



Islandmore Wind Farm

Environmental Impact Assessment
Report

Annex 12.2 Baseline Noise Survey
Details

Islandmore Wind Farm Limited



Islandmore Wind Farm Limited

Islandmore Wind Farm – Noise and Vibration

Annex 12.2 Baseline Noise Survey Details

Project Number: 23113

Document Reference: 23113-R2 V0

Document Date: 21/01/2026

Author: RSC

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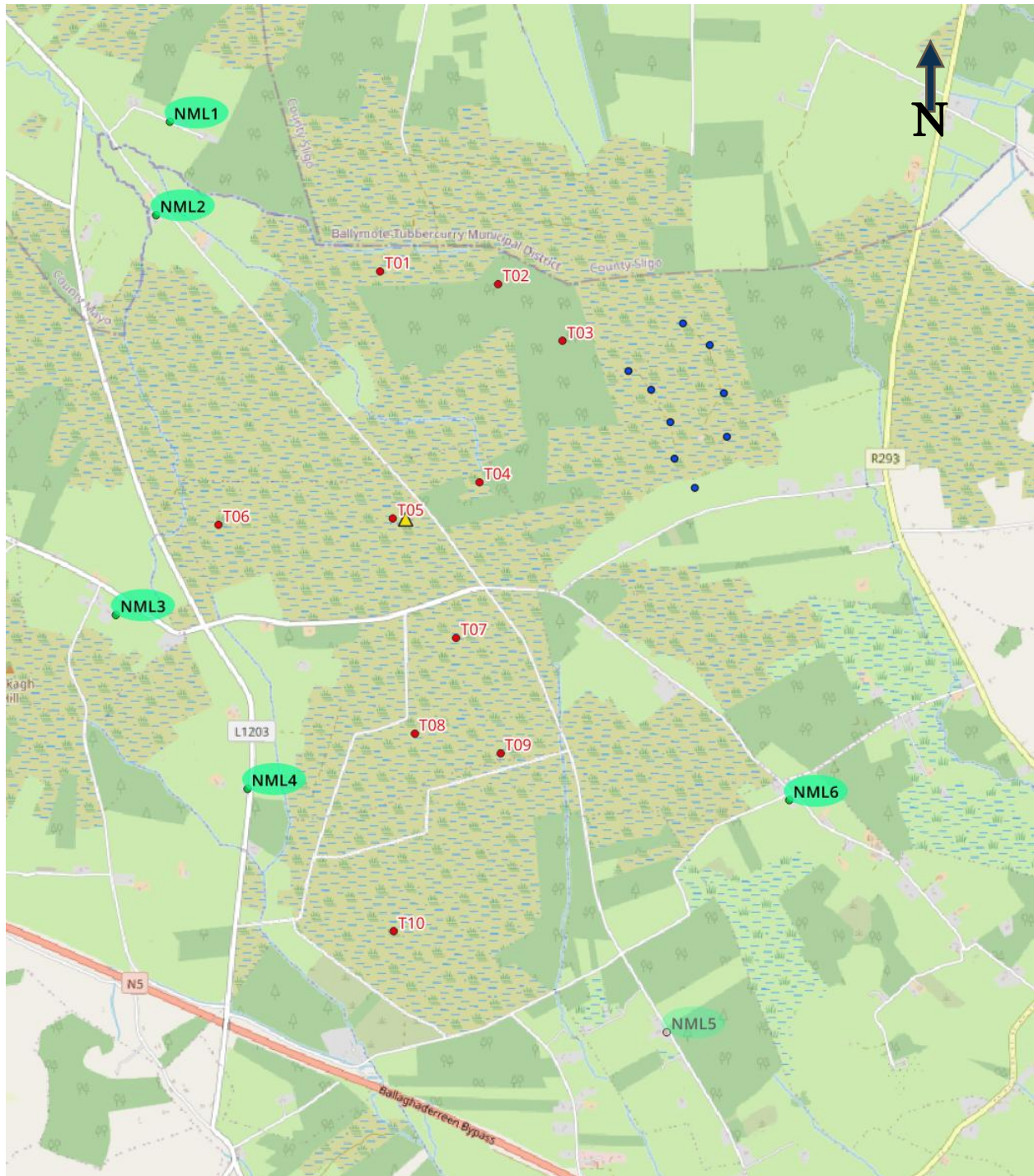
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1 Overview of Survey Locations

Set out below in Plate 12.1 is an overview of the noise measurement locations (NML), also shown are the turbines within the Project in red, the existing Largan Hill wind turbine locations in blue and the location of the LiDAR (wind monitor) and rain gauge as a yellow triangle adjacent to T05. Further details of the installed location and Sound Level Meters (SLM) used are provided in the subsequent sections. Note that, as set out in Section 12.3.3 of Chapter 12, NML5 did not have an acceptable calibration drift and this location was not included in the analysis, but is shown in Plate 12.1 greyed out for reference.

Plate 12.1 - Overview of the Noise Monitoring Locations

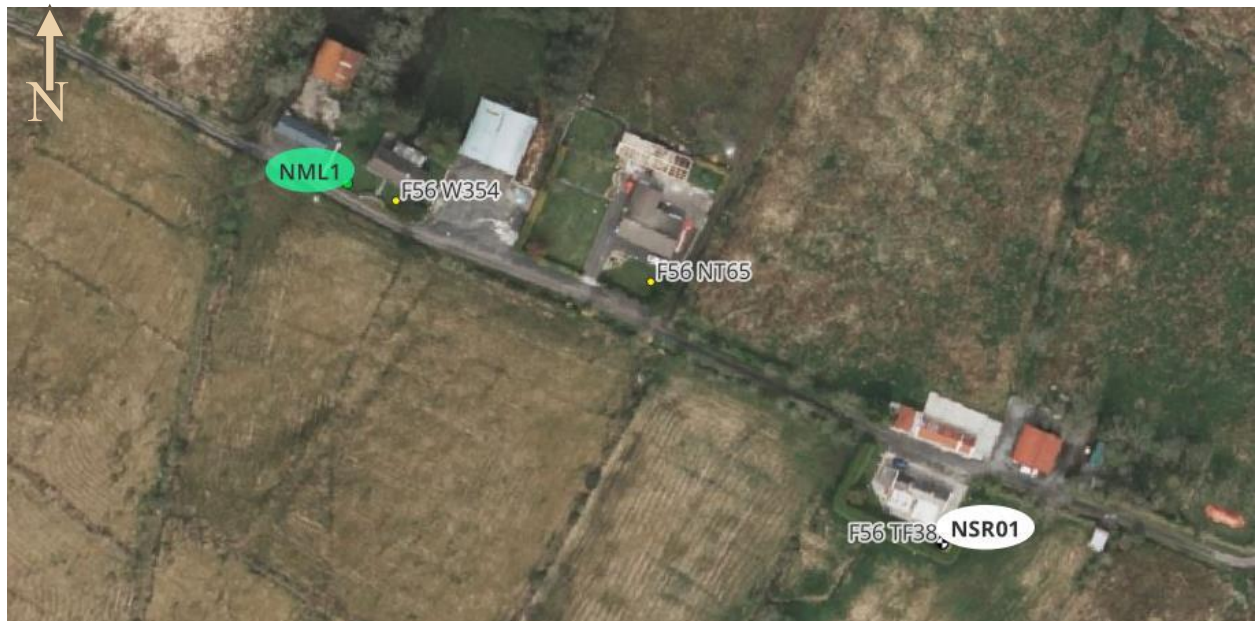


2 NML1 – F56 W354

2.1 Equipment

Sound level meter (SLM) position:	560902, 801221
SLM type and serial number:	SVAN 977A, sn 46009
SLM laboratory calibration date:	16/12/2024
Field calibration values:	113.19 dB (start) / 113.15 dB (end) @ 1kHz
Drift in field calibration:	0.04 dB
Date and time of setup:	28/02/2025, 12:00 (IST)
Date and time of collection:	08/04/2025, 14:30 (IST)

Plate 12.2 - NML1 F36 W354



2.2 Description of Measurement Location

Situated to the north west of the Project. Meter located in front garden, position was selected to be away from any observed localised sources of noise such as boiler flues, pumps or fan outlets and considered to be acoustically representative of the amenity space in the private garden. Rural location towards the end of a no-through road with fields and isolated houses nearby. No potential dominant noise sources observed nearby with natural sounds including wind-disturbed vegetation and birds, some intermittent farm animal noises and occasional passing vehicle. Panoramic photographs of the meter at this location are provided in Plate 12.3 and Plate 12.4.

