National Accreditation Board for Testing and Calibration Laboratories

# CERTIFICATE OF ACCREDITATION

## SARRC TEST HOUSE

**has been assessed and accredited in accordance with the standard**

## ISO/IEC 17025:2017

## "General Requirements for the Competence of Testing & Calibration Laboratories"

**for its facilities at**

**HOUSE NO 100, SECTOR 29, FARIDABAD, HARYANA, INDIA**

**in the field of**

## CALIBRATION

**Certificate Number:** CC-2076

**Issue Date:** 28/01/2022 **Valid Until:** 27/01/2024

**This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.**
**(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)**

**Name of Legal Identity :** SARRC TEST HOUSE

**Signed for and on behalf of NABL**

**N. Venkateswaran**
**Chief Executive Officer**

# SCOPE OF ACCREDITATION

| | | | |
|---|---|---|---|
| **Laboratory Name :** | SARRC TEST HOUSE, HOUSE NO 100, SECTOR 29, FARIDABAD, HARYANA, INDIA | | |
| **Accreditation Standard** | ISO/IEC 17025:2017 | | |
| **Certificate Number** | CC-2076 | **Page No** | 1 of 71 |
| **Validity** | 28/01/2022 to 27/01/2024 | **Last Amended on** | 30/06/2022 |

| 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 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure) | AC Current | 6.5 digit DMM Direct Method | > 200 mA to 1 A | 0.23 % to 0.26 % |
| 2 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure) | AC Current | 6.5 digit DMM Direct Method | 1 A to 10 A | 0.26 % to 0.3% |
| 3 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure) | AC Current | 6.5 digit DMM Direct Method | 1 mA to 200 mA | 0.17 % to 0.23 % |
| 4 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure) | AC Voltage | 6.5 digit DMM Direct Method | 10 mV to 100 mV | 0.21 % to 0.13 % |

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| 5 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure) | AC Voltage | 6.5 digit DMM Direct Method | 100 mV to 5 V | 0.13 % to 0.59 % |
| 6 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure) | AC Voltage | 6.5 digit DMM Comparision / Direct Method | 230 V to 1000 V | 0.79 % to 0.12 % |
| 7 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure) | AC Voltage | 6.5 digit DMM Comparision / Direct Method | 5 V to 230 V | 0.59 % to 0.79 % |
| 8 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC Current | MFC 5.5 digit Direct method | 1 A to 10 A | 0.6 % to 0.32 % |
| 9 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC Current | MFC 5.5 digit Direct method | 1 mA to 200 mA | 0.5 % to 0.3 % |

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| 10 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC Current | MFC 5.5 digit Direct method with current coil | 20 A to 1000 A | 2.8% % to 2.8 % |
| 11 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC current | MFC 5.5 digit Direct method | 200 mA to 1 A | 0.3 % to 0.6 % |
| 12 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC Voltage | MFC 5.5 digit Direct method | 10 mV to 200 mV | 0.45 % to 0.3 % |
| 13 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC Voltage | MFC 5.5 digit Direct method | 2 to 500 V | 0.7 % to 0.8 % |
| 14 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC Voltage | MFC 5.5 digit Direct method | 200 mV to 2 V | 0.3 % to 0.7 % |
| 15 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Capacitance | 6.5 digit DMM Direct Method | 1 nF to 100 nF | 0.174 % to 0.1 % |

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| 16 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Capacitance | 6.5 digit DMM Direct Method | 1 uF to 1 µF | 0.6 % to 0.6 % |
| 17 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Capacitance | 6.5 digit DMM Direct Method | 100 nF to 1 µF | 0.10% to 0.6 % |
| 18 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Current | 6.5 digit DMM Direct Method | 1 A to 10 A | 0.19 % to 0.19 % |
| 19 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Current | 6.5 digit DMM Direct Method | 1 mA to 200 mA | 0.08 % to 0.08 % |
| 20 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Current | 6.5 digit DMM Direct Method | 200 mA to 1 A | 0.08 % to 0.19 % |
| 21 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Resistance 2w/4 w | 6.5 digit DMM Direct Method | 1 M ohm to 100 M ohm | 0.029 % to 0.94 % |

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| 22 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Resistance 2w/4w | Using DMM 6.5 Digit | 1 ohm to 100 ohm | 0.06 % to 0.016 % |
| 23 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Resistance 2w/4w | 6.5 digit DMM Direct Method | 10 k ohm to 1 M ohm | 0.013 % to 0.029 % |
| 24 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Resistance 2w/4w | 6.5 digit DMM Direct Method | 10 ohm to 100 ohm | 0.048 % to 0.016 % |
| 25 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Resistance 2w/4w | 6.5 digit DMM Direct Method | 100 M ohm to 900 M ohm | 0.94 % to 2.5 % |
| 26 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Resistance 2w/4w | 6.5 digit DMM Direct Method | 100 ohm to 10 k ohm | 0.016 % to 0.013 % |
| 27 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Voltage | 6.5 digit DMM Comparision / Direct Method | 1 mV to 100 mV | 0.48 % to 0.041 % |

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| 28 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Voltage | 6.5 digit DMM Comparision / Direct Method | 1 V to 100 V | 0.041% |
| 29 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Voltage | 6.5 digit DMM Comparision / Direct Method | 100 mV to 1 V | 0.042 % to 0.042% |
| 30 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Voltage | 6.5 digit DMM Comparision / Direct Method | 100 V to 1000 V | 0.041 % to 0.055 % |
| 31 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Current | MFC 5.5 digit Direct method | 1 A to 10 A | 0.4 % to 0.24 % |
| 32 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Current | MFC 5.5 digit Direct method | 1 mA to 200 mA | 0.4 % to 0.2 % |
| 33 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Current | MFC 5.5 digit Direct method with current coil | 20 A to 1000 A | 1.9 % to 2.0 % |

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| 34 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Current | MFC 5.5 digit Direct method | 200 mA to 1 A | 0.2 % to 0.4 % |
| 35 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance | Using Decade Resistance Box by Direct Method | 1 ohm to 10 ohm | 0.3 % to 0.14 % |
| 36 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 0.01 ohm to 0.01 ohm | 4.8 % to 4.8 % |
| 37 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 0.01 ohm to 0.1 ohm | 4.8 % to 0.4 % |
| 38 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 0.1 ohm to 1 ohm | 0.4 % to 0.2 % |
| 39 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 1 M ohm to 100 M ohm | 0.58 % to 1.11 % |

