High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET



File No. MA16034/05/0044

Project No.	AM1 - Tin Hau	Temple				,	
Date:	12-Oct-23 : A-01-05		Next Due Date: 12-Dec-23		Dec-23	Operator:	SK
Equipment No.:			Model No.:	GS	S2310	Serial No.	10599
			Ambient C	andition			
Temperatur	re Ta (K)	298.7	Pressure, Pa		Ī	763.3	
Temperatur	ie, 1a (K)	290.1	Tiessuie, Ta	(IIIIII Ig)		703.3	
		Or	ifice Transfer Star	ndard Informa	ation		
Serial	No.	3864	Slope, mc	0.05928	Intercept	, bc	-0.03491
Last Calibra	Last Calibration Date: 16 -Jan-23 $mc \times Qstd + bc = [\Delta H \times (Pa/7)]$						
Next Calibra	ation Date:	16-Jan-24		$Qstd = \{ [\Delta H \ x] \}$	(Pa/760) x (298/7	Γa)] ^{1/2} -bc} / mc	
			Calibration of	TSP Sampler	T		
Calibration		Oı	fice			HVS	1/2
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		0) x (298/Ta)] ^{1/2} axis
1	13.1		3.62	61.71	9.1	3	.02
2	10.4		3.23	55.04	6.8	2	.61
3	7.4		2.72	46.52	4.9	2	.22
4	5.4		2.33	39.83	2.9	1	.70
5	2.9		1.70	29.34	1.6	1	.27
By Linear Regr	ession of V on Y	X					
Slope, mw =		-]	Intercept, bw :	-0.388	2	
	coefficient* =		.9964	1 1, 1			
		90, check and red		•			
1 map p:	11.0.11	7	Set Point Ca	alculation			
		Curve, take Qstd					
from the Regress	sion Equation, th	ne "Y" value acco	ording to				
		mw x ($\mathbf{Qstd} + \mathbf{bw} = [\mathbf{\Delta W} \ \mathbf{x}]$	(Pa/760) x (29	98/Ta)] ^{1/2}		
TEN C C	· D · · · W · /	0.1.1.	2 (760 / P.) (5	E (200)	2.00		
Therefore, Se	et Point; W = (m	iw x Qstd + bw)	2 x (760 / Pa) x (7	Ta / 298) =	3.88		
Remarks:							
·					 λ		
Conducted by:	Wong Sh	ning Kwai	Signature:			Date:	12-Oct-23
				\ 0	X 2 27		
Checked by:	Henry	Leung	Signature:	1 tem	Just 1	Date:	12-Oct-23

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/08/0044

Project No.	AM2 - Sai Tso V	Van Recreation	Ground				
Date:	12-0	ct-23	Next Due Date: 12-Dec-23		Operator:	SK	
Equipment No.:	A-01-08		Model No.:	G	52310	Serial No.	1287
			Ambient C	Condition			
Temperatur	re, Ta (K)	298.7	Pressure, Pa			763.3	
Serial	No	3864	Slope, mc	ndard Informa 0.05928	Intercept	- he	-0.03491
Last Calibra		16-Jan-23			$c = [\Delta H \times (Pa/760)]$		
Next Calibra		16-Jan-24			$(Pa/760) \times (298/7)$		
TYOKE CUITOTE	tion Bute.			<u> </u>	(= ••• • • •) == (= • • • •		
			Calibration of	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		50) x (298/Ta)] ^{1/2} -axis
1	13.2		3.64	61.94	8.8	,	2.97
2	10.3		3.21	54.78	6.5		2.55
3	7.5		2.74	46.83	4.6		2.15
4	5.2		2.28	39.09	3.1		1.76
5	3.0		1.73	29.84	1.6		1.27
Slope, mw = Correlation C *If Correlation C	coefficient* =		.9997	-	-0.301	·	
			Set Point Ca	alculation			
From the TSP Fig	eld Calibration C	urve, take Qstd					
From the Regress	sion Equation, th	e "Y" value acco	ording to				
		mw v C	$\mathbf{pstd} + \mathbf{bw} = [\mathbf{\Delta W} \ \mathbf{x}]$	(Do/760) v (20	18/Ta)1 ^{1/2}		
		IIIW X (zsta + υw – <u>[Δ</u> w x	(Fa/700) X (23	70/1a)j		
Therefore, Se	t Point; W = (m	w x Qstd + bw)	2 x (760 / Pa) x (7	$\Gamma a / 298) =$	3.82		
Remarks:							
				10	-1		
Conducted by:	Wong Sh	ing Kwai	Signature:		<u></u>	Date:	12-Oct-23
Checked by:	Henry	Leung	Signature:	\-lem	, X27	Date:	12-Oct-23
· .	J				1		

