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File No. MA16034/05/0039

Project No.	AM1 - Tin Ha	u Temple					
Date:	9-Dec-22		Next Due Date:	9-Feb-23	Operator:	SK 10599	
Equipment No.:			Model No.:	GS2310	Serial No.		
			Ambient Condit	ion			
Temperatu	ire, Ta (K)	292.6	Pressure, Pa (mml	Hg)	761.7		

Orifice Transfer Standard Information					
Serial No.	3864 Slope, mc 0.05922 Intercept, bc -0.02420				
Last Calibration Date:	31-Jan-22	mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$			
Next Calibration Date:	31-Jan-23	Qstd = { $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc			

	Calibration of TSP Sampler						
Calibration		Orfice			HVS		
Point	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \ x \ (Pa/760) \ x \ (298/Ta)]^{1/2}$ Y-axis		
1	13.2	3.67	62.39	9.9	3.18		
2	10.4	3.26	55.43	7.3	2.73		
3	7.6	2.79	47.44	5.4	2.35		
4	5.6	2.39	40.78	3.4	1.86		
5	3.3	1.84	31.40	1.9	1.39		
By Linear Regression of Y on X Slope , mw =0.0578 Intercept, bw :0.4421 Correlation coefficient* =0.9983 *If Correlation Coefficient < 0.990, check and recalibrate.							
From the TSP Fi	eld Calibration C	Set Point C urve, take Qstd = 43 CFM	alculation				
	From the Regression Equation, the "Y" value according to $\mathbf{mw} \mathbf{x} \mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \mathbf{x} (\mathbf{Pa}/760) \mathbf{x} (\mathbf{298/Ta})]^{1/2}$ Therefore, Set Point; W = (mw x Qstd + bw) ² x (760 / Pa) x (Ta / 298) =						
Remarks:							
Conducted by:	Wong Shi	ng Kwai Signature:	k	y drong	Date: 10-Dec-22		
Checked by:	Henry I	Leung Signature:	-len	J ang	Date: 10-Dec-22		



File No. MA16034/08/0039

						1 ne 1 to.	MA10034/08/0039		
Project No.	AM2 - Sai Tso V	Van Recreation	Ground						
Date:	9-De	c-22	Next Due Date:	9-I	Feb-23	Operator:	SK		
Equipment No.:	A-01	-08	Model No.:	G	52310	Serial No.	1287		
			Ambient C	ondition					
Temperatu	re, Ta (K)	292.6	Pressure, Pa	(mmHg)		761.7			
		Ori	fice Transfer Sta	ndard Inform	ation				
Serial No. 3864			Slope, mc	0.05922	Intercept	, bc	-0.02420		
Last Calibra	t Calibration Date: 31-Jan-22				c = [ΔH x (Pa/760				
Next Calibr	ation Date:	31-Jan-23				/760) x (298/Ta)] ^{1/2} -bc} / mc			
			Calibration of	FSP Sampler					
Calibration		Or	fice			HVS [ΔW x (Pa/760) x (298/Ta)] Y-axis			
Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	0) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water				
1	13.4		3.70		9.5		3.11		
2	10.7		3.30	56.21	7.0		2.67		
3	7.9		2.84	48.36	5.4		2.35		
4	5.5		2.37	40.42	3.7	1.94			
5	3.3		1.84	31.40	2.1		1.46		
Slope , mw = Correlation	ression of Y on X 0.0511 coefficient* = Coefficient < 0.99	0	9982	Intercept, bw [.]	-0.137	7			
			Set Point Ca	alculation					
From the TSP Fi	eld Calibration C	urve, take Qstd	= 43 CFM						
From the Regres	sion Equation, th	e "Y" value acc	ording to						
		mw x O	$std + bw = [\Delta W x]$: (Pa/760) x (29	$98/Ta)l^{1/2}$				
					(), 1 ()]				
Therefore, Se	et Point; W = (my	w x Qstd + bw)	² x (760 / Pa) x (7	Ta / 298) =	4.16				

Conducted by: <u>Wong Shing Kwai</u> Signature: <u>M</u> Date: <u>10-Dec-22</u> Checked by: <u>Henry Leung</u> Signature: <u>lemp Manp</u> Date: <u>10-Dec-22</u>

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Remarks:

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File No. MA16034/03/0039

Project No.	AM3 - Yau La	M3 - Yau Lai Estate, Bik Lai House						
Date:	9-Dec-22		Next Due Date:	8-Feb-23	Operator:	SK		
Equipment No.:	A-	01-03	Model No.:	GS2310	Serial No.	10379		
			Ambient Conditi	on				
Temperature, Ta (K)292.6Pressure, Pa (mmHg)761.7								

	Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05922	Intercept, bc	-0.02420	
Last Calibration Date:	31-Jan-22	mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$] ^{1/2}	
Next Calibration Date:	31-Jan-23	Qstd = { $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$ -bc} / mc				

Calibration of TSP Sampler						
Calibration		Orfice			HVS	
Point	ΔH (orifice), in. of water	$[\Delta H \ x \ (Pa/760) \ x \ (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \ x \ (Pa/760) \ x \ (298/Ta)]^{1/2}$ Y-axis	
1	13.0	3.64	61.92	9.0	3.03	
2	10.3	3.24	55.16	6.8	2.63	
3	8.2	2.89	49.26	5.2	2.30	
4	5.2	2.30	39.31	3.2	1.81	
5	2.8	1.69	28.96	2.0	1.43	
By Linear Regression of Y on X Slope , mw = 0.0488 Intercept, bw = -0.0484 Correlation coefficient* = 0.9957 *If Correlation Coefficient < 0.990, check and recalibrate.						
From the TSP Fi	eld Calibration C	Set Point C urve, take Qstd = 43 CFM	alculation			
From the Regres	sion Equation, the	e "Y" value according to $\mathbf{mw} \mathbf{x} \mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \mathbf{x}]$	· · · ·			
Therefore, Set Point; $W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = 4.12$ Remarks:						
	Wong Shi		K -lem	y Xong	Date: 10-Dec-22 Date: 10-Dec-22	



File No. MA16034/05/0040

Project No.	AM1 - Tin Hau	Temple					
Date:	9-Fe	eb-23	Next Due Date:	12-Apr-23		Operator:	SK
Equipment No.:	A-01-05		Model No.:	GS	52310	Serial No.	10599
			Ambient C	ondition			
Temperatur	re, Ta (K)	292.5	Pressure, Pa			762.3	
					•		
		Ori	ifice Transfer Star	ndard Informa	ation		
Serial	No.	3864	Slope, mc	0.05928	Intercept		-0.03491
Last Calibra	ation Date:	16-Jan-23			$c = [\Delta H \times (Pa/760)]$		
Next Calibra	ation Date:	16-Jan-24		$Qstd = \{ [\Delta H x] \}$	(Pa/760) x (298/7	[a)] ^{1/2} -bc} / mo	2
			Calibration of 7	FSP Sampler	[
Calibration	AII (arifica)		fice	O d (CEM)		HVS	$(200 \text{ (T)})^{1/2}$
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	13.3		3.69	62.78	10.1	3	.21
2	10.5		3.28		7.4	2	2.75
3	7.7		2.81		5.5	2	2.37
4	5.7		2.41		3.5	1	.89
5	3.4		1.86	32.03	2.0	1	.43
	0.0580 coefficient* =	_	.9982	Intercept, bw =	-0.453	5	
			Set Point Ca	alculation			
From the TSP Fi	eld Calibration	Curve, take Qstd	= 43 CFM				
From the Regres	sion Equation, t	he "Y" value acco	ording to				
		mw x O	$\mathbf{b}\mathbf{x} = [\Delta \mathbf{W} \mathbf{x}]$	(Pa/760) x (29	$98/Ta)1^{1/2}$		
Therefore, Se	et Point; W = (n		² x (760 / Pa) x (7		4.08		
Remarks:							
Conducted by:	Wong Sl	ning Kwai	Signature:	R	A.	Date:	9-Feb-23
Checked by:	Henry	Leung	Signature:	\-lem	J Xm J	Date:	9-Feb-23