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| 40 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4 w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 10 k ohm to 1 M ohm | 0.17 % to 0.58 % |
| 41 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4 w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 10 ohm to 100 ohm | 0.14 % to 0.52 % |
| 42 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4 w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 100 ohm to 10 k ohm | 0.52 % to 0.17 % |
| 43 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Voltage | MFC 5.5 digit Direct method | 1 mV to 200 mV | 0.6 % to 0.15 % |
| 44 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Voltage | MFC 5.5 digit Direct method | 2 V to 200 V | 0.19% |
| 45 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Voltage | MFC 5.5 digit Direct method | 200 mV to 2 V | 0.15 % to 0.19 % |

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| 46 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Voltage | MFC 5.5 digit Direct method | 200 V to 1000 V | 0.19 % to 0.14 % |
| 47 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | B Type Thermocouple | Using Universal Calibrator | 400 °C to 1800 °C | 1.38°C |
| 48 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | J Type Thermocouple | Using (Radix) + ITS-90 Direct Method | 50 °C to 760 °C | 0.67°C |
| 49 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | K Type Thermocouple | Using Universal Calibrator | -190 °C to 1300 °C | 0.86°C |
| 50 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | R Type Thermocouple | Using Universal Calibrator | 50 °C to 1700 °C | 1.38°C |
| 51 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | RTD Pt-100 | Using Universal Calibrator | -199 °C to 600 °C | 0.55°C |

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| 52 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | S Type Thermocouple | Using Universal Calibrator | 50 °C to 1750 °C | 0.78°C |
| 53 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | T Type Thermocouple | Using Universal Calibrator | -199 °C to 400 °C | 0.76°C |
| 54 | ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure) | Frequency | 6.5 digit DMM Direct Method | 10 Hz to 100 kHz | 0.10 % to 0.07 % |
| 55 | ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure) | Stop Watch / Timer | Digital Timer/Comparision | 10 s to 60 s | 0.8 % to 0.13 % |
| 56 | ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure) | Stop Watch / Timer | Digital Timer/Comparision | 60 s to 990 min | 0.13 % to 0.06 % |
| 57 | ELECTRO-TECHNICAL-TIME & FREQUENCY (Source) | Frequency | MFC 5.5 digit Direct method | 50 Hz to 1 k Hz | 0.15 % to 0.076 % |

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| 58 | MECHANICAL-ACCELERATION AND SPEED | (Non-Contact type) Tachometer/RPM | Using Laser Tachometer by comparision method | >7500 rpm to 60000 rpm | 0.02% |
| 59 | MECHANICAL-ACCELERATION AND SPEED | (Non-Contact type) Tachometer/RPM | Using Laser Tachometer by comparision method | 50 rpm to 120 rpm | 2% |
| 60 | MECHANICAL-ACCELERATION AND SPEED | (Non-Contact type)Tachometer/RPM | Using Laser Tachometer by comparision method | >120 rpm to 7500 rpm | 0.14% |
| 61 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Angle plate - Flatness/parallelism/ Squareness | Using Gauge block, Feeler gauge, Master cylinder by comparision method | 0 to 300 mm | 9µm |
| 62 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Bench Centre(Coaxiality, Parallelism of Axis of centers) | Using Mandrel/Dial Indicator by Comparision Method | 0 to 350 mm | 8.0µm |
| 63 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Bevel Protector/ Combination Set | Using Angle Gauge by Comparision Method | 0 to 180 degree | 3.0min |

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| 64 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Bore Gauge (Transmission only) LC-0.001 mm and coarser | Using Dial calibration tester by Comparision Method | 0 to 1 mm | 2.3µm |
| 65 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Box Angle plate - Squareness | Using Gauge block, Feeler gauge, Master cylinder by comparision method | 0 to 300 mm | 9µm |
| 66 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Coating Thickness Gauge L.C.- 0.001 mm | Using Coating Thickness Films by Comparision Method | 0 to 1200 µm | 2.0µm |
| 67 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Comparator stand flatness of base plate | Using Surface Plate, Spirit Level, Dial indicator, Gauge Block and accessories by Comparison Method | 100 mm x 100 mm | 3µm |
| 68 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Comparator stand flatness of base plate | Using plunger dial, comparator stand electronic levelmeter by Comparision Method | 300 mm x 300 mm | 4µm |

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| 69 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Cube Mould | Using Vernier Caliper by comparision method | 1 mm to 200 mm | 18.5µm |
| 70 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Cylindrical Setting masters | Using ULMM/Gauge block and comparator by Comparision Method | 0 to 100 mm | 1.5µm |
| 71 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Depth Micrometer L.C.- 0.01 mm | Using gauge block, Granite Surface plate by Comparision Method | 0 to 150 mm | 6µm |
| 72 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Depth Micrometer LC 0.01mm | Using gauge block, Granite Surface plate by Comparision Method | 0 to 25 mm | 5.9µm |
| 73 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Depth Micrometer LC 0.01mm | Using gauge block, Granite Surface plate by Comparision Method | 0 to 300 mm | 7µm |

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| 74 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Depth Vernier Caliper L.C - 0.01 mm and coarser | Using gauge block, Caliper checker, Granite surface plate by Comparision Method | >300 mm to 600 mm | 14µm |
| 75 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Depth Vernier Caliper L.C - 0.01 mm and coarser | Using gauge block, Caliper checker, Granite surface plate by Comparision Method | up to 300 mm | 13µm |
| 76 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Dial Indicator Plunger type LC-0.001 mm & coarser | Using Dial calibration tester by Comparision Method | 0 to 1 mm | 1.4µm |
| 77 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Dial indicator Plunger type LC-0.001 mm & coarser | Using Dial calibration tester by Comparision Method | 0 to 25 mm | 1.5µm |
| 78 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Dial Indicator Plunger type LC-0.01 mm | Using Dial calibration tester by Comparision Method | 0 to 50mm | 6µm |

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| 79 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Dial Thickness Gauge L.C.- 0.001 mm | Using Gauge Block by Comparision Method | 0 to 10 mm | 2.4µm |
| 80 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Dial Thickness Gauge L.C.- 0.001 mm & coarser | Using Gauge Block by Comparision Method | 0 to 100 mm | 7.0µm |
| 81 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Electronic Probe with DRO L.C.- 0.1 µm | Using Gauge block by Comparision Method | 0 to 25 mm | 0.15µm |
| 82 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Eye Piece L.C.-0.1 mm | Using Profile Projector & Glass Scale-10 mm, 0.1 mm by Comparison Method | 0 to 10 mm | 6µm |
| 83 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Feeler gauge | Using ULMM by comparision Method | 0.02 mm to 10 mm | 1µm |

