

Calibration Certificate No.37494

Instrument: Acoustical Calibrator
Model: SV 30A
Manufacturer: Svantek
Serial number: 7923
Class (IEC 60942): 1
Barometer type:
Barometer s/n:

Date Calibrated: 12/13/2016 Cal Due:
Status: Received Sent
In tolerance: X X
Out of tolerance:
See comments:
Contains non-accredited tests: Yes X No

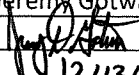
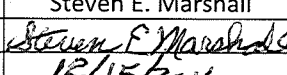
Customer: Subsecretaria de Salud Publica Address: calle Bueras N° 555, Rancagua
Tel/Fax: 722335342 /

Tested in accordance with the following procedures and standards:
Calibration of Acoustical Calibrators, Scantek Inc., Rev. 10/1/2010

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
				Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31061	Jul 27, 2016	Scantek, Inc./ NVLAP	Jul 27, 2017
DS-360-SRS	Function Generator	88077	Sep 15, 2016	ACR Env./ A2LA	Sep 15, 2018
34401A-Agilent Technologies	Digital Voltmeter	MY47011118	Sep 15, 2016	ACR Env./ A2LA	Sep 15, 2017
HM30-Thommen	Meteo Station	1040170/39633	Nov 1, 2016	ACR Env./ A2LA	Nov 1, 2017
140-Norsonic	Real Time Analyzer	1403978	Mar 17, 2016	Scantek, Inc. / NVLAP	Mar 17, 2017
PC Program 1018 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
4192-Brüel&Kjær	Microphone	2854675	Nov 11, 2016	Scantek, Inc. / NVLAP	Nov 11, 2017
1203-Norsonic	Preamplifier	92268	Oct 17, 2016	Scantek, Inc./ NVLAP	Oct 17, 2017

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)

Calibrated by:	Jeremy Gotwalt	Authorized signatory:	Steven E. Marshall
Signature		Signature	
Date	12/13/16	Date	12/15/2016

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This Calibration Certificate or Test Reports shall not be used to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the federal government.
Document stored as: Z:\Calibration Lab\Cal 2016\SVAN30A_7923_M1.doc

Results summary: Device was tested and complies with following clauses of mentioned specifications:

CLAUSES ¹ FROM STANDARDS REFERENCED IN PROCEDURES:	MET ²	NOT MET	COMMENTS
Manufacturer specifications			
Manufacturer specifications: Sound pressure level	X		
Manufacturer specifications: Frequency	X		
Manufacturer specifications: Total harmonic distortion	X		
Current standards			
ANSI S1.40:2006 B.3 / IEC 60942: 2003 B.2 - Preliminary inspection	X		
ANSI S1.40:2006 B.4.4 / IEC 60942: 2003 B.3.4 - Sound pressure level	X		
ANSI S1.40:2006 A.5.4 / IEC 60942: 2003 A.4.4 - Sound pressure level stability	X		
ANSI S1.40:2006 B.4.5 / IEC 60942: 2003 B.3.5 - Frequency	X		
ANSI S1.40:2006 B.4.6 / IEC 60942: 2003 B.3.6 - Total harmonic distortion	X		

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

² The tests marked with (*) are not covered by the current NVLAP accreditation.

Main measured parameters ³:

Measured ⁴ /Acceptable ⁵ Tone frequency (Hz):	Measured ⁴ /Acceptable ⁵ Total Harmonic Distortion (%):	Measured ⁴ /Acceptable Level ⁵ (dB):
1000.01 ± 1.0/1000.0 ± 10.0	0.19 ± 0.10/ < 3	94.07 ± 0.12/94.0 ± 0.4
1000.01 ± 1.0/1000.0 ± 10.0	0.19 ± 0.10/ < 3	114.07 ± 0.12/114.0 ± 0.4

³ The stated level is valid at measurement conditions.