2.3 Details of any Excluded Data

- Any data measured between 06:00 and 07:00 (IST) due to an observed regular sharp increase in background noise during this period;
- Any data measured during, or within 30 minutes of rainfall; and
- Data showing a temporary increase in noise clearly not related to wind speed (IST):
 - 03:20 to 04:20 hours on 10/03/2025
 - 16:20 hours on 15/03/2025
 - 15:20 hours on 05/04/2025
 - 19:20 to 20:40 hours on 07/05/2025

Plate 12.3 – NML1 Looking West



Plate 12.4 – NML1 Looking East

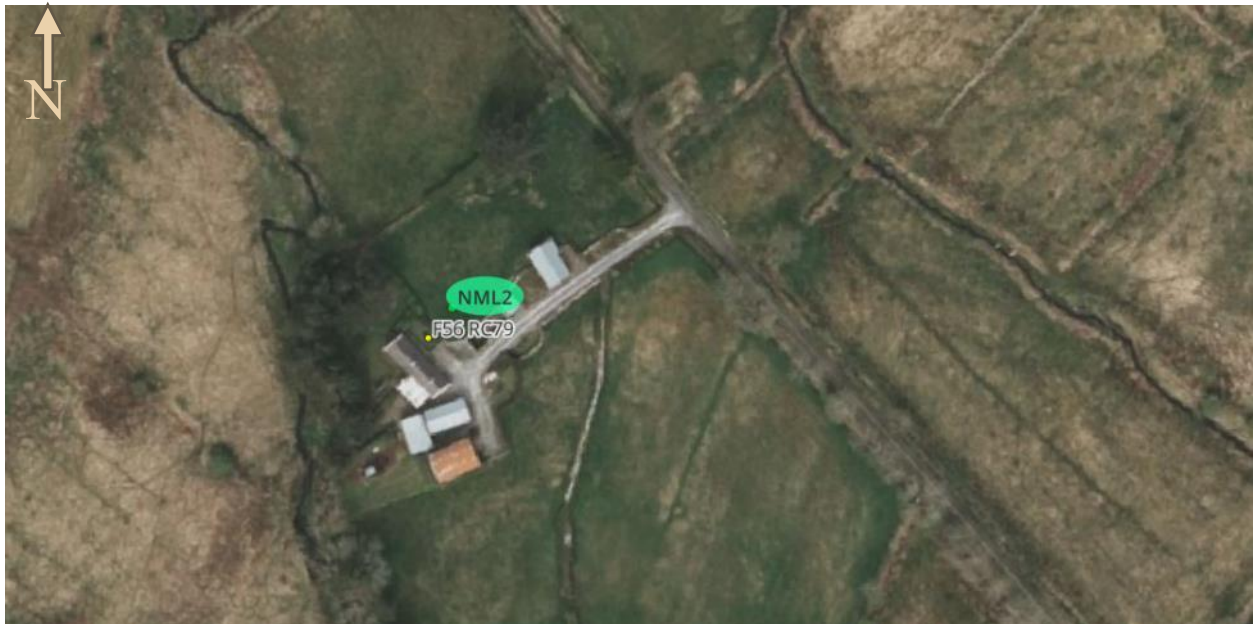


3 NML2 – F56 RC79

3.1 Equipment

Sound level meter (SLM) position:	560839, 800795
SLM type and serial number:	SVAN 977, sn 46436
SLM laboratory calibration date:	16/12/2024
Field calibration values:	113.69 dB (start) / 113.41 dB (end) @ 1kHz
Drift in field calibration:	0.28 dB
Date and time of setup:	28/02/2025, 12:30 (IST)
Date and time of collection:	08/04/2025, 14:40 (IST)

Plate 12.5 – NML2 F56 RC79



3.2 Description of Measurement Location

Situated to the north west of the Project. Meter located in small paddock adjacent to the house, position was selected to be away from any observed localised sources of noise such as boiler flues, pumps or fan outlets and considered to be acoustically representative of the amenity space in the private garden. Rural location approximately 50m back from local road with fields and isolated houses nearby. No potential dominant noise sources observed nearby with natural sounds including wind-disturbed vegetation and birds, some intermittent farm animal noises and occasional passing vehicle. Panoramic photographs of the meter at this location are provided in Plate 12.6 and Plate 12.7.

3.3 Details of any Excluded Data

- Data measured during the quiet daytime when the wind speed was less than 4 m/s and the L_{A90} was greater than 44 dB, as these data presented as outliers
- Any data measured during, or within 30 minutes of rainfall; and
- Data showing a temporary increase in noise clearly not related to wind speed (IST):
 - 19:10 to 19:30 hours on 10/03/2025
 - 20:00 hours on 15/03/2025

Plate 12.6 – NML2 Looking Northeast



Plate 12.7 – NML2 Looking Southwest



4 NML3 – F45 HC98

4.1 Equipment

Sound level meter (SLM) position:	560655, 798971
SLM type and serial number:	SVAN 977, sn 46010
SLM laboratory calibration date:	16/12/2024
Field calibration values:	113.98 dB (start) / 113.11 dB (end) @ 1kHz
Drift in field calibration:	0.87 dB
Date and time of setup:	28/02/2025, 12:30 (IST)
Date and time of collection:	08/04/2025, 14:40 (IST)

Plate 12.8 – NML3 F45 HC98



4.2 Description of Measurement Location

Situated to the west of the Project. Meter located in field adjacent to the house, position was selected to be away from any observed localised sources of noise such as boiler flues, pumps or fan outlets and considered to be acoustically representative of the amenity space in the private garden. Rural location approximately 80m back from local road with fields and isolated houses nearby. No potential dominant noise sources observed nearby with natural sounds including wind-disturbed vegetation and birds, with occasional passing vehicles. Panoramic photographs of the meter at this location are provided in Plate 12.9 and Plate 12.10.

4.3 Details of any Excluded Data

- Data measured during the quiet daytime when the wind speed was less than 4 m/s and the L_{A90} was greater than 48 dB, as these data presented as outliers; and
- Any data measured during, or within 30 minutes of rainfall.

Plate 12.9 – NML3 Looking Northwest



Plate 12.10 – NML3 Looking South



5 NML4 – F45 H291

5.1 Equipment

Sound level meter (SLM) position:	561257, 798177
SLM type and serial number:	SVAN 977C, sn 92648
SLM laboratory calibration date:	03/01/2024
Field calibration values:	113.14 dB (start) / 113.39 dB (end) @ 1kHz
Drift in field calibration:	0.25 dB
Date and time of setup:	28/02/2025, 14:00 (IST)
Date and time of collection:	08/04/2025, 15:20 (IST)

Plate 12.11 – NML4 F45 H291



5.2 Description of Measurement Location

Situated to the southwest of the Project. Meter located on the windfarm side of the house in the garden, position was selected to be away from any observed localised sources of noise such as boiler flues, pumps or fan outlets and considered to be acoustically representative of the amenity space in the private garden. Rural location approximately 15m back from local road and over 1km from N5 with fields and isolated houses nearby. No potential dominant noise sources observed nearby with natural sounds including wind-disturbed vegetation and birds, with distant road traffic and occasional passing vehicles on the local road. Panoramic photographs of the meter at this location are provided in Plate 12.12 and Plate 12.13.

5.3 Details of any Excluded Data

- Any data measured during, or within 30 minutes of rainfall; and
- Data showing a temporary increase in noise clearly not related to wind speed (IST):
 - 13:00 to 13:50 hours on 22/03/2025

Plate 12.12 – NML4 Looking Northeast

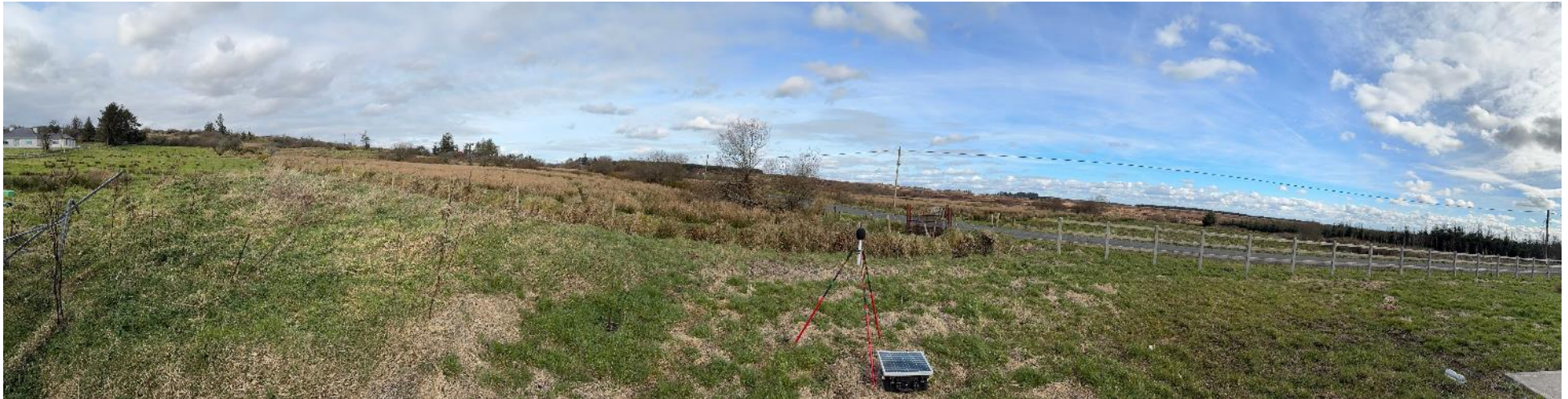


Plate 12.13 – NML4 Looking Southwest



6 NML6 – F45 CH96

6.1 Equipment

Sound level meter (SLM) position:	563731, 798126
SLM type and serial number:	Larson Davis LxT1L, sn 0006034
SLM laboratory calibration date:	08/08/2024
Field calibration values:	114.13 dB (start) / 113.82 dB (end) @ 1kHz
Drift in field calibration:	0.30 dB
Date and time of setup:	28/02/2025, 14:50 (IST)
Date and time of collection:	08/04/2025, 16:30 (IST)

Plate 12.14 – NML6 F45 CH96



6.2 Description of Measurement Location

Situated to the east of the Project, sufficient distance from Largan Hill Wind Farm turbines (approx. 1.5km to 2.2km). Meter located on the windfarm side of the house in the garden, position was selected to be away from any observed localised sources of noise such as boiler flues, pumps or fan outlets and considered to be acoustically representative of the amenity space in the private garden. A small drainage stream was noted 15m from the sound level meter, on the southwest boundary of the garden; however, no influence of water course noise was evident in the data analysis. Rural location with fields and isolated houses nearby. No potential dominant noise sources observed nearby with natural sounds including wind-disturbed vegetation and birds, with occasional passing vehicles on the local road. Panoramic photographs of the meter at this location are provided in Plate 12.15 and Plate 12.16.