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|---|---|---|---|---|---|
| 84 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Height Gauge LC 0.01mm | Using gauge block, caliper checker, Granite Surface plate & Puppy dial by Comparision Method | 0 to 300 mm | 12µm |
| 85 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Height Gauge LC 0.01mm | Using gauge block, caliper checker, Granite Surface plate & Puppy dial by Comparision Method | 0 mm to 600 mm | 14µm |
| 86 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Height Gauge LC 0.01mm & Coarser | Using gauge block, caliper checker, Granite Surface plate & Puppy dial by Comparision Method | >600 mm to 1000 mm | 18µm |
| 87 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Height Master L.C.-0.001 mm | Using Gauge Block by Comparision Method | 5 mm to 310 mm | 6.4µm |
| 88 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | IIW V1,V2 Blocks (Thickness, Radius) | Using Gauge Blocks , Electronic probe with indicator,profile projector by Comparision Method | up to 300 mm | 7.0µm |

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| 89 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Industrial Angle Gauge | Using Profile Projector by Comparision Method | 0° to 180° | 15' |
| 90 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Inside Dial Caliper L.C.- 0.01 mm | Using Gauge Block, Gauge Block accessories by Comparision Method | 4 mm to 100 mm | 7µm |
| 91 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Internal Micrometer LC 0.01mm | Using gauge block, Gauge block accessories & Caliper checker by Comparision Method | >300 mm to 600 mm | 14µm |
| 92 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Internal Micrometer LC 0.01mm | Using gauge block, Gauge block accessories & Caliper checker by Comparision Method | 50 mm to 1000 mm | 20µm |
| 93 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Internal Micrometer LC 0.01mm | Using gauge block, Gauge block accessories & Caliper checker by Comparision Method | 50 mm to 300 mm | 9µm |

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|---|---|---|---|---|---|
| 94 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Length Bar | Using ULMM/Gauge Block by Comparision Method | > 200 mm to 300 mm | 2.3µm |
| 95 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Length Bar | Using ULMM/Gauge Block by Comparision Method | >100 mm to 200 mm | 1.6µm |
| 96 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Length Bar | Using ULMM/Gauge Block by Comparision Method | up to 100 mm | 1.2µm |
| 97 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Lever type Dial Gauge: LC 0.002 mm or coarser | Using Dial calibration tester by Comparision Method | 0 to 0.2 mm | 2.3µm |
| 98 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Lever type Dial Gauge : LC 0.001 mm or coarser | Using Dial calibration tester by Comparision Method | 0 to 0.14 mm | 2.1µm |

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|---|---|---|---|---|---|
| 99 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Lever type dial gauge ; LC 0.01mm | Using Dial calibration tester by Comparision Method | 0 to 0.8 mm | 6µm |
| 100 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Mandrels Concentricity Roundness | Using Electronic probe with indicator and Fcdmm by Comparision Method | 0 to 100 mm | 4.8µm |
| 101 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Measuring Tape/ Pie Tape L.C.- 1 mm | Using scale and tape calibration unit by Comparision Method | 0 to 15 m | 37 sqrt (L)where L is in mm |
| 102 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Measuring Tape/ Pie Tape L.C.- 1 mm | Using scale and tape calibration unit by Comparision Method | 0 to 30 m | 37 sqrt (L)where L is in mm |
| 103 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Measuring Tape/ Pie Tape L.C.- 1 mm | Using Scale and tape calibration unit by Comparision Method | 0 to 5 m | 37 sqrt (L)where L is in mm |

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| 104 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Measuring Tape/ Pie Tape L.C.- 1 mm | Using scale and tape calibration unit by Comparision Method | 0 to 50 m | 37 sqrt (L)where L is in mm |
| 105 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer L.C.- 0.001 mm | Using Gauge Block by Comparision Method | 25 mm to 50 mm | 1.5µm |
| 106 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer L.C.- 0.001 mm | Using Gauge Block by Comparision Method | 50 mm to 100 mm | 2.2µm |
| 107 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer L.C.- 0.001 mm & coarser | Using Gauge Block by Comparision Method | 0 to 25 mm | 1.2µm |
| 108 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer LC 0.01mm | Using Gauge Block & Caliper checker by Comparision Method | > 800 mm to 900 mm | 18µm |

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| 109 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer LC 0.01mm | Using Gauge block & Caliper checker by Comparision Method | >100 mm to 150 mm | 7µm |
| 110 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer LC 0.01mm | Using Gauge Blocks by Comparision Method | >150 mm to 300 mm | 9µm |
| 111 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer LC 0.01mm | Using Gauge Block & Caliper checker by Comparision Method | >300 mm to 400 mm | 10µm |
| 112 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer LC 0.01mm | Using Gauge Block & Caliper checker by Comparision Method | >400 mm to 500 mm | 11µm |
| 113 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer LC 0.01mm | Using Gauge Block & Caliper checker by Comparision Method | >500 mm to 600 mm | 14µm |

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| 114 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer LC 0.01mm | Using Gauge Block & Caliper checker by Comparision Method | >600 mm to 700 mm | 15µm |
| 115 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer LC 0.01mm | Using Gauge Block & Caliper checker by Comparision Method | >700 mm to 800 mm | 17µm |
| 116 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer LC 0.01mm | Using Gauge Block & Caliper checker by Comparision Method | >900 mm to 1000 mm | 20µm |
| 117 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Outside Micrometer-LC 0.01 mm | Using Gauge block, caliper checker by Comparision Method | 0 to 100 mm | 6µm |
| 118 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Pistol Caliper L.C.-0.1 mm | Using Slip Gauge by Comparision Method | 0 to 100 mm | 58.0µm |

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|---|---|---|---|---|---|
| 119 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Pitch Gauge (Pitch and Angle) | Using Profile Projector by Comparision Method | 0 to 10 mm | 2.2µm |
| 120 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Pitch Gauge (Pitch and Angle) | Using Profile Projector by Comparision Method | 0° to 90° | 0.6'' |
| 121 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Pitch Micrometer L.C.-0.001 mm | Using Gauge Block by Comparision Method | 0 to 100 mm | 2.3µm |
| 122 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Pitch Micrometer L.C.-0.01 mm | Using Gauge Block by Comparision Method | 0 to 200 mm | 7.0µm |
| 123 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Plain Plug Gauge | Using ULMM/Gauge block and comparator by Comparision Method | > 200 mm Dia to 300 mm Dia | 3µm |

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| 124 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Plain Plug Gauge | Using ULMM/Gauge block and comparator by Comparision Method | >100 mm Dia to 200 mm Dia | 2.2µm |
| 125 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Plain Plug Gauge | Using ULMM/Gauge block and comparator by Comparision Method | up to 100 mm Dia | 1.5µm |
| 126 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Plain Plug gauge Taper | Using ULMM/Gauge block and comparator by Comparision Method | up to 100 mm Dia | 3s |
| 127 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Plain ring gauge | Using ULMM, Gauge block by Comparision Method | >100 mm Dia to 200 mm Dia | 2.2µm |
| 128 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Plain ring gauge | Using ULMM, Gauge block by Comparision Method | >200 mm Dia to 300 mm Dia | 3.2µm |

