

CERTIFICATE OF CALIBRATION

No: CDK1400871

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CALIBRATION OF

| | | | |
|----------------------|------------------------------|-------------------|---------|
| Sound Level Meter: | Brüel & Kjær Type 3050-A-040 | No: 3050-100751 | Id: - |
| Microphone: | Brüel & Kjær Type 4189 | No: 2621142 | |
| Preamplifier: | Brüel & Kjær Type 2669 | No: 2297929 | |
| Supplied Calibrator: | None | | |
| Software version: | LabShop 18.1.1.9 | Pattern Approval: | PENDING |
| Instruction manual: | BE1631 | | |

CUSTOMER

Brüel & Kjær Sound & Vibration Measurement A/S
Skodsborgvej 307
DK-2850 Nærum
Denmark

CALIBRATION CONDITIONS

Preconditioning: 4 hours at 23°C ± 3°C
Environment conditions: *See actual values in **Environmental conditions** sections.*

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 3050-A-040 has been calibrated in accordance with the requirements as specified in IEC61672-1:2002 class 1. Procedures from IEC 61672-3:2006 were used to perform the periodic tests. The accreditation assures the traceability to the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 5.0 - DB: 5.00) by using procedure LAN-XI 4189.

RESULTS

Calibration Mode: **Calibration as received.**

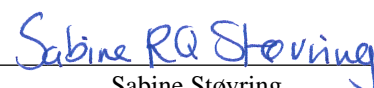
The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2014-02-03

Date of issue: 2014-02-04



Jonas Johannessen
Calibration Technician



Sabine Støvring
Approved Signatory

1. Calibration Note

n/a

2. Summary

| | |
|--|--------|
| 4.1. Preliminary inspection | Passed |
| 4.2. Environmental conditions, Prior to calibration | Passed |
| 4.3. Channel information | Passed |
| 4.4. Reference information | Passed |
| 4.5. Indication at the calibration check frequency | Passed |
| 4.6. Self-generated noise, Microphone installed | Passed |
| 4.7. Acoustical signal tests of a frequency weighting, C weighting | Passed |
| 4.8. Self-generated noise, Electrical | Passed |
| 4.9. Electrical signal tests of frequency weightings, A weighting | Passed |
| 4.10. Electrical signal tests of frequency weightings, C weighting | Passed |
| 4.11. Electrical signal tests of frequency weightings, Z weighting | Passed |
| 4.12. Frequency and time weightings at 1 kHz | Passed |
| 4.13. Level linearity on the reference level range, Upper | Passed |
| 4.14. Level linearity on the reference level range, Lower | Passed |
| 4.15. Toneburst response, Time-weighting Fast | Passed |
| 4.16. Toneburst response, Time-weighting Slow | Passed |
| 4.17. Toneburst response, Leq | Passed |
| 4.18. Peak C sound level, 8 kHz | Passed |
| 4.19. Peak C sound level, 500 Hz | Passed |
| 4.20. Overload indication | Passed |
| 4.21. Environmental conditions, Following calibration | Passed |

Conformance to the requirements of IEC 61672-3:2006, is demonstrated when the measured deviations extended by the actual expanded uncertainties of measurement, do not exceed the applicable tolerance limits given in IEC 61672-1:2002. (as specified in IEC 61672-3:2006 § 4.1)

The sound level meter submitted for periodic testing successfully completed the class 1 tests of IEC 61672-3:2006, 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 requirements of IEC 61672-1:2002 because evidence was not publicly available, from an independent testing organization responsible pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002 and because the periodic test of IEC 61672-3:2006 cover only a limited subset of the specifications in IEC 61672-1:2002.