6.3 Details of any Excluded Data

- Any data measured during, or within 30 minutes of rainfall; and
- Data showing a temporary increase in noise clearly not related to wind speed (IST):
 - 14:10 hours on 08/03/2025
 - 11:50 to 18:00 hours on 15/03/2025
 - 09:10 to 12:30 hours on 16/03/2025
 - 14:10 to 15:20 hours on 22/03/2025
 - 18:20 hours on 01/04/2025
 - 14:00 to 14:20 hours on 06/04/2025

Plate 12.15 – NML6 Looking Southeast



Plate 12.16 – NML6 Looking North



CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 03-01-2024

Certificate No: 1507440-3

Calibrated By: A. Pullinger

Approved By: A. Pullinger

CUSTOMER

Galetech Energy Services

Tullyco,
Co Cavan,
Ireland

INSTRUMENT DETAILS

Manufacturer: SVANTEK

Model: SV977

Serial No.: 92648

Firmware Version: 1.41.3

Description: Sound Level Meter

Performance Class: 1

Type Approved to IEC 61672-1:2013: No

(If Yes, there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013)

SENSOR DETAILS

Manufacturer: MTG

SVANTEK

Model: MK 255

SV12L

Serial No.: 27646

128714

Description: Microphone

Preamplifier

P/O NUMBER

521

DATE RECEIVED

22-12-2023

DATE CALIBRATED

03-01-2024

CALIBRATION RESULTS

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organization responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

REPORTED RESULTS

The results contained in this Certificate refer only to the measurements made at the time of test for the instrument detailed above. These results do not reflect the instrument's ability to maintain calibration.

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 03-01-2024

Certificate No: 1507440-3

ENVIRONMENTAL CONDITIONS

Start - End

Temperature: 21.7 – 21.9 °C
Humidity: 50 – 52 %rh
Pressure: 98.5 – 98.7 kPa

INSTRUCTION MANUAL DETAILS

Title: SVANTEK g77 User's Manual
Version No.: N/A
Publication Date: August 2015
Date Provided or Downloaded: 16/11/2017
Uncertainties Provided: Mic Pressure to Free Field Corrections

CALIBRATOR DETAILS

Manufacturer: SVANTEK
Model: SV30A
Serial No.: 83782
Customer or Lab Calibrator: Lab Calibrator
Specified or Equivalent: Equivalent
Sound Pressure Level: 114.00 dB Calibration Reference SPL
Frequency: 999.97 Hz Calibration Check Frequency

CALIBRATION METHOD

Periodic tests were performed in accordance with procedures from IEC 61672-3: 2013.

UNCERTAINTY OF MEASUREMENTS

Uncertainty of measurement has been evaluated in compliance with EA-4/02:2013. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%.

MEASUREMENT TRACEABILITY

The instrument under test was calibrated using the following equipment:
Svantek SV401 Signal Generator, ACS022, Certificate No. 1148625
Svantek SV30A Acoustical Calibrator, ACS023, Certificate No. 6397/1
LAB-EL LB-706B Thermo-Barometer, ACS029, Certificate No. 1148624

NOTES

1. The information appearing on this certificate has been compiled specifically for this instrument. This calibration certificate is produced with traceable and advanced equipment which permit comprehensive quality assurance verification of all data supplied herein.
2. The measurements in this document are traceable to GUM (Central Office of Measures), Poland
3. This calibration certificate shall not be reproduced except in full, without written permission from AcSoft Ltd.

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 03-01-2024

Certificate No: 1507440-3

CALIBRATION RESULTS ARE AS FOLLOWS:

1. Indication at the calibration check frequency

The sound level meter was calibrated in compliance with the instruction manual. During this process, the indication of this SLM was adjusted to the sound pressure level of the sound level calibrator type SV 30A, No 83782, from SVANTEK. The sound pressure level was corrected by the free-field factor.

Indicated Level On Receipt [dB]	Indicated Level Following Adjustment [dB]
113.2	114.0

2. Self-generated noise with microphone installed

Frequency weighting	A
The highest level of self-generated noise stated in the instruction manual [dB]	----
Indication [dB]	n/a

Self-Generated Noise is reported for information only and not used to assess conformance to a requirement.

3. Self-generated noise with microphone replaced by the electrical input signal device

Frequency weighting	A	C	Z
The highest expected level of self-generated noise stated in the instruction manual [dB]	14.0	13.0	21.0
Level of self-generated noise [dB]	6.8	6.8	8.2

Self-Generated Noise is reported for information only and not used to assess conformance to a requirement.

4. Acoustical signal tests of a frequency weighting C

Frequency	Relative frequency-weighted free-field response	Design-goal frequency weighting	The deviation of frequency weighting	Expanded uncertainty	Acceptable limits
Hz	dB	dB	dB	dB	dB
125.0	-0.11	-0.2	0.1	±0.3	±1.0
1000.0	0.00	0.0	0.0	±0.3	±0.7
4000.0	-0.95	-0.8	-0.1	±0.4	±1.0
8000.0	-2.81	-3.0	0.2	±0.4	+1.5; -2.5

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Date Of Issue: 03-01-2024

Certificate No: 1507440-3

5. Electrical signal tests of frequency weightings

Frequency	Design-goal frequency weighting			The deviation of frequency weighting			Expanded uncertainty	Acceptable limits
	A	C	Z	A	C	Z		
Hz	dB	dB	dB	dB	dB	dB	dB	dB
63	-26,2	-0,8	0,0	0.1	0.0	0.0	±0,3	±1,0
125	-16,1	-0,2	0,0	0.0	0.0	0.0	±0,3	±1,0
250	-8,6	0,0	0,0	0.1	0.1	0.1	±0,3	±1,0
500	-3,2	0,0	0,0	0.2	0.3	0.3	±0,3	±1,0
1000	0,0	0,0	0,0	0.0	0.0	0.0	±0,3	±0,7
2000	+1,2	-0,2	0,0	0.6	0.6	0.6	±0,3	±1,0
4000	+1,0	-0,8	0,0	0.5	0.5	0.4	±0,3	±1,0
8000	-1,1	-3,0	0,0	0.1	0.1	0.0	±0,4	+1,5; -2,5
16000	-6,6	-8,5	0,0	-3,2	-3,2	-3,0	±0,6	+2,5; -16,0

6. Frequency and time weightings at 1 kHz

	Sound level				Time-averaged sound level
Frequency weighting	A	A	C	Z	A
Time weighting	Fast	Slow	Fast	Fast	-
Indication [dB]	114.0	114.0	114.0	114.0	114.0
The deviation of indication from the indication of A-weighted sound level with Fast time weighting [dB]		0.0	0.0	0.0	0.0
Expanded uncertainty [dB]		0.1			
Acceptable limits[dB]		±0,1	±0,1	±0,1	±0,1

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Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 03-01-2024

Certificate No: 1507440-3

7. Level linearity

Reference level range: 130 dB

Expected sound level	Indication	Level linearity error	Expanded uncertainty	Acceptable limits
dB	dB	dB	dB	dB
136.0	135.9	-0.1	±0,2	±0,8
135.0	134.9	-0.1		
134.0	133.9	-0.1		
133.0	132.9	-0.1		
132.0	131.9	-0.1		
131.0	130.9	-0.1		
130.0	129.9	-0.1		
129.0	128.9	-0.1		
124.0	123.9	-0.1		
119.0	118.9	-0.1		
114.0	113.9	-0.1		
109.0	108.9	-0.1		
104.0	103.9	-0.1		
99.0	98.9	-0.1		
94.0	93.9	-0.1		
89.0	88.9	-0.1		
84.0	83.9	-0.1		
79.0	78.9	-0.1		
74.0	73.9	-0.1		
69.0	68.9	-0.1		
64.0	63.9	-0.1		
59.0	58.9	-0.1		
54.0	53.9	-0.1		
49.0	48.9	-0.1		
44.0	43.9	-0.1		
43.0	43.0	0.0		
42.0	42.0	0.0		
41.0	41.0	0.0		
40.0	40.0	0.0		