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| 129 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Plain ring gauge | Using ULMM, Gauge block by Comparision Method | 3 mm Dia to 100 mm Dia | 1.6µm |
| 130 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Plain ring gauge-taper | Using ULMM, Gauge block by Comparision Method | 0 to 100 mm Dia | 3s |
| 131 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Point/Ball Outside Micrometer L.C.-0.001 mm or coarser | Using Slip Gauge by Comparision Method | >100 mm to 200 mm | 7.0µm |
| 132 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Point/Ball Outside Micrometer l.C.-0.001 mm or coarser | Using Slip Gauge by Comparision Method | 0 to 100 mm | 6.2µm |
| 133 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Radius Gauge | Using Profile Projector by Comparision Method | 0.5 mm to 50 mm | 2.4µm |

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| 134 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Reference blocks FBH/SDH | ULMM, VC, DM, SGA, SG,/ASME Sec V, ASTM E 127 | >200 mm to 400 mm | 10µm |
| 135 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Reference blocks Flat bottom hole/Side Drill Hole | Using ULMM, VC, DM, SGA, SG,/ASME Sec V, ASTM E 127 by Comparision Method | up to 200 mm | 5µm |
| 136 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Right Angle/Engineer's Square | Using Surface plate & Master Cylinder/Bevel Protector by Comparision Method | Up to 600 mm | 6.0µm |
| 137 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Sine bar | Using lever type dial gauge, gauge block, angle gauge by Comparision Method | up to 200 mm | 4.3µm |
| 138 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Snap Gauge | Using Gauge blocks by Comparision Method | >100 mm to 200 mm | 0.82µm |

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| 139 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Snap Gauge | Using Gauge blocks by Comparision Method | up to 100 mm | 0.58µm |
| 140 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Spirit level LC 0.01mm/m & coarser(Type 1,2 & 3) | Using Electronic level by Comparision Method | base up to 200 mm | 14µm / m |
| 141 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Standard Pin/Wires | Using ULMM by Comparision Method | 0.1 mm to 20 mm | 1.2 µm to 1.5 µm |
| 142 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Standard Wire Gauge | Using Slip Gauge/Profile Projector by Comparision Method | Up to 10 mm | 3µm |
| 143 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Steel Scale L.C.- 0.5 mm | using scale and tape calibration unit by Comparision Method | 0 to 1 m | 37 sqrt (L)where L is in m |

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| 144 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Steel Scale L.C.- 0.5 mm | using scale and tape calibration unit by Comparision Method | 0 to 2 m | 37 sqrt (L)where L is in m |
| 145 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Straight edge-Straightness | Using Electronic levelmeter by Comparision Method | up to 4000 mm | 1.3 sqrt(L/150)where L & W are in mm |
| 146 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Surface plate(Granite/Cast Iron) | Using electronic level meter by Comparision Method | up to mm to 6000 mm | 0.5 sqrt((L+W)/150) µm Where L is length in mm |
| 147 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Surface Roughness Tester Ra | Using Roughness Specimen by Comparision Method | up to 25 µm | 6.5% |
| 148 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Taper Scale L.C.- 0.1 mm | Using Profile Projector by Comparision Method | Up to 15 mm | 2.5µm |

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| 149 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Test sieves | Using Profile Projector/Vernier Caliper by Comparision Method | 10 mm to 200 mm | 13.0µm |
| 150 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Test Sieves | Using Profile Projector/Vernier Caliper by Comparision Method | 32 µm to 10 mm | 13.0µm |
| 151 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Thickness Foil | Using ULMM by Comparision Method | 10 µm to 1200 µm | 1.0µm |
| 152 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Thread Measuring Prisms | Using ULMM by Comparision Method | up to 20 mm | 1.5µm |
| 153 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Thread Plug gauge(Major / Minor/Effective diameter) | Using ULMM/Gauge blocks, FCDMM, Cyl. masters, pin, prisms by Comparision Method | > 200 mm to 300 mm | 2.3µm |

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| 154 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Thread Plug gauge(Major /Minor/ Effective diameter) | Using ULMM/Gauge blocks, FCDMM, Cyl. masters, pin, prisms by Comparision Method | up to 100 mm | 1.5µm |
| 155 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Thread Plug gauge(Major/Minor/Effective diameter) | Using ULMM/Gauge blocks, FCDMM, Cyl. masters, pin, prisms by Comparision Method | >100 mm to 200 mm | 1.6µm |
| 156 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Thread Ring Gauge - Taper | Using ULMM,Plain Ring Gauge by Comparision Method | 3 mm to 100 mm | 2.2µm |
| 157 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Thread Ring gauge(Effective/Min or diameter) | Using ULMM, Plain ring gauge/prisms by Comparision Method | > 100 mm Dia to 200 mm Dia | 3µm |
| 158 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Thread Ring gauge(Effective/Min or diameter) | Using ULMM, Plain ring gauge/prisms by Comparision Method | > 200 mm to 300 mm | 4µm |

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|---|---|---|---|---|---|
| 159 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Thread Ring gauge(Effective/Min or diameter) | Using ULMM, Plain ring gauge/prisms by Comparision Method | 3 mm to 100 mm | 1.3µm |
| 160 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | V Block-Flatness, parallelism, Squareness ,Symmetry | Using gauge block accessories, lever type dial, Master mandrel by Comparision Method | up to 200 mm | 4.0 µm, 4' |
| 161 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Vernier Caliper (Dial/Digital) L.C.-0.01 mm& Coarser | Using Gauge block/Caliper Checker by Comparision Method | >200 mm to 600 mm | 14µm |
| 162 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Vernier Caliper (Dial/Digital) L.C.-0.01 mm& Coarser | Using Gauge block/Caliper Checker by Comparision Method | >600 mm to 1000 mm | 16µm |
| 163 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Vernier Caliper (Dial/Digital) L.C.-0.01 mm& Coarser | Using Gauge block/Caliper Checker by Comparision Method | 0 to 200 mm | 10µm |

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| 164 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Width Gauge/Rectangular Block | Using ULMM by Comparision Method | Up to 300 mm | 2µm |
| 165 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Dial calibration tester LC-0.02 microns/0.001mm & coarser | Using electronic probe. gauge block by Comparision Method | 0 to 50 mm | 1.2µm |
| 166 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Floating carriage diameter measuring machine | Using mandrels/Gauge blocks, Pins by Comparision Method | 0 to 100 mm | 1.55mm |
| 167 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Gauge Block Calibrator | Using Gauge Blocks by Comparision Method | 4 mm to 100 mm | 0.12µm |
| 168 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Gauge Block Calibrator | Using Gauge Blocks by Comparision Method | Up to 4 mm | 0.082µm |
| 169 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Glass Scale | Profile projector | up to 300 mm | 5µm |
| 170 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Master cylinder - Squareness | Using gauge block and master cylinder | up to 300 mm | 5µm |