3. Instruments

| | Instrument | Inventory No. |
|------------------|------------------------------------|----------------------|
| Generator | Brüel & Kjær, Type 3560 | 123560011 |
| AmplifierDivider | Brüel & Kjær, Type 3111 | 123111001 |
| Calibrator | Brüel & Kjær, Type 4226 | 124226015 |
| Adaptor | Brüel & Kjær, Type WA-0302-B 15 pF | 150503008 |
| Voltmeter | Agilent, Type 34970A | 142101020 |

4. Measurements

4.1. Preliminary inspection

Visually inspect instrument, and operate all relevant controls. (section 5)

| | Result | |
|-------------------|--------|--|
| Visual inspection | OK | |

4.2. Environmental conditions, Prior to calibration

Actual environmental conditions prior to calibration. (section 7)

| | Measured | |
|-------------------|--------------------|--|
| | [Deg C/ kPa / %RH] | |
| Air temperature | 23.00 | |
| Air pressure | 101.59 | |
| Relative humidity | 37.00 | |

4.3. Channel information

Number of channel being calibrated.

| Signal number | 1 | |
|---------------------|---|--|
| Channel information | 0 | |

4.4. Reference information

Information about reference range, level and channel. (section 19.h + 19.m)

| | Value | |
|--------------------------------|-------|--|
| | [dB] | |
| Reference sound pressure level | 94 | |
| Reference level range | 135 | |
| Channel number | 0 | |

4.5. Indication at the calibration check frequency

Measure and adjust sound level meter using the supplied calibrator. (section 9 + 19.m)

| | Measured | Uncertainty | |
|---|-----------|-------------|--|
| | [dB / Hz] | [dB / Hz] | |
| Initial indication (in-house calibrator) | 93.23 | 0.20 | |
| Calibration check frequency (in-house calibrator) | 1000.00 | 1.00 | |
| Adjusted indication (in-house calibrator) | 94.00 | 0.20 | |

4.6. Self-generated noise, Microphone installed

Self-generated noise measured with microphone submitted for periodic testing. Averaging time is 30 seconds. An anechoic chamber is used to isolate environmental noise. (section 10.1)

| | Max | Measured | Deviation | Uncertainty | |
|---------------|-------|----------|-----------|-------------|--|
| | [dB] | [dB] | [dB] | [dB] | |
| A weighted | 17.20 | 16.03 | -1.17 | 1.00 | |
| Monitor Level | 20.20 | 12.10 | -8.10 | 1.00 | |

4.7. Acoustical signal tests of a frequency weighting, C weighting

Frequency weightings measured acoustically with a calibrated multi-frequency sound calibrator. Averaging time is 10 seconds, and the result is the average of 2 measurements. (section 11)

| | Coupler Pressure Lc | Mic. Correction C4226 | Body Influence | Expected | Measured | Corr. Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty | |
|------------------------|---------------------|-----------------------|----------------|----------|----------|----------------|----------------|----------------|-----------|-------------|--|
| | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | |
| 1000Hz, Ref. (1st) | 94.08 | 0.10 | 0.00 | 93.98 | 94.00 | 94.00 | -1.1 | 1.1 | 0.02 | 0.20 | |
| 1000Hz, Ref. (2nd) | 94.08 | 0.10 | 0.00 | 93.98 | 94.00 | 94.00 | -1.1 | 1.1 | 0.02 | 0.20 | |
| 1000Hz, Ref. (Average) | 94.08 | 0.10 | 0.00 | 93.98 | 94.00 | 94.00 | -1.1 | 1.1 | 0.02 | 0.20 | |
| 125.89Hz (1st) | 94.08 | 0.00 | 0.00 | 93.90 | 93.93 | 93.93 | -1.5 | 1.5 | 0.03 | 0.20 | |
| 125.89Hz (2nd) | 94.08 | 0.00 | 0.00 | 93.90 | 93.93 | 93.93 | -1.5 | 1.5 | 0.03 | 0.20 | |
| 125.89Hz (Average) | 94.08 | 0.00 | 0.00 | 93.90 | 93.93 | 93.93 | -1.5 | 1.5 | 0.03 | 0.20 | |
| 3981.1Hz (1st) | 94.03 | 0.90 | 0.00 | 92.35 | 92.27 | 92.27 | -1.6 | 1.6 | -0.08 | 0.30 | |
| 3981.1Hz (2nd) | 94.03 | 0.90 | 0.00 | 92.35 | 92.27 | 92.27 | -1.6 | 1.6 | -0.08 | 0.30 | |
| 3981.1Hz (Average) | 94.03 | 0.90 | 0.00 | 92.35 | 92.27 | 92.27 | -1.6 | 1.6 | -0.08 | 0.30 | |
| 7943.3Hz (1st) | 93.84 | 2.80 | 0.00 | 88.06 | 87.62 | 87.62 | -3.1 | 2.1 | -0.44 | 0.40 | |
| 7943.3Hz (2nd) | 93.84 | 2.80 | 0.00 | 88.06 | 87.62 | 87.62 | -3.1 | 2.1 | -0.44 | 0.40 | |
| 7943.3Hz (Average) | 93.84 | 2.80 | 0.00 | 88.06 | 87.62 | 87.62 | -3.1 | 2.1 | -0.44 | 0.40 | |