⁴ The above expanded uncertainties for frequency and distortion are calculated with a coverage factor k=2; for level k=2.00

⁵ Acceptable parameters values are from the current standards

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.1 ± 1.0	100.58 ± 0.000	37.1 ± 2.0

Tests made with following attachments to instrument:

Calibrator ½" Adaptor Type:
Other:

Adjustments: Unit was not adjusted.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.

Compliance with any standard cannot be claimed based solely on the periodic tests.

Measured Data: in Acoustical Calibrator Test Report # 37494 of two pages.

Place of Calibration: Scantek, Inc.

6430 Dobbin Road, Suite C
Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167
callab@scantekinc.com

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Test Report No.:37494

Manufacturer: Svantek
Type: SV 30A
Serial no: 7923

Customer: Subsecretaria de Salud Publica
Department:
Address: calle Bueras N° 555, Rancagua
Order No:
Contact Person: Patricio Muñoz Anders
Phone No.: 722335342

Measurement Results:

	Level: (dB)	P. Stab : (dB)	Frequency: (Hz)	F. Stab : (%)	Distortion: (% TD)
1:	94.07	0.03	1000.02	0.00	0.19
2:	94.07	0.03	1000.00	0.00	0.19
3:	94.07	0.02	1000.00	0.00	0.19
Result (Average):	94.07	0.03	1000.01	0.00	0.19
Expanded Uncertainty:	0.12	0.02	1.00	0.01	0.10
Degree of Freedom:	>100	>100	>100	>100	>100
Coverage Factor:	2.00	2.00	2.00	2.00	2.00

The stated levels are relative to 20μPa.

The stated level is valid at measurement conditions.
Reference microphone: 4192-2854675. Volume correction: -0.016 dB
Records:Z:\Calibration Lab\Cal 2016\SVAN30A_7923_M1.nmf

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$, which for a normal distribution corresponds to coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA publication EA-4/02.

Environmental conditions:

Pressure: 100.580 ± 0.020 kPa Temperature: 22.1 ± 1.0 °C Relative humidity: 37.1 ± 2.0 %RH

Date of calibration: 12/13/2016
Date of issue: 12/13/2016

Supervisor : Steven E. Marshall
Measurements performed by:


Jeremy Gotwalt
Software version: 6.1T

Scantek, Inc.
6430 Dobbin Rd., Suite C, Columbia, MD 21045
Ph: 410-290-7726 eMail: callab@scantekinc.com

Test Report No.:37494

Manufacturer: Svantek
Type: SV 30A
Serial no: 7923

Customer: Subsecretaria de Salud Publica
Department:
Address: calle Bueras N° 555, Rancagua
Order No:
Contact Person: Patricio Muñoz Anders
Phone No.: 722335342

Measurement Results:

	Level:	P. Stab :	Frequency:	F. Stab :	Distortion:
	(dB)	(dB)	(Hz)	(%)	(% TD)
1:	114.06	0.02	1000.01	0.00	0.19
2:	114.07	0.02	1000.01	0.00	0.19
3:	114.07	0.01	1000.00	0.00	0.19
Result (Average) :	114.07	0.02	1000.01	0.00	0.19
Expanded Uncertainty:	0.12	0.02	1.00	0.01	0.10
Degree of Freedom:	>100	>100	>100	>100	>100
Coverage Factor:	2.00	2.00	2.00	2.00	2.00

The stated levels are relative to 20µPa.

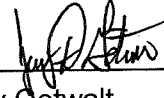
The stated level is valid at measurement conditions.
Reference microphone: 4192-2854675. Volume correction: -0.016 dB
Records:Z:\Calibration Lab\Cal 2016\SVAN30A_7923_M2.nmf

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2, which for a normal distribution corresponds to coverage probability of approximately 95%.
The standard uncertainty of measurement has been determined in accordance with EA publication EA-4/02.

Environmental conditions:
Pressure: Temperature: Relative humidity:
100.590 ± 0.020 kPa 22.1 ± 1.0 °C 37.8 ± 2.0 %RH

Date of calibration: 12/13/2016
Date of issue: 12/13/2016

Supervisor : Steven E. Marshall
Measurements performed by:



Jeremy Gotwalt
Software version: 6.1T

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