



CALIBRATION CERTIFICATE

Certificate number:

CONFIDENTIAL

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Applicant:

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Instrument:

	Make	Type
Sound level meter :	Rion	NA-28
Microphone :	Rion	UC-59
Preamplifier :	Rion	NH-23

Serial number

CONFIDENTIAL

Calibration date: 21-06-2017

Calibration method: The sound level meter with microphone and microphone preamplifier has been verified against the requirements as specified in the IEC 61672 standards for the applicable class of accuracy (class 1 or class 2).
Before and after the tests the sound level meter is calibrated with an acoustic calibrator (nominal sound level 94.0 dB; frequency 1 kHz) and adjusted if necessary.

Results: The results of the verification are stated on page 2 of this certificate. The ambient temperature during the measurements was $21,0\text{ }^{\circ}\text{C} \pm 4\text{ }^{\circ}\text{C}$.

Traceability: The measurements have been executed using standards for which the traceability to (inter)national standards has been demonstrated towards the Raad voor Accreditatie.

Executed

Etten Leur, 21-06-2017

W.E. de Bruin
Product Application Specialist Calibration

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Status of the instrument				
Measurement		Upon receipt (Pass/Fail)	Adjusted (Yes/No)	After adjustment (Pass/Fail)
1*	Reading under reference conditions IEC 61672	Pass	Yes	Pass
2	Frequency response (acoustic), C frequency weighting IEC 61672 – 5.2	Pass	No	Pass
3	Supplied acoustic calibrator IEC 651 - 4.2/9.2.1	Refer to separate certificate		
4	Frequency weighting (electrical input), A, C and Lin frequency weighting IEC 61672 – 5.4	Pass	No	Pass
5	Frequency and Time weighting at 1 kHz (A, C and Lin frequency weighting) IEC 61672 – 5.4	Pass	No	Pass
6	Accuracy of the attenuator IEC 61672 – 5.5	Pass	No	Pass
7	Toneburst F, S and SEL IEC 61672 – 5.8	Pass	No	Pass
8	Linearity of the indicator IEC 61672 – 5.5	Pass	No	Pass

Measurement uncertainty:

Measurement 1:	Reading under reference conditions: ± 0.3 dB
Measurement 2:	Frequency response: 125 Hz - 2 kHz: ± 0.3 dB, 4 kHz: ± 0.4 dB
Measurement 4 to 9:	Electrical properties: ± 0.15 dB / 0.1 Hz

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, which provides a confidence level of approximately 95 %. The standard uncertainty has been determined in accordance with EA-4/02.

* Refer to table below for detailed results x: Not applicable

Measurement results before and after adjustment (acoustic calibration)

Measurement		Upon receipt Deviation (dB)	After adjustment Deviation (dB)
1	Deviation of the reading under reference conditions (at 94.0 dB - 1 kHz). IEC 61672 – 5.2	0,1	0 **
** After verification of all properties			