

Laboratory Hi Tech Calibration Services, No. 130, 2nd Floor, VGP Nagar, Mugappair West, Chennai, Tamil Nadu

Accreditation Standard ISO/IEC 17025:2005

Discipline Thermal Calibration

Issue Date 11.09.2015

Certificate Number C-1264

Valid Until 10.09.2017

Last Amended on -

Page 1 of 2

| Quantity Measured / Instrument  | Range/ Frequency       | * Calibration Measurement Capability ( $\pm$ ) | Remarks  |
|---|------------------------|--|--|
| <b>I. TEMPERATURE</b>   |                        |  |  |
| 1. GLASS THERMOMETER, TEMPERATURE GAUGES <sup>#</sup>   | 50 °C to 250 °C        | 0.60 °C  | Using Oil Bath, 6 ½ Digit Multimeter & RTD Sensor by Comparison Method   |
| 2. RTD SENSOR / THERMOCOUPLE, TEMPERATURE INDICATOR / CONTROLLER WITH SENSOR, TEMPERATURE TRANSMITTER, TEMPERATURE SWITCH <sup>#</sup>            | (-) 8 °C to 50 °C      | 0.59 °C  | Using Dry Block Calibrator, RTD Sensor, R- Type Thermocouple, 6 ½ Digit Multimeter and Multifunction Calibrator By Comparison Method                 |
|   | 50 °C to 250 °C        | 0.80 °C  |  |
|   | 250 °C to 600 °C       | 1.60 °C  |  |
|   | 600 °C to 1200 °C      | 3.81 °C  |  |
| 3. TEMPERATURE INDICATOR / CONTROLLER WITH SENSOR OF TEMPERATURE BATH / DRY BLOCK CALIBRATOR <sup>#</sup>   | (-) 8 °C to 250 °C     | 0.80 °C  | Using RTD Sensor, R- Type Thermocouple, 6 ½ Digit Multimeter and Multifunction Calibrator @ Measuring Location in DUC by Single Position Calibration |
|   | 250 °C to 600 °C       | 1.6 °C   |  |
|   | 600 °C to 1200 °C      | 3.81 °C  |  |
| 4. TEMPERATURE INDICATOR / CONTROLLER WITH SENSOR OF DEEP FREEZER, CHILLER, AUTOCLAVE, CHAMBER, INCUBATOR, WATER BATH, OVEN, FURNACE <sup>*</sup> | (-) 80 °C to (-) 37 °C | 0.99 °C  | Using RTD Sensor, R Type Thermocouple and Multifunction Calibrator @ Measuring Location in DUC (Single Position Calibration)                         |
|   | (-) 37 °C to 400 °C    | 0.53 °C  |  |
|   | 400 °C to 1200 °C      | 2.38 °C  |  |

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Program Manager

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Page 2 of 2

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|--|-------------------------------------|--|--|
| 5. DEEP FREEZER, CHILLER, AUTOCLAVE, CHAMBERS, INCUBATORS, WATER BATH, OVEN, FURNACE*                      | (-) 80 °C to 100 °C                 | 1.85 °C  | Using RTD Sensors (Minimum 9) with Data Logger by Multi Position Calibration                     |
|  | 100 °C to 500 °C                    | 1.85 °C  | Using K - Type Thermocouples (Minimum 9) with Data Logger by Multi Position Calibration          |
|  | 500 °C to 1100 °C                   | 3.9 °C   |  |
| <b>II. SPECIFIC HEAT AND HUMIDITY</b>  |                                     |  |  |
| 1. HUMIDITY INDICATOR / CONTROLLER WITH SENSOR OF HUMIDITY CHAMBER, ENVIRONMENT CHAMBER, CLIMATIC CHAMBER* | 18 % RH to 90 %RH @ $\approx$ 25 °C | 3.2 %RH  | Using Humidity sensor with Data Logger @ Measuring Location in DUC (Single Position Calibration) |
| 2. HUMIDITY CHAMBER, ENVIRONMENTAL CHAMBER, CLIMATIC CHAMBER*  | 18 %RH to 90 %RH @ $\approx$ 25 °C  | 4.1 %RH  | Using Humidity sensor (Minimum 9) with Data Logger (Multi Position Calibration)                  |

\* Measurement Capability is expressed as an uncertainty ( $\pm$ ) at a confidence probability of 95%

\$Only in Permanent Laboratory

\*Only for Site Calibration

# The laboratory is also capable for site calibration however, the uncertainty at site depends on the prevailing actual environmental conditions and master equipment used.

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