File No. MA16034/08/0040

Project No.	AM2 - Sai Tso	Wan Recreation	Ground				
Date:	9-F	eb-23	Next Due Date:	12-	12-Apr-23		SK
Equipment No.:	A-01-08		Model No.:	o.: GS2310		Serial No.	1287
			Ambient C	ondition	1		
Temperatu	re, Ta (K)	292.5	Pressure, Pa	(mmHg)		762.3	
		0-	fine Transfor Stor	a Jourd Tufformer	-4: or		
Serial	No	3864	ifice Transfer Star Slope, mc	0.05928	Intercept	t hc	-0.03491
Last Calibra					$c = [\Delta H \times (Pa/760)]$		
Next Calibra		16-Jan-24			(Pa/760) x (298/2		
		•					
	-		Calibration of '	FSP 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} X-axis
1	13.6		3.73	63.48	9.7		3.15
2	10.8		3.32	56.63	7.2		2.71
3	8.0		2.86	48.82	5.5	2.37	
4	5.6		2.39	40.94	3.8		1.97
5	3.4		1.86	32.03	2.3		1.53
By Linear Regression of Y on X Slope , mw =0.0505 Intercept, bw :0.0949 Correlation coefficient* =0.9986 *If Correlation Coefficient < 0.990, check and recalibrate.							
			Set Point Ca	alculation			
From the TSP Fi	eld Calibration	Curve, take Qstd	= 43 CFM				
From the Regres	sion Equation, t	the "Y" value acco	ording to				
		mw x ($\mathbf{A} = \mathbf{A} \mathbf{W} \mathbf{x}$: (Pa/760) x (29	$98/T_{a}$		
				(1 4, 7 0 0) 11 (2)	(), (, (, (, (, (, (, (, (, (, (, (, (, (,		
Therefore, Se	et Point; W = (1	mw x Qstd + bw)	² x (760 / Pa) x (7	Га / 298) =	4.22		
Remarks:							
Conducted by:	Wong S	hing Kwai	Signature:	k	X.	Date:	9-Feb-23
-		-		1		· <u> </u>	
Checked by:	Henr	y Leung	Signature:	-lem	<u>1 X-1</u>	Date:	9-Feb-23

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File No. MA16034/03/0040

Project No.	AM3 - Yau Lai	Estate, Bik Lai I	House				
Date:	9-Feb-23		Next Due Date: 11-Apr-23		Apr-23	Operator:	SK
Equipment No.:			Model No.:	GS	52310	Serial No.	10379
			Ambient C	ondition			
Temperatur	re, Ta (K)	292.5	Pressure, Pa			762.3	
			ifice Transfer Star				
Serial		3864	Slope, mc	0.05928	Intercept		-0.03491
Last Calibra		16-Jan-23			$c = [\Delta H \times (Pa/760) (Pa/760) \times (298/7)]$		
Next Calibra	ation Date:	16-Jan-24		$2sta = \{ \Delta H x \}$	(Pa/700) X (298/.	[a)] -DC}/mc	
		•	Calibration of 7	FSP Sampler			
Caliberties		O	fice			HVS	
Calibration Point	ΔH (orifice), in. of water		50) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water		0) x (298/Ta)] ^{1/2} axis
1	13.2		3.67		9.2	3	.07
2	10.4		3.26		6.9	2	.66
3	8.3	2.91		49.72	5.3	2	.33
4	5.3	2.33		39.85	3.3	1	.84
5	3.0		1.75	30.13	2.2	1	.50
		-					
By Linear Regr		K			0.024	10	
Slope, mw =	0.0486 coefficient* =	-	.9949	Intercept, bw =	-0.034	5	
*If Correlation C		-					
		o, check and red	lanorate.				
			Set Point Ca	alculation			
From the TSP Fi	eld Calibration C	Curve, take Qstd	= 43 CFM				
From the Regres	sion Equation, th	ne "Y" value acc	ording to				
			$p_{std} + bw = [\Delta W x]$	(Do /7(0) (2(1/2		
		III w X Q	$\frac{1}{2}$ stu + Dw – [Δ W x	$(\mathbf{F} \mathbf{a} / 100) \mathbf{X} (2)$	<i>o(1a)</i>]		
Therefore, Se	et Point; W = (m	w x Qstd + bw)	² x (760 / Pa) x (7	Га / 298) =	4.13		
Remarks:							
				,	1		
Conducted by:	Wong Sh	ing Kwai	Signature:	Ŕ	N-	Date:	9-Feb-23
Conducted by.	11 OII 5 DI		Signature.		-	Duite.	/ 100 25
Checked by:	Henry	Leung	Signature:	Flem	j Xoz	Date:	9-Feb-23