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET



File No. MA16034/03/0044

Project No.	AM3 - Yau Lai Estate, Bik Lai House							
Date:	12-Oct-23		Next Due Date: 12-Dec-23		Dec-23	Operator: SK	SK	
Equipment No.:	A-0	A-01-03 Model No.: GS2310		Serial No.	10379			
			Ambient C	ondition				
Temperatur	re Ta(K)	298.7	Pressure, Pa			763.1		
Tomporata	ie, iu (ii)	270.7	11055410,14	(mm1g)		703.1		
		Or	ifice Transfer Star	ndard Informa	ation			
Serial	No.	3864	Slope, mc	0.05928	Intercept	, bc -0.03491		
Last Calibration Date: 16 -Jan-23 $mc \times Qstd + bc = [\Delta H \times (Pa/7)]$			$c = [\Delta H \times (Pa/760]]$) x (298/Ta)] ^{1/2}				
Next Calibration Date: 16-Jan-24 Qstd = $\{[\Delta H \times (Pa/760) \times (298)]\}$				(Pa/760) x (298/7	Γa)] ^{1/2} -bc} / mo	•		
			Calibration of	ΓSP Sampler				
Calibration		Oı	fice			HVS		
Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	60) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water		0) x (298/Ta)] ^{1/2} -axis	
1	13.0		3.61	61.46	8.6	2	2.94	
2	10.6		3.26	55.56	6.6	2	2.57	
3	8.0		2.83	48.34	4.8	2	2.19	
4	5.2		2.28	39.09	3.0	1	.73	
5	3.0		1.73	29.83	1.8	1	.34	
By Linear Regr Slope , mw = Correlation o		_	.9979	ntercept, bw	-0.195	2		
*If Correlation C				•				
			Set Point Ca	lculation				
From the TSP Fi	eld Calibration (Curve, take Qstd	= 43 CFM					
From the Regress	sion Equation, th	ne "Y" value acc	ording to					
		mw x ($\mathbf{pstd} + \mathbf{bw} = \mathbf{\Delta W} \mathbf{x}$	(Pa/760) x (29	98/Ta) ^{1/2}			
Therefore, Se	et Point: W = (m	nw x Ostd + bw)	² x (760 / Pa) x (7	Γa / 298) =	3.84			
, 50	, ·· (H	()	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	. = /	2,01			
Remarks:								
				h				
Conducted by:	Wong Sh	ning Kwai	Signature:		"	Date:	12-Oct-23	
Checked by:	Henry	Leung	Signature:	\-lem	y day	Date:	12-Oct-23	

