

5-Aug-20

Date of Calibration

Cerificate of Calibration

Digital Dust Indicator

Description:

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

_								
Manufacturer:	Sibata Scienti	fic Technology LTD.	_	Validity of Calibra	ation Record	5-Oct-20		
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 Sensit	tivity Adjustment	645			
Tisch Calibration	n Orifice No.:	3607	After Sensitivity Adjustment		645			
		Ca	alibration of 1	hr TSP				
Calibration		Laser Dust Monito	r	HVS				
Point	M	ass Concentration (μg	/m3)	Mas	s concentration ($\mu g/m^3$)		
		X-axis		Y-axis				
1		36.0			65.8			
2	30.0				62.7			
3		24.0			59.0			
Average		30.0			62.5			
By Linear Regr Slope , mw = Correlation co	0.560			rcept, bw =	45.5000	<u> </u>		
		Se	et Correlation	Factor				
Particaulate Con	centration by H	High Volume Sampler	$(\mu g/m^3)$		62.5			
Particaulate Con	centration by [Oust Meter (μg/m ³)			30.0			
Measureing time	e, (min)			60.0				
Set Correlation I	Factor, SCF							
SCF = [K=Higl	h Volume Sam	npler / Dust Meter, (µ	ıg/m3)]	2.1				
The Dust Monito	or was compare	o the instruction manued with a calibrated Hi	gh Volume San	npler and The result	was used to gene	rate the Correlation		

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by:

Wong Shing Kwai

Approved by:

Henry Leung



Date of Calibration 5-Aug-20

Approved by: _\left(\left(\left(\sum_{\text{em}}\)\)\\
Henry Leung

Cerificate of Calibration

Calibrated by: Wong Shing Kwai

Digital Dust Indicator

Description:

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

Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calibr	ation Record	5-Oct-20		
Model No.:	LD-5R						
Serial No.:	972778						
Equipment No.:	SA-01-07	Sensitivity	0.001 mg/m3				
High Volume Sa	mpler No.: <u>A-01-01A</u>	Before Sensitiv	rity Adjustment	735 CPM			
Tisch Calibration	n Orifice No.: 3607	After Sensitivit	y Adjustment	735 CPM			
	Cal	ibration of 1 hr	TSP				
Calibration	Laser Dust Monitor			HVS			
Point	Mass Concentration (μg/r	m3)	Mas	s concentration (με	g/m^3)		
	X-axis		Y-axis				
1	41.0		65.8				
2	31.0		62.7				
3	21.0			59.0			
Average	31.0			62.5			
By Linear Regr	ession of Y on X						
Slope, mw =	0.3400	Interc	ept, bw =	51.9600			
Correlation co	pefficient* = 0.9987						
	Set	Correlation Fa	ector				
	centration by High Volume Sampler (μg/m³)		62.5			
Particaulate Con	centration by Dust Meter (µg/m³)			31.0			
Measureing time	e, (min)			60.0			
Set Correlation I	Factor, SCF						
SCF = [K=Higl	h Volume Sampler / Dust Meter, (μg	g/m3)]	2.0				
The Dust Monitor Factor (CF) betw	in according to the instruction manual or was compared with a calibrated Hig ween the Dust Monitor and High Volumers are weighted by HOKLAS labo	h Volume Samp ne Sampler.		was used to genera	ate the Correlation		
inose mici pap	cis are weighted by HOKLAS labo	i atory (vi chab	Litilica)				



Cerificate 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 5-Aug-20					
Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calibr	ration Record	5-Oct-20		
Model No.:	LD-5R						
Serial No.:	972779						
Equipment No.:	SA-01-08	Sensitivity	0.001 mg/m3				
High Volume Sa	impler No.: <u>A-01-01A</u>	Before Sensitiv	vity Adjustment	744 CPM			
Tisch Calibration	n Orifice No.: 3607	After Sensitivi	ty Adjustment	744 CPM			
	Ca	libration of 1 h	r TSP				
Calibration	Laser Dust Monitor	r	HVS				
Point	Mass Concentration (μg/	Mas	ss concentration (µ	g/m^3)			
	X-axis		Y-axis				
1	41.0			65.8			
3	32.0 23.0			59.0			
Average	32.0			62.5			
Average	32.0			02.3			
By Linear Regr	ression of Y on X						
Slope, mw =	0.3778	Interc	ept, bw =	50.4111			
Correlation co	Defficient* = 0.9987	7					
		et Correlation F	actor				
	centration by High Volume Sampler	(μg/m³)		62.5			
	centration by Dust Meter (µg/m³)			32.0			
Measureing time	e, (min)		60.0				
Set Correlation I							
SCF = [K=High	h Volume Sampler / Dust Meter, (μ		2.0				
	in according to the instruction manu or was compared with a calibrated Hi		oler and The result	was used to gener	ate the Correlation		

Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: Wong Shing Kwai



5-Jun-20

Date of Calibration

Cerificate of Calibration

Digital Dust Indicator

Description:

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

_							
Manufacturer:	Sibata Scientific Technology LTD	Validit	y of Calibration Record _	5-Aug-20			
Model No.:	LD-5R						
Serial No.:	972778						
Equipment No.:	SA-01-07	Sensitivity 0.001	mg/m3				
High Volume Sa	mpler No.: <u>A-01-01A</u>	Before Sensitivity Adj	ustment 735 CPM				
Tisch Calibration	n Orifice No.: 3607	After Sensitivity Adjus	stment 735 CPM				
		Calibration of 1 hr TSP					
Calibration	Laser Dust Monit	or	HVS				
Point Mass Concentration (µg/ X-axis		g/m3)	Mass concentration (μg/m³) Y-axis				
1	47.0		100.5				
2	37.0		96.5				
3	26.0		91.0				
Average	36.7		96.0				
By Linear Regr Slope , mw = Correlation co	ession of Y on X 	Intercept, bw	= 79.383	37			
		<u> </u>					
		Set Correlation Factor					
	centration by High Volume Sample	$r (\mu g/m^3)$	96.0				
Particaulate Con	centration by Dust Meter (μg/m³)		36.7				
Measureing time	e, (min)		60.0				
Set Correlation I	Factor, SCF						
SCF = [K=Higl	h Volume Sampler / Dust Meter, (μg/m3)]	2.6				
The Dust Monito Factor (CF) betw	in according to the instruction man or was compared with a calibrated F ween the Dust Monitor and High Vo	ligh Volume Sampler and lume Sampler.	•	nerate the Correlation			

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: Wong Shing Kwai Approved by: Lemy Kenry Leung



Approved by: _lemp \\ Henry Leung

Cerificate of Calibration

Calibrated by:

Wong Shing Kwai

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

Description:	Digital Dust Indicator		Date	of Calibration	5-Jun-20		
Manufacturer:	Sibata Scientific Technology L	TD.	Validity of Calibr	ration Record	5-Aug-20		
Model No.:	LD-5R						
Serial No.:	972779						
Equipment No.:	SA-01-08	Sensitivity	0.001 mg/m3				
High Volume Sa	mpler No.: <u>A-01-01A</u>	Before Sensitiv	rity Adjustment	744 CPM			
Tisch Calibration	n Orifice No.: <u>3607</u>	After Sensitivit	y Adjustment	744 CPM			
		Calibration of 1 hi	· TSP				
Calibration	Laser Dust Mo	nitor		HVS			
Point Mass Concentration (μg/m3) X-axis			Mass concentration (μg/m³) Y-axis				
1	46.0			100.5			
2	33.0		96.5				
3	19.0						
Average	32.7			96.0			
•	ession of Y on X						
Slope , mw =	0.3524	Interc	ept, bw =	84.4890			
Correlation co	pefficient* =0.	.9976					
		Set Correlation Fa	actor				
Particaulate Con	centration by High Volume Sam	ıpler (μg/m³)		96.0			
Particaulate Con	centration by Dust Meter (µg/m ²	3)		32.7			
Measureing time	e, (min)			60.0			
Set Correlation I	Factor, SCF						
SCF = [K=Higl	h Volume Sampler / Dust Mete	er, (µg/m3)]	2.9				
The Dust Monito Factor (CF) betw	in according to the instruction or was compared with a calibrate ween the Dust Monitor and High oers are weighted by HOKLAS	ed High Volume Samp Volume Sampler.		was used to gener	ate the Correlation		



5-Jun-20

Date of Calibration

Cerificate of Calibration

Calibrated by:

Wong Shing Kwai

Description:

Digital Dust Indicator

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

Manufacturer:	Sibata Scient	ific Technology LTD.	LTD. Validity of Calibration Reco			5-Aug-20		
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 Sensi	tivity Adjustment	645			
Tisch Calibration	n Orifice No.:	3607	After Sensitivity Adjustment 645		645			
		Ca	alibration of 1	hr TSP				
Calibration		Laser Dust Monito	r	HVS				
Point	M	Iass Concentration (μg	/m3)	Mass	s concentration ($\mu g/m^3$)		
		X-axis		Y-axis				
1		46.0		100.5				
2	40.0				96.5			
3	34.0				91.0			
Average		40.0			96.0			
By Linear Regr Slope , mw =	ession of Y or 0.79		Inte	rcept, bw =	64.3333			
Correlation co		0.9959		<u>_</u>	04.555	<u>'</u>		
Correlation Co	cincient –	0.773	,	_				
		Se	et Correlation	Factor				
Particaulate Con	centration by I	High Volume Sampler	$(\mu g/m^3)$		96.0			
Particaulate Con	centration by I	Dust Meter (μg/m ³)			40.0			
Measureing time	e, (min)				60.0			
Set Correlation I	Factor, SCF							
SCF = [K=High	h Volume San	npler / Dust Meter, (µ	ıg/m3)]	2.4				
In-house method	l in according t	to the instruction manu	ual:					
		ed with a calibrated Hi		npler and The result v	was used to gene	rate the Correlation		
		Monitor and High Volu	=					
Those filter pap	ers are weigh	ted by HOKLAS lab	oratory (Wella	b Litimed)				



File No. MA16034/05/0024

Project No.	AM1 - Tin Hau	Temple				<u>-</u>	
Date:	9-Jı	ın-20	Next Due Date:	9-4	Aug-20	Operator:	SK
Equipment No.:	A-0	1-05	Model No.:	GS	GS2310		10599
			Ambient C	ondition			
Temperatu	re, Ta (K)	303	Pressure, Pa			759.1	
•	`		•	`	•		
		Or	fice Transfer Star	ndard Informa	ation		
Serial	l No.	3746	Slope, mc	0.0592	Intercept		-0.02740
Last Calibra	ation Date:	17-Jan-20			$c = [\Delta H \times (Pa/760)]$		
Next Calibr	ation Date:	17-Jan-21		$Qstd = \{ [\Delta H \ x] \}$	(Pa/760) x (298/7	Γa)] ^{1/2} -bc} /	mc
	1		Calibration of	ΓSP Sampler	ı		
Calibration		Oı	fice	Qstd (CFM)		HVS	. 1/2
Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	[Δ H x (Pa/760) x (298/Ta)] ^{1/2}		ΔW (HVS), in. of water		760) x (298/Ta)] ^{1/2} Y-axis
1	12.8		3.55	60.36	8.6		2.91
2	9.4		3.04	51.79	6.3		2.49
3	7.5		2.71		4.8		2.17
4	4.8		2.17	37.14	3.1		1.75
5	2.5		1.57	26.93	1.8		1.33
	ression of Y on 2	X			0.011	0	
Slope, mw =		_		Intercept, bw	0.011	9	
	coefficient* =	90, check and re	.9983	•			
'II Correlation (_0e111clent < 0.9	90, check and re	canorate.				
			Set Point Ca	lculation			
From the TSP F	ield Calibration	Curve, take Qstd	= 43 CFM				
From the Regres	ssion Equation, t	he "Y" value acc	ording to				
					21/2		
		mw x C	$\mathbf{pstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$	(Pa/760) x (29	98/Ta)]"²		
Therefore, Se	et Point; W = (n	nw x Qstd + bw)	2 x (760 / Pa) x (7	Γa / 298) =	4.30		
Remarks:							
			d				
Conducted by:	SK Wong	Signature:				Date:	9 June 2020
Checked by:	Henry Leung	Signature:	-len X	~~		Date:	9 June 2020



File No. MA16034/08/0024

Project No.	AM2 - Sai Tso						
Date:	9-Jı	ın-20	Next Due Date:	9-4	Aug-20	Operator:	SK
Equipment No.:	A-0	1-08	Model No.:	GS	52310	Serial No.	1287
			Ambient C	ondition			
Temperatu	re, Ta (K)	303	Pressure, Pa			759.1	
•	, , , ,			, ,			
		Or	ifice Transfer Star	idard Informa	ation		
Serial	No.	3746	Slope, mc	0.0592	Intercept		-0.02740
Last Calibra	tion Date:	17-Jan-20			$c = [\Delta H \times (Pa/760)]$		
Next Calibra	ation Date:	17-Jan-21		$Qstd = \{ [\Delta H \ x] \}$	(Pa/760) x (298/7	Γa)] ^{1/2} -bc} / m	c
			Calibration of	ISP Sampler			
Calibration	ΔH (orifice),		fice	Oatd (CEM)	ΔW (HVS), in.	HVS	(200 /T)1 ^{1/2}
Point	in. of water	1 IAH v (Pa//60) v (70x/		Qstd (CFM) X - axis	of water		50) x (298/Ta)] ^{1/2} -axis
1	12.8		3.55	60.36	8.4		2.87
2	9.8	1	3.10	52.87	6.1		2.45
3	7.8		2.77	47.22	4.8	,	2.17
4	4.8		2.17		3.0		1.72
5	2.6		1.60	27.46	1.9	1.37	
By Linear Regr Slope, mw = Correlation		_	.9964	ntercept, bw =	0.063	1	
*If Correlation C	Coefficient < 0.9	90, check and re	calibrate.				
			Set Point Ca	lculation			
From the TSP Fi	eld Calibration	Curve, take Qstd	= 43 CFM				
From the Regres	sion Equation, t	he "Y" value acc	ording to				
		mw x Q	$\mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$	(Pa/760) x (29	98/Ta)] ^{1/2}		
Therefore, Se	et Point; W = (n	nw x Qstd + bw)	$x^2 \times (760 / Pa) \times (760 / Pa)$	Γa / 298) =	4.17		
Remarks:							
Conducted by:	SK Wong	Signature:	<u> </u>			Date:	9 June 2020
Checked by:		Signature:	-leng 0	01-08).xls		Date:	9 June 2020