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File No. MA20003/55/018

Project No.	CKL 2 - Flat 10)3 Cha Kwo Ling	Village			. –	
Date:	5-J	an-23	Next Due Date:	- 7-N	Mar-23	Operator:	SK
Equipment No.:	A-()1-55	Model No.: TE 5170		Serial No.	1956	
			Ambient (andition			
Tomporatu	r_{0} T ₀ (K)	291.5				767.6	
Temperatu	ie, 1a (k)	291.5	Pressure, Pa	t (IIIIIIng)		767.6	
		Ori	fice Transfer Sta	ndard Inform	ation		
Serial No.		3864	Slope, mc	0.05922	Intercept		-0.02420
Last Calibra	ation Date:	31-Jan-22			$c = [\Delta H \times (Pa/760)]$		
Next Calibr	ation Date:	31-Jan-23		$\mathbf{Qstd} = \{ [\Delta \mathbf{H} \mathbf{x}] \}$	(Pa/760) x (298/	Γa)]^{1/2} -bc} / m	10
		•					
		01	Calibration of fice	TSP Sampler		HVS	
Calibration Point	ALL (orifice)		0) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/7	60) x (298/Ta)] ^{1/2} Z-axis
1	12.7		3.62		9.8		3.18
2	10.6		3.31	56.27	7.5		2.78
3	8.5		2.96	50.43	5.6		2.40
4	5.2		2.32		3.1		1.79
5	2.8		1.70 29.12		1.9		1.40
By Linear Regr Slope , mw =		X		Intercept. bw :	-0.287	1	
	coefficient* =	- 0	.9926	1 /			
*If Correlation C	Coefficient < 0.9	90, check and rec	calibrate.	_			
			Set Point C	alculation			
From the TSP Fi	ield Calibration	Curve, take Qstd	= 43 CFM				
From the Regres	sion Equation, t	he "Y" value acco	ording to				
		0	$\mathbf{bstd} + \mathbf{bw} = [\Delta \mathbf{W}]$	- (D- /7(0) (2)	1/2		
		mw x Q	$std + bw = [\Delta W]$	x (Pa/760) x (2)	98/1a)]		
Therefore, Se	et Point; W = (r	nw x Qstd + bw)	² x (760 / Pa) x (Ta / 298) =	4.15		
Remarks:							
				10			
Conducted by:	Wong S	hing Kwai	Signature:	<u> </u>	<u>ب</u>	Date:	5-Jan-23
Checked by	Henry	v Leung	Signature:	1_0	Non r	Date:	5-Jan-23

Report No.

Rm 1904, Technology Park 18 On Lai Street, Shatin NT, Hong Kong Tel: +852 3841 4388 Website: https://www.hpct.com.hk

: 00171



Issue Date : 01 Apr 2022

: HP00046 Application No. **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 : 25 Mar 2022

Date Received	•	
Test Period	:	30 Mar 2022 to 30 Mar 2022
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

Lee Wai Kit Laboratory Manager

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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Issue Date : 01 Apr 2022

Report No.:00171Application No.:HP00046

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.

- End of report -

Report No.

Rm 1904, Technology Park 18 On Lai Street, Shatin NT, Hong Kong Tel: +852 3841 4388 Website: https://www.hpct.com.hk

: 00181



Issue Date : 24 May 2022

: HP00060 Application No. **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 : 16 May 2022

	•	
Test Period	:	24 May 2022 to 24 May 2022
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

Lee Wai Kit Laboratory Manager

Rm 1904, Technology Park 18 On Lai Street, Shatin NT, Hong Kong Tel: +852 3841 4388 Website: https://www.hpct.com.hk

:

:



Issue Date : 24 May 2022

Report No.:00181Application No.:HP00060

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	114.1	+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.

- End of report -

Report No.

Rm 1904, Technology Park 18 On Lai Street, Shatin NT, Hong Kong Tel: +852 3841 4388 Website: https://www.hpct.com.hk

: 00288



Issue Date : 10 Nov 2022

Application No. : HP00176 **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-13-03 Manufacturer: : SOUNDTEK Other information : Model No. ST-120 Serial No. 181001637 : 10 Nov 2022 Date Received Test Period : 10 Nov 2022 to 10 Nov 2022 : Performance checking for Sound Level Calibrator **Test Requested** 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

Rm 1904, Technology Park 18 On Lai Street, Shatin NT, Hong Kong Tel: +852 3841 4388 Website: https://www.hpct.com.hk

:

:



Issue Date : 10 Nov 2022

Report No.:00288Application No.:HP00176

<u>Certificate of Calibration</u>

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
	DOWNTEEnnology
Model No.	BSWA 308
Model No. Serial No.	81
	BSWA 308
Serial No.	BSWA 308 570183

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.