4.8. Self-generated noise, Electrical

Self-generated noise measured in most sensitive range, with electrical substitution for microphone, according to manufactures specifications.

Exceedance of the measured level above the corresponding level given in the instruction manual does not, by itself, mean that the performance of the sound level meter is no longer acceptable for many practical applications. (section 10.2)

| | Max | Measured | Uncertainty | |
|------------|-------|----------|-------------|--|
| | [dB] | [dB] | [dB] | |
| A weighted | 13.20 | 10.19 | 0.30 | |
| C weighted | 20.60 | 11.77 | 0.30 | |
| Z weighted | 20.60 | 15.39 | 0.30 | |

4.9. Electrical signal tests of frequency weightings, A weighting

Frequency response measured with electrical signal relative to level at 1 kHz in reference range. (section 12)

| | Input Level | Expected | Measured | El.+Acous. Resp. | Body Influence | Corr. Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty |
|--------------|-------------|----------|----------|------------------|----------------|----------------|----------------|----------------|-----------|-------------|
| | [dBV] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] |
| 1000Hz, Ref. | -29.53 | 90.00 | 90.00 | 0.00 | 0.00 | 90.00 | -1.1 | 1.1 | 0.00 | 0.12 |
| 63.096Hz | -3.33 | 90.00 | 89.94 | 0.00 | 0.00 | 89.94 | -1.5 | 1.5 | -0.06 | 0.12 |
| 125.89Hz | -13.43 | 90.00 | 90.00 | 0.00 | 0.00 | 90.00 | -1.5 | 1.5 | 0.00 | 0.12 |
| 251.19Hz | -20.93 | 90.00 | 89.97 | 0.00 | 0.00 | 89.97 | -1.4 | 1.4 | -0.03 | 0.12 |
| 501.19Hz | -26.33 | 90.00 | 89.96 | 0.00 | 0.00 | 89.96 | -1.4 | 1.4 | -0.04 | 0.12 |
| 1995.3Hz | -30.73 | 90.00 | 90.00 | 0.00 | 0.00 | 90.00 | -1.6 | 1.6 | 0.00 | 0.12 |
| 3981.1Hz | -30.53 | 90.00 | 89.95 | 0.00 | 0.00 | 89.95 | -1.6 | 1.6 | -0.05 | 0.12 |
| 7943.3Hz | -28.43 | 90.00 | 89.97 | 0.00 | 0.00 | 89.97 | -3.1 | 2.1 | -0.03 | 0.12 |
| 15849Hz | -22.93 | 90.00 | 90.01 | 0.00 | 0.00 | 90.01 | -17.0 | 3.5 | 0.01 | 0.12 |