File No. MA16034/03/0024

Project No.	AM3 - Yau Lai						
Date:	9-Jı	ın-20	Next Due Date:	9-4	Aug-20	Operator:	SK
Equipment No.:	A-0	01-03	Model No.:	GS	52310	Serial No.	10379
			Ambient C	ondition			
Temperatu	re Ta(K)	303	Pressure, Pa			759.1	
Temperatu	10, 14 (11)	303	11055410,14	(11111115)		733.1	
		Or	ifice Transfer Star	ndard Informa	ation		
Serial	No.	3746	Slope, mc	0.0592	Intercept	t, bc	-0.02740
Last Calibra	ntion Date:	17-Jan-20	r	nc x Qstd + bo	$c = [\Delta H \times (Pa/760)]$	$(298/Ta)]^{1/2}$	2
Next Calibra	ation Date:	17-Jan-21			(Pa/760) x (298/7		
	-		-				
			Calibration of	ΓSP Sampler			
Calibration		Oı	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		50) x (298/Ta)] ^{1/2} -axis
1	12.8		3.55	60.36	8.5	2	2.89
2	9.3		3.02	51.52	6.5	2	2.53
3	7.8		2.77	47.22	5.1	2	2.24
4	5.2		2.26	38.64	3.4		1.83
5	2.6		1.60	27.46	2.0		1.40
By Linear Regr Slope , mw = Correlation		_	.9969	ntercept, bw =	0.095	3	
		90, check and re					
			Set Point Ca	lculation			
From the TSP Fi	eld Calibration	Curve, take Qstd	= 43 CFM				
From the Regres	sion Equation, t	he "Y" value acc	ording to				
		mw x Q	$\mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$	(Pa/760) x (29	98/Ta)] ^{1/2}		
Therefore, Se	et Point; W = (n	nw x Qstd + bw)	² x (760 / Pa) x (7	Γα / 298) =	4.41		
Remarks:							
Conducted by:	SK Wong	Signature:	<u> </u>			Date:	9 June 2020
Checked by: F:\Cinotech Solution		Signature:	Composition (A-6034 20200609 AM3 (A-	01-03).xls		Date:	9 June 2020



File No. MA16034/54/0024

Project No.	ject No. AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office						
Date:	9-Jı	ın-20	Next Due Date:	9- <i>A</i>	Aug-20	Operator:	SK
Equipment No.:	A-(01-54			E-5170	Serial No.	1536
			Ambient C	ondition			
Temperatur	re, Ta (K)	303	Pressure, Pa			759.1	
			•	-			
		Or	ifice Transfer Star	ndard Informa	ation		
Serial	No.	3746	Slope, mc	0.0592	Intercept	t, bc	-0.02740
Last Calibra	tion Date:	17-Jan-20			$c = [\Delta H \times (Pa/760]]$		
Next Calibra	ation Date:	17-Jan-21		$Qstd = \{ [\Delta H x] \}$	(Pa/760) x (298/7	Γa)] ^{1/2} -bc} / n	nc
			Calibration of T	ΓSP Sampler			
Calibration		Oı	rfice	Qstd (CFM)		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		(60) x (298/Ta)] ^{1/2} Y-axis
1	12.9		3.56	60.59	8.5		2.89
2	9.8		3.10	52.87	6.3		2.49
3	7.5		2.71	46.31	5.0		2.22
4	5.2		2.26	38.64	3.2		1.77
5	2.9		1.69	28.97	1.9		1.37
By Linear Regr Slope, mw = Correlation		_	.9988	Intercept, bw =	-0.059	2	
*If Correlation C	Coefficient < 0.9	90, check and re	calibrate.				
			Set Point Ca	lculation			
From the TSP Fi	eld Calibration	Curve, take Qstd	= 43 CFM				
From the Regres	sion Equation, t	he "Y" value acc	cording to				
		mw x Q	$\mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$	(Pa/760) x (29	98/Ta)] ^{1/2}		
Therefore, Se	et Point; W = (n	nw x Qstd + bw)	$x^2 \times (760 / Pa) \times (78)$	Γa / 298) =	4.18		
Remarks:							
			لدا				
Conducted by:	SK Wong	Signature:				Date:	9 June 2020
Checked by:	Henry Leung	Signature:	- leng X	~~		Date:	9 June 2020
F:\Cinotech Solution	ns\Equipment\Calibrati	on Cert\HVS\new\MA1	6034_20200609_AM4(A)_	(A-01-54).xls			

