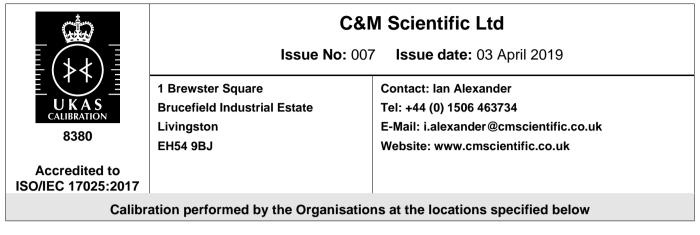
# **Schedule of Accreditation**

issued by

**United Kingdom Accreditation Service** 

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



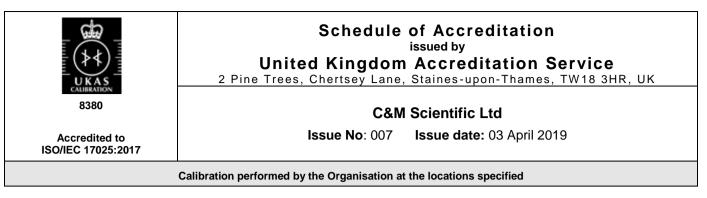
# Locations covered by the organisation and their relevant activities

## Laboratory locations:

Location details		Activity	Location code
Address 1 Brewster Square Brucefield Industrial Estate Livingston EH54 9BJ	Local contact Tel: +44 (0)1506 463734 Email: info@cmscientific.co.uk Website: www.cmscientific.co.uk	Temperature indicatorsTemperature controlled chambers Rotational speed of centrifuges Time Interval Electrical simulation of temperature PT100	Lab

### Site activities performed away from the locations listed above:

Location details	Activity	Location code
The customers' site or premises must be suitable for the nature of the particular calibrations undertaken and will be the subject of contract review arrangements between the laboratory and the customer.	Temperature indicators Temperature controlled chambers Rotational Speed of centrifuges Time interval Electrical simulation of temperature PT100	Site



Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks	Location Code	
TEMPERATURE					
Temperature sensors with indicators or recorders	-90 °C to 0 °C -40 °C to 0 °C 0 °C to 125 °C -90 °C to +125 °C -196	0149 °C 0094 °C 0.0850 °C 0.30 °C		Lab and site Lab and site Lab and	
				Site	
Temperature controlled, incubators, ovens, environmental chambers, refrigerators, freezers, centrifuges and liquid baths (inclusive of associated indicators, controllers and recorders, all with sensors)	-90 °C to 125 °C	0.35 °C	Single point probes. Single and multipoint monitoring probes Time dependent temperature profiling	Lab and Site	
TIME INTERVAL					
Timers	5 s to 24 hr	3s		Lab and site	
Rotational speed Centrifuges ELECTRICAL CALIBRATION OF TEMPERATURE INDICATORS AND SIMULATORS	500 RPM to 20000 RPM	1.8 RPM		Lab and site	
PRT simulation (PT100)	-100 °C to +400 °C	0.1 °C		Lab and site	
END					

# DETAIL OF ACCREDITATION

8380	C&M Scientific Ltd					
Accredited to ISO/IEC 17025:2017	<b>Issue No</b> : 007	Issue date: 03 April 2019				
Calibration performed by the Organisation at the locations specified						
Appendix - Calibration and Measurement Capabilities						
Introduction						
	creditation is a critical document, as it defines the	Accreditation Certificate and the associated Schedule of e measurement capabilities, ranges and boundaries of the				
Calibration and Measurement Ca	pabilities (CMCs)					
expresses the lowest uncertainty of contributes significantly to the unce	f measurement that can be achieved during a ca	e Calibration and Measurement Capability (CMC), which alibration. If a particular device under calibration itself r exhibits significant non-repeatability) then the uncertainty CIPM-ILAC definition of the CMC is as follows:				
(a) as published in the BIPM key co	ement capability available to customers under no omparison database (KCDB) of the CIPM MRA; scope of accreditation granted by a signatory to	or				
uncertainty for which the laboratory according to the procedures given i	whas been accredited using the procedure that win M3003 and is normally stated as an expanded age factor of $k = 2$ . An accredited laboratory is no	d calibration laboratory's schedule of accreditation and is th vas the subject of assessment. The CMC is calculated d uncertainty at a coverage probability of 95 %, which ot permitted to quote an uncertainty that is smaller than the				
The CMC may be described using	various methods in the Schedule of Accreditation	n:				
	urand or of a parameter (see below).	onable estimate of the likely uncertainty at any point within				

As a matrix or table where the CMCs depend on the values of the measurand and a further quantity.

In graphical form, providing there is sufficient resolution on each axis to obtain at least two significant figures for the CMC.

#### Expression of CMCs - symbols and units

In general, only units of the SI and those units recognised for use with the SI are used to express the values of guantities and of the associated CMCs. Nevertheless, other commonly used units may be used where considered appropriate for the intended audience. For example, the term "ppm" (part per million) is frequently used by manufacturers of test and measurement equipment to specify the performance of their products. Terms like this may be used in Schedules of Accreditation where they are in common use and understood by the users of such equipment, providing their use does not introduce any ambiguity in the capability that is being described.

When the CMC is expressed as an explicit function of the measurand or of a parameter, this often comprises a relative term (e.g., percentage) and an absolute term, i.e. one expressed in the same units as those of the measurand. This form of expression is used to describe the capability that can be achieved over a range of values. Some examples are shown below. It should be noted that these expressions are not mathematical formulae but are instead written in a commonly used shorthand for expressing uncertainties - therefore, for purposes of clarity, an indication of how they are to be interpreted is also provided below.

DC voltage, 100 mV to 1 V: 0.0025 % + 5.0 µV

Over the range 100 mV to 1 V, the CMC is 0.0025 % V + 5.0 μV, where V is the measured voltage.

Hydraulic pressure, 0.5 MPa to 140 MPa: 0.0036 % + 0.12 ppm/MPa + 4.0 Pa

Over the range 0.5 MPa to 140 MPa, the CMC is 0.0036 %  $p + (0.12 \cdot 10^{-6}, p \cdot 10^{-6}) + 4.0$  Pa, where p is the measured pressure in Pa.

It should be noted that the percentage symbol (%) simply represents the number 0.01. In cases where the CMC is stated only as a percentage, this is to be interpreted as meaning percentage of the measured value or indication.

Thus, for example, a CMC of 1.5 % means  $1.5 \cdot 0.01 \cdot i$ , where *i* is the instrument indication.

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