National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name : SAMS ADVANCED CLIMATIC TECHNOLOGIES PRIVATE LIMITED, PLOT NUMBER 8 & 9B/29, MIRRA INDUSTRIAL ESTATE, PHASE-1, IDA PATANCHERU, HYDERABAD, TELANGANA, INDIA

Accreditation Standard ISO/IEC 17025:2017

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Validity 15/02/2025 to 14/02/2029 **Last Amended on** 13/03/2025

S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrument	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
Permanent Facility					
1	MECHANICAL-ACCELERATION AND SPEED	Accelerometer - Amplitude Response (1 g to 10 g)	Using Standard Accelerometer & Spider Controller cum Signal Conditioner & Electro Dynamic Shaker by Back to back Comparison method as per ISO 16063-Part 21:2003	5 Hz to 15000 Hz	1.9 % to 2.2 %
2	MECHANICAL-ACCELERATION AND SPEED	Accelerometer - Amplitude Response (1 g to 10 g)	Using Standard Accelerometer & VRC Controller cum Signal Conditioner & Electro Dynamic Shaker by Back to back Comparison method as per ISO 16063-Part 21:2003	5 Hz to 15000 Hz	1.9 % to 2.2 %
3	MECHANICAL-ACCELERATION AND SPEED	Accelerometer - Linearity Response(Frequency at 100Hz)	Using Standard Accelerometer, controller, Shaker by Back to back Comparison method as per ISO 16063-Part 21:2003	1 g to 40 g	1.8 %
4	MECHANICAL-ACCELERATION AND SPEED	Shock Accelerometer (amplitude from 5 g to 5000 g)	Using Reference shock accelerometer, Spider controller cum signal conditioner & Pendulum Shock Testing Machine by comparison method as per ISO16063 Part 22:2005	0.2 ms to 11 ms	2.74 %

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5	MECHANICAL-ACCELERATION AND SPEED	Shock Accelerometer (Pulse Duration from 0.2 ms to 11 ms)	Using Reference shock accelerometer, Spider controller cum signal conditioner & Pendulum Shock Testing Machine by comparison method as per ISO16063-Part 22:2005	5 g to 5000 g	2.74 %
6	MECHANICAL-ACCELERATION AND SPEED	Vibration Controllers - Amplitude (Frequency: 5 Hz to 3000 Hz)	Using Spider Signal Analyzer by Comparison method	1 g to 40 g	2.93 % to 2.43 %
7	MECHANICAL-ACCELERATION AND SPEED	Vibration Meter - Acceleration (Frequency: 30 Hz to 3000 Hz)	Using Standard Accelerometer, Vibration Controller, Shaker by Back to back Comparison method as per ISO 16063-Part 21:2003	1 g to 15 g	1.72 % to 1.9 %
8	MECHANICAL-ACCELERATION AND SPEED	Vibration Meter - Velocity (Frequency: 30 Hz to 3000 Hz)	Using Standard Accelerometer, Vibration Controller, Shaker by Back to Back Comparison method as per ISO 16063 Part 21:2003	10 mm/s to 500 mm/s	1.72 % to 1.9 %
9	MECHANICAL-ACCELERATION AND SPEED	Vibration/Hand Held Shaker (Single Amplitude & Single Frequency)	Using Standard Accelerometer, controller, Shaker by Back to back Comparison method as per ISO 16063-Part 21:2003	1 g pk @ 160 Hz	1.62 %