5-POINT CALIBRATION DATA SHEET



File No. MA16034/05/0025

Project No.	AM1 - Tin Hau	Temple						
Date:	10-A	Aug-20	Next Due Date:	10-	Oct-20	Operator:	SK	
Equipment No.:	A-()1-05	Model No.:	G	GS2310		10599	
			Ambient C	ondition				
Temperatur	re, Ta (K)	304	Pressure, Pa	(mmHg)		760		
					_			
Serial	Na	3746	Slope, mc	0.0592	I	. 1	-0.02740	
Last Calibra		17-Jan-20	_ ·		22 Intercept, bc -0.02740 1 + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibra		17-Jan-20	4		$(Pa/760) \times (298/7)$			
TVEXT CUITOR	ation Bute.			<u> </u>	(14,700) 11 (250)	- w _j w _e		
			Calibration of	ΓSP 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	1	760) x (298/Ta)] ^{1/2} Y-axis	
1	12.9		3.56	60.53	8.5		2.89	
2	9.4		3.04		6.3		2.49	
3	7.5		2.71	46.26	4.8		2.17	
4	4.8		2.17	37.10	3.2		1.77	
5	2.6		1.60	27.43	1.8		1.33	
By Linear Regr		X			0.020			
Slope, mw =		_		ntercept, bw	0.020	6		
	coefficient* =	90, check and red	.9993					
'II Correlation C	defficient < 0.9	90, check and rec	cantifate.					
			Set Point Ca	lculation				
From the TSP Fi	eld Calibration	Curve, take Qstd	= 43 CFM					
From the Regres	sion Equation, t	he "Y" value acco	ording to					
		_		(T) (T) (T)	20 m × 1/2			
		mw x ($\mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$	(Pa/760) x (29	98/Ta)] ¹¹²			
Therefore, Se	et Point; W = (n	nw x Qstd + bw)	² x (760 / Pa) x (7	Ta / 298) =	4,29			
Remarks:								
Conducted by:	SK Wong	Signatura				Datas	10 August 2020	
Conducted by:	DIX WONE	Signature:		<u>, '</u>	•	Date:	10 August 2020	
Checked by:	Henry Leung	Signature:	\-lang X	~~7		Date:	10 August 2020	

5-POINT CALIBRATION DATA SHEET



File No. MA16034/08/0025

Project No.	AM2 - Sai Tso	Wan Recreation	Ground					
Date:	10-A	aug-20	Next Due Date:	10-	Oct-20	Operator:	SK	
Equipment No.:	A-(01-08	Model No.:	GS	GS2310		1287	
			Ambient C	ondition				
Temperatu	re, Ta (K)	304	Pressure, Pa	(mmHg)		760		
0 : 1	127		ifice Transfer Star			, 1	0.02740	
Serial		3746	Slope, mc	mc 0.0592 Intercept, bc -0.02740 mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$				
Last Calibra Next Calibr		17-Jan-20 17-Jan-21	•		$(Pa/760) \times (298/7)$			
Next Callor	ation Date:	1/-Jan-21		Qstu – _{ξ[ΔΠ λ}	(1 a/ /00) x (290/)	rajj -bc _s /	<u>mc</u>	
			Calibration of T	ΓSP Sampler				
Calibration		Oı	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	[ΔW x (Pa/	(760) x (298/Ta)] ^{1/2} Y-axis	
1	12.9		3.56	60.53	8.5		2.89	
2	9.8		3.10	52.82	6.1		2.45	
3	7.8		2.77	47.17	4.8		2.17	
4	4.8		2.17	37.10	3.0		1.71	
5	2.8		1.66	28.45	1.9	1.9		
Slope , mw = Correlation	coefficient* =	_	.9977 calibrate.		-0.011	2		
			Set Point Ca	lculation				
		Curve, take Qstd he "Y" value acco mw x ((Pa/760) x (29	98/Ta) ^{1/2}			
Therefore, So	et Point; W = (n	nw x Qstd + bw)	² x (760 / Pa) x (7	Γa / 298) =	4.13			
Remarks:								
Conducted by:	SK Wong	Signature:	6/	<u></u>		Date:	10 August 2020	
Checked by:	Henry Leung	Signature:	-lemy X	, ~~~~		Date:	10 August 2020	

