

Laboratory Ecotech Instruments-Centre for Calibration Services (A Division of Ecotech Instruments), K-127, UPSIDC Industrial Area, Site-V, Kasna, Greater Noida, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2864 (In lieu of C-0862, C-0863, C-0864, C-0880) **Page** 1 of 6

Validity 04.10.2018 to 03.10.2020 **Last Amended on** 10.10.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
<u>ELECTRO TECHNICAL CALIBRATION</u>				
1.	Time Interval / Elapsed Time ^s Time Totalizer (Digital or Analog)/ Digital Timer/Programmable Timer Stop Watch	1 Min to 60 Min 1 Hr to 8Hr	0.40 s 0.50 to 0.67 s	Using Digital Bench Timer By Comparison Method
2.	Time Interval / Elapsed Time [*] Time Totalizer (Digital or Analog)/ Digital Timer/Programmable Timer Stop Watch	10 Min to 1 Hr	0.43 s	Using Digital Bench Timer By Comparison Method

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Convenor

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Program Manager

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
<u>FLUID FLOW CALIBRATION</u>				
1.	Flow Rate ^s Orifice Transfer Standard (Top Loading calibrator)	0.6 m ³ /min to 1.4 m ³ /min	0.58%	Using Roots Meter (PD Meter)By Comparison Method
	High Volume Sampler / Respirable Dust Sampler / PM10 Sampler	0.6 m ³ /min to 1.4 m ³ /min	0.60 %	Using Orifice Transfer Standard (Top Loading calibrator)By Comparison Method
	Flow Meter / Rotameter / Dry Gas Meter / Flow Calibrator / PM10 & 2.5 Sampler / Combo Sampler / Dichotomous Sampler / Gas Sampler	10 ccm to 1000 ccm 1.0lpm to 50 lpm >50 ccm to 95 lpm	0.45 % 0.45 % 0.52 %	Using Mol Block With RFM /Roots Meter (PD Meter) By Comparison Method
2.	Volume ^s Dry Gas Meter / Volume Totalizer (Digital / Mechanical)	0.01m ³ to 0.6m ³ At flow rate 0.6m ³ /hr to 3.6m ³ /hr	1.17 %	Using Roots Meter (PD Meter) By Comparison Method

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
3.	Velocity ^s Pitot Tube / Anemometer	0.5 m/s to 4 m/s > 4m/s to 50 m/s	3.0 % 1.2 %	Using Wind Tunnel & Reference Pitot Tube, Thermal Anemometer By Comparison Method Thermal Aneometer
4.	Flow Rate High Volume Sampler / Respirable Dust Sampler / PM10 Sampler*	0.6 m ³ /min to 1.4 m ³ /min	0.60 %	By Comparison Method Using Orifice Transfer Standard (Top Loading calibrator)
5.	Flow Rate Flow Meter / Rotameter / Dry Gas Meter / Flow Calibrator / PM10 & 2.5 Sampler / Combo Sampler / Dichotomous Sampler / Gas Sampler*	0.2 lpm to 10 lpm >10 lpm to 50 lpm	0.56 % 0.50 %	Using Digital Flow Calibrator By Comparison Method

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
<u>MECHANICAL CALIBRATION</u>				
1	PRESSURE INDICATING DEVICES			
1.	Pressure Gauges Digital/Analog, Pressure Transmitter, Manometer ^s	0 to 300 mmwc >300 to 1400mmwc 0 to 1994 kPa	0.24 mmWc 1.68 mmWc 0.35 kPa	Using Digital/Précision Pressure Gauge/ Portable Pressure Calibrator By Comparison Method as per Method as per DKDR-6-1
2..	Negative Pressure Pressure Gauges (Digital/Analog), Pressure Transmitter, Manometer ^s	(-) 0.8 to 0 bar (-) 82 kPa to 0 kPa	0.0024 bar 0.19 kPa	Using Digital/Precision Pressure Gauge/ Portable Pressure Calibrator By Comparison Method Method as per DKDR-6-2
3.	Barometric Pressure Barometric Pressure Meter/ Indicator Digital/ Analog ^s	200 mbar to 1050 mbar	1.81 mbar	Using Digital Barometer Pressure Monitor By Comparison Method Method as per DKDR-6-1
4.	Positive/ Negative Pressure * Pressure Gauges Digital/Analog, Pressure Transmitter, Manometer	(-) 82 to 1994 kPa	0.32 kpa	Using Fluke Portable Pressure Calibrator By Comparison Method Method as per DKDR-6-1&2

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
5.	Barometric Pressure Barometric Pressure Meter/ Indicator Digital/ Analog *	200 to 1050 mbar	1.81 mbar	Using Digital Barometer Pressure Monitor By Comparison Method Method as per DKDR-6-1
II.	ACOUSTIC			
1.	Sound Level Meter ^b	94 dB 114 dB	0.21 dB	Using Sound Level Calibrator By Direct Method

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<u>THERMAL CALIBRATION</u>				
I.	TEMPERATURE			
1.	Thermocouple/ Thermistor Sensor with Temperature Indicator [§]	50 °C to 200 °C >200 °C to 600 °C >600 °C to 1100 °C	0.77 °C 2.10 °C 2.60 °C	Using 'R' Type Thermocouple with digital Temp. Indicator & Dry Block Furnaces By Comparison Method
2.	Digital/Analog Thermo Hygrometer, Hygrograph, Temperature Sensor with Indicator / Logger [§]	10 °C to 60°C @ \approx 50% RH	0.43 °C @ 50%RH	Using Temperature Humidity Meter with Sensor & Humidity Chamber By Comparison Method Humidity Chamber
II.	SPECIFIC HEAT AND RELATIVE HUMIDITY			
1.	Digital/Analog Thermo Hygrometer, Hygrograph, Humidity Sensor with Indicator, Logger [§]	20% to 95 % RH @ \approx 25 °C	1.82 % RH @ 25 °C	Using Temperature Humidity Meter with Sensor & Humidity Chamber By Comparison Method

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

[§]Only in Permanent Laboratory

*Only for Site Calibration

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