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10	MECHANICAL-PRESSURE INDICATING DEVICES	Digital/Analogue Pressure Gauges	Using Pneumatic Hand pump, Pneumatic Comparator Pump & Digital Pressure Gauge Based on DKD–R6-1 by Comparison method	0 to 30 bar	0.022 bar
11	MECHANICAL-PRESSURE INDICATING DEVICES	Digital/Analogue Vacuum Gauges	Using Pneumatic Hand pump, Pneumatic Comparator Pump & Digital Pressure Gauge Based on DKD–R6-1 by Comparison method	(-)0.9 bar to 0	0.004 bar
12	THERMAL-SPECIFIC HEAT & HUMIDITY	Humidity Chamber (Multi positions Minimum Five/Nine) @ (10%RH to 95%RH)	Using PT-100 RTD Sensors with Multichannel data Recorder by Wet & Dry Bulb Method by Spatial Mapping Method as per IEC 60068-3-5 & IEC 60068-3-11	10 °C to 95 °C	0.9 °C
13	THERMAL-SPECIFIC HEAT & HUMIDITY	Humidity Chamber (Multi positions Minimum Five/Nine) @ (10°C to 95°C)	Using PT-100 RTD sensors with Multichannel data Recorder by Wet & Dry Bulb Method by Spatial Mapping Method as per IEC 60068-3-6 & IEC 60068-3-11 (Dew point range -10 to +94°C)	10 %RH to 95 %RH	3.8 %RH

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14	THERMAL-SPECIFIC HEAT & HUMIDITY	Indicator with sensor of Relative Humidity / Temperature & Humidity chamber	Using Digital Hygropalm (Single Position) by Comparison Method as per IEC 60068-3-6, IEC 60068-3-11 & DKD-R 5-7	10 %RH to 95 %RH @ 20 °C to 60 °C	1.31 %RH
15	THERMAL-TEMPERATURE	Indicator with Sensor of Chambers / Autoclaves / Incubators / Oven / Furnace (Single Position)	Using Standard PT-100 RTD sensor By Comparison Method as per DKD-R 5-7, IEC 60068-3-5 & IEC 60068-3-11	100 °C to 300 °C	0.5 °C
16	THERMAL-TEMPERATURE	Indicator with Sensor of Chambers / Incubators / Oven (Single Position)	Using Standard PT-100 RTD sensor By Comparison Method as per DKD-R-5-7, IEC 60068-3-5 & IEC 60068-3-11	(-)75 °C to 100 °C	0.65 °C
17	THERMAL-TEMPERATURE	Temperature Chamber/Climatic Chamber/ Stability Chamber	Using PT 100 RTD Sensors with Data Logger by Multiposition (minimum Five/Nine sensors) by spatial mapping method as per IEC 60068-3-5, IEC 60068-3-11 & DKD-R 5-7	(-)75 °C to 100 °C	0.69 °C

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18	THERMAL-TEMPERATURE	Temperature Chamber/Industrial Oven/Furnace	Using PT 100 RTD Sensors with Data Logger & Multiposition (minimum Five/Nine sensors) by spatial mapping method as per IEC 60068-3-5, IEC 60068-3-11 & DKD-R 5-7	100 °C to 300 °C	0.64 °C

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Site Facility					
1	MECHANICAL-ACCELERATION AND SPEED	Machines - Vibration, Shock, BUMP (Amplitude from 5 g to 5000 g)	Using Reference shock accelerometer, Spider controller cum signal conditioner as per ISO16063-Part 22:2005 by comparison method	0.2 ms to 50 ms	5.21 %
2	MECHANICAL-ACCELERATION AND SPEED	Machines - Vibration, Shock, BUMP (Pulse Duration from 0.2 ms to 50 ms)	Using Reference shock accelerometer, Spider controller cum signal conditioner as per ISO16063-Part 22:2005 by comparison method	5 g to 5000 g	5.12 %
3	MECHANICAL-ACCELERATION AND SPEED	Shock Accelerometer (amplitude from 5 g to 5000 g)	Using Reference shock accelerometer, Spider controller cum signal conditioner & Pendulum Shock Testing Machine by comparison method as per ISO16063 Part 22:2005	0.2 ms to 11 ms	2.74 %