- End of report -



Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Laser Dust Mo	nitor	Date o	of Calibration	29-Jan-23
Manufacturer:	Sibata Scientif	ic Technology LTD.	Validity of Calibra	ation Record	31-Mar-23
Model No.:	LD-3B				
Serial No.:	2Y6194				
Equipment No.:	SA-01-02	Sensi	tivity 0.001 mg/m3		
High Volume Sa	ampler No.:	A-01-03 Befor	re Sensitivity Adjustment	578	
Tisch Calibration	n Orifice No.:	After	Sensitivity Adjustment	578	
		Calibration of	1 hr TSP		
Calibration		Laser Dust Monitor		HVS	
Point	Total Count	Count / Minute X-axis	Mass	s concentration (µ Y-axis	ug/m ³)
1	4080	70.0		135.0	
2	3600	62.0		117.0	
3	2880	50.0		95.0	
Aver	rage	60.7		115.7	
By Linear Regr Slope , mw =			Intercept, bw =	-4.8684	<u> </u>
Correla	ation coefficien	.t* =0.9984			
Set Correlation I SCF = [K=Hig		pler / Dust Meter, (µ g/m3)]	1.9		

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 Limited)

Calibrated by:

Approved by: _____ Project Manager (Henry Leung)



Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator		Date	of Calibration	29-Jan-23
Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calib	ration Record	31-Mar-23
Model No.:	LD-5R				
Serial No.:	8Y2374				
Equipment No.:	SA-01-04	Sensitivity	0.001 mg/m3	-	
High Volume Sa	mpler No.: <u>A-01-03</u>	Before Sensit	ivity Adjustment	652	
Tisch Calibratior	o Orifice No.: 3864	After Sensitiv	ity Adjustment	652	

		Calibration of 1 hr TSP	
Calibration	Laser Dust Mon	itor	HVS
Point	Mass Concentration ((µg/m3)	Mass concentration ($\mu g/m^3$)
Tohit	X-axis		Y-axis
1	70.0		131.0
2	63.0		118.0
3	52.0		96.0
Average	61.7		115.0
Slope , mw =	ession of Y on X 1.9494	Intercept, bw =	-5.2126
	1.9494	998	-5.2126
Slope , mw = Correlation co	<u>1.9494</u> efficient* =0.9	998 Set Correlation Factor	
Slope , mw = Correlation co Particaulate Conc	1.9494 efficient* = 0.9 centration by High Volume Samp	Set Correlation Factor ler (µg/m ³)	115.0
Slope , mw = Correlation co Particaulate Conce Particaulate Conce	1.9494 efficient* = 0.9 centration by High Volume Samp centration by Dust Meter (µg/m³)	Set Correlation Factor ler (µg/m ³)	<u>115.0</u> 61.7
Slope , mw = Correlation co Particaulate Conc	1.9494 efficient* = 0.9 centration by High Volume Samp centration by Dust Meter (μ g/m ³) , (min)	Set Correlation Factor ler (µg/m ³)	115.0

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)

Approved by: Project Manager (Henry Leung)

Technical Officer (Wong Shing Kwai)

Calibrated by:



Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator		Date of	f Calibration	29-Jan-23
Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calibra	tion Record	31-Mar-23
Model No.:	LD-5R				
Serial No.:	8Y2373				
Equipment No.:	SA-01-05	Sensitivity	0.001 mg/m3		
High Volume Sa	mpler No.: <u>A-01-03</u>	Before Sensiti	vity Adjustment	657	
Tisch Calibration	n Orifice No.: <u>3864</u>	After Sensitivi	ty Adjustment	657	
	Ca	libration of 1 h	r TSP		
	Legen Dugt Menitor				

