2		
4.0 4.0		0.0		

2. Performance check of Wind Direction

Wind Di	rection (°)	Difference D (°)
Wind Direction Reading (W1)	Marine Compass Value (W2)	D = W1 - W2
0	0	0.0
90	90	0.0
180	180	0.0
270	270	0.0

Test Specification:

- 1. Performance Wind Speed Test The wind meter was on-site calibrated against the anemometer
- 2. Performance Wind Direction Test The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by:

Wong Shing Kwai

Approved by:

Henry Leung



RECALIBRATION DUE DATE:

January 15, 2025

Certificate of Calibration

Calibration Certification Information

Cal. Date: January 15, 2024

Rootsmeter S/N: 438320

Ta: 294

°K

Operator: Jim Tisch

Pa: 755.4

mm Hg

Calibration Model #: TE-5025A

Calibrator S/N: 3864

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4380	3.3	2.00
2	3	4	1	1.0270	6.4	4.00
3	5	6	1	0.9180	8.0	5.00
4	7	8	1	0.8750	8.9	5.50
5	9	10	1	0.7230	12.9	8.00

	Data Tabulation						
Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	$\sqrt{\Delta H (Ta/Pa)}$		
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)		
1.0031	0.6975	1.4195	0.9956	0.6924	0.8823		
0.9989	0.9727	2.0075	0.9915	0.9655	1.2477		
0.9968	1.0858	2.2444	0.9894	1.0778	1.3950		
0.9956	1.1378	2.3539	0.9882	1.1294	1.4631		
0.9903	1.3697	2.8390	0.9829	1.3595	1.7645		
	m=	2.11196		m=	1.32248		
QSTD	b=	-0.05043	QA	b=	-0.03134		
	r=	0.99998	4 .	r=	0.99998		

	Calculatio	ns		
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)	
Qstd=	Vstd/∆Time	Qa= Va/ΔTime		
	For subsequent flow ra	te calculatio	ns:	
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa=	$1/m\left(\left(\sqrt{\Delta H(Ta/Pa)}\right)-b\right)$	

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

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002

www.tisch-env.com

TOLL FREE: (877)263-7610 FAX: (513)467-9009





RECALIBRATION DUE DATE:

January 7, 2026

Certificate of Calibration

Calibration Certification Information

Cal. Date: January 7, 2025 Rootsmeter S/N: 438320 Ta: 293 °K

Operator: Jim Tisch Pa: 759.0 mm Hg

Calibration Model #: TE-5025A Calibrator S/N: 3864

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4590	3.2	2.00
2	3	4	1	1.0360	6.4	4.00
3	5	6	1	0.9160	8.0	5.00
4	7	8	1	0.8800	8.8	5.50
5	9	10	1	0.7270	12.7	8.00

	Data Tabulation						
Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	$\sqrt{\Delta H(Ta/Pa)}$		
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)		
1.0114	0.6932	1.4252	0.9958	0.6825	0.8787		
1.0071	0.9721	2.0156	0.9916	0.9571	1.2427		
1.0050	1.0971	2.2535	0.9895	1.0802	1.3893		
1.0039	1.1408	2.3635	0.9884	1.1232	1.4572		
0.9987	1.3737	2.8505	0.9833	1.3525	1.7574		
	m=	2.08969		m=	1.30853		
QSTD	b=	-0.02374	QA	b=	-0.01464		
	r=	0.99985	,	r=	0.99985		

	Calculations						
	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)				
Qstd=	Vstd/∆Time	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			
	or 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

