



C and I Calibrations Pvt. Ltd., Jaipur C&I SYSTEMS, Kota

NABL ISO/IEC 17025 Accredited & ISO 9001 Certified Calibration Laboratory
Electro-technical, Mechanical, Fluid Flow, Thermal Fields

ELECTRO TECHNICAL CALIBRATION (Lab & Site)



NABL C-0768, 0769, 0981
C-0088, 0190, 0191

| Calibration Facilities | DUC / Parameter | Range | CMC (±) |
|---|---|--|---|
| Calibrator / DMM (using Fluke 8508A Reference 8½ DMM & High Precision Fluke Calibrator 5720A traceable to Fluke USA, Keithely Pico ampere meter 6485 traceable to Keithely USA) Pico Ampere LCR RF Power & Voltage Frequency (Oscilloscope) | <ul style="list-style-type: none"> ❖ Multi Function Calibrator (Fluke 9100, 5500A, 5080A, 5520A, 5522A, 5720A / Time / Transmile/equivalent). ❖ Digital Multimeter (upto 8½ digit). ❖ Process Calibrator, Loop Calibrator (Fluke, Druck, Yokogawa, Beamex & eqv) ❖ Voltmeter, Ammeter, Watt Meter, Frequency Meter, Clamp Meter, Power Supply, Voltage and Current Source ❖ Temperature Indicator / Controller ❖ Pico Ampere Meter / Source ❖ Relay Test Kit ❖ LCR Meter, L,C,R Box ❖ HV Resistance Box/ Earth Tester ❖ Motor Checker ❖ Kelvin / Wheatstone Bridge ❖ Tan Delta Calibrator ❖ RF Power Meter /RF Voltmeter ❖ Oscilloscope / Scope Meter ❖ Frequency / Pulse Counter & Generator ❖ Taxi Fare Meter/ Calibrator | DC Voltage 100 μV-1100V AC Voltage 1mV-1100V DC Current 1nA-1000A AC Current 10 μA-2000A Resistance 0.001Ω-20GΩ Insulation Resistance 10kΩ-10TΩ Frequency 10mHz-3GHz Time Interval 10ns-10 ⁵ s Capacitance 1pF-100μF-10mF Inductance 100 μH-10H AC Power 5mA-120A ; 40V-600V DC Power 1.5W-20kW Power Factor -1 to 1 RF Power 50kHz-1GHz (1μW-20mW) RF Voltage 200μV-1.86V RTD & T/C -200°C to 1800°C | 0.0003%-0.55% 0.005% - 0.65% 0.0013%-0.5% 0.0125%-0.83% 0.0005%-0.23% 0.2%-3.1% 0.0000001-0.00023 Hz 0.00000013-0.002 s 0.04%-0.1%-1.45% 0.04%-0.3% 0.01%-0.45% 0.011%-0.55% 0.00011-0.00018 PF 1.13%-2% 1.14%-3% |
| Energy and Power (1ϕ & 3 ϕ) (using Reference Standard COM 3003 Zera, Germany traceable to DKD, Germany) | <ul style="list-style-type: none"> ❖ Energy and Power Calibrator ❖ Reference Standard (Energy & Power) ❖ LT/HT Accucheck / RSS / ESS Meter ❖ ABT Meter (Open Access Connection / Wind / Solar / Industrial) ❖ Digital Power Meter / Analyzer. ❖ Power Factor Meter / Transducers | AC Power / Energy(Active, Reactive, Apparent) 1mA-120A; 40V-320V ; 40Hz-70Hz Cos ϕ +0.01 to 1 AC Power (1ϕ & 3ϕ) 0.5A-20A ; 320V-600V; Cos ϕ +0.01 to 1 Power Factor -1 to 1 DC Power 1.5W-20kW Frequency 40Hz-70Hz | 0.01%-0.035% 0.01%-0.45% 0.00011-0.00018 PF 0.011%-0.55% 0.025% |
| CT/PT | <ul style="list-style-type: none"> ❖ Current Transformer ❖ Potential Transformer ❖ CT/PT Test Set / AITTS, Burden Box ❖ Primary / Secondary Injection Set | 1A-2000A (Primary) at 50 Hz 1A, 5A (Secondary) 63.5 V-33kV (Primary) 63.5/110 V, 50V-144V (Secondary) | 0.03% (Ratio error) 2.5 min (Phase error) 0.08%(Ratio error) 4 min (Phase error) |
| AC High Voltage (100 kV) DC High Voltage (25 kV) | <ul style="list-style-type: none"> ❖ High Voltage Tester / Probe ❖ Oil BDV / Impulse / Hi-Pot Tester ❖ DC High Voltage Tester / Probe | 550V-33kV-100kV 1 kV-25 kV | 0.6% ; 2.5-3kV 0.4kV-2kV |
| HV Resistance (upto 10 TΩ) | <ul style="list-style-type: none"> ❖ HV Meggar / Insulation Tester ❖ Electrical Safety Device / Calibrator | Insulation Resistance 10 kΩ-10 TΩ | 0.2%-3.1% |
| Turn Ratio(1ϕ, 3ϕ) | <ul style="list-style-type: none"> ❖ Turn Ratio Meter | 1-2000 Turns | 0.17%-0.5% |
| Time / Time Interval | <ul style="list-style-type: none"> ❖ Stop Watch / Counter / Timer | Time Interval 10ns-10 ⁵ s (27 Hrs) | 0.0000013-0.002 s |
| Lux / Luminous Intensity | <ul style="list-style-type: none"> ❖ Lux Meter | upto 20000 Lux | 2.5% |

