

CALIBRATION LABORATORY

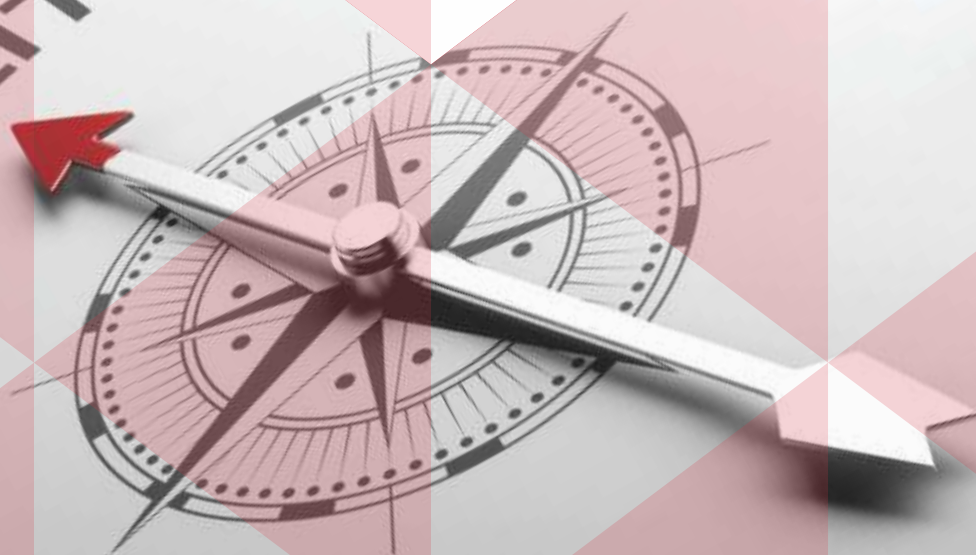
Quality Assurance Through Calibration
(Accredited as per ISO / IEC 17025)

ISO 9001
ISO 14001
ISO 27001
OHSAS 18001
CERTIFIED

Q



CC - 2742



CALIBRATION CAPABILITIES

One of the leading
Laboratories in India

Wide range of Calibration
facilities under one roof

Undertake turn-key
Calibration Assignments

Qualified and Experienced
Technical staff

Onsite Calibration Facility for
Various Parameters

Customer centric approach

NABL Accredited
(ISO/IEC 17025) since 2000

Customer Retention for more than 10 years
shows quality services

PARAMETERS

Mass & Balance

Micro Balances,
Weighing Scales,
Fractional Weight Sets,
Weights etc.

Sound & Vibration

Sound Level Meters,
Accelerometers
Calibrators, Microphones,
Vibration Analyzers etc.

Pressure

Pressure Gauges,
Transmitters, Manometers,
Vacuum Gauges,
Pressure Systems etc.

Speed

Contact / Non Contact
Tachometers
& Pulse Engine
Tachometers etc.

ARAI CALIBRATION LAB PROVIDES THE CALIBRATION
SERVICE TO INTERNAL AS WELL AS EXTERNAL
CUSTOMERS.

Temperature & Humidity

SPRTs / PRTs,
Thermocouples, RTD
Sensors, Environmental
Chambers, Hygrometers,
Temp Baths etc.

Electrotechnical

Multimeters, Calibrators,
Shunt, Oscilloscopes,
Function Generators,
Counters, Timers, Indicators,
HV Testers etc.

Air Flow Systems

Blow by meters
(Air media) etc.

Force Calibration

UTM & Force
generating Machine

Load, Torque & Liquid Flow

Load Cells, Load systems,
Torque Sensors,
PLU/DFL etc.