Calibration	Laser Dust Monitor		HVS
Point	Mass Concentration (µg/m3	3) M	ass concentration ($\mu g/m^3$)
1 01110	X-axis		Y-axis
1	69.0		131.0
2	61.0		112.0
3	50.0		95.0
Average	60.0		112.7
By Linear Regre Slope , mw = Correlation coe	1.8736	Intercept, bw =	0.2491
Slope , mw =	<u>1.8736</u> fficient* = <u>0.9924</u>	Intercept, bw = 	0.2491
Slope , mw = Correlation coe	<u>1.8736</u> fficient* = <u>0.9924</u>	Correlation Factor	<u>0.2491</u> 112.7
Slope , mw = Correlation coe Particaulate Conc	<u>1.8736</u> :fficient* = <u>0.9924</u> Set C	Correlation Factor	
Slope , mw = Correlation coe Particaulate Conc Particaulate Conc	$\frac{1.8736}{\text{efficient*} = 0.9924}$ $\frac{6}{\text{Set C}}$ $\frac{1.8736}{\text{entration by High Volume Sampler (}\mu_{g})}$	Correlation Factor	112.7
Slope , mw = Correlation coe Particaulate Conc	1.8736 fficient* = 0.9924 Set C entration by High Volume Sampler (μ g entration by Dust Meter (μ g/m ³) (min)	Correlation Factor	 112.7 60.0

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)

Technical Officer (Wong Shing Kwai)

Calibrated by:



Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator		Date	of Calibration	29-Jan-23
Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calibr	ation Record	31-Mar-23
Model No.:	LD-5R				
Serial No.:	972777				
Equipment No.:	SA-01-06	Sensitivity	0.001 mg/m3		
High Volume Sa	ampler No.: A-01-03	Before Sensitiv	ity Adjustment	645	
Tisch Calibratio	on Orifice No.: 3864	After Sensitivit	y Adjustment	645	
	Ca	llibration of 1 hr	TSP		
Calibration	Laser Dust Monitor	r		HVS	
Point	Mass Concentration (µg/	/m3)	Mas	s concentration (µ	$\iota g/m^3$)
	X-axis		Y-axis		
1	67.0		134.0		
2	60.0		116.0		
3	49.0			96.0	
Average	58.7			115.3	
By Linear Reg Slope , mw = Correlation c			ept, bw =	-6.9879	
	Se	et Correlation Fa	nctor		
Particaulate Cor	ncentration by High Volume Sampler	$(\mu g/m^3)$		115.3	
Particaulate Cor	ncentration by Dust Meter (µg/m ³)		58.7		
Measureing time	e, (min)			60.0	
Set Correlation	Factor, SCF				
SCF = K=Hig	h Volume Sampler / Dust Meter, (μ	ıg/m3)]	2.0		

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:

Approved by: Project Manager (Henry Leung)



Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator	Date o	f Calibration	29-Jan-23
Manufacturer:	Sibata Scientific Technology LTD.	Validity of Calibra	ation Record	31-Mar-23
Model No.:	LD-5R			
Serial No.:	972778			
Equipment No.:	SA-01-07	Sensitivity 0.001 mg/m3		
High Volume Sa	mpler No.: <u>A-01-03</u>	Before Sensitivity Adjustment	735 CPM	
Tisch Calibration	n Orifice No.: <u>3864</u>	After Sensitivity Adjustment	735 CPM	

	Calibration o	f 1 hr TSP
Calibration	Laser Dust Monitor	HVS
Point	Mass Concentration (µg/m3)	Mass concentration ($\mu g/m^3$)
Tonit	X-axis	Y-axis
1	64.0	134.0
2	57.0	116.0
3	46.0	95.0
Average	55.7	115.0
Correlation coef	ficient* = 0.9965	
	G.4 C	
	Set Correlati	on Factor
Particaulate Conce	ntration by High Volume Sampler (µg/m ³)	115.0
	2	
	ntration by High Volume Sampler ($\mu g/m^3$) ntration by Dust Meter ($\mu g/m^3$)	115.0
Particaulate Conce	ntration by High Volume Sampler (µg/m ³) ntration by Dust Meter (µg/m ³) min)	115.0 55.7

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:

Approved by: _______ Project Manager (Henry Leung)



<u>Certificate of Calibration</u>

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust l	Indicator		Date	of Calibration	29-Jan-23
Manufacturer:	Sibata Scientific Technology LTD.		Validity of Calibration Record		31-Mar-23	
Model No.:	LD-5R					
Serial No.:	972779					
Equipment No.:	SA-01-08		Sensitivity	0.001 mg/m3		
High Volume Sa	mpler No.:	A-01-03	Before Sensiti	vity Adjustment	744 CPM	
Tisch Calibration	n Orifice No.:	3864	After Sensitiv	ity Adjustment	744 CPM	
		Cal	libration of 1 k	r TSD		