5-POINT CALIBRATION DATA SHEET



File No. MA16034/03/0025

Project No.	AM3 - Yau Lai	Estate, Bik Lai I	House				
Date:	10-A	ug-20	Next Due Date:	10-	Oct-20	Operator:	SK
Equipment No.:	A-0	1-03	Model No.:	o.: GS2310		Serial No.	10379
			Ambient C	ondition			
Temperatur	re, Ta (K)	304	Pressure, Pa			760	
•	· · · · · · · · ·		,	<i>\</i>			
		Or	ifice Transfer Star	ndard Informa	ation		
Serial	No.	3746	Slope, mc	0.0592	Intercept		-0.02740
Last Calibra	ntion Date:	17-Jan-20	ļ ,	mc x Qstd + bo	$c = [\Delta H \times (Pa/760)]$) x (298/Ta)	l ^{1/2}
Next Calibra	ation Date:	17-Jan-21		$Qstd = \{ [\Delta H \ x]$	(Pa/760) x (298/7	Γa)] ^{1/2} -bc} /	mc
			Calibration of	TSP Sampler			
Calibration		Oı	fice			HVS	1/0
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	[ΔW x (Pa	/760) x (298/Ta)] ^{1/2} Y-axis
1	13.0		3.57	60.76	8.6		2.90
2	9.4		3.04	51.74	6.4		2.50
3	7.7		2.75	46.87	5.1		2.24
4	5.1		2.24	38.23	3.3		1.80
5	2.5		1.57	26.91	2.0		1.39
By Linear Regr Slope , mw =	0.0455	_		Intercept, bw	0.124	1	
	coefficient* =		.9973	•			
*If Correlation C	Coefficient < 0.99	00, check and red	calibrate.				
			Set Point Ca	alculation			
From the TSP Fi	eld Calibration C	Curve, take Qstd					
From the Regres	sion Equation, th	e "Y" value acc	ording to				
٥	1 ,		-		1/2		
		mw x ($\mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$	(Pa/760) x (29	98/Ta)] ^{1/2}		
Therefore, Se	et Point; W = (m	w x Qstd + bw)	² x (760 / Pa) x (7	Γa / 298) =	4.42		
Remarks:							
			L21				40.4
Conducted by:	SK Wong	Signature:		<u>, '</u>		Date:	10 August 2020
Checked by:	Henry Leung	Signature:	-lem, a	Xoz		Date:	10 August 2020

5-POINT CALIBRATION DATA SHEET



File No. MA16034/54/0025

Project No.	AM4(A) - Cha l	Kwo Ling Public	Cargo Working A	rea Administra	tive Office		
Date:	10-A	ug-20	Next Due Date:	10-	Oct-20	Operator:	SK
Equipment No.:	A-0	1-54	Model No.:	TE	E-5170	Serial No.	1536
			Ambient C	ondition			
Temperatur	re, Ta (K)	304	Pressure, Pa			760	
	•			-			
		Or	ifice Transfer Star	ndard Informa	ation		
Serial	No.	3746	Slope, mc	0.0592	Intercept		-0.02740
Last Calibration Date: 17-Jan-20			1	mc x Qstd + bo	$c = [\Delta H \times (Pa/760]]$) x (298/Ta))] ^{1/2}
Next Calibra	ation Date:	17-Jan-21		$Qstd = \{ [\Delta H \ x]$	(Pa/760) x (298/7	Γa)] ^{1/2} -bc} /	mc
			Calibration of	ΓSP Sampler	T		
Calibration		Oı	fice	T		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	[ΔW x (Pa	//760) x (298/Ta)] ^{1/2} Y-axis
1	12.8		3.54	60.30	8.6		2.90
2	9.8		3.10	52.82	6.3		2.49
3	7.4		2.69	45.96	5.0		2.21
4	5.2		2.26	38.60	3.2		1.77
5	2.9		1.69	28.94	1.8		1.33
By Linear Regr Slope, mw = Correlation of *If Correlation C	0.0502 coefficient* =	0	.9987	Intercept, bw	-0.135	54	-
			Set Point Ca	plaulation			
From the TSP Fi	eld Calibration (Curve, take Ostd		นเนเสนเปม			
From the Regres							
rioni uno riogros	2. 2. 4		orumg ve				
		mw x ($\mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$	(Pa/760) x (29	98/Ta)] ^{1/2}		
Therefore, Se	et Point; W = (m	w x Qstd + bw)	² x (760 / Pa) x (7	Γa / 298) =	4.18		-
Remarks:							
Conducted by:	SK Wong	Signature:	(h)			Date:	10 August 2020
Checked by:	Henry Leung	Signature:	-leng O	Log		Date:	10 August 2020



