Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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0801

Accredited to ISO/IEC 17025:2017

University of Salford

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Calibration performed at the above address only

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks
Sound calibrators & pistonphones			
Sound pressure level of pistonphones	110 dB to 125 dB	0.07 dB	Suitable to support the verification of Pistonphones according to IEC 60942:2003 (Withdrawn) Annex B; IEC 60942:2018 Annex B Using IEC Type WS2P or LS2P microphones.
Frequency of pistonphones	250 Hz 1000 Hz	0.012 % of reading 0.012 % of reading	
Distortion	0.01 % to 4 %	0.22 %	
Sound pressure level of sound calibrators	85 dB to 125 dB	0.07 dB	Suitable to support the verification of Sound Calibrators according to IEC 60942:2003 (Withdrawn)Annex B,IEC 60942:2018 Annex B Using IEC Type WS2P or LS2P microphones.
Frequency of sound calibrators	250 Hz 1000 Hz	0.012 % of reading 0.012 % of reading	
Distortion	0.01 % to 4 %	0.22 %	
Microphones			
Pressure sensitivity of IEC type LS2/WS2 microphones	250 Hz 1000 Hz	0.09 dB	Using a sound calibrator
Pressure sensitivity of microphones to BS EN 61094-5:2016	20 Hz to 50 Hz 50 Hz to 100 Hz 100 Hz to 10 kHz 10 kHz to 12.5 kHz 12.5 kHz to 16 kHz 16 kHz to 20 kHz	0.11 dB 0.09 dB 0.08 dB 0.09 dB 0.12 dB 0.15 dB	Using an LS2 reference microphone

Sound Level Meters	BS 7580:Part 1:1997 (Withdrawn)	See remarks	Suitable to support the verification of Type 1 Sound level meters originally manufactured in accordance with BS EN 60651:1994 (Withdrawn) BS EN 60804:1994 (Withdrawn) and for which required correction factors are known and agreed.
	BS EN 61672-3: 2006 (Withdrawn) as modified by UKAS TPS 49 Edition 3: December 2022	See remarks	Suitable to support the verification of Class 1 & 2 Sound Level Meters originally manufactured in accordance with IEC 61672-1:2002 (Withdrawn) and for which required correction factors are known and agreed
	BS EN 61672-3: 2013	See remarks	Suitable to support the 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 - sound level meter based			
Octave band	16Hz to 16kHz	0.18 dB	Filters originally manufactured in accordance with IEC 61260:1995 (Withdrawn)(BS EN 61260:1996 (Withdrawn)) in combination with a sound level meter
One-third octave band	20 Hz to 20 kHz		

Reverberation Time	**Calibration and Measurement Capability in seconds of decay times over the frequency ranges shown**			(electrical signals with a continuous decay) Suitable to support the verification of specific RT modules on sound level meters using a transfer standard
	125 Hz	**1 kHz**	**10 kHz**	
300 ms	0.01 s	0.01 s	0.01 s	
1 s	0.02 s	0.02 s	0.02 s	
3 s	0.03 s	0.03 s	0.05 s	
10 s	0.12 s	0.12 s	0.17 s	

Tapping Machines			In support of BS EN ISO 140-7: 1998 (Withdrawn); BS EN ISO 10140-5:2010+A1:2014 (Withdrawn), BS EN ISO 10140-5:2021, BS EN ISO 16283-2:2015 (Withdrawn) and BS EN ISO 16283-2:2020 Annex A to support the verification of Tapping Machines
Velocity:	0.70 m//s to 1.00 m/s	0.03 m/s	
Mass:	480 g – 520 g	0.20 g	
Time:	50 ms – 150 ms	0.20 ms	
Diameter:	25 mm to 35 mm	0.01 mm	
Radius of Curvature:	300 mm to 700 mm	10 mm	
Angle of fall:	0^{O} to 0.6^{O}	0.10^{O}	

END

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: $Q[a, b] = [a^2 + b^2]^{1/2}$