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| 171 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Profile Projector/Microscope Linear Scale L.C.-0.001 mm Angluar scale-1" Magnification-10X,20X,50X,100X | Using Glass scale,Gauge Block,Angle Gauge,Vernier Caliper,Glass Scale by Comparision Method | 0 to 300 mm | 2.4µm |
| 172 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Profile Projector/Microscope Linear Scale L.C.-0.001 mm Angluar scale-1" Magnification-10X,20X,50X,100X | Using Glass scale,Gauge Block,Angle Gauge,Vernier Caliper,Glass Scale by Comparision Method | 0° to 360° | 4' |
| 173 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Profile Projector/Microscope Linear Scale L.C.-0.001 mm Angular scale-1" Magnification-10X,20X,50X,100X | Using Glass scale,Gauge Block,Angle Gauge,Vernier Caliper,Glass Scale by Comparision Method | 10X to 100X | 1% |
| 174 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Slip Gauges/Gauge blocks | Using gauge block calibrator, Gauge block set by Comparision Method | >0.5 mm to 25 mm | 0.12µm |
| 175 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Slip Gauges/Gauge blocks | Using gauge block calibrator, Gauge block set by Comparision Method | >25 mm | 0.15µm |

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| 176 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Slip Gauges/Gauge blocks | Using gauge block calibrator, Gauge block set by Comparision Method | >50 mm to 100 mm | 0.25µm |
| 177 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Step Thickness Gauge Block | Using ULMM/Dial Comparator by Comparision Method | 1 mm to 10 mm | 10.0µm |
| 178 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Ultrasonic Thickness Testing Machine | Using Slip Gauge/Step Gauge Block by Comparision Method | Up to 200 mm | 14.0µm |
| 179 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Universal Length Measuring Machine L.C.- 0.1 micron | Using Gauge Block by Comparision Method | >100 mm to 200 mm | 1.5µm |
| 180 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Universal Length Measuring Machine L.C.- 0.1 micron | Using Gauge Block by Comparision Method | >200 mm to 300 mm | 2.0µm |
| 181 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Universal Length Measuring Machine L.C.- 0.1 micron | Using Gauge Block by Comparision Method | 0 to 100 mm | 1.1µm |

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| 182 | MECHANICAL-DUROMETER | Indentation Depth of Shore A/D Hardness Tester | Using Dial Calibration Tester, L.C.- 0.0002 mm /ISO:18898: 2016/ASTM D 2240 by Comparision Method | 0 to 100 Shore A/D | 0.58Shore A/D |
| 183 | MECHANICAL-PRESSURE INDICATING DEVICES | (Hydraulic) Digital/Analogue Pressure Gauges/Transmitter Switches | Using Digital Pressure Gauge & Digital Test Gauge by Comparision Method | >30 bar to 700 bar | 0.1% rdg |
| 184 | MECHANICAL-PRESSURE INDICATING DEVICES | (Pneumatic)Digital/Analogue Pressure Gauges/Transmitter Switches | Using Digital Pressure Gauge as per DKD-R 6-1 by Comparision Method | 0 to 30 bar | 0.21% rdg |
| 185 | MECHANICAL-PRESSURE INDICATING DEVICES | (Vaccum) Digital/Analogue Vaccum Gauges | Using Digital Pressure Gauge & Digital Test Gauge by Comparision Method | 0 to -0.95 bar | 1.8% rdg |
| 186 | MECHANICAL-TORQUE MEASURING DEVICES | Torque Wrench (Type- I , Class B & C) (Type-II, Class A, B,C & G) | Using Torque Transducer with Indicator IS : 16906:2018 by Comparision Method | 0.4 Nm to 20 Nm | 1 % rdg to 0.4 % rdg |

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| 187 | MECHANICAL-TORQUE MEASURING DEVICES | Torque Wrench (Type- I , Class B & C) (Type-II, Class A, B,C & G) | Using Torque Transducer with Indicator IS : 16906:2018 by Comparision Method | 20 Nm to 200 Nm | 0.5 % rdg to 0.22 % rdg |
| 188 | MECHANICAL-TORQUE MEASURING DEVICES | Torque Wrench (Type- I , Class B & C) (Type-II, Class A, B,C & G) | Using Torque Transducer with Indicator IS : 16906:2018 by Comparision Method | 200 Nm to 2000 Nm | 0.77% rdg |
| 189 | MECHANICAL-VOLUME | Glass Burette | Digital Precision Balance and distilled water of known density having balance L.C. for 1 ml to 50 ml as 0.01 mg and for 1 ml to 2000 ml as per ISO/TR 20461 & 4787 | >25 ml to 50 ml | 0.005 ml to 0.009 ml |
| 190 | MECHANICAL-VOLUME | Glass Burette | Digital Precision Balance and distilled water of known density having balance L.C. for 1 ml to 50 ml as 0.01 mg and for 1 ml to 2000 ml as per ISO/TR 20461 & 4787 | 1 ml to 25 ml | 0.005 ml to 0.009 ml |

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|---|---|---|---|---|---|
| 191 | MECHANICAL-VOLUME | Glass Pipettes | Digital Precision Balance and distilled water of known density having balance L.C. for 1 ml to 50 ml as 0.01 mg and for 1 ml to 2000 ml as per ISO/TR 20461 & 4787 | >25 ml to 50 ml | 0.005 ml to 0.009 ml |
| 192 | MECHANICAL-VOLUME | Glass Pipettes | Digital Precision Balance and distilled water of known density having balance L.C. for 1 ml to 50 ml as 0.01 mg and for 1 ml to 2000 ml as per ISO/TR 20461 & 4787 | 1 ml to 25 ml | 0.005 ml to 0.009 ml |
| 193 | MECHANICAL-VOLUME | Measuring Cylinder/Volumetric Flask/Conical Flask/Beaker | Digital Precision Balance and distilled water of known density having balance L.C. for 1 ml to 50 ml as 0.01 mg and for 1 ml to 2000 ml as per ISO/TR 20461 & 4787 | > 10 ml to 900 ml | 0.009 ml to 0.012 ml |