4.10. Electrical signal tests of frequency weightings, C weighting

Frequency response measured with electrical signal relative to level at 1 kHz in reference range. (section 12)

| | Input Level | Expected | Measured | El.+Acous. Resp. | Body Influence | Corr. Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty |
|--------------|-------------|----------|----------|------------------|----------------|----------------|----------------|----------------|-----------|-------------|
| | [dBV] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] |
| 1000Hz, Ref. | -29.52 | 90.00 | 90.00 | 0.00 | 0.00 | 90.00 | -1.1 | 1.1 | 0.00 | 0.12 |
| 63.096Hz | -28.72 | 90.00 | 89.99 | 0.00 | 0.00 | 89.99 | -1.5 | 1.5 | -0.01 | 0.12 |
| 125.89Hz | -29.32 | 90.00 | 90.02 | 0.00 | 0.00 | 90.02 | -1.5 | 1.5 | 0.02 | 0.12 |
| 251.19Hz | -29.52 | 90.00 | 89.99 | 0.00 | 0.00 | 89.99 | -1.4 | 1.4 | -0.01 | 0.12 |
| 501.19Hz | -29.52 | 90.00 | 90.03 | 0.00 | 0.00 | 90.03 | -1.4 | 1.4 | 0.03 | 0.12 |
| 1995.3Hz | -29.32 | 90.00 | 90.03 | 0.00 | 0.00 | 90.03 | -1.6 | 1.6 | 0.03 | 0.12 |
| 3981.1Hz | -28.72 | 90.00 | 89.97 | 0.00 | 0.00 | 89.97 | -1.6 | 1.6 | -0.03 | 0.12 |
| 7943.3Hz | -26.52 | 90.00 | 89.97 | 0.00 | 0.00 | 89.97 | -3.1 | 2.1 | -0.03 | 0.12 |
| 15849Hz | -21.02 | 90.00 | 89.96 | 0.00 | 0.00 | 89.96 | -17.0 | 3.5 | -0.04 | 0.12 |

4.11. Electrical signal tests of frequency weightings, Z weighting

Frequency response measured with electrical signal relative to level at 1 kHz in reference range. (section 12)

| | Input Level | Expected | Measured | El.+Acous. Resp. | Body Influence | Corr. Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty |
|--------------|-------------|----------|----------|------------------|----------------|----------------|----------------|----------------|-----------|-------------|
| | [dBV] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] |
| 1000Hz, Ref. | -29.52 | 90.00 | 90.00 | 0.00 | 0.00 | 90.00 | -1.1 | 1.1 | 0.00 | 0.12 |
| 63.096Hz | -29.52 | 90.00 | 89.97 | 0.00 | 0.00 | 89.97 | -1.5 | 1.5 | -0.03 | 0.12 |
| 125.89Hz | -29.52 | 90.00 | 89.98 | 0.00 | 0.00 | 89.98 | -1.5 | 1.5 | -0.02 | 0.12 |
| 251.19Hz | -29.52 | 90.00 | 89.99 | 0.00 | 0.00 | 89.99 | -1.4 | 1.4 | -0.01 | 0.12 |
| 501.19Hz | -29.52 | 90.00 | 89.99 | 0.00 | 0.00 | 89.99 | -1.4 | 1.4 | -0.01 | 0.12 |
| 1995.3Hz | -29.52 | 90.00 | 90.00 | 0.00 | 0.00 | 90.00 | -1.6 | 1.6 | 0.00 | 0.12 |
| 3981.1Hz | -29.52 | 90.00 | 89.98 | 0.00 | 0.00 | 89.98 | -1.6 | 1.6 | -0.02 | 0.12 |
| 7943.3Hz | -29.52 | 90.00 | 89.98 | 0.00 | 0.00 | 89.98 | -3.1 | 2.1 | -0.02 | 0.12 |
| 15849Hz | -29.52 | 90.00 | 89.99 | 0.00 | 0.00 | 89.99 | -17.0 | 3.5 | -0.01 | 0.12 |