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET



File No. MA20003/55/021

Project No.	CKL 2 - Flat 10	3 Cha Kwo Ling						
Date:	4-Se	ep-23	Next Due Date:	4-N	Nov-23	Operator:	SK	
Equipment No.:		01-55		TE	E 5170	Serial No.	1956	
			Ambient C	ondition				
Temperatur	re. Ta (K)	302.9	Pressure, Pa			751.6		
Temperatur	10, 14 (11)		11055410,14	()		75110		
		Or	ifice Transfer Star	ndard Informa	ntion			
Serial	No.	3864	Slope, mc	0.05928	Intercept	, bc	-0.03491	
Last Calibration Date: 16 -Jan-23 $mc \times Qstd + bc = [\Delta H \times (Pa/76)]$					$(x (298/Ta)]^{1/2}$			
Next Calibration Date: 16 -Jan-24 Qstd = {[Δ H x (Pa/760) x (29)					(Pa/760) x (298/7	$[\Gamma a]^{1/2}$ -bc} / mo	:	
			Calibration of T	ΓSP Sampler				
Calibration		Or	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		0) x (298/Ta)] ^{1/2} -axis	
1	13.1		3.57	60.81	9.7	3	3.07	
2	11.1		3.29	56.03	7.7	2	2.74	
3	8.9		2.94	50.23	5.9	2	2.40	
4	5.2		2.25	38.53	2.7	1	.62	
5	3.2		1.76	30.35	1.6	1	.25	
	0.0606 coefficient* =	<u> </u>	.9981	Intercept, bw	-0.646	0		
			Set Point Ca	lculation				
From the Regress	sion Equation, th		ording to Qstd + bw = [ΔW x					
Therefore, Se	et Point; W = (m	nw x Qstd + bw)	² x (760 / Pa) x (7	Га / 298) =	3.95			
Remarks:								
Conducted by:	Wong Sh	ning Kwai	Signature:	K	<u></u>	Date:	4-Jul-23	
Checked by:	Henry	Leung	Signature:	\-la-	Mong	Date:	4-Jul-23	

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET



File No. MA20003/55/023 Project No. CKL 2 - Flat 103 Cha Kwo Ling Village 4-Nov-23 Next Due Date: 4-Jan-24 Operator: SK Date: Equipment No.: A-01-55 Model No.: TE 5170 Serial No. 1956 **Ambient Condition** Temperature, Ta (K) 299.3 Pressure, Pa (mmHg) 760.5 **Orifice Transfer Standard Information** 0.05928 Intercept, bc 3864 Slope, mc -0.03491 Serial No. $mc \times Ostd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ Last Calibration Date: 16-Jan-23 Qstd = $\{ [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} -bc \} / mc$ 16-Jan-24 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. Point $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ in. of water X - axis of water Y-axis 1 13.3 3.64 62.00 9.8 3.12 2.79 2 11.0 3.31 56.43 7.8 9.1 3.01 51.38 6.0 2.44 4 5.4 2.32 39.72 2.8 1.67 1.7 5 3.4 1.84 31.64 1.30 By Linear Regression of Y on X Slope , mw = 0.0614 Intercept, bw : -0.6964 Correlation coefficient* = 0.9981 *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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.79 Remarks: Conducted by: Wong Shing Kwai Checked by: Henry Leung

Digital Dust Indicator



30-Sep-23

Date of Calibration

Certificate of Calibration

Description:

-						
Manufacturer:	Sibata Scient	ific Technology LTD.	_	Validity of Calibra	ation Record	30-Nov-23
Model No.:	LD-5R					
Serial No.:	972777					
Equipment No.:	SA-01-06		Sensitivity	0.001 mg/m3		
High Volume Sa	ımpler No.:	A-01-03	Before Sensitiv	vity Adjustment	645	
Tisch Calibration	n Orifice No.:	3864	After Sensitivit	y Adjustment	645	
		Ca	libration of 1 hi	· TSP		
Calibration		Laser Dust Monitor	r		HVS	
Point	N	fass Concentration (μg/	(m3)	Mas	s concentration ($\mu g/m^3$)
		X-axis			Y-axis	
1		73.0			138.0	
2		65.0			119.0	
3		52.0			99.0	
Average		63.3			118.7	
Slope , mw = Correlation co		0.9926		ept, bw =	2.9941	
		Se	t Correlation F	actor		
Particaulate Con	centration by	High Volume Sampler ($(\mu g/m^3)$		118.7	
Particaulate Con	centration by	Dust Meter (μg/m ³)			63.3	
Measureing time	e, (min)				60.0	
Set Correlation I	Factor, SCF					
SCF = [K=Hig	h Volume San	npler / Dust Meter, (μ	g/m3)]	1.9		
In-house method	l in according	to the instruction manua	al:			
The Dust Monito	or was compar	ed with a calibrated Hig	gh Volume Samp	ler and The result	was used to gene	rate the Correlation
		Monitor and High Volu	_			
Those filter pap	ers are weigh	nted by HOKLAS labo	oratory (HPCT)	Litimed)		
Colibrated !		ml		Approved by:	1-0	X 927
Calibrated by:		China V	<u> </u>		1 Manager (II	7000
1 ecnnic	ai Officer (Wo	ong Shing Kwai)		Projec	t Manager (Henr	y Leung)