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| 194 | MECHANICAL-VOLUME | Measuring Cylinder/Volumetric Flask/Conical Flask/Beaker | Digital Precision Balance and distilled water of known density having balance L.C. for 1 ml to 50 ml as 0.01 mg and for 1 ml to 2000 ml as per ISO/TR 20461 & 4787 | >900 ml to 19000 ml | 0.012 ml to 0.226 ml |
| 195 | MECHANICAL-WEIGHING SCALE AND BALANCE | Electronic Weighing Balance Class -I , d= 100 mg and coarser | using weights of E1,E2,F1 as per OIML R-76-1 :2006: | up to 100 kg | 1.6g |
| 196 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class I , d= 10 mg & Coarser | using Weights of E1 & E2 as per OIML R-76-1 :2006 | up to 5 kg | 0.01g |
| 197 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class I , d=(0.1mg& coarser) | using weights of E1 Class as per OIML R-76-1 :2006 | >82 g to 200 g | 0.07mg |
| 198 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class I, d= 1mg & coarser | Using Weights of E1 & E2 as per OIML R-76-1 :2006 | up to 1 kg | 0.002g |
| 199 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class I, d=(0.01 mg & coarser) | using Standard weights of E1 Class as per OIML R-76-1 :2006 | up to 82 g | 0.04mg |

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| 200 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class II, d= 10 g & Coarser | Using Weights of E1, E2 & F1 as per OIML R-76-1 | >60 kg to 150 kg | 3.2g |
| 201 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class II, d= 50 g & Coarser | using weights of E1, E2 and F1 as per OIML R-76-1 | >100 kg to 150 kg | 14.5g |
| 202 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class II, d=2g & coarser | Using Weights of E1, E2 & F1 as per OIML R-76-1 :2006 | >30 kg to 60 kg | 1.306g |
| 203 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance d= 100 mg & Coarser , Class II | using E1, E2 and F1 class of Weights as per OIML R-76-1 :2006 | >20 kg to 30 kg | 0.184g |
| 204 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance (50 mg) & coarser Class I | Calibration of Electronic Weighing Balance using Standard weights of E2 Class | >200 g to 20 kg | 0.073g |

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| 205 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) Class F2 and Coarser | Weights of accuracy class E2 and Digital Balance up to 20 kg readability 0.1 g Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 10 kg | 0.055g |
| 206 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) Class F2 and Coarser | Weights of accuracy class E2 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 10 mg | 0.015mg |

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| 207 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) Class F2 and Coarser | Weights of accuracy class E2 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 5 mg | 0.014mg |
| 208 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) Class F2 and Coarser | Weights of accuracy class E1 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 20 g | 0.02mg |

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| 209 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) Class M1 and coarser | Weights of accuracy class E2 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 100 mg | 0.015mg |
| 210 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) Class M1 and coarser | Weights of accuracy class E2 and Digital Balance up to 20 kg readability 0.1 g Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 20 kg | 0.056g |

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| 211 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) Class M1 and coarser | Weights of accuracy class E2 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 20 mg | 0.015mg |
| 212 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) Class M1 and coarser | Weights of accuracy class E2 and Digital Balance up to 60000 g readability 2g Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 50 kg | 0.913g |

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| 213 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) Class M2 and Coarser | Weights of accuracy class E2 and Digital Balance up to 1000 g readability 1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 1 kg | 0.026g |
| 214 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 & Coarser | Weights of accuracy class E2 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 1 g | 0.015mg |

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| 215 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 & Coarser | Weights of accuracy class E1 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 10 g | 0.01mg |
| 216 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 & Coarser | Weights of accuracy class E1 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 100 g | 0.07mg |

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| 217 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 & Coarser | Weights of accuracy class E2 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 2 g | 0.015mg |
| 218 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 & Coarser | Weights of accuracy class E2 and Digital Balance up to 5000 g readability 10 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 2 kg | 0.038g |

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|---|---|---|---|---|---|
| 219 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 & Coarser | Weights of accuracy class E1 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 200 g | 0.07mg |
| 220 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 & Coarser | Weights of accuracy class E1 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 200 mg | 0.015mg |

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|---|---|---|---|---|---|
| 221 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 & Coarser | Weights of accuracy class E2 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 5 g | 0.015mg |
| 222 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 & Coarser | Weights of accuracy class E1 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 50 g | 0.02mg |

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|---|---|---|---|---|---|
| 223 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 & Coarser | Weights of accuracy class E2 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 50 mg | 0.015mg |
| 224 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 & Coarser | Weights of accuracy class E2 and Digital Balance up to 1000 g readability 1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 500 g | 0.001g |

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|---|---|---|---|---|---|
| 225 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 & Coarser | Weights of accuracy class E1 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 500 mg | 0.015mg |
| 226 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) F2 and Coarser | Weights of accuracy class E1 and Digital Balance up to 80/200 g readability 0.01/0.1 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 1 mg | 0.013mg |

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|---|---|---|---|---|---|
| 227 | MECHANICAL-WEIGHTS | Weights (Conventional Mass) M2 Class and Coarser | Weights of accuracy class E2 and Digital Balance up to 5000 g readability 10 mg Substitution Method & ABBA Weighing Cycle Procedure. Calibration of Weights of Class F1 Accuracy and Coarser based on OIML R 111 | 5 kg | 0.038g |
| 228 | THERMAL-SPECIFIC HEAT & HUMIDITY | Humidity Indicator with Sensor Of Humidity Chamber at 25 Degree Celsius | Digital Hygrometer Single Position calibration | 15 %rh to 90 %rh | 1.57%rh |
| 229 | THERMAL-SPECIFIC HEAT & HUMIDITY | Humidity Indicators with Inbuild Or External Sensor, Thermo Hygometers at 25 Degree Celsius. | Digital Hygrometer , Humidity Chamber Comparison Method | 15 %rh to 90 %rh | 1.53%rh @ 25 °C |
| 230 | THERMAL-TEMPERATURE | INFRARED THERMOMETER | BLACK BODY SOURCE WITH RTD BY COMPARISION METHOD | 0°C to 50 °C | 2.6°C |

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|---|---|---|---|---|---|
| 231 | THERMAL-TEMPERATURE | Liquid In Glass Thermometers/Temperature Gauges | Using RTD-4 wire and DMM-6.5 digit,low temperature bath/oil bath Comparision Method | -30 °C to 250 °C | 0.22°C |
| 232 | THERMAL-TEMPERATURE | RTD,Thermocouple with or without Temperature Indicator/Data Logger/Recorder, Digital Thermometer | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C),low temperature bath/oil bath & thermocouple S type and DMM-6.5, Dry Block Furnace (from 250 deg C to 1200 deg C) Comparision Method | 250 °C to 500 °C | 1.83°C |
| 233 | THERMAL-TEMPERATURE | RTD,Thermocouple with or without Temperature Indicator/Data Logger/Recorder, Digital Thermometer | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C),low temperature bath/oil bath & thermocouple S type and DMM-6.5, Dry Block Furnace (from 250 deg C to 1200 deg C) Comparision Method | -30 °C to 50 °C | 0.16°C |