	Calibr		
Calibration	Laser Dust Monitor		HVS
Point	Mass Concentration (µg/m3))	Mass concentration ($\mu g/m^3$)
rome	X-axis		Y-axis
1	68.0		135.0
2	57.0		116.0
3	48.0		95.0
Average	57.7		115.3
By Linear Regressi Slope , mw =	1.9900	Intercept, bw =	0.5748
	<u>1.9900</u> cient* =		0.5748
Slope , mw = Correlation coeffi	<u>1.9900</u> cient* =0.9963 Set C	orrelation Factor	
Slope , mw = Correlation coeffi Particaulate Concent	<u> 1.9900</u> cient* = 0.9963 Set Contraction by High Volume Sampler (μg)	orrelation Factor	0.5748
Slope , mw = Correlation coeffi Particaulate Concent	1.9900 cient* = 0.9963 Set C tration by High Volume Sampler (µg/m³)	orrelation Factor	115.3
Slope , mw = Correlation coeffi Particaulate Concent Particaulate Concent	1.9900 cient* = 0.9963 Set Colspan="2">Colspan="2" Set Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2" Colspan="2"	orrelation Factor	115.3 57.7

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:



<u>Certificate of Calibration</u>

1

2

3

Average

By Linear Regression of Y on X

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator		Date	of Calibration	29-Jan-23	
Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calibr	ation Record	31-Mar-23	
Model No.:	LD-5R					
Serial No.:	972780					
Equipment No.:	SA-01-09	Sensitivity	0.001 mg/m3	-		
High Volume Sa	ampler No.: A-01-03	Before Sensiti	ivity Adjustment	739 CPM		
Tisch Calibration	n Orifice No.: <u>3864</u>	After Sensitivi	ity Adjustment	739 CPM		
	Calibration of 1 hr TSP					
Calibration	Laser Dust Monitor	r		HVS		
Point	Mass Concentration (µg/	(m3)	Mas	ss concentration (µ	$\mu g/m^3$)	
1 0	X-axis	I		Y-axis		

Slope , mw = 2.0498	Intercept, bw = -7.0055
Correlation coefficient* = 0.9990	
Set Corr	elation Factor
Particaulate Concentration by High Volume Sampler (µg/m ³)) 116.7
Particaulate Concentration by Dust Meter (µg/m ³)	60.3
Measureing time, (min)	60.0
Set Correlation Factor, SCF	
SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)]	1.9

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)

70.0

60.0

51.0 60.3

Calibrated by:

136.0

117.0 97.0

116.7



Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator	Date	of Calibration	29-Jan-23
Manufacturer:	Sibata Scientific Technology LTD.	Validity of Calib	ration Record	31-Mar-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 Sensitivity Adjustment	734 CPM	
Tisch Calibration	n Orifice No.: <u>3864</u>	After Sensitivity Adjustment	734 CPM	

	Calibration of 1	hr 18P
Calibration	Laser Dust Monitor	HVS
Point	Mass Concentration (µg/m3)	Mass concentration ($\mu g/m^3$)
1 onit	X-axis	Y-axis
1	70.0	132.0
2	63.0	114.0
3	51.0	94.0
Average	61.3	113.3
Slope, mw =		rcept, bw = -7.1191
	<u>1.9639</u> Inte efficient* = 0.9928	_
Slope , mw = Correlation co	1.9639 Integration efficient* = 0.9928 Set Correlation	Factor
Slope , mw = Correlation co Particaulate Conc	1.9639 Integration efficient* = 0.9928 Set Correlation centration by High Volume Sampler (µg/m³)	Factor 113.3
Slope , mw = Correlation co Particaulate Conc Particaulate Conc	1.9639 Integration efficient* = 0.9928 Set Correlation centration by High Volume Sampler ($\mu g/m^3$) centration by Dust Meter ($\mu g/m^3$)	Factor 113.3 61.3
Slope , mw = Correlation co Particaulate Cond Particaulate Cond Measureing time.	1.9639 Integration efficient* = 0.9928 Set Correlation centration by High Volume Sampler (μ g/m ³) centration by Dust Meter (μ g/m ³) (min)	Factor 113.3
Slope , mw = Correlation co Particaulate Conc Particaulate Conc Measureing time. Set Correlation F	1.9639 Integration efficient* = 0.9928 Set Correlation centration by High Volume Sampler (μ g/m ³) centration by Dust Meter (μ g/m ³) (min)	Factor 113.3 61.3