Digital Dust Indicator



Date of Calibration 30-Sep-23

Certificate of Calibration

Description:

Manufacturer:	Sibata Scient	ific Technology LTD.	_	Validity of Caliba	ration Record	30-Nov-23
Model No.:	LD-5R					
Serial No.:	972778					
Equipment No.:	SA-01-07		Sensitivity	0.001 mg/m3	_	
High Volume Sa	mpler No.:	A-01-03	Before Sensiti	vity Adjustment	735 CPM	
Tisch Calibration	n Orifice No.:	3864	After Sensitivi	ty Adjustment	735 CPM	
		Ca	libration of 1 h	r TSP		
Calibration		Laser Dust Monitor			HVS	
Point	N.	fass Concentration (μg/	m3)	Mas	ss concentration ($(\mu g/m^3)$
1		X-axis			Y-axis	
2		71.0 62.0			138.0 120.0	
3		51.0			99.0	
Average		61.3			119.0	
Slope , mw = Correlation co	1.94 pefficient* =	0.9999		ept, bw =	-0.508	3
		Se	t Correlation F	actor		
Particaulate Con	centration by I	High Volume Sampler ($(\mu g/m^3)$		119.0	
Particaulate Con	centration by l	Dust Meter (μg/m ³)			61.3	
Measureing time					60.0	
Set Correlation I SCF = [K=Higl		npler / Dust Meter, (μ	g/m3)]	1.9		
In-house method	in according t	to the instruction manua	al:			
Factor (CF) betw	veen the Dust I	ed with a calibrated Hig Monitor and High Volu ated by HOKLAS labo	me Sampler.		was used to gene	erate the Correlation
Calibrated by:		M.	_	Approved by:	\-len	y Xoy
Technica	al Officer (Wo	ong Shing Kwai)		Projec	et Manager (Henr	ry Leung)



Certificate of Calibration

Description:	Digital Dust I	ndicator		Date of Calibration 30-Sep-23			
Manufacturer:	Sibata Scienti	fic Technology LTD.	<u>-</u>	Validity of Calibration Record30-		30-Nov-23	
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 Sensiti	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	М	ass Concentration (μg/1 X-axis	m3)	Mas	ss concentration (µ Y-axis	ıg/m³)	
1		72.0			138.0		
2		62.0			118.0		
3		50.0			97.0		
Average		61.3			117.7		
IDY Lincai Negi	ession of 1 on	l / X					
By Linear Regr Slope , mw = Correlation co	1.859		Interd	cept, bw =	3.5934		
Slope, mw =	1.859	0.9993	Interd		3.5934		
Slope , mw = Correlation co	1.859 pefficient* =	0.9993	t Correlation F		3.5934		
Slope , mw = Correlation co	1.859 pefficient* =	0.9993 Set	t Correlation F				
Slope , mw = Correlation co Particaulate Con Particaulate Con Measureing time	1.859 centration by I centration by I c, (min)	0.9993 Set High Volume Sampler (t Correlation F		117.7		
Slope , mw = Correlation co Particaulate Con Particaulate Con Measureing time Set Correlation F	centration by I centration by	0.9993 Set High Volume Sampler (t Correlation F μg/m³)		117.7 61.3		
Slope , mw = Correlation co Particaulate Con Particaulate Con Measureing time Set Correlation F SCF = [K=High	1.859 pefficient* = centration by I cent	99 0.9993 Set High Volume Sampler (Oust Meter (μg/m³)	t Correlation F μg/m³) g/m3)]	actor	117.7 61.3		
Slope, mw = Correlation co Particaulate Con Particaulate Con Measureing time Set Correlation F SCF = [K=High In-house method The Dust Monito	centration by I centration by	99 0.9993 Set High Volume Sampler (Dust Meter (μg/m³) npler / Dust Meter, (μg o the instruction manual and with a calibrated High	t Correlation F [µg/m³) g/m³)] gl: gh Volume Sam	actor	117.7 61.3 60.0	rate the Correlation	
Slope, mw = Correlation co Particaulate Con Particaulate Con Measureing time Set Correlation F SCF = [K=High In-house method The Dust Monito Factor (CF) betw	centration by I centration by	99 0.9993 Set High Volume Sampler (Dust Meter (μg/m³) npler / Dust Meter, (μg o the instruction manua	t Correlation F μg/m³) g/m3)] ul: gh Volume Samp me Sampler.	1.9	117.7 61.3 60.0	rate the Correlation	
Slope, mw = Correlation co Particaulate Con Particaulate Con Measureing time Set Correlation F SCF = [K=High In-house method The Dust Monito Factor (CF) betw	centration by I centration by	Set High Volume Sampler (Dust Meter (μg/m³) npler / Dust Meter, (μg o the instruction manual and with a calibrated High Monitor and High Volume	t Correlation F μg/m³) g/m3)] ul: gh Volume Samp me Sampler.	1.9	117.7 61.3 60.0	rate the Correlation	

