

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK



0653

Accredited to
ISO/IEC 17025:2017

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Issue No: 026 Issue date: 23 September 2021

Beaufort Court
17 Roebuck Way
Milton Keynes
MK5 8HL
United Kingdom

Contact: Kiran Mistry
Tel: +44 (0)1908 642846
Fax: +44 (0)1908 642814
E-Mail: kmistry@anv.uk.com
Website: www.noise-and-vibration.co.uk

Calibration performed at the above address only

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ($k = 2$)	Remarks
Acoustics			
Sound Calibrators			
Sound pressure level	85 dB to 135 dB	0.10 dB	Verification of Sound Calibrators according to IEC 60942:2003 Annex B (Withdrawn); IEC 60942:2017 Annex B. With Bruel & Kjaer microphone type 4134
Frequency	250 Hz 1000 Hz	0.048 % 0.012 %	
Distortion		6.1 % of reading	
Pistonphones			
Sound pressure level	110 dB to 135 dB	0.10 dB	Verification of Pistonphones according to IEC 60942:2003 Annex B (Withdrawn); IEC 60942:2017 Annex B. With Bruel & Kjaer microphone type 4134
Frequency	250 Hz	0.072 %	
Distortion		6.1 % of reading	
Sound level meters			
Verification of Sound Level Meters	BS 7580:Part 1:1997 (Withdrawn)	See remarks	Verification of Type 0, 1 & 2 SLMs originally manufactured in accordance with BS EN 60651:1994 (Withdrawn) BS EN 60804:1994 (Withdrawn) and for which appropriate correction factors are known and agreed



0653
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

**Acoustics Noise and Vibration Ltd trading as
ANV Measurement Systems**

Issue No: 026 Issue date: 23 September 2021

Calibration performed at main address only

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ($k = 2$)	Remarks
Acoustics cont'd			
Sound level meters cont'd			
Verification of Sound Level Meters	BS EN 61672-3: 2006 (Withdrawn) as modified by UKAS TPS 49 Edition 2: June 2009	See remarks	Verification of Class 1 & 2 Sound Level Meters originally manufactured in accordance with IEC 61672-1:2002 (Withdrawn) and for which required correction factors are known and agreed
Verification of Sound Level Meters	BS EN 61672-3:2013	See remarks	Verification of Class 1 & 2 Sound Level Meters originally manufactured in accordance with IEC 61672-1:2013 and for which required correction factors are known and agreed.
Filters - Octave and one-third octave band, sound level meter based: IEC 61260 and IEC 225, filter band shape: One-third octave at centre band frequencies	16 Hz to 20 kHz	0.16 dB within the filter pass- band 0.20 dB outside the filter pass- band	Filters originally manufactured in accordance with IEC 225:1966 (Withdrawn) or IEC 61260:1995 (Withdrawn) (BS EN 61260:1996 (Withdrawn)); IEC 61260- 3:2016 (BS EN 61260-3:2016) in combination with a sound level meter
Octave	16 Hz to 16 kHz		
IEC 61260 / IEC 225 inter-band level	4 Hz to 32 kHz	0.16 dB at the centre frequency	
Reverberation time	50 Hz to 10 kHz in 1/3 octave steps Decay times 0.05 s to 25 s* *NB Exact Base 2 or Base 10 frequencies used; decay time increment 0.01 s	0.20% of decay time for T_{20} 0.13% of decay time for T_{30}	Verification of specific RT modules on sound level meters using multi-frequency sinusoidal signal with a continuous decay
Microphones Pressure sensitivity of 1/2" microphones @ reference frequency	1 kHz	0.1 dB	WSM type microphones By comparison with a reference microphone
Electrostatic actuator response of 1/2" microphones	100 Hz to 4 kHz >4 kHz to 8 kHz >8 kHz to 16 kHz >16 kHz to 20 kHz	0.09 dB 0.10 dB 0.14 dB 0.14 dB	By electrostatic actuator methods



0653
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

**Acoustics Noise and Vibration Ltd trading as
ANV Measurement Systems**

Issue No: 026 Issue date: 23 September 2021

Calibration performed at main address only

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ($k = 2$)	Remarks
Acoustics cont'd			
Microphones cont'd			
Pre-amp associated with Microphone	100 Hz to 20 kHz	0.04 dB	Frequency response of the associated pre-amp. Method can only be applied to microphones and pre- amplifiers which can be separated.
Noise recording instrumentation:			
- Frequency response	31.5 Hz to 12.5 kHz	0.20 dB	Range may be extended to limit of manufacturers' specification for instruments that analyse the recording internally
- Linearity response: external analysis	0 to 65 dB	0.27 dB	
internal analysis	0 to 65 dB	0.20 dB	
Tapping machines - verification	In support of BS EN ISO 140-7:1998 (Withdrawn); BS EN ISO 16283- 2:2015 (Withdrawn); BS EN ISO 16283-2:2018; BS EN ISO 16283-2:2020; BS EN ISO 10140-5:2010 +A1:2014; BS EN ISO 10140-5:2021		
	Velocity	0.009 m/s	
	Mass	0.14 g	
	Time	0.7 ms	
	Distance: diameter	0.04 mm	
	radius of curvature	12 mm	
	Angle of fall	0.18°	

END



0653
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

**Acoustics Noise and Vibration Ltd trading as
ANV Measurement Systems**

Issue No: 026 Issue date: 23 September 2021

Calibration performed at main address only

Appendix - Calibration and Measurement Capabilities

Introduction

The definitive statement of the accreditation status of a calibration laboratory is the Accreditation Certificate and the associated Schedule of Accreditation. This Schedule of Accreditation is a critical document, as it defines the measurement capabilities, ranges and boundaries of the calibration activities for which the organisation holds accreditation.

Calibration and Measurement Capabilities (CMCs)

The capabilities provided by accredited calibration laboratories are described by the Calibration and Measurement Capability (CMC), which expresses the lowest measurement uncertainty that can be achieved during a calibration. If a particular device under calibration itself contributes significantly to the uncertainty (for example, if it has limited resolution or exhibits significant non-repeatability) then the uncertainty quoted on a calibration certificate will be increased to account for such factors.

The CMC is normally used to describe the uncertainty that appears in an accredited calibration laboratory's schedule of accreditation and is the uncertainty for which the laboratory has been accredited using the procedure that was the subject of assessment. The measurement uncertainty is calculated according to the procedures given in the GUM and is normally stated as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k = 2$. An accredited laboratory is not permitted to quote an uncertainty that is smaller than the published measurement uncertainty in certificates issued under its accreditation.

Expression of CMCs - symbols and units

It should be noted that the percentage symbol (%) represents the number 0.01. In cases where the measurement uncertainty is stated as a percentage, this is to be interpreted as meaning percentage of the measurand. Thus, for example, a measurement uncertainty of 1.5 % means $1.5 \times 0.01 \times q$, where q is the quantity value.

The notation $Q[a, b]$ stands for the root-sum-square of the terms between brackets: $Q[a, b] = [a^2 + b^2]^{1/2}$