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|---|---|---|---|---|---|
| 234 | THERMAL-TEMPERATURE | RTD,Thermocouple with or without Temperature Indicator/Data Logger/Recorder, Digital Thermometer | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C),low temperature bath/oil bath & thermocouple S type and DMM-6.5, Dry Block Furnace (from 250 deg C to 1200 deg C) Comparision Method | 50 °C to 250 °C | 0.19°C |
| 235 | THERMAL-TEMPERATURE | RTD,Thermocouple with or without Temperature Indicator/Data Logger/Recorder, Digital Thermometer | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C),low temperature bath/oil bath & thermocouple S type and DMM-6.5, Dry Block Furnace (from 250 deg C to 1200 deg C) Comparision Method | 500 °C to 1000 °C | 1.85°C |
| 236 | THERMAL-TEMPERATURE | Temperature Indicator with Sensor Of Dry Block Furnace | Using Thermocouple S type and DMM-6.5 (from 250 deg C to 1200 deg C) Single Position Method | 1000 °C to 1200 °C | 2.24°C |

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|---|---|---|---|---|---|
| 237 | THERMAL-TEMPERATURE | Temperature Indicator with Sensor Of Dry Block Furnace | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C) & thermocouple S type and DMM-6.5 (from 250 deg C to 1200 deg C) Single Position Method | 250 °C to 700 °C | 1.44°C |
| 238 | THERMAL-TEMPERATURE | Temperature Indicator with Sensor Of Dry Block Furnace | Using Thermocouple S type and DMM-6.5 (from 250 deg C to 1200 deg C) Single Position Method | 700 °C to 1000 °C | 2.15°C |
| 239 | THERMAL-TEMPERATURE | Temperature Indicator with Sensor Of Liquid Bath/Temperature Indicator with Sensor | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C) & thermocouple S type and DMM-6.5 (from 250 deg C to 1200 deg C) Single Position Method | -30 °C to 50 °C | 0.28°C |
| 240 | THERMAL-TEMPERATURE | Temperature Indicator with Sensor Of Liquid Bath/Temperature Indicator with Sensor | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C) & thermocouple S type and DMM-6.5 (from 250 deg C to 1200 deg C) Single Position Method | 50 °C to 250 °C | 0.30°C |

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|---|---|---|---|---|---|
| 241 | THERMAL-TEMPERATURE | Thermocouple with or without Temperature Indicator/Data Logger/Recorder, Digital Thermometer | Using thermocouple S type and DMM-6.5, Dry Block Furnace (from 250 deg C to 1200 deg C) Comparision Method | 1000 °C to 1200 °C | 1.96°C |

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|---|---|---|---|---|---|
| Site Facility | | | | | |
| 1 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC Current | MFC 5.5 digit Direct method | 1 A to 10 A | 0.6 % to 0.32 % |
| 2 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC Current | MFC 5.5 digit Direct method | 1 mA to 200 mA | 0.5 % to 0.3 % |
| 3 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC Current | MFC 5.5 digit Direct method with current coil | 20 A to 1000 A | 2.8% % to 2.8 % |
| 4 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC current | MFC 5.5 digit Direct method | 200 mA to 1 A | 0.3 % to 0.6 % |
| 5 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC Voltage | MFC 5.5 digit Direct method | 10 mV to 200 mV | 0.45 % to 0.3 % |

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|---|---|---|---|---|---|
| 6 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC Voltage | MFC 5.5 digit Direct method | 2 to 500 V | 0.7 % to 0.8 % |
| 7 | ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source) | AC Voltage | MFC 5.5 digit Direct method | 200 mV to 2 V | 0.3 % to 0.7 % |
| 8 | ELECTRO-TECHNICAL-DIRECT CURRENT (Measure) | DC Resistance 2w/4 w | Using DMM 6.5 Digit | 1 ohm to 100 ohm | 0.06 % to 0.016 % |
| 9 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Current | MFC 5.5 digit Direct method | 1 A to 10 A | 0.4 % to 0.24 % |
| 10 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Current | MFC 5.5 digit Direct method | 1 mA to 200 mA | 0.4 % to 0.2 % |
| 11 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Current | MFC 5.5 digit Direct method with current coil | 20 A to 1000 A | 1.9 % to 2.0 % |

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|---|---|---|---|---|---|
| 12 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Current | MFC 5.5 digit Direct method | 200 mA to 1 A | 0.2 % to 0.4 % |
| 13 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 0.01 ohm to 0.01 ohm | 4.8 % to 4.8 % |
| 14 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 0.01 ohm to 0.1 ohm | 4.8 % to 0.4 % |
| 15 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 0.1 ohm to 1 ohm | 0.4 % to 0.2 % |
| 16 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 1 M ohm to 100 M ohm | 0.58 % to 1.11 % |
| 17 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 10 k ohm to 1 M ohm | 0.17 % to 0.58 % |

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|---|---|---|---|---|---|
| 18 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4 w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 10 ohm to 100 ohm | 0.14 % to 0.52 % |
| 19 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Resistance 2w/4 w | Std. Resistance box-sigma discrete values + Std. Resistance box by direct method | 100 ohm to 10 k ohm | 0.52 % to 0.17 % |
| 20 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Voltage | MFC 5.5 digit Direct method | 1 mV to 200 mV | 0.6 % to 0.15 % |
| 21 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Voltage | MFC 5.5 digit Direct method | 2 V to 200 V | 0.19% |
| 22 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Voltage | MFC 5.5 digit Direct method | 200 mV to 2 V | 0.15 % to 0.19 % |
| 23 | ELECTRO-TECHNICAL-DIRECT CURRENT (Source) | DC Voltage | MFC 5.5 digit Direct method | 200 V to 1000 V | 0.19 % to 0.14 % |

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|---|---|---|---|---|---|
| 24 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | B Type Thermocouple | Using Universal Calibrator | 400 °C to 1800 °C | 1.38°C |
| 25 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | J Type Thermocouple | Using (Radix) + ITS-90 Direct Method | 50 °C to 760 °C | 0.67°C |
| 26 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | K Type Thermocouple | Using Universal Calibrator | -190 °C to 1300 °C | 0.86°C |
| 27 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | R Type Thermocouple | Using Universal Calibrator | 50 °C to 1700 °C | 1.38°C |
| 28 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | RTD Pt-100 | Using Universal Calibrator | -199 °C to 600 °C | 0.55°C |
| 29 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | S Type Thermocouple | Using Universal Calibrator | 50 °C to 1750 °C | 0.78°C |