Digital Dust Indicator



Date of Calibration 30-Sep-23

Certificate of Calibration

Description:

Manufacturer:	Sibata Scientific Technology LTD.	<u>-</u>	Validity of Calibr	ation Record	30-Nov-23
Model No.:	LD-5R				
Serial No.:	972781				
Equipment No.:	SA-01-10	Sensitivity	0.001 mg/m3		
High Volume Sa	mpler No.: <u>A-01-03</u>	Before Sensitiv	vity Adjustment	734 CPM	
Tisch Calibration	o Orifice No.: 3864	After Sensitivi	ty Adjustment	734 CPM	
	Cal	ibration of 1 h	r TSP		
Calibration	Laser Dust Monitor			HVS	
Point	Mass Concentration (μg/r X-axis	m3)	Mas	ss concentration (µ Y-axis	g/m ³)
1	81.0			133.0	
2	71.0			115.0	
3	60.0			98.0	
Average	70.7			115.3	
Slope , mw = Correlation co	ession of Y on X 	Interc	ept, bw =	-2.3021	
	Set	Correlation F	actor		
Particaulate Con	centration by High Volume Sampler (p	ug/m³)		115.3	
Particaulate Con-	centration by Dust Meter (μg/m ³)			70.7	
Measureing time				60.0	
Set Correlation F SCF = [K=High	Factor , SCF n Volume Sampler / Dust Meter, (µg	/m3)]	1.6		
The Dust Monitor Factor (CF) betw	in according to the instruction manual or was compared with a calibrated High een the Dust Monitor and High Volumers are weighted by HOKLAS labor	h Volume Samp ne Sampler.		was used to gener	ate the Correlation
Calibrated by:	al Officer (Wong Shing Kwai)	-	Approved by: Projec	Lement Manager (Henry	Leung)

Digital Dust Indicator



30-Sep-23

Date of Calibration

Certificate of Calibration

Description:

-						
Manufacturer:	Sibata Scient	ific Technology LTD.	_	Validity of Calibr	ration Record	30-Nov-23
Model No.:	LD-5R					
Serial No.:	8Y2374					
Equipment No.:	SA-01-04		Sensitivity	0.001 mg/m3	<u>.</u>	
High Volume Sa	mpler No.:	A-01-03	Before Sensitiv	vity Adjustment	652	
Tisch Calibration	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 (ug/m ³)
		X-axis			Y-axis	
1		73.0			134.0	
2		66.0			121.0	
3		53.0			99.0	
Average		64.0			118.0	
Slope , mw = Correlation co		0.9997		ept, bw =	6.4660	
		Se	t Correlation Fa	actor		
Particaulate Con	centration by l	High Volume Sampler ($(\mu g/m^3)$		118.0	
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	h Volume San	npler / Dust Meter, (μ	g/m3)]	1.8		
In-house method	in according	to the instruction manua	al:			
	-	ed with a calibrated Hig	-	ler and The result	was used to gene	rate the Correlation
		Monitor and High Volu	=	r *** - T\		
Those filter pap	ers are weign	ted by HOKLAS labo	oratory (HPCT)	Litimea)		
Calibrated by:		M.	_	Approved by:	\-len	y Xon
Technica	al Officer (Wo	ng Shing Kwai)		Projec	et Manager (Henr	Leung)