FAX: (513)467-9009

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET



File No. MA16034/05/0051

Project No.	AM1 - Tin Hau	Temple					
Date:	14-D	ec-24	Next Due Date:	14-	Feb-25	Operator:	SK
Equipment No.:	A-0	1-05	Model No.:	GS2310		Serial No.	10599
			Ambient C	andition			
Temperatur	re Ta (K)	288.5	Pressure, Pa			768.6	
Temperatur	ic, 14 (11)	200.5	11035410, 14	(mmrg)		700.0	
		Or	ifice Transfer Star	ndard Informa	ation		
Serial	No.	3864	Slope, mc	0.05976	Intercept	t, bc	-0.05018
Last Calibra	ntion Date:	15-Jan-24			$c = [\Delta H \times (Pa/760]]$		
Next Calibra	ation Date:	14-Jan-25		$Qstd = \{ [\Delta H \ x] \}$	(Pa/760) x (298/7	Γa)] ^{1/2} -bc} / mo	
			Calibration of 7	ΓSP Sampler			
Calibration		Oı	fice			HVS	1/0
Point	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}		Qstd (CFM) X - axis	ΔW (HVS), in. of water		0) x (298/Ta)] ^{1/2} -axis
1	13.2	3.71		62.98	8.5	2	2.98
2	10.1	3.25		55.19	6.5	2	2.61
3	7.2	2.74		46.73	4.3	2	2.12
4	5.0		2.29	39.08	2.6	1	.65
5	2.8		1.71	29.46	1.4	1	.21
By Linear Regr	ession of Y on Y	K					
Slope , mw =	0.0540	_]	Intercept, bw :	-0.410	6	
Correlation of	coefficient* =	0	.9988				
*If Correlation C	Coefficient < 0.99	90, check and rec	calibrate.				
			Set Point Ca	alculation			
From the TSP Fi	eld Calibration (Curve, take Qstd	= 43 CFM				
From the Regress	sion Equation, th	ne "Y" value acco	ording to				
		mw v ($\mathbf{pstd} + \mathbf{bw} = [\mathbf{\Delta W} \ \mathbf{x}]$	(Pa/760) v (20	08/Ta)1 ^{1/2}		
		IIIW X (zstu + DW – LΔW x	(F a/ /00) X (2)	76/1a)j		
Therefore, Se	et Point; W = (m	nw x Qstd + bw)	² x (760 / Pa) x (7	Γa / 298) =	3.50		
Remarks:							
•							
				10	- 1		
Conducted by:	Wong St	ning Kwai	Signature:	X	<u> </u>	Date	14-Dec-24
conducted by.	THOIR DI		Signature.		X 29 27		11 200 27
Checked by:	Henry	Leung	Signature:	\-lem	y day	Date:	14-Dec-24

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/08/0051

Project No.	AM2 - Sai Tso	Wan Recreation	Ground					
Date:	14-D	ec-24	Next Due Date:	e: 14-Feb-25 .:: GS2310		Operator:	SK	
Equipment No.:	A-0	1-08	Model No.:			Serial No.	1287	
			Ambient C	ondition				
Temperatur	re, Ta (K)	288.5	Pressure, Pa	(mmHg)		768.6		
Serial	No	3864	Slope, mc	ndard Informa 0.05976	ation Intercept	· ho	-0.05018	
Last Calibra		15-Jan-24						
Next Calibra		13-Jan-24 14-Jan-25	1/2					
TVOXE CUITOTE	ation Bute.			<u> </u>	(1 4, 7 0 0) 12 (2 5 0) 3	,	·	
			Calibration of	TSP Sampler				
Calibration		Or	fice			HVS		
Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}		ΔW (HVS), in. of water		0) x (298/Ta)] ^{1/2} -axis	
1	13.3		3.73	63.21	8.2	2	2.93	
2	10.3		3.28		6.3	2	2.57	
3	7.5		2.80	47.68	4.0	2	2.04	
4	5.2		2.33	39.84	2.5	1	1.62	
5	3.0		1.77	30.46	1.5	1	1.25	
Slope , mw = Correlation C	coefficient* =		.9964	Intercept, bw :	-0.415	7		
			Set Point Ca	alculation				
From the TSP Fi	eld Calibration C	Curve, take Qstd						
From the Regress								
		_		·	20 15 22 1/2			
		mw x ($\mathbf{Qstd} + \mathbf{bw} = [\mathbf{\Delta W} \ \mathbf{x}]$	(Pa/760) x (29	98/Ta)] ²²			
Therefore, Se	et Point; W = (m	w x Qstd + bw)	² x (760 / Pa) x (7	Γa / 298) =	3.28			
Remarks:								
·								
•								
				- 10	- 1			
Conducted by:	Wong Sh	ing Kwai	Signature:	X	<u>}_</u> -	Date:	14-Dec-24	
, , , , , , , , , , , , , , , , , , ,	<u> </u>			1	-			
Checked by:	Henry	Leung	Signature:	- lem	y Xory	Date:	14-Dec-24	