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4	MECHANICAL-ACCELERATION AND SPEED	Shock Accelerometer (Pulse Duration from 0.2 ms to 11 ms)	Using Reference shock accelerometer, Spider controller cum signal conditioner & Pendulum Shock Testing Machine by comparison method as per ISO16063-Part 22:2005	5 g to 5000 g	2.74 %
5	MECHANICAL-ACCELERATION AND SPEED	Vibration Controllers - Amplitude (Frequency: 5 Hz to 3000 Hz)	Using Spider Signal Analyzer by Comparison method	1 g to 40 g	2.93 % to 2.43 %
6	MECHANICAL-ACCELERATION AND SPEED	Vibration Shaker Systems - Amplitude (Frequency: 5 Hz to 3000 Hz)	Using Spider Controller cum Signal Conditioner and transfer standard accelerometer by comparison method as per ISO16063-Part21:2003	5 Hz to 3000 Hz	2.93 % to 2.31 %
7	MECHANICAL-PRESSURE INDICATING DEVICES	Digital/Analogue Pressure Gauges	Using Pneumatic Hand pump, Pneumatic Comparator Pump & Digital Pressure Gauge Based on DKD–R6-1 by Comparison method	0 to 30 bar	0.022 bar

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8	MECHANICAL-PRESSURE INDICATING DEVICES	Digital/Analogue Vacuum Gauges	Using Pneumatic Hand pump, Pneumatic Comparator Pump & Digital Pressure Gauge Based on DKD–R6-1 by Comparison method	(-)0.9 bar to 0	0.004 bar
9	THERMAL-SPECIFIC HEAT & HUMIDITY	Humidity Chamber (Multi positions Minimum Five/Nine) @ (10%RH to 95%RH)	Using PT-100 RTD Sensors with Multichannel data Recorder by Wet & Dry Bulb Method by Spatial Mapping Method as per IEC 60068-3-5 & IEC 60068-3-11	10 °C to 95 °C	0.9 °C
10	THERMAL-SPECIFIC HEAT & HUMIDITY	Humidity Chamber (Multi positions Minimum Five/Nine) @ (10°C to 95°C)	Using PT-100 RTD sensors with Multichannel data Recorder by Wet & Dry Bulb Method by Spatial Mapping Method as per IEC 60068-3-6 & IEC 60068-3-11 (Dew point range -10 to +94°C)	10 %RH to 95 %RH	3.8 %RH
11	THERMAL-SPECIFIC HEAT & HUMIDITY	Indicator with sensor of Relative Humidity / Temperature & Humidity chamber	Using Digital Hygropalm (Single Position) by Comparison Method as per IEC 60068-3-6, IEC 60068-3-11 & DKD-R 5-7	10 %RH to 95 %RH @ 20 °C to 60 °C	1.31 %RH

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12	THERMAL-TEMPERATURE	Indicator with Sensor of Chambers / Autoclaves / Incubators / Oven / Furnace (Single Position)	Using Standard PT-100 RTD sensor By Comparison Method as per DKD-R 5-7, IEC 60068-3-5 & IEC 60068-3-11	100 °C to 300 °C	0.5 °C
13	THERMAL-TEMPERATURE	Indicator with Sensor of Chambers / Incubators / Oven (Single Position)	Using Standard PT-100 RTD sensor By Comparison Method as per DKD-R-5-7, IEC 60068-3-5 & IEC 60068-3-11	(-)75 °C to 100 °C	0.65 °C
14	THERMAL-TEMPERATURE	Temperature Chamber/Climatic Chamber/ Stability Chamber	Using PT 100 RTD Sensors with Data Logger by Multiposition (minimum Five/Nine sensors) by spatial mapping method as per IEC 60068-3-5, IEC 60068-3-11 & DKD-R 5-7	(-)75 °C to 100 °C	0.69 °C
15	THERMAL-TEMPERATURE	Temperature Chamber/Industrial Oven/Furnace	Using PT 100 RTD Sensors with Data Logger & Multiposition (minimum Five/Nine sensors) by spatial mapping method as per IEC 60068-3-5, IEC 60068-3-11 & DKD-R 5-7	100 °C to 300 °C	0.64 °C

*** CMCs represent expanded uncertainties expressed at approximately the 95% level of confidence, using a coverage factor of k = 2.**