4.12. Frequency and time weightings at 1 kHz

Frequency and time weighting measured at 1 kHz with electrical signal in reference range. Measured relative to A-weighted and Fast response. (section 13)

| | Expected | Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty | |
|-----------|----------|----------|----------------|----------------|-----------|-------------|--|
| | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | |
| LAF, Ref. | 94.00 | 94.00 | -0.4 | 0.4 | 0.00 | 0.12 | |
| LCF | 94.00 | 93.99 | -0.4 | 0.4 | -0.01 | 0.12 | |
| LZF | 94.00 | 93.99 | -0.4 | 0.4 | -0.01 | 0.12 | |
| LAS | 94.00 | 93.99 | -0.4 | 0.4 | -0.01 | 0.12 | |
| LAeq | 94.00 | 93.99 | -0.4 | 0.4 | -0.01 | 0.12 | |

4.13. Level linearity on the reference level range, Upper

Level linearity in reference range, measured at 8 kHz until overload. (section 14)

| | Expected | Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty | |
|--------|----------|----------|----------------|----------------|-----------|-------------|--|
| | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | |
| 94 dB | 94.00 | 94.00 | -1.1 | 1.1 | 0.00 | 0.12 | |
| 99 dB | 99.00 | 99.00 | -1.1 | 1.1 | 0.00 | 0.12 | |
| 104 dB | 104.00 | 103.99 | -1.1 | 1.1 | -0.01 | 0.12 | |
| 109 dB | 109.00 | 108.99 | -1.1 | 1.1 | -0.01 | 0.12 | |
| 114 dB | 114.00 | 113.94 | -1.1 | 1.1 | -0.06 | 0.12 | |
| 119 dB | 119.00 | 118.94 | -1.1 | 1.1 | -0.06 | 0.12 | |
| 124 dB | 124.00 | 123.95 | -1.1 | 1.1 | -0.05 | 0.12 | |
| 129 dB | 129.00 | 128.95 | -1.1 | 1.1 | -0.05 | 0.12 | |
| 130 dB | 130.00 | 129.95 | -1.1 | 1.1 | -0.05 | 0.12 | |
| 131 dB | 131.00 | 130.95 | -1.1 | 1.1 | -0.05 | 0.12 | |
| 132 dB | 132.00 | 131.95 | -1.1 | 1.1 | -0.05 | 0.12 | |
| 133 dB | 133.00 | 132.95 | -1.1 | 1.1 | -0.05 | 0.12 | |
| 134 dB | 134.00 | 133.95 | -1.1 | 1.1 | -0.05 | 0.12 | |
| 135 dB | 135.00 | 134.95 | -1.1 | 1.1 | -0.05 | 0.12 | |
| 136 dB | 136.00 | 135.94 | -1.1 | 1.1 | -0.06 | 0.12 | |

4.14. Level linearity on the reference level range, Lower

Level linearity in reference range, measured at 8 kHz down to lower limit, or until underrange. (section 14)