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Date Of Issue: 03-01-2024

Certificate No: 1507440-3

Level range: 105 dB

Expected sound level	Indication	Level linearity error	Expanded uncertainty	Acceptable limits	
dB	dB	dB	dB	dB	
115.0	114.9	-0.1	±0,2	±0,8	
114.0	113.9	-0.1			
113.0	112.9	-0.1			
112.0	111.9	-0.1			
111.0	110.9	-0.1			
110.0	109.9	-0.1			
109.0	108.9	-0.1			
104.0	103.9	-0.1			
99.0	98.9	-0.1			
94.0	93.9	-0.1			
89.0	88.9	-0.1			
84.0	83.9	-0.1			
79.0	78.9	-0.1			
74.0	73.9	-0.1			
69.0	68.9	-0.1			
64.0	63.9	-0.1			
59.0	58.9	-0.1			
54.0	53.9	-0.1			
49.0	48.9	-0.1			
44.0	43.9	-0.1			
39.0	39.0	0.0			±0,3
34.0	34.1	0.1			
29.0	29.1	0.1			
28.0	28.2	0.2			
27.0	27.3	0.3			
26.0	26.3	0.3			
25.0	25.3	0.3			
24.0	24.4	0.4			

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Date Of Issue: 03-01-2024

Certificate No: 1507440-3

8. Level linearity including the level range control

Level range	130 dB	105 dB
Indication for the reference sound pressure level [dB]	113.9	113.9
The deviation of indication [dB]		0.0
Anticipated level that is 5 dB less than the upper limit specified in the instruction manual for level range at 1 kHz [dB]	132.0	110.0
Indication [dB]	131.9	109.9
The deviation of indication [dB]	-0.1	-0.1
Expanded uncertainty [dB]	0.2	
Acceptable limits [dB]	±0.8	

9. Toneburst response

Measurement quantity	Time weighting	Toneburst duration	The indications in response to toneburst relative to steady sound level	Reference toneburst response relative to steady sound level	Deviation of measured toneburst response from reference toneburst	Expanded uncertainty	Acceptable limits
		ms	dB	dB	dB	dB	dB
Time-weighted sound level	Fast	200	-1.0	-1.0	0.0	±0.2	±0.5
		2	-18.0	-18.0	0.0		+1.0; -1.5
		0.25	-27.1	-27.0	-0.1		+1.0; -3.0
Time-weighted sound level	Slow	200	-7.4	-7.4	0.0		±0.5
		2	-27.0	-27.0	0.0		+1.0; -3.0
Sound exposure level	-	200	-7.0	-7.0	0.0		±0.5
		2	-27.0	-27.0	0.0		+1.0; -1.5
		0.25	-36.1	-36.0	-0.1		+1.0; -3.0

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Certificate No: 1507440-3

10. Peak C sound level

Numbers of cycles in test signal	Frequency of test signal	The deviation of indication	Expanded uncertainty	Acceptable limits
	Hz	dB	dB	dB
One	8000	-0.5	±0.2	±2.0
Positive half-cycle	500	-0.1		±1.0
Negative half-cycle	500	-0.1		

11. Overload indication

Frequency weighting A

The difference between the levels of the positive and negative one-half-cycles input signals that first cause the displays of overload indication	Expanded uncertainty	Maximum value of the difference
dB	dB	dB
0.0	±0.3	1.5



MTS Calibration Ltd,
The Grange Business Centre,
Belasis Avenue,
Billingham TS23 1LG,
England
Telephone: 01642 876 410

CERTIFICATE OF CALIBRATION

Page 1 of 11 pages

Approved Signatory:

Issued by: **MTS Calibration Ltd**

Date of Issue: **08 August 2024** Certificate Number: **39919**

Tony Sherris

Sound Level Meter

Sound Level Meter Periodic Tests to EN 61672-3: 2013 Class 1

Client: Environmental Measurements
Unit 12, Tallaght Business Centre
Whitestown Business Park
Co.Dublin 24, Ireland

Instrument Make: Larson Davis
Instrument Model: LxT1L
Serial Number: 0006034

Associated Equipment	Make	Model	Serial number
Preamplifier	PCB	PRMLxT1L	070104
Microphone	PCB	377B02	345641
Calibrator	Larson Davis	CAL200	9175
Calibrator supplied by	MTS for this calibration		

The measurements were performed at The Grange Business Centre, Belasis Avenue, TS23 1LD. The results only apply to the items tested.

Periodic tests were performed in accordance with procedures from IEC 61672-3:2013 Class 1

MTS Work procedure WP21 issue C3 test results summary, detailed results are shown on subsequent pages.

Tests performed	Section	Results of test	Page	Comments
Calibration Certificate	22		1	
Additional information			2	
Indication with Calibrator Supplied	10	No Limit	3	
Self-Generated Noise	11	No Limit	3	
Frequency and Time-weightings at 1kHz	14	Complies	3	
Long term stability	15	Complies	3	
High stability	21	Complies	3	
Acoustic Tests	12	Complies	4	
Frequency Weighting A	13	Complies	5	
Frequency Weighting C	13	Complies	6	
Frequency Weighting Z	13	Complies	7	
Level Linearity	16	Complies	8	
Level Linearity Range Control	17		n/a	SLM only has one range
Tone-burst Response	18	Complies	9	
Peak C sound level	19	Complies	10	
Overload indication	20	Complies	11	

The instrument was within the above specification as received - no modifications were made

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3: 2013 for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2: 2013, to demonstrate that the model of sound level meter fully conformed to the Class 1 specifications in IEC 61672-1: 2013, the sound level meter submitted for testing conforms to the Class 1 specifications of IEC 61672-1: 2013

Additional tests performed

Reference

Microphone full frequency response	39921	See additional certificate
Filter calibration, third octave or octave	39919F	See additional certificate

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CALIBRATION CERTIFICATE



Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 17-12-2024

Certificate No: 1510161-5

Calibrated By: W. Jay

Approved By: W. Jay

CUSTOMER

Galetech Energy Services
Tullyco,
Co Cavan
Co Cavan
Ireland

INSTRUMENT DETAILS

Manufacturer: SVANTEK
Model: SV33B
Serial No.: 10453
Description: Acoustic Calibrator accuracy class 1 with nominal level of 114 dB, and nominal frequency of 1000 Hz

P/O NUMBER DATE RECEIVED

PO-GES-0581
16-12-2024

ENVIRONMENTAL CONDITIONS

Temperature:	19.8	°C
Humidity:	38.6	%rh
Pressure:	101.2	kPa

CALIBRATION RESULTS

The calibrator submitted for testing has successfully completed the Periodic tests of IEC 60942:2003 (BS EN 60942:2003) (Annex B), for class 1 sound calibrators, for the environmental conditions under which the tests were performed.

REPORTED RESULTS

The results contained in this Certificate refer only to the measurements made at the time of test for the instrument detailed above. These results do not reflect the instrument's ability to maintain calibration.

MEASUREMENT TRACEABILITY

The instrument under test was calibrated using the following equipment:
Svantek SV30A Acoustic Calibrator, ACS023, Certificate No. 06397/1
GRAS 40AG Reference Microphone, ACS009, Certificate No. 06448/2
LAB-EL LB-706B Thermo-Barometer, ACS029, Certificate No. 1148624

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 17-12-2024

Certificate No: 1510161-5

NOTES

1. The information appearing on this certificate has been compiled specifically for this instrument. This calibration certificate is produced with traceable and advanced equipment which permit comprehensive quality assurance verification of all data supplied herein.
2. The measurements in this document are traceable to GUM (Central Office of Measures), Poland
3. This calibration certificate shall not be reproduced except in full, without written permission from AcSoft Ltd.

CALIBRATION RESULTS ARE AS FOLLOWS:

SPL

Measured Level	Deviation From Nominal	Uncertainty	Tolerance (dB)	
dB	dB	dB	class 1	class 2
114.07	0.07	0.15	±0.25	±0.4

Frequency

Measured Frequency	Deviation From Nominal	Uncertainty	Tolerance (%)	
Hz	Hz	Hz	class 1	class 2
999.98	-0.02	0.1	±0.7 (±7Hz)	±1.7 (±17Hz)

THD+N

Measured Distortion	Uncertainty	Tolerance (%)	
%	%	class 1	class 2
0.46	0.1	2.5	3.0

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2

Calibrated By: W. Jay

Approved By: W. Jay

CUSTOMER

Galetech Energy Services
Tullyco,
Co Cavan
Co Cavan
Ireland

INSTRUMENT DETAILS

Manufacturer: SVANTEK
Model: SV977A
Serial No.: 46009
Firmware Version: 2.08.4
Description: Sound Level Meter
Performance Class: 1
Type Approved to IEC 61672-1:2013: No
(If Yes, there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013)

SENSOR DETAILS

Manufacturer:	ACO	Svantek
Model:	7052E	SV12L
Serial No.:	91644	77933
Description:	Microphone	Preamplifier

P/O NUMBER

PO-GES-0581

DATE RECEIVED

27-11-2024

DATE CALIBRATED

16-12-2024

CALIBRATION RESULTS

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organization responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

REPORTED RESULTS

The results contained in this Certificate refer only to the measurements made at the time of test for the instrument detailed above. These results do not reflect the instrument's ability to maintain calibration.