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)

Approved by: ______ Project Manager (Henry Leung)

Technical Officer (Wong Shing Kwai)

Calibrated by:



RECALIBRATION

DUE DATE:

January 16, 2024

Certificate of Calibration

			Calibration					014
Cal. Date:	January 16	, 2023	Roots	meter S/N:	438320	Та:	293	℃К
Operator:	Jim Tisch					Pa:	749.0	mm Hg
Calibration	Model #:	TE-5025A	Calib	prator S/N:	3864			
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ	1
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)	
	1	1	2	1	1.4440	3.2	2.00	1
	2	3	4	1	1.0220	6.4	4.00	
	3	5	6	1	0.9100	8.0	5.00	
	4	7	8	1	0.8710	8.8	5.50	
	5	9	10	1	0.7210	12.8	8.00	
			[Data Tabula	tion]
	Vstd	Qstd	√∆H(<u>Pa</u> Pstd)(<u>Tstd</u>) Ta)		Qa	$\sqrt{\Delta H(Ta/Pa)}$	
	(m3)	(x-axis)	(y-ax	is)	Va	(x-axis)	(y-axis)	
	0.9981	0.6912	1.41	59	0.9957	0.6896	0.8845	
	0.9938	0.9724	2.00	24	0.9915	0.9701	1.2509	
	0.9917	1.0898	2.23	88	0.9893	1.0872	1.3985	
	0.9906	1.1373	2.34	80	0.9883	1.1346	1.4668	
	0.9853	1.3665	2.83		0.9829	1.3633	1.7690	
		m=	2.094			m=	1.31155	
	QSTD	b=	-0.034		QA	b=	-0.02182	
		r=	0.999	995	r= 0.99995			
				Calculatio				
)/Pstd)(Tstd/Ta	a)		Va= \DVol((Pa-\DP)/Pa)		
	Qstd=	Vstd/∆Time			Qa= Va/∆Time			
			For subsequ	ient flow ra	te calculatio	ns:		
	Qstd=	Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$		-))-ь)	Qa=	1/m ((√∆H	l(Ta/Pa))-b)	
		Conditions						
Tstd						RECA	LIBRATION	
Pstd		mm Hg			US FPA rec	ommends a	nnual recalibratio	on ner 1999
AH: calibrat		Key ter reading (i	n H2O)				Regulations Part !	
		eter reading					, Reference Meth	
		perature (°K)					ended Particulat	
		ressure (mm				•	ere, 9.2.17, page	
b: intercept						c Autospite	, J.z.z/, page	
m: slope								

CIN@TECH 🤳

Certificate of Calibration - Wind Monitoring Station

Description:	Yau Lai Estate, Bik Lai House
Manufacturer:	Davis Instruments
Model No.:	<u>Davis7440</u>
Serial No.:	<u>MC01010A44</u>
Equipment No.:	<u>SA-03-04</u>
Date of Calibration	<u>19-Aug-2022</u>
Next Due Date	<u>19-Feb-2023</u>

1. Performance check of Wind Speed

Wind Sp	beed, 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	2.6	-0.1
4.0	4.0	0.0

2. Performance check of Wind Direction

Wind Direction (°)		Difference D (°)
Wind Direction Reading (W1)	Marine Compass Value (W2)	$\mathbf{D} = \mathbf{W1} - \mathbf{W2}$
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

CINGTECH

Certificate of Calibration - Wind Monitoring Station

Description:	Yau Lai Estate, Bik Lai House
Manufacturer:	Davis Instruments
Model No.:	<u>Davis7440</u>
Serial No.:	<u>MC01010A44</u>
Equipment No.:	<u>SA-03-04</u>
Date of Calibration	<u>18-Feb-2023</u>
Next Due Date	<u>18-Aug-2023</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
1.2	1.3	-0.1
2.5	2.5	0.0
3.8	3.9	-0.1

2. Performance check of Wind Direction

Wind Direction (°)		Difference D (°)
Wind Direction Reading (W1)	Marine Compass Value (W2)	$\mathbf{D} = \mathbf{W1} - \mathbf{W2}$
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: ______ Approved by: _______ Henry/Leung