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET



File No. MA16034/03/0051

Project No.	AM3 - Yau Lai Estate, Bik Lai House						
Date:	14-Dec-24		Next Due Date:	: 14-Feb-25		Operator:	SK
Equipment No.:	.: A-01-03		Model No.:	GS	S2310	Serial No.	10379
			•				
	T		Ambient C	ondition			
Temperatur	re, Ta (K)	288.5	Pressure, Pa	(mmHg)		768.6	
				1 17 0			
Serial	No	3864	ifice Transfer Star	0.05976	I	ho	-0.05018
Last Calibra		15-Jan-24	Slope, mc		Intercept $c = [\Delta H \times (Pa/760)]$		
Next Calibra	Ì	13-Jan-24 14-Jan-25			$(Pa/760) \times (298/7)$		
TVCAL CAHOLO	ition Date.			<u> </u>	(1 u/100) h (2)0/	(a) (bc) / III	
		•	Calibration of 7	TSP Sampler			
Calibration		Oı	fice	•		HVS	
Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	50) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	· ·	60) x (298/Ta)] ^{1/2} -axis
1	12.9		3.67	62.27	8.0	2	2.89
2	10.2		3.26	55.46	6.2	2	2.54
3	7.7		2.84	48.30	4.2	2	2.09
4	5.2		2.33	39.84	2.7	1	1.68
5	2.9		1.74	29.96	1.6	1	1.29
By Linear Regressions Slope, mw = Correlation Correlation C	0.0503 coefficient* =	0	.9965	Intercept, bw :	-0.272	9	
			Set Point Ca	alculation			
From the TSP Fig From the Regress Therefore, Se	sion Equation, th	mw x (98/Ta)] ^{1/2}		
Remarks:							
Conducted by:	Wong Sh	ning Kwai	Signature:		<u> </u>	Date:	14-Dec-24
Checked by:	Henry	Leung	Signature:	\-lem	y day	Date:	14-Dec-24

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET



File No. MA20003/55/029 Project No. CKL 2 - Flat 103 Cha Kwo Ling Village 4-Nov-24 Next Due Date: 4-Jan-25 Date: Operator: SK Equipment No.: A-01-55 Model No.: TE 5170 Serial No. 1956 **Ambient Condition** 302 Temperature, Ta (K) Pressure, Pa (mmHg) 762.7 **Orifice Transfer Standard Information** 0.05976 Intercept, bc 3864 Slope, mc Serial No. -0.05018 $mc \times Ostd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ Last Calibration Date: 15-Jan-24 Qstd = $\{ [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} -bc \} / mc$ 14-Jan-25 Next Calibration Date: **Calibration of TSP Sampler** Orfice Calibration $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ ΔH (orifice), Ostd (CFM) ΔW (HVS), in. $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ Point in. of water X - axis of water Y-axis 1 13.5 3.66 62.02 9.3 3.03 2.69 2 11.3 3.35 56.82 7.3 3.02 51.35 5.9 2.42 4 2.33 39.89 2.8 1.67 3.5 31.99 1.9 1.37 5 1.86 By Linear Regression of Y on X Slope , mw = 0.0566 Intercept, bw :____ -0.5013 Correlation coefficient* = 0.9966 *If Correlation Coefficient < 0.990, check and recalibrate. **Set Point Calculation** From the TSP Field Calibration Curve, take Qstd = 43 CFM From the Regression Equation, the "Y" value according to mw x Qstd + bw = $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.76 Remarks: Conducted by: Wong Shing Kwai Checked by: Henry Leung

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET



File No. MA20003/55/030 Project No. CKL 2 - Flat 103 Cha Kwo Ling Village 4-Jan-25 Next Due Date: 6-Mar-25 Operator: SK Date: Equipment No.: A-01-55 Model No.: TE 5170 Serial No. 1956 **Ambient Condition** 292.7 Temperature, Ta (K) Pressure, Pa (mmHg) 765.4 **Orifice Transfer Standard Information** 0.05976 Intercept, bc 3864 Slope, mc Serial No. -0.05018 $mc \times Ostd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ Last Calibration Date: 15-Jan-24 Qstd = $\{ [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} -bc \} / mc$ 14-Jan-25 Next Calibration Date: **Calibration of TSP Sampler** Orfice Calibration $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ ΔH (orifice), Ostd (CFM) ΔW (HVS), in. $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ Point in. of water X - axis of water Y-axis 3.07 1 13.6 3.73 63.33 9.2 11.2 2.74 2 3.39 57.55 7.3 3.04 51.67 5.7 2.42 4 5.3 2.33 39.85 2.6 1.63 3.6 32.99 1.8 5 1.92 1.36 By Linear Regression of Y on X Slope , mw = 0.0581 Intercept, bw : -0.6068 Correlation coefficient* = 0.9980 *If Correlation Coefficient < 0.990, check and recalibrate. **Set Point Calculation** From the TSP Field Calibration Curve, take Qstd = 43 CFM From the Regression Equation, the "Y" value according to mw x Qstd + bw = $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.49 Remarks: Conducted by: Wong Shing Kwai Checked by: Henry Leung