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2

ENVIRONMENTAL CONDITIONS

Start - End

Temperature: 22.6 – 23.0 °C
Humidity: 40 – 42 %rh
Pressure: 102.6 – 102.7 kPa

INSTRUCTION MANUAL DETAILS

Title: SVANTEK g77 User's Manual
Version No.: N/A
Publication Date: August 2015
Date Provided or Downloaded: 16/11/2017
Uncertainties Provided: Mic Pressure to Free Field Corrections

CALIBRATOR DETAILS

Manufacturer: SVANTEK
Model: SV30A
Serial No.: 83782
Customer or Lab Calibrator: Lab Calibrator
Specified or Equivalent: Equivalent
Sound Pressure Level: 114.00 dB Calibration Reference SPL
Frequency: 999.97 Hz Calibration Check Frequency

CALIBRATION METHOD

Periodic tests were performed in accordance with procedures from IEC 61672-3: 2013.

UNCERTAINTY OF MEASUREMENTS

Uncertainty of measurement has been evaluated in compliance with EA-4/02:2013. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%.

MEASUREMENT TRACEABILITY

The instrument under test was calibrated using the following equipment:
Svantek SV401 Signal Generator, ACS022, Certificate No. 1148625
Svantek SV30A Acoustical Calibrator, ACS023, Certificate No. 6397/1
LAB-EL LB-706B Thermo-Barometer, ACS029, Certificate No. 1148624

NOTES

1. The information appearing on this certificate has been compiled specifically for this instrument. This calibration certificate is produced with traceable and advanced equipment which permit comprehensive quality assurance verification of all data supplied herein.
2. The measurements in this document are traceable to GUM (Central Office of Measures), Poland
3. This calibration certificate shall not be reproduced except in full, without written permission from AcSoft Ltd.

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2

CALIBRATION RESULTS ARE AS FOLLOWS:

1. Indication at the calibration check frequency

The sound level meter was calibrated in compliance with the instruction manual. During this process, the indication of this SLM was adjusted to the sound pressure level of the sound level calibrator type SV 30A, No 83782, from SVANTEK. The sound pressure level was corrected by the free-field factor.

Indicated Level On Receipt [dB]	Indicated Level Following Adjustment [dB]
114.00	114.0

2. Self-generated noise with microphone installed

Frequency weighting	A
The highest level of self-generated noise stated in the instruction manual [dB]	N/A
Indication [dB]	N/A

Self-Generated Noise is reported for information only and not used to assess conformance to a requirement.

3. Self-generated noise with microphone replaced by the electrical input signal device

Frequency weighting	A	C	Z
The highest expected level of self-generated noise stated in the instruction manual [dB]	12.0	12.0	17.0
Level of self-generated noise [dB]	9.0	8.7	14.5

Self-Generated Noise is reported for information only and not used to assess conformance to a requirement.

4. Acoustical signal tests of a frequency weighting C

Frequency	Relative frequency-weighted free-field response	Design-goal frequency weighting	The deviation of frequency weighting	Expanded uncertainty	Acceptable limits
Hz	dB	dB	dB	dB	dB
125.0	-0.25	-0.2	-0.1	±0.3	±1.0
1000.0	0.00	0.0	0.0	±0.3	±0.7
4000.0	-0.36	-0.8	0.4	±0.4	±1.0
8000.0	-2.36	-3.0	0.6	±0.4	+1.5; -2.5

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2

5. Electrical signal tests of frequency weightings

Frequency	Design-goal frequency weighting			The deviation of frequency weighting			Expanded uncertainty	Acceptable limits
	A	C	Z	A	C	Z		
Hz	dB	dB	dB	dB	dB	dB	dB	dB
63	-26,2	-0,8	0,0	0.1	0.0	0.0	±0,3	±1,0
125	-16,1	-0,2	0,0	0.0	0.0	0.0	±0,3	±1,0
250	-8,6	0,0	0,0	0.0	0.0	0.0	±0,3	±1,0
500	-3,2	0,0	0,0	0.0	0.0	0.0	±0,3	±1,0
1000	0,0	0,0	0,0	0.0	0.0	0.0	±0,3	±0,7
2000	+1,2	-0,2	0,0	0.0	0.0	0.0	±0,3	±1,0
4000	+1,0	-0,8	0,0	0.0	0.1	0.0	±0,3	±1,0
8000	-1,1	-3,0	0,0	0.1	0.1	0.0	±0,4	+1,5; -2,5
16000	-6,6	-8,5	0,0	-0.2	-0.2	0.0	±0,6	+2,5; -16,0

6. Frequency and time weightings at 1 kHz

	Sound level				Time-averaged sound level
Frequency weighting	A	A	C	Z	A
Time weighting	Fast	Slow	Fast	Fast	-
Indication [dB]	114.0	114.0	114.0	114.0	114.0
The deviation of indication from the indication of A-weighted sound level with Fast time weighting [dB]		0.0	0.0	0.0	0.0
Expanded uncertainty [dB]		0.1			
Acceptable limits[dB]		±0,1	±0,1	±0,1	±0,1

CALIBRATION CERTIFICATE



Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2

7. Level linearity

Reference level range: HIGH

Expected sound level	Indication	Level linearity error	Expanded uncertainty	Acceptable limits
dB	dB	dB	dB	dB
136.0	136.0	0.0	±0,2	±0,8
135.0	135.0	0.0		
134.0	134.0	0.0		
133.0	133.0	0.0		
132.0	132.0	0.0		
131.0	131.0	0.0		
130.0	130.0	0.0		
129.0	129.0	0.0		
124.0	124.0	0.0		
119.0	119.0	0.0		
114.0	114.0	0.0		
109.0	109.0	0.0		
104.0	104.0	0.0		
99.0	99.0	0.0		
94.0	94.0	0.0		
89.0	89.0	0.0		
84.0	84.0	0.0		
79.0	79.0	0.0		
74.0	74.0	0.0		
69.0	69.0	0.0		
64.0	64.0	0.0		
59.0	59.0	0.0		
54.0	54.0	0.0		
49.0	49.0	0.0		
44.0	44.0	0.0		
43.0	43.0	0.0		
42.0	42.0	0.0		
41.0	41.0	0.0		
40.0	40.0	0.0		

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2

8. Level linearity including the level range control

Level range	HIGH	LOW
Indication for the reference sound pressure level [dB]	114.0	114.0
The deviation of indication [dB]		0.0
Anticipated level that is 5 dB less than the upper limit specified in the instruction manual for level range at 1 kHz [dB]	129.0	110.0
Indication [dB]	129.0	110.0
The deviation of indication [dB]	0.0	0.0
Expanded uncertainty [dB]	0.2	
Acceptable limits [dB]	±0.8	

9. Toneburst response

Measurement quantity	Time weighting	Toneburst duration	The indications in response to toneburst relative to steady sound level	Reference toneburst response relative to steady sound level	Deviation of measured toneburst response from reference toneburst	Expanded uncertainty	Acceptable limits
		ms	dB	dB	dB	dB	dB
Time-weighted sound level	Fast	200	-1.0	-1.0	0.0	±0.2	±0.5
		2	-18.0	-18.0	0.0		+1.0; -1.5
		0.25	-27.1	-27.0	-0.1		+1.0; -3.0
Time-weighted sound level	Slow	200	-7.4	-7.4	0.0		±0.5
		2	-27.0	-27.0	0.0		+1.0; -3.0
Sound exposure level	-	200	-7.0	-7.0	0.0		±0.5
		2	-27.0	-27.0	0.0		+1.0; -1.5
		0.25	-36.1	-36.0	-0.1		+1.0; -3.0

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2



10. Peak C sound level

Numbers of cycles in test signal	Frequency of test signal	The deviation of indication	Expanded uncertainty	Acceptable limits
	Hz	dB	dB	dB
One	8000	-0.4	±0,2	±2,0
Positive half-cycle	500	-0.1		±1,0
Negative half-cycle	500	-0.1		

11. Overload indication

Frequency weighting A

The difference between the levels of the positive and negative one-half-cycles input signals that first cause the displays of overload indication	Expanded uncertainty	Maximum value of the difference
dB	dB	dB
0.0	±0,3	1,5

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2

Calibrated By: W. Jay

Approved By: W. Jay

CUSTOMER

Galetech Energy Services
Tullyco,
Co Cavan
Co Cavan
Ireland

INSTRUMENT DETAILS

Manufacturer: SVANTEK
Model: SV977A
Serial No.: 46010
Firmware Version: 2.08.1
Description: Sound Level Meter
Performance Class: 1
Type Approved to IEC 61672-1:2013: No
(If Yes, there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013)

SENSOR DETAILS

Manufacturer:	ACO	SVANTEK
Model:	7052E	SV12L
Serial No.:	91645	116674
Description:	Microphone	Preamplifier

P/O NUMBER

PO-GES-0581

DATE RECEIVED

27-11-2024

DATE CALIBRATED

16-12-2024

CALIBRATION RESULTS

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organization responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

REPORTED RESULTS

The results contained in this Certificate refer only to the measurements made at the time of test for the instrument detailed above. These results do not reflect the instrument's ability to maintain calibration.