0022999

Customer: Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong		Object 1 : Serial No. /Ref. No. : Object 2 : Serial No. /Ref. No. :	Microphone
Customer Code : SVEC09005		Manufacturer: Svar	ntek
Date of calibration: Date of the recommended re-calibration:	19/12/2019 19/12/2020	Certificate No.: Handle by:	0022999 E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object	
94.0dB	94.0dB	0.0dB	+/- 1.5dB	1	
114.0dB	114.0dB	0.0dB	+/- 1.5dB	1	

Measuring equipment

	index	Calibrator / Master	Traceability
C Description	1	Master Sound Meter, SVAN949,sn:8571	IEC61672
	2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

Measured value(s)	within	the allowable deviation.
(-/	AA TCTTTTT	

Performed by

Calibration Technician

Approved by

Quality Manager



0022522

Object 1: Customer: BSWA 308 SLM Serial No. /Ref. No. : Cinotech Consultants Limited 570187 / 550841 RM 1710, Technology Park, Object 2: 18 On Lai Street, Shatin, N.T. Serial No. /Ref. No. Hong Kong Customer Code: SVEC09005 Manufacturer: **BSWAtech** Date of calibration: 23/09/2019 Certificate No.: 0022522 Date of the recommended re-calibration: Handle by: 23/09/2020 E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 1.5dB	1
114.0dB	113.9dB	-0.1dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability	
1	Master Sound Meter, SVAN949,sn:8571	IEC61672	
2	Sound Calibrator, SV30A sn:32580	IEC60942	

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

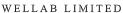
Measured value(s)	ithin ti	he allowable	deviation.
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Performed by

Calibration Technician

Approved by

Quality Manager



1 of 1



Rms 1214, 1502, 1516, 1701 & 1716, Technology Park, 18 On Lai Street, Shatin, N.T., Hong Kong. Tel: 2898 7388 Fax: 2898 7076 Website: www.wellab.com.hk

TEST REPORT

APPLICANT: Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

 Test Report No.:
 32151

 Date of Issue:
 2019-09-27

 Date Received:
 2019-09-26

 Date Tested:
 2019-09-26

 Date Completed:
 2019-09-27

 Next Due Date:
 2020-09-26

ATTN: Mr. Henry Leung Page:

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter

Manufacturer : SVANTEK
Model No. : SVAN 957
Serial No. : 21455
Microphone No. : 43730
Equipment No. : N-08-07

Test conditions:

Room Temperatre : 17-22 degree Celsius

Relative Humidity : 40-70%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE
Laboratory Manager



0023002

Customer: Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1: SV30A sound calibrator Serial No. /Ref. No.: 10965 / N-09-02 Object 2: Serial No. /Ref. No.:
Customer Code : SVEC09005	Manufacturer: Svantek
Date of calibration: 19/12/2019 Date of the recommended re-calibration: 19/12/2020	002002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.9dB	-0.1dB	+/- 0.3dB	1
114.0dB	114.2dB	+0.2dB	+/- 0.3dB	1

Measuring equipment

	index	Calibrator / Master	Traceability
1		Master Sound Meter, SVAN949,sn:8571	IEC61672
	2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

Measured value(s)	within	the allowable deviation
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Performed by

Calibration Technician

Approved by

Quality Manager



0022673

Customer:		Object 1 : ST-120 sound calibrator
Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T.		Serial No. /Ref. No.: 181001608
		Object 2:
		Serial No. /Ref. No. :
Hong Kong		
Customer Code: SVEC09005		Manufacturer : Soundtek
Date of calibration:	24/10/2019	Certificate No.: 0022673
Date of the recommended re-calibration:	24/10/2020	Handle by: F0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 0.3dB	1
114.0dB	114.1dB	+0.1dB	+/- 0.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

iation.	
Approved by	
Ouglity Manager	_

Appleone Calibration Laboratory Ltd.

Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR

Tel: +852 2370 4437 Fax: +852 2114 0393



0022676

Customer: Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong		Object 1: ST-120 sound calibrator Serial No. /Ref. No.: 181001636 Object 2: Serial No. /Ref. No.:
Customer Code: SVEC09005		Manufacturer: Soundtek
Date of calibration: Date of the recommended re-calibration:	24/10/2019 24/10/2020	Certificate No.: 0022676 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.7dB	-0.3dB	+/- 0.3dB	1
114.0dB	113.7dB	-0.3dB	+/- 0.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

Measured value(s)	within	the allowable deviation.
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Performed by

Calibration Technician

Quality Manager

Approved by

Appleone Calibration Laboratory Ltd. Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR

Tel: +852 2370 4437 Fax: +852 2114 0393



RECALIBRATION **DUE DATE:**

January 17, 2021

ertificate o

Calibration Certification Information

Cal. Date: January 17, 2020

Rootsmeter S/N: 438320

Ta: 295 Pa: 744.2 °K

Operator: Jim Tisch

mm Hg

Calibration Model #: TE-5025A

Calibrator S/N: 3746

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4340	3.2	2.00
2	3	4	1	1.0180	6.4	4.00
3	5	6	1	0.9080	7.9	5.00
4	7	8	1	0.8700	8.7	5.50
5	9	10	1	0.7150	12.6	8.00

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)	
0.9849	0.6868	1.4066	0.9957	0.6944	0.8904	
0.9807	0.9633	1.9892	0.9914	0.9739	1.2592	
0.9787	1.0779	2.2240	0.9894	1.0896	1.4078	
0.9776	1.1237	2.3325	0.9883	1.1360	1.4765	
0.9724	1.3601	2.8131	0.9831	1.3749	1.7808	
	m=	2.09221		m=	1.31010	
QSTD	b=	-0.02779	QA	b=	-0.01759	
	r=	0.99994		r=	0.99994	

Calculations				
$Vstd= \Delta Vol((Pa-\Delta P)/Pstd)(Tstd/Ta) Va= \Delta Vol((Pa-\Delta P)/Pa)$				
Qstd=	Vstd/∆Time	Qa=	Qa= Va/ΔTime	
For subsequent flow rate calculations:				
$\mathbf{Qstd} = \frac{1}{m} \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right) \qquad \mathbf{Qa} = \frac{1}{m} \left(\left(\sqrt{\Delta H \left(Ta/Pa \right)} \right) - b \right)$				

Standard Conditions				
Tstd: 298.15 °K				
Pstd: 760 mm Hg				
Key				
ΔH: calibrator manometer reading (in H2O)				
ΔP: rootsmeter manometer reading (mm Hg)				
Ta: actual absolute temperature (°K)				
Pa: actual barometric pressure (mm Hg)				
b: intercept				
m· clana				

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



Cerificate 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>21-Feb-2020</u>

Next Due Date <u>21-Aug-2020</u>

1. Performance check of Wind Speed

Wind Sp	peed, m/s	Difference D (m/s)
Wind Speed Reading (V1)	Anemometer Value (V1)	D = V1 - V2
0.0	0.0	0.0
1.2	1.3	-0.1
2.0	2.1	-0.1
3.0	3.2	-0.2

2. Performance check of Wind Direction

Wind Di	rection (°)	Difference D (°)	
Wind Direction Reading (V1)	Marine Compass Value (V1)	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:		Approved by:	Lemy Xon		
	Wong Shing Kwai	_	Henry Leung		



Cerificate 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>21-Aug-2020</u>

Next Due Date <u>21-Feb-2021</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	1.5	0.0
2.2	2.3	-0.1
3.5	3.4	0.1

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:		Approved by:	I lema chang	
	Wong Shing Kwai	_	Henry Leung	



MSA Hong Kong Ltd.

25/F Jupiter Tower, 9 Jupiter Street, Hong Kong

Tel 852-22587588 Fax 25478780 Email info.hk@msasafety.com Website www.msasafety.com

Ref.

2020/05/008

Date: 22-May-20

Customer

Leighton China State Joint Venture

CERTIFICATE FOR CALIBRATION CHECK TEST

Model	Serial No.	Calibration Check Gas	Regulator	Full Scale	Response
	152097	1.45% Methane,	1	100% LEL	29%LEL
		15% Oxygen	.25litre/min	30% Vol	15% O2
Altair 5X		60ppm Carbon Monoxide		1999 ppm	60ppm CO
Altali JA		20ppm Hydrogen Sulfide		200 ppm	20ppm H2S
		2.5% Carbon Dioxide		10% Vol	2.5% CO2
		25ppm Ammonia	Demand	100 ppm	25ppm NH3

Remarks:

Regular inspection completed. Calibration passed

MSA Hong Kong Ltd. certify that instrument/s listed above has/have been calibrated check tested on: 22-May-20

This instrument was calibrated in accordance with all requirements of the specifications of MSA.

This instrument must be calibration checked prior to use in accordance with the instruction manual.

This instrument was calibrated using NIST traceable equipment and was in accordance with all requirements of the drawings and specifications of MSA.

For and on behalf of

MSA Hong Kong Ltd.

Authorised Signature