Digital Dust Indicator



Date of Calibration 30-Sep-23

Certificate of Calibration

Description:

Manufacturer:	Sibata Scient	ific Technology LTD.	_	Validity of Calibr	ation Record	30-Nov-23
Model No.:	LD-5R					
Serial No.:	8Y2373					
Equipment No.:	SA-01-05		Sensitivity	0.001 mg/m3		
High Volume Sa	mpler No.:	A-01-03	Before Sensitiv	vity Adjustment	657	
Tisch Calibration	orifice No.:	3864	After Sensitivi	ty Adjustment	657	
		Cal	libration of 1 h	r TSP		
Calibration		Laser Dust Monitor			HVS	
Point	M	Iass Concentration (μg/1	m3)	Mas	s concentration ($\mu g/m^3$)
		X-axis			Y-axis	
1		73.0			134.0	
3		53.0			97.0	
Average		63.3			115.3	
Slope , mw = Correlation co	1.84 pefficient* =	0.9973	Interc	ept, bw =	-1.3389	<u>) </u>
		Set	t Correlation F	actor		
Particaulate Con	centration by I	High Volume Sampler ($\mu g/m^3$)		115.3	
Particaulate Con	centration by I	Oust Meter (μg/m ³)			63.3	
Measureing time	, (min)				60.0	
Set Correlation F SCF = [K=Higl		npler / Dust Meter, (με	g/m3)]	1.8		
In-house method	in according t	to the instruction manua	ıl:			
Factor (CF) betw	een the Dust M	ed with a calibrated Hig Monitor and High Volu ted by HOKLAS labo	me Sampler.		was used to gene	rate the Correlation
Calibrated by:	/	ol.	_	Approved by:	\-len	y Xoy
Technica	al Officer (Wo	ng Shing Kwai)		Projec	et Manager (Henr	y Leung)





RECALIBRATION DUE DATE:

January 16, 2024

Certificate of Calibration

Calibration Certification Information

Cal. Date: January 16, 2023

Rootsmeter S/N: 438320

Ta: 293

°K

Operator: Jim Tisch
Calibration Model #:

TE-5025A Calibrator S/N: 3864

Pa: 749.0

mm Hg

ΔΗ Vol. Final ΔVol. ΔTime ΔΡ Vol. Init (in H2O) (m3)(min) (mm Hg) Run (m3)(m3)2.00 3.2 2 1.4440 1 6.4 4.00 2 3 4 1 1.0220 5.00 3 5 1 8.0 6 0.9100 5.50 4 8.8 7 8 1 0.8710 8.00 10 0.7210 12.8

	Data Tabulation						
Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	√∆H(Ta/Pa)		
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)		
0.9981	0.6912	1.4159	0.9957	0.6896	0.8845		
0.9938	0.9724	2.0024	0.9915	0.9701	1.2509		
0.9917	1.0898	2.2388	0.9893	1.0872	1.3985		
0.9906	1.1373	2.3480	0.9883	1.1346	1.4668		
0.9853	1.3665	2.8318	0.9829	1.3633	1.7690		
	m=	2.09452		m=	1.31155		
QSTD[b=	-0.03493	QA	b=	-0.02182		
	r=	0.99995	•	r=	0.99995		

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

	Standard Conditions
Tstd:	
Pstd:	760 mm Hg
	Key
	or manometer reading (in H2O)
	ter manometer reading (mm Hg)
	solute temperature (°K)
Pa: actual ba	rometric 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