Certificate of Calibration

Description:	Laser Dust Mo	nitor			Date o	f Calibration	30-Nov-24
Manufacturer:		ic Technology L	TD.		Validity of Calibra		
Model No.:	LD-3B						
Serial No.:	2Y6194	i					
Equipment No.:				Sensitivity	0.001 mg/m3		
		A 01 02		•		570	
High Volume Sa	•	A-01-03			tivity Adjustment	578	
Tisch Calibratio	n Onlice No.:	3864		After Sensiti	vity Adjustment	578	
			Calibrat	ion of 1 hr T	SP		
Calibration		Laser Dust				HVS	
Point	Total Count	C	Count / Minute X-axis		Mass	concentration (µ Y-axis	\lg/m^3)
1	4000		75.0			142.0	
2	3600		65.0			120.0	
3	3000		55.0			100.0	
Ave	rage		65.0			120.7	
Slope, mw =	ression of Y on 2.10			Inter	rcept, bw =	-15.833	3
Correl	ation coefficien	t* =	0.999	06			
Set Correlation 1 SCF = [K=Hig	Factor , SCF h Volume Sam j	oler / Dust Meto	er, (μg/m3)]		1.9		
The Dust Monit (CF) between th	d in according to or was compared e Dust Monitor pers are weight	d with a calibrate and High Volun	ed High Volum ne Sampler.		d The result was used	d to generate the	Correlation Factor
Calibrated by: Techni	cal Officer (Wo	ng Shing Kwai)			Approved by: _	Project Manager	(Henry Leung)

Digital Dust Indicator



30-Nov-24

Date of Calibration

Certificate of Calibration

Description:

-						
Manufacturer:	Sibata Scient	ific Technology LTD.	_	Validity of Calibr	ration Record	30-Jan-25
Model No.:	LD-5R					
Serial No.:	8Y2374					
Equipment No.:	SA-01-04		Sensitivity	0.001 mg/m3	<u>.</u>	
High Volume Sa	impler No.:	A-01-03	Before Sensitiv	rity Adjustment	652	
Tisch Calibratio	n Orifice No.:	3864	After Sensitivit	y Adjustment	652	
		Ca	libration of 1 hi	TSP		
Calibration Laser Dust Monitor			HVS			
Point	N	fass Concentration (μg/	(m3)	Mas	ss concentration (µ	\lg/m^3)
		X-axis		Y-axis		
1		74.0			136.0	
2		64.0			119.0	
3		54.0			100.0	
Average		64.0			118.3	
Slope , mw = Correlation co	1.80 pefficient* =	0.9995		ept, bw =	3.1333	
		Se	t Correlation Fa	actor		
Particaulate Con	centration by l	High Volume Sampler ($(\mu g/m^3)$	118.3		
Particaulate Con	centration by I	Dust Meter (μg/m ³)		64.0		
Measureing time	e, (min)			60.0		
Set Correlation I	Factor, SCF					
SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] 1.8						
In-house method	l in according t	to the instruction manua	al:			
	-	ed with a calibrated Hig	-	ler and The result	was used to gener	rate the Correlation
		Monitor and High Volu	=	- • . •		
Those filter pap	ers are weigh	nted by HOKLAS labo	oratory (HPCT)	Litimed)		
Calibrated by:		M.	_	Approved by:	\-lem	y Xon
Technic	al Officer (Wo	ong Shing Kwai)		Projec	et Manager (Henry	Leung)

Digital Dust Indicator



30-Nov-24

Date of Calibration

Certificate of Calibration

Description:

Manufacturer:	Sibata Scientific Technology LTD.	Validity of Calib	ration Record 30-Jan-25		
Model No.:	LD-5R				
Serial No.:	8Y2373				
Equipment No.:	SA-01-05	Sensitivity 0.001 mg/m3	_		
High Volume Sa	ampler No.: A-01-03	Before Sensitivity Adjustment	657		
Tisch Calibration	n Orifice No.: 3864	After Sensitivity Adjustment	657		
	Ca	alibration of 1 hr TSP			
Calibration	Laser Dust Monito	r	HVS		
Point	Mass Concentration (μg.	/m3) Ma	Mass concentration (μg/m ³)		
	X-axis		Y-axis		
1	75.0		134.0		
2	65.0		118.0		
3	55.0		100.0		
Average	65.0		117.3		
Correlation co					
		et Correlation Factor			
	ncentration by High Volume Sampler	(μg/m ²)	117.3		
	ncentration by Dust Meter (μg/m³)		65.0 60.0		
Measureing time Set Correlation I			60.0		
	h Volume Sampler / Dust Meter, (μ	g/m3)]1.8			
The Dust Monitor Factor (CF) betw	I in according to the instruction manuor was compared with a calibrated Hiween the Dust Monitor and High Volumers are weighted by HOKLAS laborations.	gh Volume Sampler and The result ime Sampler.	was used to generate the Correlation		
Calibrated by:	al Officer (Wong Shing Kwai)	Approved by:	ct Manager (Henry Leung)		