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2

ENVIRONMENTAL CONDITIONS

Start - End

Temperature: 22.0 – 21.8 °C
Humidity: 41 – 40 %rh
Pressure: 102.7 – 102.7 kPa

INSTRUCTION MANUAL DETAILS

Title: SVANTEK g77 User's Manual
Version No.: N/A
Publication Date: August 2015
Date Provided or Downloaded: 16/11/2017
Uncertainties Provided: Mic Pressure to Free Field Corrections

CALIBRATOR DETAILS

Manufacturer: SVANTEK
Model: SV30A
Serial No.: 83782
Customer or Lab Calibrator: Lab Calibrator
Specified or Equivalent: Equivalent
Sound Pressure Level: 114.00 dB Calibration Reference SPL
Frequency: 999.97 Hz Calibration Check Frequency

CALIBRATION METHOD

Periodic tests were performed in accordance with procedures from IEC 61672-3: 2013.

UNCERTAINTY OF MEASUREMENTS

Uncertainty of measurement has been evaluated in compliance with EA-4/02:2013. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%.

MEASUREMENT TRACEABILITY

The instrument under test was calibrated using the following equipment:
Svantek SV401 Signal Generator, ACS022, Certificate No. 1148625
Svantek SV30A Acoustical Calibrator, ACS023, Certificate No. 6397/1
LAB-EL LB-706B Thermo-Barometer, ACS029, Certificate No. 1148624

NOTES

1. The information appearing on this certificate has been compiled specifically for this instrument. This calibration certificate is produced with traceable and advanced equipment which permit comprehensive quality assurance verification of all data supplied herein.
2. The measurements in this document are traceable to GUM (Central Office of Measures), Poland
3. This calibration certificate shall not be reproduced except in full, without written permission from AcSoft Ltd.

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2

CALIBRATION RESULTS ARE AS FOLLOWS:

1. Indication at the calibration check frequency

The sound level meter was calibrated in compliance with the instruction manual. During this process, the indication of this SLM was adjusted to the sound pressure level of the sound level calibrator type SV 30A, No 83782, from SVANTEK. The sound pressure level was corrected by the free-field factor.

Indicated Level On Receipt [dB]	Indicated Level Following Adjustment [dB]
113.80	113.8

2. Self-generated noise with microphone installed

Frequency weighting	A
The highest level of self-generated noise stated in the instruction manual [dB]	N/A
Indication [dB]	N/A

Self-Generated Noise is reported for information only and not used to assess conformance to a requirement.

3. Self-generated noise with microphone replaced by the electrical input signal device

Frequency weighting	A	C	Z
The highest expected level of self-generated noise stated in the instruction manual [dB]	12.0	12.0	17.0
Level of self-generated noise [dB]	7.6	6.9	10.4

Self-Generated Noise is reported for information only and not used to assess conformance to a requirement.

4. Acoustical signal tests of a frequency weighting C

Frequency	Relative frequency-weighted free-field response	Design-goal frequency weighting	The deviation of frequency weighting	Expanded uncertainty	Acceptable limits
Hz	dB	dB	dB	dB	dB
125.0	-0.09	-0.2	0.1	±0.3	±1.0
1000.0	0.00	0.0	0.0	±0.3	±0.7
4000.0	-3.21	-0.8	-0.2	±0.4	±1.0
8000.0	-3.21	-3.0	-0.2	±0.4	+1.5; -2.5

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2

5. Electrical signal tests of frequency weightings

Frequency	Design-goal frequency weighting			The deviation of frequency weighting			Expanded uncertainty	Acceptable limits
	A	C	Z	A	C	Z		
Hz	dB	dB	dB	dB	dB	dB	dB	dB
63	-26,2	-0,8	0,0	0.1	0.0	0.0	±0,3	±1,0
125	-16,1	-0,2	0,0	0.0	0.0	0.0	±0,3	±1,0
250	-8,6	0,0	0,0	0.1	0.1	0.1	±0,3	±1,0
500	-3,2	0,0	0,0	0.2	0.3	0.2	±0,3	±1,0
1000	0,0	0,0	0,0	0.0	0.0	0.0	±0,3	±0,7
2000	+1,2	-0,2	0,0	0.6	0.6	0.6	±0,3	±1,0
4000	+1,0	-0,8	0,0	0.5	0.5	0.4	±0,3	±1,0
8000	-1,1	-3,0	0,0	0.1	0.1	0.0	±0,4	+1,5; -2,5
16000	-6,6	-8,5	0,0	-3,2	-3,2	-3,0	±0,6	+2,5; -16,0

6. Frequency and time weightings at 1 kHz

	Sound level				Time-averaged sound level
Frequency weighting	A	A	C	Z	A
Time weighting	Fast	Slow	Fast	Fast	-
Indication [dB]	114.0	114.0	114.0	114.0	114.0
The deviation of indication from the indication of A-weighted sound level with Fast time weighting [dB]		0.0	0.0	0.0	0.0
Expanded uncertainty [dB]		0.1			
Acceptable limits[dB]		±0,1	±0,1	±0,1	±0,1

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2

7. Level linearity

Reference level range: HIGH

Expected sound level	Indication	Level linearity error	Expanded uncertainty	Acceptable limits
dB	dB	dB	dB	dB
136.0	135.7	-0.3	±0,2	±0,8
135.0	134.9	-0.2		
134.0	134.0	-0.1		
133.0	133.0	-0.1		
132.0	132.0	-0.1		
131.0	131.0	-0.1		
130.0	130.0	-0.1		
129.0	128.9	-0.1		
124.0	123.9	-0.1		
119.0	118.9	-0.1		
114.0	114.0	0.0		
109.0	108.9	-0.1		
104.0	103.9	-0.1		
99.0	98.9	-0.1		
94.0	93.9	-0.1		
89.0	88.9	-0.1		
84.0	83.9	-0.1		
79.0	78.9	-0.1		
74.0	73.9	-0.1		
69.0	68.9	-0.1		
64.0	63.9	-0.1		
59.0	58.9	-0.1		
54.0	53.9	-0.1		
49.0	48.9	-0.1		
44.0	43.9	-0.1		
43.0	42.9	-0.1		
42.0	42.0	0.0		
41.0	40.9	-0.1		
40.0	40.0	0.0		

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2

8. Level linearity including the level range control

Level range	HIGH	LOW
Indication for the reference sound pressure level [dB]	113.9	113.9
The deviation of indication [dB]		0.0
Anticipated level that is 5 dB less than the upper limit specified in the instruction manual for level range at 1 kHz [dB]	40.0	30.0
Indication [dB]	40.0	30.0
The deviation of indication [dB]	0.0	0.0
Expanded uncertainty [dB]	0.2	
Acceptable limits [dB]	±0.8	

9. Toneburst response

Measurement quantity	Time weighting	Toneburst duration	The indications in response to toneburst relative to steady sound level	Reference toneburst response relative to steady sound level	Deviation of measured toneburst response from reference toneburst	Expanded uncertainty	Acceptable limits
		ms	dB	dB	dB	dB	dB
Time-weighted sound level	Fast	200	-1.0	-1.0	0.0	±0.2	±0.5
		2	-18.0	-18.0	0.0		+1.0; -1.5
		0.25	-27.1	-27.0	-0.1		+1.0; -3.0
Time-weighted sound level	Slow	200	-7.4	-7.4	0.0		±0.5
		2	-27.0	-27.0	0.0		+1.0; -3.0
Sound exposure level	-	200	-7.0	-7.0	0.0		±0.5
		2	-27.0	-27.0	0.0		+1.0; -1.5
		0.25	-36.1	-36.0	-0.1		+1.0; -3.0

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-2



10. Peak C sound level

Numbers of cycles in test signal	Frequency of test signal	The deviation of indication	Expanded uncertainty	Acceptable limits
	Hz	dB	dB	dB
One	8000	-0.3	±0,2	±2,0
Positive half-cycle	500	-0.1		±1,0
Negative half-cycle	500	-0.1		

11. Overload indication

Frequency weighting A

The difference between the levels of the positive and negative one-half-cycles input signals that first cause the displays of overload indication	Expanded uncertainty	Maximum value of the difference
dB	dB	dB
0.1	±0,3	1,5

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-4

Calibrated By: W. Jay

Approved By: W. Jay

CUSTOMER

Galetech Energy Services
Tullyco,
Co Cavan
Co Cavan
Ireland

INSTRUMENT DETAILS

Manufacturer: SVANTEK
Model: SV977A
Serial No.: 46436
Firmware Version: 2.08.4
Description: Sound Level Meter
Performance Class: 1
Type Approved to IEC 61672-1:2013: No
(If Yes, there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013)

SENSOR DETAILS

Manufacturer:	ACO	SVANTEK
Model:	7052E	SV12L
Serial No.:	91614	58574
Description:	Microphone	Preamplifier

P/O NUMBER

PO-GES-0581

DATE RECEIVED

27-11-2024

DATE CALIBRATED

16-12-2024

CALIBRATION RESULTS

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organization responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

REPORTED RESULTS

The results contained in this Certificate refer only to the measurements made at the time of test for the instrument detailed above. These results do not reflect the instrument's ability to maintain calibration.

