Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

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Accredited to ISO/IEC 17025:2005

Consolidated Medical Industries Limited Trading as TME Calibration and Testing

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Calibration performed by the Organisations at the locations specified below

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
Address 5 Rise Road Sunningdale Ascot Berkshire SL5 0BH **Local contact** Mr A Hodgson	Pressure Temperature Time interval	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.	Pressure Temperature Time interval	Site

DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks	Location Code
			A list of approved engineers is held by the laboratory and by UKAS	
TEMPERATURE				
Temperature sensors with indicators				Lab
Resistance sensors	-40 °C to +200 °C	0.030 °C		
Thermocouple sensors	-40 °C to +50 °C 50 °C to 200 °C	0.10 °C 0.17 °C		
Temperature block calibrators	-40 °C to +200 °C	0.14 °C		
Temperature sensors with indicators				Site
Resistance sensors	-40 °C to +50 °C 50 °C to 150 °C	0.16 °C 0.29 °C		
Thermocouple sensors	-40 °C to +150 °C	0.30 °C		
Temperature controlled autoclaves, media preparators, incubators, ovens, environmental chambers, fridges/refridgerators and freezers (inclusive of associated indicators, controllers and recorders)	-40 °C to +200 °C	0.50 °C	Single and multipoint time dependent temperature profiling, also referred to as spatial temperature surveying or mapping Calibrations can be carried out as part of the performance and safety tests for sterilizers as prescribed in the following standards: BS 2646:1993:Part 5:Section 3 BS 3970:1990 EN 285:2006 + A2:2009	
TEMPERATURE SIMULATION				
Temperature indicators and simulators, calibration by electrical simulation, for the following sensor types:				
Base metal thermocouples	-200 °C to -100 °C -100 °C to 0 °C 0 °C to 1370 °C	0.90 °C 0.50 °C 0.35 °C	including cold junction compensation	Lab
	-200 °C to -100 °C -100 °C to 0 °C 0 °C to 1370 °C	1.8 °C 1.0 °C 0.75 °C	including cold junction compensation	Site

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks	Location Code
PRESSURE				
<u>Gas pressure gauge</u>				
Calibration of Pressure indicating instruments and gauges	-99 kPa to -80 kPa 10 kPa to 700 kPa 700 kPa to 1 MPa	120 Pa 150 Pa 330 Pa		Lab
	-96 kPa to +100 kPa 100 kPa to 400 kPa 400 kPa to 1000 kPa	300 Pa 440 Pa 860 Pa		Site
<u>Gas pressure absolute</u>				
Calibration of Pressure indicating instruments and gauges	1 kPa to 20 kPa 20 kPa to 1 MPa	240 Pa 330 Pa		Lab
	3.5 kPa to 1 MPa	500 Pa		Site
TIME INTERVAL				
Timers	10 s to 12 hrs	2.0 s		Lab & site
ELECTRICAL				
DC Voltage measurement	0 mV to 50 mV	2.4 µV		Lab
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 uncertainty of measurement 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 CIPM-ILAC definition of the CMC is as follows:

A CMC is a calibration and measurement capability available to customers under normal conditions:
(a) as published in the BIPM key comparison database (KCDB) of the CIPM MRA; or
(b) as described in the laboratory's scope of accreditation granted by a signatory to the ILAC Arrangement.

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 CMC is calculated according to the procedures given in M3003 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 CMC in certificates issued under its accreditation.

The CMC may be described using various methods in the Schedule of Accreditation:

As a single value that is valid throughout the range.
As an explicit function of the measurand or of a parameter (see below).
As a range of values. The range is stated such that the customer can make a reasonable estimate of the likely uncertainty at any point within the range.
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 quantities 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, and an indication of how they are to be interpreted, are shown 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 + ($0.12 \cdot 10^{-6} \cdot p \cdot 10^{-6}$) + 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.