Digital Dust Indicator



30-Nov-24

Date of Calibration

Certificate of Calibration

Description:

-						
Manufacturer:	Sibata Scient	ific Technology LTD.	_	Validity of Calibr	ration Record	30-Jan-25
Model No.:	LD-5R					
Serial No.:	972777					
Equipment No.:	SA-01-06		Sensitivity	0.001 mg/m3	·	
High Volume Sa	mpler No.:	A-01-03	Before Sensitiv	vity Adjustment	645	
Tisch Calibratio	n Orifice No.:	3864	After Sensitivi	ty Adjustment	645	
		Ca	libration of 1 h	· TSP		
Calibration Laser Dust Monitor		•		HVS		
Point	N.	fass Concentration (μg/	/m3)	Mas	s concentration (ug/m ³)
		X-axis		Y-axis		
1		74.0			134.0	
2		64.0			116.0	
3		54.0			100.0	
Average		64.0			116.7	
Slope , mw = Correlation co		0.9994		ept, bw =	7.8667	
		Se	t Correlation F	actor		
Particaulate Con	centration by l	High Volume Sampler ($(\mu g/m^3)$		116.7	
Particaulate Con	centration by l	Dust Meter (μg/m ³)		64.0		
Measureing time	e, (min)			60.0		
Set Correlation I	Factor, SCF					
SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] 1.8						
In-house method	in according t	to the instruction manua	al:			
	-	ed with a calibrated Hig		oler and The result	was used to gene	rate the Correlation
		Monitor and High Volu	-			
Those filter pap	ers are weigh	ited by HOKLAS labo	oratory (HPCT)	Litimed)		
Calibrated by:		M.	_	Approved by:	-lem	y Xon
Technic	al Officer (Wo	ong Shing Kwai)		Projec	et Manager (Henry	Leung)

Digital Dust Indicator



30-Nov-24

Date of Calibration

Certificate of Calibration

Description:

Manufacturer:	Sibata Scienti	ific Technology LTD.	v	alidity of Calib	ration Record	30-Jan-25
Model No.:	LD-5R					
Serial No.:	972778					
Equipment No.:	SA-01-07		Sensitivity	0.001 mg/m3	_	
High Volume Sa	impler No.:	A-01-03	Before Sensitivity	y Adjustment	735 CPM	
Tisch Calibratio	n Orifice No.:	3864	After Sensitivity	Adjustment	735 CPM	
		Ca	alibration of 1 hr T	ΓSP		
Calibration Laser Dust Monitor		or		HVS		
Point	Mass Concentration (μg/m3)			Mas	ss concentration (µ	ıg/m³)
		X-axis			Y-axis	
1		76.0			140.0	
2		66.0			121.0	
3	56.0			101.0		
Average		66.0			120.7	
By Linear Regression of Y on X Slope , mw = 1.9500 Intercept, bw = -8.0333 Correlation coefficient* = 0.9999						
Correlation Co	oefficient* =	0.9999				
Correlation Co	oefficient* = _	*****	et Correlation Fac	tor		
	-	*****	et Correlation Fac	tor	120.7	
Particaulate Con	centration by I	Se	et Correlation Fac	tor	120.7 66.0	
Particaulate Con	ecentration by I	So High Volume Sampler	et Correlation Fac	tor		
Particaulate Con Particaulate Con Measureing time Set Correlation I	acentration by I acentration by I e, (min) Factor, SCF	S e High Volume Sampler Dust Meter (μg/m ³)	et Correlation Fac (μg/m³)	tor	66.0	
Particaulate Con Particaulate Con Measureing time Set Correlation I	acentration by I acentration by I e, (min) Factor, SCF	So High Volume Sampler	et Correlation Fac (μg/m³)	tor 1.8	66.0	
Particaulate Con Particaulate Con Measureing time Set Correlation I SCF = [K=Hig	acentration by Incentration	S e High Volume Sampler Dust Meter (μg/m ³)	et Correlation Fact (μg/m³)		66.0	
Particaulate Con Particaulate Con Measureing time Set Correlation I SCF = [K=Hig In-house method The Dust Monito	icentration by I icentration by I e, (min) Factor, SCF h Volume San I in according tor was compare	So High Volume Sampler Dust Meter (μg/m³) Inpler / Dust Meter, (μ to the instruction manual	et Correlation Fact (μg/m³)	1.8	66.0	rate the Correlation
Particaulate Con Particaulate Con Measureing time Set Correlation I SCF = [K=Hig In-house method The Dust Monite Factor (CF) betw	centration by Incentration by Incentration by Incentration by Incentration by Incentration, SCF The Volume Same In according to the Court of the Co	Solution High Volume Sampler Dust Meter (μg/m³) Impler / Dust Meter, (μ To the instruction manual with a calibrated High Volume Sampler Volume Sampler High High Volume Sampler High High Volume Sampler High Volume Sampler High Volume Sampler H	et Correlation Fact (μg/m³) ag/m3)] al: igh Volume Samples ume Sampler.	1.8	66.0	rate the Correlation
Particaulate Con Particaulate Con Measureing time Set Correlation I SCF = [K=Hig In-house method The Dust Monite Factor (CF) betw	centration by Incentration by Incentration by Incentration by Incentration by Incentration, SCF The Volume Same In according to the Court of the Co	So High Volume Sampler Dust Meter (μg/m³) Inpler / Dust Meter, (μ to the instruction manual	et Correlation Fact (μg/m³) ag/m3)] al: igh Volume Samples ume Sampler.	1.8	66.0	rate the Correlation
Particaulate Con Particaulate Con Measureing time Set Correlation I SCF = [K=Hig In-house method The Dust Monite Factor (CF) betw	centration by Incentration by Incentration by Incentration by Incentration by Incentration, SCF The Volume Same In according to the Court of the Co	Solution High Volume Sampler Dust Meter (μg/m³) Impler / Dust Meter, (μ To the instruction manual with a calibrated High Volume Sampler Volume Sampler High High Volume Sampler High High Volume Sampler High Volume Sampler High Volume Sampler H	et Correlation Fact (μg/m³) ag/m3)] al: igh Volume Samples ume Sampler.	1.8	66.0	rate the Correlation
Particaulate Con Particaulate Con Measureing time Set Correlation I SCF = [K=Hig In-house method The Dust Monito Factor (CF) betw Those filter page	centration by Incentration by Incentration by Incentration by Incentration by Incentration by Incentration (Incentration & Sandal Incentration & Sandal In	Solution High Volume Sampler Dust Meter (μg/m³) Impler / Dust Meter, (μ To the instruction manual with a calibrated High Volume Sampler Volume Sampler High High Volume Sampler High High Volume Sampler High Volume Sampler High Volume Sampler H	et Correlation Fact (μg/m³) ag/m3)] al: igh Volume Samples ume Sampler.	1.8 r and The result timed)	66.0 60.0 was used to gener	rate the Correlation
Particaulate Con Particaulate Con Measureing time Set Correlation I SCF = [K=Hig In-house method The Dust Monite Factor (CF) betw Those filter pap	recentration by Incentration by Incentration by Incentration by Incentration by Incentration, SCF in Volume Same In according to the Core was compared ween the Dust Incers are weight	Solution High Volume Sampler Dust Meter (μg/m³) Impler / Dust Meter, (μ To the instruction manual with a calibrated High Volume Sampler Volume Sampler High High Volume Sampler High High Volume Sampler High Volume Sampler High Volume Sampler H	et Correlation Fact (μg/m³) ag/m3)] al: igh Volume Samples ume Sampler.	1.8 r and The result timed) Approved by:	66.0 60.0 was used to gener	y Over

Digital Dust Indicator



Date of Calibration 30-Nov-24

Certificate of Calibration

Description:

Manufacturer:	Sibata Scient	ific Technology LTD.	_	Validity of Calibr	ation Record	30-Jan-25
Model No.:	LD-5R					
Serial No.:	972780					
Equipment No.:	SA-01-09		Sensitivity	0.001 mg/m3		
High Volume Sa	mpler No.:	A-01-03	Before Sensitiv	vity Adjustment	739 CPM	
Tisch Calibration	n Orifice No.:	3864	After Sensitivi	ty Adjustment	739 CPM	
		Cal	libration of 1 h	r TSP		
Calibration Laser Dust Monitor		•		HVS		
Point	N.	Iass Concentration (μg/1	m3)	Mas	s concentration ($\mu g/m^3$)
1		X-axis			Y-axis	
2		74.0			138.0 118.0	
3	64.0 54.0			100.0		
Average		64.0		118.7		
Slope , mw = Correlation co	1.90 pefficient* =	0.9995		ept, bw =	-2.9333	3
		Set	t Correlation F	actor		
Particaulate Con	centration by l	High Volume Sampler ($(\mu g/m^3)$	118.7		
Particaulate Con	centration by l	Oust Meter (μg/m ³)		64.0		
Measureing time	· · · · · · · · · · · · · · · · · · ·				60.0	
Set Correlation Factor , SCF SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] 1.9						
In-house method	in according t	to the instruction manua	ո1։			
Factor (CF) betw	een the Dust I	ed with a calibrated Hig Monitor and High Volu ted by HOKLAS labo	me Sampler.		was used to gene	rate the Correlation
Calibrated by:		M.	_	Approved by:	-lem	y day
Technica	al Officer (Wo	ng Shing Kwai)			et Manager (Henr	1

Digital Dust Indicator



30-Nov-24

Date of Calibration

Certificate of Calibration

Description:

-						
Manufacturer:	Sibata Scient	ific Technology LTD.	_	Validity of Calib	ration Record	30-Jan-25
Model No.:	LD-5R					
Serial No.:	972781					
Equipment No.:	SA-01-10		Sensitivity	0.001 mg/m3	_	
High Volume Sa	mpler No.:	A-01-03	Before Sensitiv	ity Adjustment	734 CPM	
Tisch Calibration	n Orifice No.:	3864	After Sensitivit	y Adjustment	734 CPM	
		Ca	llibration of 1 hr	TSP		
Calibration Laser Dust Monitor		r		HVS		
Point	Mass Concentration (μg/m3)			Mas	ss concentration (µ	\lg/m^3)
		X-axis		Y-axis		
1		78.0			134.0	
2		68.0			115.0	
3	60.0			101.0		
Average		68.7			116.7	
Slope , mw = Correlation co	1.83 pefficient* =	61 0.9997		ept, bw =	-9.4098	
		Se	et Correlation Fa	nctor		
Particaulate Con	centration by l	High Volume Sampler	$(\mu g/m^3)$	116.7		
Particaulate Con	centration by I	Dust Meter (μg/m ³)		68.7		
Measureing time	e, (min)			60.0		
Set Correlation Factor , SCF SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] 1.7						
In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler. Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)						
Calibrated by:		ong Shing Kwai)	_	Approved by:	Ct Manager (Henry	Leung)

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NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00736 Issue Date : 28 Jun 2024

Application No. : HP00592

Certificate of Calibration

Applicant : Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Sound Level Calibrator.

Equipment No.: : N-16-01

Manufacturer: : Hangzhou Aihua Instruments Co., Ltd.

Other information : Model No. AWA6021A

Serial No. 1023253

Date Received : 27 Jun 2024

Test Period : 28 Jun 2024 to 28 Jun 2024

Test Requested : Performance checking for Sound Level Calibrator

Test Method : The Sound Level Meter and Calibrator has been calibrated in accordance with

the documented procedures and using standard and instrument which are

recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius

Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : 1. Information of the sample description provided by the Applicant.

2. The result(s) relate only to the items tested or calibrated.

For and on behalf of HIGH PRECISION CHEMICAL TESTING LIMITED

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00736 | Issue Date : 28 Jun 2024

Application No. : HP00592

Certificate of Calibration

Measuring equipment

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Description	Sound Meter
Manufacturer	BSWA Technology
Model No.	BSWA 308
Serial No.	570183
Microphone No.	570605
Equipment No.	N-12-01

Test Result

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+ 0.1	± 0.3
114.0	114.1	+ 0.1	± 0.5

Note

- : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
 - 2. The indication value was obtained from the average of ten replicated measurement.

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NT, Hong Kong

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Report No. : 00582 | Issue Date : 14 Feb 2024

Application No. : HP00451

Certificate of Calibration

Applicant : Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Sound Level Calibrator.

Equipment No.: : N-16-02

Manufacturer: : Hangzhou Aihua Instruments Co., Ltd.

Other information : Model No. AWA6021A

Serial No. 1023064

Date Received : 14 Feb 2024

Test Period : 15 Feb 2024 to 15 Feb 2024

Test Requested : Performance checking for Sound Level Calibrator

Test Method : The Sound Level Meter and Calibrator has been calibrated in accordance with

the documented procedures and using standard and instrument which are

recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius

Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : 1. Information of the sample description provided by the Applicant.