* For detailed scope, refer our NABL Accreditation Certificates.

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MECHANICAL CALIBRATION (Lab & Site)



NABL C-0768, 0769, 0981
C-0088, 0190, 0191

| Calibration Facilities | DUC / Parameter | Range | CMC (±) |
|---|---|---|--|
| Pressure, Vacuum and Absolute Pressure <i>(using DH-Budenberg UK Dead Weight Tester upto 1200kg/cm² traceable to UKAS, UK)</i> | <ul style="list-style-type: none"> ❖ Dead Weight Tester ❖ Pressure / Vacuum / Absolute Calibrator ❖ Pressure / Vacuum Gauge, Transmitter, Transducer, Safety Valve / Switch ❖ Barometer ❖ Manometer ❖ BP Instrument | Pressure : 1-1200 bar 0-20000 mm wc Vacuum : -10000 to 0 mm wc Absolute Pressure: 0-2 bar Abs | 0.01% rdg. 0.045% rdg. 0.08% rdg. 0.048% rdg. |
| Dimension / Angle | <ul style="list-style-type: none"> ❖ Vernier Caliper, Micrometer (Inside & Outside), Height Gauge, Dial Gauge, Dial Bore Gauge ❖ Feeler Gauge ❖ Coating Thickness Gauge, Foil ❖ Spirit level ❖ Angle Bevel Protector, Clinometer, Combination Set, ❖ Tape and Scale | upto 1000 mm upto 1 mm 10µm - 6000µm upto 300mm 0-360° meter | 1 µm to 15 µm 1.3µm 1.41µm 3.6 min |
| Sound | <ul style="list-style-type: none"> ❖ Sound Level Meter ❖ Sound Level Calibrator | 94 dB, 114dB | 0.3 dB |
| Speed | <ul style="list-style-type: none"> ❖ RPM Meter / Tachometer / Stroboscope ❖ Centrifuge | upto 90,000 RPM | 0.12 RPM-25 RPM |
| Mass and Balance | <ul style="list-style-type: none"> ❖ Weighing Balance (upto 100 kg) ❖ Weight Box / Standard Weight | Weighing Balance: upto 100 kg Mass: 1 mg-20 kg | 0.12 mg-2.68 g 0.008 mg-0.73 g |
| Volume and Density | <ul style="list-style-type: none"> ❖ Laboratory Glassware (Burette, Pipette, Beaker etc.) ❖ Hydrometer | Volume: 10µl-5L Density: 0.600 g/ml - 2.000 g/ml | 0.02 µl - 0.065 ml 0.0013 g/ml |
| Force | <ul style="list-style-type: none"> ❖ Tensile Testing Machine ❖ Compression Testing Machine ❖ Universal Testing Machine | Tension: 0.1kN-50kN Compression: 40kN-2000kN | 0.5% 0.7% |

FLUID FLOW CALIBRATION (Lab & Site)

| Calibration Facilities | DUC / Parameter | Range | CMC (±) |
|------------------------|---|--|---------------|
| Fluid Flow | <ul style="list-style-type: none"> ❖ Flow Meter (Turbine, Magnetic, Mass, Vortex, Orifice, Ultrasonic) | upto 70 m ³ /h upto 3500 m ³ /h | 0.81% 0.9% |

THERMAL CALIBRATION (Lab & Site)

| Calibration Facilities | DUC / Parameter | Range | CMC (±) |
|------------------------|---|---------------------------------|----------------|
| Temperature | <ul style="list-style-type: none"> ❖ RTD, Thermocouple, Glass Thermometer ❖ Digital / Dial Thermometer ❖ Temperature Bath, Oven, Furnace | Temperature: -35°C to 1200°C | 0.1°C to 2.4°C |
| Humidity | <ul style="list-style-type: none"> ❖ Humidity Meter / Chamber | Humidity: 20%RH-90%RH | 2.06%RH |

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