NEW FACILITY CALIBRATION OF EMC INSTRUMENT

NABL



Impedance Of LISN,
CDN etc
2.72 Ω to 200 Ω
Insertion Loss for LISN,
Bulk current injection
probe, Attenuators etc.
0.1 dB to 65 dB
Return Loss (VSWR)
1.0023 to 3.5



ESD Simulators for
Air Discharge
Amplitude calibration:
DC Voltage $\pm 0-30$ kV
Waveform Calibration
for Contact discharge
Peak Current (I pk),
Current at 30ns or I at t1 ns
Current at 60 ns or at t2 ns
Rise/Fall Time



Different type of Generators
For Conducted immunity
pulses of Generators used
in Automotive as well as
Non automotive Testing

- Peak Voltage
- Short ckt Current
- Rise/Fall Time
- Td Pulse Duration

MECHANICAL CALIBRATION



Comparator Balance	
Range	CMC(±)
Up to 22 g	0.0044 mg to 0.0013 mg
Up to 220 g	0.08 mg
Up to 610 g	0.28 mg
Up to 5100 g	6 mg
Up to 12 kg	80 mg
Up to 60 kg	160 mg



Mass	
Range	CMC(±)
1 mg to 500 g	0.0021 mg to 0.30 mg
1 kg to 5 kg	2 mg to 5 mg
10 kg to 100 kg	20 mg to 1 g

1 mg to 500 g (E2 class) Weight Set
Calibration facility newly added



Acceleration @ Lab (Piezoelectric, Piezo Resistive, Capacitive, etc.)	
Range	CMC(±)
Accelerometers (0.1 g to 10g)	(3 HZ to 10 kHz) 0.85% to 1.8%
Vibration Shakers, Exciters (0.1g to 10g)	(10Hz to 10kHz) 1.27% to 1.45%
Vibration Meters for Acceleration (0.5g to 10g) For velocity (1mm/s to 200mm/s) For Displacement (0.01mm to 5mm)	(10 Hz to 5 kHz) 1.60%



Pressure @ Lab	
Range	CMC(±)
0 to 1000 bar g	0.015% rdg
0 - 25 bar g	0.013% rdg
0 - 2.5 bar A	0.01% rdg
0 to -0.9 bar	0.016% rdg
(±)250 mbar to 250 mbar	0.12% rdg

UTM @ Site	
Range	CMC(±)
1 to 100 kN	0.21% rdg

Load Cell Calibration	
Range	CMC(±)
0 to (±) 100 kN	0.08% rdg



Speed Calibration	
Range	CMC(±)
Non- Contact Mode 100 to 10000 rpm	1.22 rpm
Contact Mode 100 to 5000 rpm	1.2 rpm



Sound Level	
Range	CMC(±)
31.5 Hz to 16 kHz At 94 dB	0.3 dB to 0.61 dB

THERMAL CALIBRATION



Primary Calibration (Fixed Point Cell)	Range	CMC(±)
Boiling Point of Ln2	-196°C	0.015°C
Mercury	-38.8344°C	0.0049°C
TPW	0.01°C	0.004°C
Gallium	29.7646°C	0.005°C
Indium	156.5985°C	0.007°C
Tin	231.928°C	0.0058°C
Zinc	419.527°C	0.008°C
Aluminum	660.323°C	0.016°C

Secondary Calibration	
Range	CMC(±)
-50 to -40°C	0.1°C
-40 to 25°C	0.06°C
25 to 650°C	0.1°C
650 to 1200°C	1.30°C to 1.32°C
20 to 90 % RH at 25°C to 40°C	1.00 %RH

ELECTRO - TECHNICAL CALIBRATION

DC & AC Voltage	100 µV to 1000 V & 1 mV to 1000 V (10 Hz to 300 kHz)
DC & AC Current	10 µA to 20 A & 10 µA to 20 A (10 Hz to 5 kHz)
Resistance	1 Ω to 1 GΩ
Discrete Standard	25 Ω, 100 Ω, 300 Ω & 400 Ω
Thermocouples	-250 to 1768°C
RTD	-200 to 850°C
Capacitance	3 nf to 30 mF



FLUID FLOW CALIBRATION

Fuel Flow Meter Calibration (DFL & PLU)	
Range	CMC(±)
1 Lph to 50 Lph	0.3% rdg



Blow by Meter (Air Media)	
Range	CMC(±)
10 to ≤ 30 LPM	1.5 %
>30 to ≤ 100 LPM	1.05%
>100 to ≤ 200 LPM	1.02%

ARAI[®]
Progress through Research



The Automotive Research Association of India
(Affiliated to Ministry of Heavy Industries & Public Enterprises, Govt. of India)

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