

## Calibration Certificate

CE-DTE-L-19-PVE-71342

ISSUED FOR :  
**SPEVI LTDA**  
**Malaquias Concha 086**  
**PROVIDENCIA**  
  
**750-1552 SANTIAGO**  
**Chile**

**Name and location of the laboratory of calibration:**  
**01 dB-Metravib - 200, Chemin des Ormeaux 69578 Limonest**  
Accredited for compliance with ISO/IEC 17025.

**TESTED INSTRUMENT**  
Designation : **Sound calibrator**

Manufacturer : **01dB**

Type : **CAL31** Serial number : **88150**

Identification number :

Date of issue : **04/10/2019**

This certificate includes **3** pages

The measurements are performed according to the IEC 60942, Electroacoustics, - Sound calibrators.

**HEAD OF THE METROLOGY LAB**  
**François MAGAND**

04/10/2019

X 

Signé par : MAGAND François

THIS CERTIFICATE is compliant with THE FD X 07-012 STANDARD DOCUMENTATION  
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Identification :

Sound calibrator	
Manufacturer	01dB
Type	CAL31
Serial number	88150
Adaptor	

Calibration Program:

The calibrator has been calibrated on different characteristics:


- Acoustic pressure level
- Acoustic signal frequency
- Total distortion + noise

Calibration Method:

The instrument has been calibrated in a air conditioning room. The characteristics are measured on a measuring chain which used a calibrated acoustic calibrator as reference.

The total distortion + noise is measured using a rejection filter device (distortion factor meter).

Calibration conditions:

Date of calibration	04/10/2019
Operator Name	X  <small>Signature: (2019) Bernard</small>
Calibration instruction	MET.18.INS.084
Static pressure	>95,5 ; <105 kPa
Temperature	23 ± 3 °C
Relative humidity	>25 ; <70 %HR

Instruments used for calibration:

Designation	Manufacturer	Type	Serial number	Identification number
Multimeter	Helwet-Packard	34401A	US36016215	APM 5420
Distortion meter	Helwet-Packard	8903E	3514A01314	APM 5427
Conditioner	GRAS	12 AK	193470	APM 5426
Calibrator	GRAS	42AP	82065	APM 1470
Microphone	GRAS	40AP	340589	APM 6041
Preamplifier	01dB	PRE21A	20931	APM 5889
Thermometer, hygrometer, barometer	COMET	T7511	18960232	APM 5858

All the measuring instruments are calibrated to national standards with COFRAC certificate of calibration.

Results:

Mentioned expanded uncertainties correspond to two standard uncertainty types ( k=2 ). The measurement value ar associated expanded uncertainty represent the interval which contains the value of measured quantity with a probab approximately 95 %.

Standard uncertainties are calculated including different uncertainty components, reference standards, instruments i environmental conditions, calibrated instrument contribution, repeatability, according to ISO/IEC Guide 98-3 (GUM).

This calibration certificate guarantees the traceability of calibration measurements to the International System of Uni

Cofrac is signatory of the European co-operation for Accreditation (EA) and of International Laboratory Accreditation Cooperation (ILAC) multilateral agreement. EA signatories recognise the equivalence of calibration certificates issued agreement signatories.

	Nominal value	Displayed value	Measurement error	Expanded uncertainty	Max permitted error
Frequency (Hz)	1000,0	1000,4	0,4	0,1	± 0,1
Level (dB)	94,00	93,81	-0,19	0,15	± 0,15
Total distortion + noise (%)		0,5		0,3	± 0,3

Calibrator user manual	NOT1406 September 2016 G - CAL21 CAL02 User Manual FR_EN
Type-approval certificate	France: LNE-30010 rev. 0 01 Sept. 2015 Deutschland: PTB 21.51 03.01 27 Jan. 2003

Conclusion:

The sound calibrator was shown in compliance with the requirements of periodic tests described to the appendix B c 60942: 2017 standard, for the sound calibrator of class 1, concerning the level of acoustic pressure, the frequency a distortion, specified for the conditions of environment in which the tests were realized.

This declaration of compliance isn't covered by the COFRAC accreditation.

End of calibration certificate