| | Expected | Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty | |
|-------|----------|----------|----------------|----------------|-----------|-------------|--|
| | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | |
| 94 dB | 94.00 | 94.01 | -1.1 | 1.1 | 0.01 | 0.12 | |
| 89 dB | 89.00 | 89.01 | -1.1 | 1.1 | 0.01 | 0.12 | |
| 84 dB | 84.00 | 84.01 | -1.1 | 1.1 | 0.01 | 0.12 | |
| 79 dB | 79.00 | 79.01 | -1.1 | 1.1 | 0.01 | 0.12 | |
| 74 dB | 74.00 | 74.01 | -1.1 | 1.1 | 0.01 | 0.12 | |
| 69 dB | 69.00 | 69.01 | -1.1 | 1.1 | 0.01 | 0.12 | |
| 64 dB | 64.00 | 64.01 | -1.1 | 1.1 | 0.01 | 0.12 | |
| 59 dB | 59.00 | 59.01 | -1.1 | 1.1 | 0.01 | 0.12 | |
| 54 dB | 54.00 | 54.01 | -1.1 | 1.1 | 0.01 | 0.12 | |
| 49 dB | 49.00 | 49.01 | -1.1 | 1.1 | 0.01 | 0.12 | |
| 44 dB | 44.00 | 44.00 | -1.1 | 1.1 | 0.00 | 0.12 | |
| 39 dB | 39.00 | 39.01 | -1.1 | 1.1 | 0.01 | 0.30 | |
| 35 dB | 35.00 | 35.04 | -1.1 | 1.1 | 0.04 | 0.30 | |
| 34 dB | 34.00 | 34.05 | -1.1 | 1.1 | 0.05 | 0.30 | |
| 33 dB | 33.00 | 33.06 | -1.1 | 1.1 | 0.06 | 0.30 | |
| 32 dB | 32.00 | 32.08 | -1.1 | 1.1 | 0.08 | 0.30 | |
| 31 dB | 31.00 | 31.11 | -1.1 | 1.1 | 0.11 | 0.30 | |
| 30 dB | 30.00 | 30.12 | -1.1 | 1.1 | 0.12 | 0.30 | |

4.15. Toneburst response, Time-weighting Fast

Response to 4 kHz toneburst measured in reference range, relative to continuous signal. (section 16)

| | Expected | Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty | |
|------------------|----------|----------|----------------|----------------|-----------|-------------|--|
| | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | |
| Continuous, Ref. | 132.00 | 132.00 | -0.8 | 0.8 | 0.00 | 0.11 | |
| 200 ms Burst | 131.00 | 131.02 | -0.8 | 0.8 | 0.02 | 0.11 | |
| 2 ms Burst | 114.00 | 113.95 | -1.8 | 1.3 | -0.05 | 0.11 | |
| 0.25 ms Burst | 105.00 | 104.89 | -3.3 | 1.3 | -0.11 | 0.11 | |

4.16. Toneburst response, Time-weighting Slow

Response to 4 kHz toneburst measured in reference range, relative to continuous signal. (section 16)

| | Expected | Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty | |
|------------------|----------|----------|----------------|----------------|-----------|-------------|--|
| | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | |
| Continuous, Ref. | 132.00 | 132.00 | -0.8 | 0.8 | 0.00 | 0.11 | |
| 200 ms Burst | 124.60 | 124.58 | -0.8 | 0.8 | -0.02 | 0.11 | |
| 2 ms Burst | 105.00 | 104.97 | -3.3 | 1.3 | -0.03 | 0.11 | |

4.17. Toneburst response, Leq

Response to 4 kHz toneburst measured in reference range, relative to continuous signal. (section 16)

| | Expected | Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty | |
|------------------|----------|----------|----------------|----------------|-----------|-------------|--|
| | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | |
| Continuous, Ref. | 132.00 | 132.00 | -0.8 | 0.8 | 0.00 | 0.11 | |
| 200 ms Burst | 115.00 | 115.01 | -0.8 | 0.8 | 0.01 | 0.11 | |
| 2 ms Burst | 95.00 | 94.98 | -1.8 | 1.3 | -0.02 | 0.11 | |
| 0.25 ms Burst | 86.00 | 85.88 | -3.3 | 1.3 | -0.12 | 0.11 | |

4.18. Peak C sound level, 8 kHz

Peak-response to a 8 kHz single- cycle sine measured in least-sensitive range, relative to continuous signal. (section 17)

| | Expected | Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty | |
|------------------|----------|----------|----------------|----------------|-----------|-------------|--|
| | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | |
| Continuous, Ref. | 130.00 | 130.00 | -0.4 | 0.4 | 0.00 | 0.11 | |
| Single Sine | 133.40 | 134.44 | -2.4 | 2.4 | 1.04 | 0.40 | |