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-4

ENVIRONMENTAL CONDITIONS

Start - End

Temperature: 22.0 – 22.2 °C
Humidity: 41 – 42 %rh
Pressure: 102.7 – 102.6 kPa

INSTRUCTION MANUAL DETAILS

Title: SVANTEK g77 User's Manual
Version No.: N/A
Publication Date: August 2015
Date Provided or Downloaded: 16/11/2017
Uncertainties Provided: Mic Pressure to Free Field Corrections

CALIBRATOR DETAILS

Manufacturer: SVANTEK
Model: SV30A
Serial No.: 83782
Customer or Lab Calibrator: Lab Calibrator
Specified or Equivalent: Equivalent
Sound Pressure Level: 114.00 dB Calibration Reference SPL
Frequency: 999.97 Hz Calibration Check Frequency

CALIBRATION METHOD

Periodic tests were performed in accordance with procedures from IEC 61672-3: 2013.

UNCERTAINTY OF MEASUREMENTS

Uncertainty of measurement has been evaluated in compliance with EA-4/02:2013. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%.

MEASUREMENT TRACEABILITY

The instrument under test was calibrated using the following equipment:
Svantek SV401 Signal Generator, ACS022, Certificate No. 1148625
Svantek SV30A Acoustical Calibrator, ACS023, Certificate No. 6397/1
LAB-EL LB-706B Thermo-Barometer, ACS029, Certificate No. 1148624

NOTES

1. The information appearing on this certificate has been compiled specifically for this instrument. This calibration certificate is produced with traceable and advanced equipment which permit comprehensive quality assurance verification of all data supplied herein.
2. The measurements in this document are traceable to GUM (Central Office of Measures), Poland
3. This calibration certificate shall not be reproduced except in full, without written permission from AcSoft Ltd.

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-4

CALIBRATION RESULTS ARE AS FOLLOWS:

1. Indication at the calibration check frequency

The sound level meter was calibrated in compliance with the instruction manual. During this process, the indication of this SLM was adjusted to the sound pressure level of the sound level calibrator type SV 30A, No 83782, from SVANTEK. The sound pressure level was corrected by the free-field factor.

Indicated Level On Receipt [dB]	Indicated Level Following Adjustment [dB]
113.90	113.9

2. Self-generated noise with microphone installed

Frequency weighting	A
The highest level of self-generated noise stated in the instruction manual [dB]	N/A
Indication [dB]	N/A

Self-Generated Noise is reported for information only and not used to assess conformance to a requirement.

3. Self-generated noise with microphone replaced by the electrical input signal device

Frequency weighting	A	C	Z
The highest expected level of self-generated noise stated in the instruction manual [dB]	12.0	12.0	17.0
Level of self-generated noise [dB]	6.5	7.1	11.2

Self-Generated Noise is reported for information only and not used to assess conformance to a requirement.

4. Acoustical signal tests of a frequency weighting C

Frequency	Relative frequency-weighted free-field response	Design-goal frequency weighting	The deviation of frequency weighting	Expanded uncertainty	Acceptable limits
Hz	dB	dB	dB	dB	dB
125.0	-0.09	-0.2	0.1	±0.3	±1.0
1000.0	0.00	0.0	0.0	±0.3	±0.7
4000.0	-3.31	-0.8	-0.3	±0.4	±1.0
8000.0	-3.31	-3.0	-0.3	±0.4	+1.5; -2.5

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-4

5. Electrical signal tests of frequency weightings

Frequency	Design-goal frequency weighting			The deviation of frequency weighting			Expanded uncertainty	Acceptable limits
	A	C	Z	A	C	Z		
Hz	dB	dB	dB	dB	dB	dB	dB	dB
63	-26,2	-0,8	0,0	0.1	0.0	0.0	±0,3	±1,0
125	-16,1	-0,2	0,0	0.0	0.0	0.0	±0,3	±1,0
250	-8,6	0,0	0,0	0.1	0.1	0.1	±0,3	±1,0
500	-3,2	0,0	0,0	0.2	0.3	0.2	±0,3	±1,0
1000	0,0	0,0	0,0	0.0	0.0	0.0	±0,3	±0,7
2000	+1,2	-0,2	0,0	0.6	0.6	0.6	±0,3	±1,0
4000	+1,0	-0,8	0,0	0.5	0.5	0.4	±0,3	±1,0
8000	-1,1	-3,0	0,0	0.1	0.1	0.0	±0,4	+1,5; -2,5
16000	-6,6	-8,5	0,0	-3,2	-3,2	-3,0	±0,6	+2,5; -16,0

6. Frequency and time weightings at 1 kHz

	Sound level				Time-averaged sound level
Frequency weighting	A	A	C	Z	A
Time weighting	Fast	Slow	Fast	Fast	-
Indication [dB]	114.0	114.0	114.0	114.0	114.0
The deviation of indication from the indication of A-weighted sound level with Fast time weighting [dB]		0.0	0.0	0.0	0.0
Expanded uncertainty [dB]		0.1			
Acceptable limits[dB]		±0,1	±0,1	±0,1	±0,1

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-4

7. Level linearity

Reference level range: HIGH

Expected sound level	Indication	Level linearity error	Expanded uncertainty	Acceptable limits
dB	dB	dB	dB	dB
136.0	136.0	0.0	±0,2	±0,8
135.0	135.0	0.0		
134.0	134.0	0.0		
133.0	133.0	0.0		
132.0	132.0	0.0		
131.0	131.0	0.0		
130.0	130.0	-0.1		
129.0	129.0	0.0		
124.0	124.0	0.0		
119.0	119.0	0.0		
114.0	114.0	0.0		
109.0	109.0	0.0		
104.0	104.0	0.0		
99.0	99.0	0.0		
94.0	94.0	0.0		
89.0	89.0	0.0		
84.0	84.0	0.0		
79.0	79.0	0.0		
74.0	74.0	0.0		
69.0	69.0	0.0		
64.0	64.0	0.0		
59.0	59.0	0.0		
54.0	53.9	-0.1		
49.0	49.0	0.0		
44.0	44.0	0.0		
43.0	43.0	0.0		
42.0	42.0	0.0		
41.0	41.0	0.0		
40.0	40.0	0.0		

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 16-12-2024

Certificate No: 1510161-4

8. Level linearity including the level range control

Level range	HIGH	LOW
Indication for the reference sound pressure level [dB]	114.0	114.0
The deviation of indication [dB]		0.0
Anticipated level that is 5 dB less than the upper limit specified in the instruction manual for level range at 1 kHz [dB]	40.0	30.0
Indication [dB]	40.1	30.1
The deviation of indication [dB]	0.1	0.1
Expanded uncertainty [dB]	0.2	
Acceptable limits [dB]	±0.8	

9. Toneburst response

Measurement quantity	Time weighting	Toneburst duration	The indications in response to toneburst relative to steady sound level	Reference toneburst response relative to steady sound level	Deviation of measured toneburst response from reference toneburst	Expanded uncertainty	Acceptable limits
		ms	dB	dB	dB	dB	dB
Time-weighted sound level	Fast	200	-1.0	-1.0	0.0	±0.2	±0.5
		2	-18.0	-18.0	0.0		+1.0; -1.5
		0.25	-27.1	-27.0	-0.1		+1.0; -3.0
Time-weighted sound level	Slow	200	-7.4	-7.4	0.0		±0.5
		2	-27.0	-27.0	0.0		+1.0; -3.0
Sound exposure level	-	200	-7.0	-7.0	0.0		±0.5
		2	-27.0	-27.0	0.0		+1.0; -1.5
		0.25	-36.1	-36.0	-0.1		+1.0; -3.0

CALIBRATION CERTIFICATE

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Date Of Issue: 16-12-2024

Certificate No: 1510161-4



10. Peak C sound level

Numbers of cycles in test signal	Frequency of test signal	The deviation of indication	Expanded uncertainty	Acceptable limits
	Hz	dB	dB	dB
One	8000	-0.6	±0,2	±2,0
Positive half-cycle	500	-0.1		±1,0
Negative half-cycle	500	-0.1		

11. Overload indication

Frequency weighting A

The difference between the levels of the positive and negative one-half-cycles input signals that first cause the displays of overload indication	Expanded uncertainty	Maximum value of the difference
dB	dB	dB
0.1	±0,3	1,5

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 13-01-2025

Certificate No: 1510161-1

Calibrated By: W. Jay

Approved By: W. Jay

CUSTOMER

Galetech Energy Services
Tullyco,
Co Cavan
Ireland

INSTRUMENT DETAILS

Manufacturer: SVANTEK
Model: SV977A
Serial No.: 46437
Firmware Version: 1.41.1
Description: Sound Level Meter
Performance Class: 1
Type Approved to IEC 61672-1:2013: No
(If Yes, there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013)

SENSOR DETAILS

Manufacturer:	ACO	Svantek
Model:	7052E	SV12L
Serial No.:	92167	77929
Description:	Microphone	Preamplifier

P/O NUMBER

PO-GES-0581

DATE RECEIVED

13-01-2025

DATE CALIBRATED

13-01-2025

CALIBRATION RESULTS

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organization responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

REPORTED RESULTS

The results contained in this Certificate refer only to the measurements made at the time of test for the instrument detailed above. These results do not reflect the instrument's ability to maintain calibration.