2. The result(s) relate only to the items tested or calibrated.

For and on behalf of HIGH PRECISION CHEMICAL TESTING LIMITED

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Application No. : HP00451

Certificate of Calibration

Measuring equipment

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Description	Sound Meter
Manufacturer	SVANTEK
Model No.	SVAN 977
Serial No.	92677
Microphone No.	10352
Equipment No.	N-14-01

Test Result

•

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.2	+ 0.2	± 0.3
114.0	114.2	+ 0.2	± 0.5

Note

- : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
 - 2. The indication value was obtained from the average of ten replicated measurement.

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Report No. : 00583 | Issue Date : 16 Feb 2024

Application No. : HP00452

Certificate of Calibration

Applicant : Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-08-07

Manufacturer: : SVANTEK

Other information : Model No.

Model No.	SVAN 957
Serial No.	21455
Microphone No.	17204

Date Received : 14 Feb 2024

Test Period : 15 Feb 2024 to 15 Feb 2024

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the

documented procedures and using standard and instrument which are

recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius

Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark: 1. Information of the sample description provided by the Applicant.

2. The result(s) relate only to the items tested or calibrated.

For and on behalf of HIGH PRECISION CHEMICAL TESTING LIMITED

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Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00583 | Issue Date : 16 Feb 2024

Application No. : HP00452

Certificate of Calibration

Measuring equipment

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+ 0.1	± 1.5
114.0	114.1	+ 0.1	± 1.5

Note

- : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
 - 2. The indication value was obtained from the average of ten replicated measurement.

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Application No. : HP00514

Certificate of Calibration

Applicant : Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-01

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	570183
Microphone No.	590073

Date Received : 09 Apr 2024

Test Period : 09 Apr 2024 to 09 Apr 2024

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the

documented procedures and using standard and instrument which are

recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius

Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark: 1. Information of the sample description provided by the Applicant.

2. The result(s) relate only to the items tested or calibrated.

For and on behalf of HIGH PRECISION CHEMICAL TESTING LIMITED

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Report No. : 00647 Issue Date : 11 Apr 2024

Application No. : HP00514

Certificate of Calibration

Measuring equipment

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+ 0.1	± 1.5
114.0	114.2	+ 0.2	± 1.5

Note

- : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
 - 2. The indication value was obtained from the average of ten replicated measurement.

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Report No. : 00648 | Issue Date : 11 Apr 2024

Application No. : HP00515

Certificate of Calibration

Applicant : Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-05

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	580287
Microphone No.	570610

Date Received : 09 Apr 2024

Test Period : 09 Apr 2024 to 09 Apr 2024

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the

documented procedures and using standard and instrument which are

recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius

Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark: 1. Information of the sample description provided by the Applicant.

2. The result(s) relate only to the items tested or calibrated.

For and on behalf of HIGH PRECISION CHEMICAL TESTING LIMITED

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Report No. : 00648 | Issue Date : 11 Apr 2024

Application No. : HP00515

Certificate of Calibration

Measuring equipment

Description	Sound Calibrator	
Manufacturer	Brüel & Kjær	
Model No.	TYPE 4231	
Serial No.	2326353	
Equipment No.	N-02-01	

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+ 0.1	± 1.5
114.0	114.1	+ 0.1	± 1.5

Note

- : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
 - 2. The indication value was obtained from the average of ten replicated measurement.

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Report No. : 00618 Issue Date : 18 Mar 2024

Application No. : HP00473

Certificate of Calibration

Applicant : Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-06

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	580156
Microphone No.	580804

Date Received : 06 Mar 2024

Test Period : 14 Mar 2024 to 14 Mar 2024

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the

documented procedures and using standard and instrument which are

recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius

Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark: 1. Information of the sample description provided by the Applicant.

2. The result(s) relate only to the items tested or calibrated.

For and on behalf of HIGH PRECISION CHEMICAL TESTING LIMITED

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk

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Report No. : 00618 | Issue Date : 18 Mar 2024

Application No. : HP00473

Certificate of Calibration

Measuring equipment

Description	Sound Calibrator	
Manufacturer	Brüel & Kjær	
Model No.	TYPE 4231	
Serial No.	2326353	
Equipment No.	N-02-01	

Test Result

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.0	± 0.0	± 1.5
114.0	114.1	+ 0.1	± 1.5

Note

- : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
 - 2. The indication value was obtained from the average of ten replicated measurement.