


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>UKAS CALIBRATION</p> <p>0477</p> <p>Accredited to ISO/IEC 17025:2017</p>	<h3>Defence Science and Technology Laboratory</h3> <p>Issue No: 020 Issue date: 01 October 2021</p>	
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<p>Calibration performed at the above address only</p>		

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ($k = 2$)	Remarks
AIR KERMA RATE	¹³⁷ Cs: 2.0 μGyh^{-1} to 8.0 μGyh^{-1}	12.0 %	Air Kerma and Ambient dose Equivalent rate fields generated in accordance with ISO 4037-1 Dosimetry and conversion coefficients conform to ISO 4037-2 and ISO 4037-3
	¹³⁷ Cs: 8.0 Gyh^{-1} to 830 mGyh^{-1}	3.0 %	
	⁶⁰ Co: 14 μGyh^{-1} to 3.5 mGyh^{-1}	5.0 %	
	²⁴¹ Am: 2 μGyh^{-1} to 200 μGyh^{-1}	5.0 %	
AMBIENT DOSE EQUIVALENT RATE	¹³⁷ Cs: 2.5 μSvh^{-1} to 10.0 μSvh^{-1}	12.0 %	
Statutory tests, including: Test before first use; periodic tests, in accordance with methods included in GPG 14	¹³⁷ Cs: 10.0 μSvh^{-1} to 1.0 Svh^{-1}	3.0 %	
	⁶⁰ Co: 20 μSvh^{-1} to 5.22 mSvh^{-1}	3.0 %	
	²⁴¹ Am: 2.5 μSvh^{-1} to 350 μSvh^{-1}	5.0 %	
PERSONAL DOSE EQUIVALENT:			
PERFORMANCE TESTING OF DOSIMETRY SERVICES FOR EXTERNAL, WHOLE BODY GAMMA RADIATION;	¹³⁷ Cs:to HSE Protocols	Uncertainties for ¹³⁷ Cs Air Kerma: 3.0 %	
PERFORMANCE TESTING OF DOSIMETRY SERVICES FOR EXTREMITY/SKIN GAMMA RADIATION;	¹³⁷ Cs:to HSE Protocols	Uncertainties for ¹³⁷ Cs Air Kerma: 3.0 %	
PERFORMANCE TESTING OF ACCIDENT DOSIMETRY SERVICES - WHOLE BODY GAMMA RADIATION;	¹³⁷ Cs:to HSE Protocols	Uncertainties for ¹³⁷ Cs Air Kerma: 3.0 %	



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Measured Quantity Instrument or Gauge	Range	Expanded Uncertainty ($k = 2$)	Remarks
ROUTINE IRRADIATION OF PERSONAL DOSEMETERS Statutory tests including: Test before first use; periodic tests, in accordance with methods included in GPG 113	^{137}Cs :to HSE Protocols	Uncertainties for ^{137}Cs Air Kerma: 3.0 %	
SURFACE CONTAMINATION MONITOR RESPONSE: ALPHA (α) CONTAMINATION BETA (β) CONTAMINATION GAMMA (γ) AND X-RAY CONTAMINATION Statutory tests, including: Test before first use; Periodic tests, in accordance with methods included in GPG 14	Alpha-emitting nuclides: ^{241}Am , ^{238}Pu , ^{238}U , ^{230}Th Beta-emitting nuclides: ^{90}Sr , ^{90}Y , ^{147}Pm , ^{36}Cl , ^{14}C , ^{60}Co , ^{137}Cs , ^{63}Ni Photon-emitting nuclides: ^{55}Fe , ^{238}Pu , ^{129}I , ^{241}Am , ^{57}Co , ^{137}Cs , ^{60}Co	5.0 % to 15 % depending upon monitor type	Using wide area reference sources and point sources, the construction of which conforms to ISO 8769
END			



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