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 13-01-2025

Certificate No: 1510161-1

ENVIRONMENTAL CONDITIONS

Start - End

Temperature: 20.5 – 20.9 °C
Humidity: 33 – 34 %rh
Pressure: 103.4 – 103.5 kPa

INSTRUCTION MANUAL DETAILS

Title: SVANTEK g77 User's Manual
Version No.: N/A
Publication Date: August 2015
Date Provided or Downloaded: 16/11/2017
Uncertainties Provided: Mic Pressure to Free Field Corrections

CALIBRATOR DETAILS

Manufacturer: SVANTEK
Model: SV30A
Serial No.: 83782
Customer or Lab Calibrator: Lab Calibrator
Specified or Equivalent: Equivalent
Sound Pressure Level: 114.00 dB Calibration Reference SPL
Frequency: 999.97 Hz Calibration Check Frequency

CALIBRATION METHOD

Periodic tests were performed in accordance with procedures from IEC 61672-3: 2013.

UNCERTAINTY OF MEASUREMENTS

Uncertainty of measurement has been evaluated in compliance with EA-4/02:2013. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%.

MEASUREMENT TRACEABILITY

The instrument under test was calibrated using the following equipment:
Svantek SV401 Signal Generator, ACS022, Certificate No. 1148625
Svantek SV30A Acoustical Calibrator, ACS023, Certificate No. 6397/1
LAB-EL LB-706B Thermo-Barometer, ACS029, Certificate No. 1148624

NOTES

1. The information appearing on this certificate has been compiled specifically for this instrument. This calibration certificate is produced with traceable and advanced equipment which permit comprehensive quality assurance verification of all data supplied herein.
2. The measurements in this document are traceable to GUM (Central Office of Measures), Poland
3. This calibration certificate shall not be reproduced except in full, without written permission from AcSoft Ltd.

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 13-01-2025

Certificate No: 1510161-1

CALIBRATION RESULTS ARE AS FOLLOWS:

1. Indication at the calibration check frequency

The sound level meter was calibrated in compliance with the instruction manual. During this process, the indication of this SLM was adjusted to the sound pressure level of the sound level calibrator type SV 30A, No 83782, from SVANTEK. The sound pressure level was corrected by the free-field factor.

Indicated Level On Receipt [dB]	Indicated Level Following Adjustment [dB]
113.4	113.4

2. Self-generated noise with microphone installed

Frequency weighting	A
The highest level of self-generated noise stated in the instruction manual [dB]	N/A
Indication [dB]	N/A

Self-Generated Noise is reported for information only and not used to assess conformance to a requirement.

3. Self-generated noise with microphone replaced by the electrical input signal device

Frequency weighting	A	C	Z
The highest expected level of self-generated noise stated in the instruction manual [dB]	12.0	12.0	17.0
Level of self-generated noise [dB]	6.6	8.0	13.3

Self-Generated Noise is reported for information only and not used to assess conformance to a requirement.

4. Acoustical signal tests of a frequency weighting C

Frequency	Relative frequency-weighted free-field response	Design-goal frequency weighting	The deviation of frequency weighting	Expanded uncertainty	Acceptable limits
Hz	dB	dB	dB	dB	dB
125.0	-0.27	-0.2	-0.1	±0.3	±1.0
1000.0	0.00	0.0	0.0	±0.3	±0.7
4000.0	-0.14	-0.8	0.7	±0.4	±1.0
8000.0	-1.79	-3.0	1.2	±0.4	+1.5; -2.5

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 13-01-2025

Certificate No: 1510161-1

5. Electrical signal tests of frequency weightings

Frequency	Design-goal frequency weighting			The deviation of frequency weighting			Expanded uncertainty	Acceptable limits
	A	C	Z	A	C	Z		
Hz	dB	dB	dB	dB	dB	dB	dB	dB
63	-26,2	-0,8	0,0	0.1	0.0	0.0	±0,3	±1,0
125	-16,1	-0,2	0,0	0.0	0.0	0.0	±0,3	±1,0
250	-8,6	0,0	0,0	0.0	0.0	0.0	±0,3	±1,0
500	-3,2	0,0	0,0	0.0	0.0	0.0	±0,3	±1,0
1000	0,0	0,0	0,0	0.0	0.0	0.0	±0,3	±0,7
2000	+1,2	-0,2	0,0	0.0	0.0	0.0	±0,3	±1,0
4000	+1,0	-0,8	0,0	0.0	0.0	0.0	±0,3	±1,0
8000	-1,1	-3,0	0,0	0.1	0.1	0.0	±0,4	+1,5; -2,5
16000	-6,6	-8,5	0,0	-0.2	-0.2	0.0	±0,6	+2,5; -16,0

6. Frequency and time weightings at 1 kHz

	Sound level				Time-averaged sound level
Frequency weighting	A	A	C	Z	A
Time weighting	Fast	Slow	Fast	Fast	-
Indication [dB]	114.0	114.0	114.0	114.0	114.0
The deviation of indication from the indication of A-weighted sound level with Fast time weighting [dB]		0.0	0.0	0.0	0.0
Expanded uncertainty [dB]		0.1			
Acceptable limits [dB]		±0,1	±0,1	±0,1	±0,1

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 13-01-2025

Certificate No: 1510161-1

7. Level linearity

Reference level range: HIGH

Expected sound level	Indication	Level linearity error	Expanded uncertainty	Acceptable limits
dB	dB	dB	dB	dB
136.0	136.0	0.0	±0,2	±0,8
135.0	135.0	0.0		
134.0	134.0	-0.1		
133.0	133.0	-0.1		
132.0	132.0	-0.1		
131.0	131.0	-0.1		
130.0	130.0	-0.1		
129.0	129.0	-0.1		
124.0	124.0	0.0		
119.0	119.0	0.0		
114.0	114.0	0.0		
109.0	109.0	0.0		
104.0	104.0	0.0		
99.0	99.0	0.0		
94.0	94.0	0.0		
89.0	89.0	0.0		
84.0	84.0	0.0		
79.0	79.0	0.0		
74.0	73.9	-0.1		
69.0	68.9	-0.1		
64.0	63.9	-0.1		
59.0	58.9	-0.1		
54.0	54.0	0.0		
49.0	49.0	0.0		
44.0	44.0	0.0		
43.0	43.0	0.0		
42.0	42.0	0.0		
41.0	41.0	0.0		
40.0	40.0	0.0		

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 13-01-2025

Certificate No: 1510161-1

8. Level linearity including the level range control

Level range	HIGH	LOW
Indication for the reference sound pressure level [dB]	114.0	114.0
The deviation of indication [dB]		0.0
Anticipated level that is 5 dB less than the upper limit specified in the instruction manual for level range at 1 kHz [dB]	129.0	110.0
Indication [dB]	129.0	110.0
The deviation of indication [dB]	0.0	0.0
Expanded uncertainty [dB]	0.2	
Acceptable limits [dB]	±0.8	

9. Toneburst response

Measurement quantity	Time weighting	Toneburst duration	The indications in response to toneburst relative to steady sound level	Reference toneburst response relative to steady sound level	Deviation of measured toneburst response from reference toneburst	Expanded uncertainty	Acceptable limits
		ms	dB	dB	dB		dB
Time-weighted sound level	Fast	200	-1.0	-1.0	0.0	±0.2	±0.5
		2	-18.0	-18.0	0.0		+1.0; -1.5
		0.25	-27.1	-27.0	-0.1		+1.0; -3.0
Time-weighted sound level	Slow	200	-7.4	-7.4	0.0		±0.5
		2	-27.0	-27.0	0.0		+1.0; -3.0
Sound exposure level	-	200	-7.0	-7.0	0.0		±0.5
		2	-27.0	-27.0	0.0		+1.0; -1.5
		0.25	-36.1	-36.0	-0.1		+1.0; -3.0

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Date Of Issue: 13-01-2025

Certificate No: 1510161-1



10. Peak C sound level

Numbers of cycles in test signal	Frequency of test signal	The deviation of indication	Expanded uncertainty	Acceptable limits
	Hz	dB	dB	dB
One	8000	-0.2	±0,2	±2,0
Positive half-cycle	500	-0.1		±1,0
Negative half-cycle	500	-0.1		

11. Overload indication

Frequency weighting A

The difference between the levels of the positive and negative one-half-cycles input signals that first cause the displays of overload indication	Expanded uncertainty	Maximum value of the difference
dB	dB	dB
0.0	±0,3	1.5



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