Certificate of Calibration - Wind Monitoring Station

Description: Yau Lai Estate, Bik Lai House

Manufacturer: <u>Davis Instruments</u>

Model No.: <u>Davis7440</u>

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

Equipment No.: <u>SA-03-04</u>

Date of Calibration <u>18-Aug-2023</u>

Next Due Date <u>18-Feb-2024</u>

1. Performance check of Wind Speed

Wind Speed, m/s		Difference D (m/s)
Wind Speed Reading (V1)	Anemometer Value (V2)	D = V1 - V2
0.0	0.0	0.0
1.5	1.5	0.0
2.5	2.4	0.1
4.0	3.9	0.1

2. Performance check of Wind Direction

Wind Direction (°)		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

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

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



Report No. : 00370 Issue Date : 02 May 2023

Application No. : HP00242

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.: : SN-01-01

Manufacturer: : SVANTEK

Other information : | Model No. | SVAN 979

Serial No. 27189
Microphone No. 25202

Date Received : 02 May 2023

Test Period : 02 May 2023 to 02 May 2023

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



Report No. : 00370 Issue Date : 02 May 2023

Application No. : HP00242

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	93.9	- 0.1	± 1.5
114.0	114.0	± 0.0	± 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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NT, Hong Kong

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



Report No. : 00333 Issue Date : 20 Jan 2023

Application No. : HP00212

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-12-02

Manufacturer: : BSWA Technology

Other information : | |

Model No.	BSWA 308
Serial No.	570187
Microphone No.	590079

Date Received : 18 Jan 2023

Test Period : 20 Jan 2023 to 20 Jan 2023

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



Report No. : 00333 | Issue Date : 20 Jan 2023

Application No. : HP00212

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	114.2	+ 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. : 00361 | Issue Date : 30 Mar 2023

Application No. : HP00236

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-12-04

Manufacturer: : BSWA Technology

Other information : N

Model No.	BSWA 308
Serial No.	580238
Microphone No.	570605

Date Received : 27 Mar 2023

Test Period : 28 Mar 2023 to 28 Mar 2023

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



Report No. : 00361 Issue Date : 30 Mar 2023

Application No. : HP00236

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	94.2	+ 0.2	± 1.5
114.0	114.3	+ 0.3	± 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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NT, Hong Kong

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



Report No. : 00364 | Issue Date : 03 Apr 2023

Application No. : HP00240

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 : 03 Apr 2023

Test Period : 03 Apr 2023 to 03 Apr 2023

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

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

:



Report No. : 00364 | Issue Date : 03 Apr 2023

Application No. : HP00240

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	94.2	+ 0.2	± 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. : 00393 | Issue Date : 02 Aug 2023

Application No. : HP00275

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-13-01

Manufacturer: : SOUNDTEK

Other information : Model No. ST-120

Serial No. 181001608

Date Received : 28 Jul 2023

Test Period : 31 Jul 2023 to 31 Jul 2023

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

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Report No. : 00393 | Issue Date : 02 Aug 2023

Application No. : HP00275

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	94.1	+ 0.1	± 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. : 00396 Issue Date : 02 Aug 2023

Application No. : HP00278

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-13-02

Manufacturer: : SOUNDTEK

Other information : | Model No. | ST-120

Serial No. 181001636

Date Received : 01 Aug 2023

Test Period : 01 Aug 2023 to 01 Aug 2023

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

Lee Wai Kit Laboratory Manager

Page 1 of 2

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Report No. : 00396 | Issue Date : 02 Aug 2023

Application No. : HP00278

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	94.1	+ 0.1	± 0.3
114.0	114.3	+ 0.3	± 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. : 00389 | Issue Date : 20 Jul 2023

Application No. : HP00262

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.

Model No. AWA6021A
Serial No. 1023253

Date Received : 18 Jul 2023

Test Period : 19 Jul 2023 to 19 Jul 2023

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. : 00389 Issue Date : 20 Jul 2023

Application No. : HP00262

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	94.2	+ 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.