4.19. Peak C sound level, 500 Hz

Peak-response to a 500 Hz half-cycle sine measured in least-sensitive range, relative to continuous signal. (section 17)

| | Expected | Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty | |
|---------------------|----------|----------|----------------|----------------|-----------|-------------|--|
| | [dB] | [dB] | [dB] | [dB] | [dB] | [dB] | |
| Continuous, Ref. | 130.00 | 130.00 | -0.4 | 0.4 | 0.00 | 0.11 | |
| Half-sine, Positive | 132.40 | 131.93 | -1.4 | 1.4 | -0.47 | 0.40 | |
| Half-sine, Negative | 132.40 | 131.93 | -1.4 | 1.4 | -0.47 | 0.40 | |

4.20. Overload indication

Overload indication in the least sensitive range determined with a 4 kHz positive/negative half-cycle signal. (section 18)

| | Measured | Accept - Limit | Accept + Limit | Deviation | Uncertainty | |
|---------------------|----------|----------------|----------------|-----------|-------------|--|
| | [dB] | [dB] | [dB] | [dB] | [dB] | |
| Continuous | 135.00 | -0.4 | 0.4 | 0.00 | 0.20 | |
| Half-sine, Positive | 137.80 | -10.0 | 10.0 | 2.80 | 0.20 | |
| Half-sine, Negative | 137.80 | -10.0 | 10.0 | 2.80 | 0.20 | |
| Difference | 137.80 | -1.8 | 1.8 | 0.00 | 0.30 | |

4.21. Environmental conditions, Following calibration

Actual environmental conditions following calibration. (section 7)

| | Measured | |
|-------------------|--------------------|--|
| | [Deg C/ kPa / %RH] | |
| Air temperature | 23.00 | |
| Air pressure | 101.58 | |
| Relative humidity | 37.00 | |

DANAK

The Danish Accreditation and Metrology Fund - DANAK - is managing the Danish accreditation scheme based on a contract with the Danish Safety Technology Authority under the Danish Ministry of Economics and Business Affairs who is responsible for the legislation on accreditation in Denmark.

The fundamental criteria for accreditation are described in DS/EN ISO/IEC 17025: "General requirements for the competence of testing and calibration laboratories", and in DS/EN ISO/IEC 15189 "Medical laboratories – Particular requirements for quality and competence" respectively. DANAK uses guidance documents to clarify the requirements in the standards, where this is considered to be necessary. These will mainly be drawn up by the "European co-operation for Accreditation (EA)" or the "International Laboratory Accreditation Co-operation (ILAC)" with a view to obtaining uniform criteria for accreditation worldwide. In addition, the Danish Safety Technology Authority issues Technical Regulations prepared by DANAK with specific requirements for accreditation that are not contained in the standards.

In order for a laboratory to be accredited it is, among other things, required:

- *that the laboratory and its personnel are free from any commercial, financial or other pressures, which might influence their impartiality;*
- *that the laboratory operates a documented management system, and has a management that ensures that the system is followed and maintained;*
- *that the laboratory has at its disposal all items of equipment, facilities and premises required for correct performance of the service that it is accredited to perform;*
- *that the laboratory has at its disposal personnel with technical competence and practical experience in performing the services that they are accredited to perform;*
- *that the laboratory has procedures for traceability and uncertainty calculations;*
- *that accredited testing, calibration or medical examination are performed in accordance with fully validated and documented methods;*
- *that accredited services are performed and reported in confidentiality with the customer and in compliance with the customer's request;*
- *that the laboratory keeps records which contain sufficient information to permit repetition of the accredited test, calibration or medical examination;*
- *that the laboratory is subject to surveillance by DANAK on a regular basis;*

Reports carrying DANAK's accreditation mark are used when reporting accredited services and show that these have been performed in accordance with the rules for accreditation.