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|---|---|---|---|---|---|
| 30 | ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source) | T Type Thermocouple | Using Universal Calibrator | -199 °C to 400 °C | 0.76°C |
| 31 | ELECTRO-TECHNICAL-TIME & FREQUENCY (Source) | Frequency | MFC 5.5 digit Direct method | 50 Hz to 1 k Hz | 0.15 % to 0.076 % |
| 32 | MECHANICAL-ACCELERATION AND SPEED | (Non-Contact type) Tachometer/RPM | Using Laser Tachometer by comparision method | >7500 rpm to 60000 rpm | 0.02% |
| 33 | MECHANICAL-ACCELERATION AND SPEED | (Non-Contact type) Tachometer/RPM | Using Laser Tachometer by comparision method | 50 rpm to 120 rpm | 2% |
| 34 | MECHANICAL-ACCELERATION AND SPEED | (Non-Contact type)Tachometer/RPM | Using Laser Tachometer by comparision method | >120 rpm to 7500 rpm | 0.14% |
| 35 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Angle plate - Flatness/parallelism/ Squareness | Using Gauge block, Feeler gauge, Master cylinder by comparision method | 0 to 300 mm | 9µm |

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|---|---|---|---|---|---|
| 36 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Bench Centre(Coaxiality, Parallelism of Axis of centers) | Using Mandrel/Dial Indicator by Comparision Method | 0 to 350 mm | 8.0µm |
| 37 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Box Angle plate - Squareness | Using Gauge block, Feeler gauge, Master cylinder by comparision method | 0 to 300 mm | 9µm |
| 38 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Comparator stand flatness of base plate | Using Surface Plate, Spirit Level, Dial indicator, Gauge Block and accessories by Comparison Method | 100 mm x 100 mm | 3µm |
| 39 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Comparator stand flatness of base plate | Using plunger dial, comparator stand electronic levelmeter by Comparision Method | 300 mm x 300 mm | 4µm |
| 40 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Height Gauge LC 0.01mm | Using gauge block, caliper checker, Granite Surface plate & Puppy dial by Comparision Method | 0 to 300 mm | 12µm |

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|---|---|---|---|---|---|
| 41 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Height Gauge LC 0.01mm | Using gauge block, caliper checker, Granite Surface plate & Puppy dial by Comparision Method | 0 mm to 600 mm | 14µm |
| 42 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Height Gauge LC 0.01mm & Coarser | Using gauge block, caliper checker, Granite Surface plate & Puppy dial by Comparision Method | >600 mm to 1000 mm | 18µm |
| 43 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Straight edge-Straightness | Using Electronic levelmeter by Comparision Method | up to 4000 mm | 1.3 sqrt(L/150)where L & W are in mm |
| 44 | MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.) | Surface plate(Granite/Cast Iron) | Using electronic level meter by Comparision Method | up to mm to 6000 mm | 0.5 sqrt((L+W)/150) µm Where L is length in mm |
| 45 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Dial calibration tester LC-0.02 microns/0.001mm & coarser | Using electronic probe. gauge block by Comparision Method | 0 to 50 mm | 1.2µm |

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|---|---|---|---|---|---|
| 46 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Floating carriage diameter measuring machine | Using mandrels/Gauge blocks, Pins by Comparision Method | 0 to 100 mm | 1.55mm |
| 47 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Gauge Block Calibrator | Using Gauge Blocks by Comparision Method | 4 mm to 100 mm | 0.12µm |
| 48 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Gauge Block Calibrator | Using Gauge Blocks by Comparision Method | Up to 4 mm | 0.082µm |
| 49 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Profile Projector/Microscope Linear Scale L.C.-0.001 mm Angluar scale-1" Magnification-10X,20X,50X,100X | Using Glass scale,Gauge Block,Angle Gauge,Vernier Caliper,Glass Scale by Comparision Method | 0 to 300 mm | 2.4µm |
| 50 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Profile Projector/Microscope Linear Scale L.C.-0.001 mm Angluar scale-1" Magnification-10X,20X,50X,100X | Using Glass scale,Gauge Block,Angle Gauge,Vernier Caliper,Glass Scale by Comparision Method | 0° to 360° | 4' |

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|---|---|---|---|---|---|
| 51 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Profile Projector/Microscope Linear Scale L.C.- 0.001 mm Angular scale-1" Magnification-10X,20X,50X,100X | Using Glass scale,Gauge Block,Angle Gauge,Vernier Caliper,Glass Scale by Comparision Method | 10X to 100X | 1% |
| 52 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Universal Length Measuring Machine L.C.- 0.1 micron | Using Gauge Block by Comparision Method | >100 mm to 200 mm | 1.5µm |
| 53 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Universal Length Measuring Machine L.C.- 0.1 micron | Using Gauge Block by Comparision Method | >200 mm to 300 mm | 2.0µm |
| 54 | MECHANICAL-DIMENSION (PRECISION INSTRUMENTS) | Universal Length Measuring Machine L.C.- 0.1 micron | Using Gauge Block by Comparision Method | 0 to 100 mm | 1.1µm |
| 55 | MECHANICAL-HARDNESS TESTING MACHINES | Rockwell Hardness Tester | Using Reference Hardness Block as per IS 1586-2-2012 by Comparision Method | 0 to 100 HRBW | 0.6HRBW |
| 56 | MECHANICAL-HARDNESS TESTING MACHINES | Rockwell Hardness Tester | Using Reference Hardness Block as per IS 1586-2-2012 by Comparision Method | 0 to 100 HRC | 0.6HRC |

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|---|---|---|---|---|---|
| 57 | MECHANICAL-PRESSURE INDICATING DEVICES | (Hydraulic) Digital/Analogue Pressure Gauges/Transmitter Switches | Using Digital Pressure Gauge & Digital Test Gauge by Comparision Method | >30 bar to 700 bar | 0.1% rdg |
| 58 | MECHANICAL-PRESSURE INDICATING DEVICES | (Pneumatic)Digital/Analogue Pressure Gauges/Transmitter Switches | Using Digital Pressure Gauge as per DKD-R 6-1 by Comparision Method | 0 to 30 bar | 0.21% rdg |
| 59 | MECHANICAL-PRESSURE INDICATING DEVICES | (Vaccum) Digital/Analogue Vaccum Gauges | Using Digital Pressure Gauge & Digital Test Gauge by Comparision Method | 0 to -0.95 bar | 1.8% rdg |
| 60 | MECHANICAL-WEIGHING SCALE AND BALANCE | Electronic Weighing Balance Class -I , d= 100 mg and coarser | using weights of E1,E2,F1 as per OIML R-76-1 :2006: | up to 100 kg | 1.6g |
| 61 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class I , d= 10 mg & Coarser | using Weights of E1 & E2 as per OIML R-76-1 :2006 | up to 5 kg | 0.01g |
| 62 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class I , d=(0.1mg& coarser) | using weights of E1 Class as per OIML R-76-1 :2006 | >82 g to 200 g | 0.07mg |
| 63 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class I, d= 1mg & coarser | Using Weights of E1 & E2 as per OIML R-76-1 :2006 | up to 1 kg | 0.002g |

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|---|---|---|---|---|---|
| 64 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class I, d=(0.01 mg & coarser) | using Standard weights of E1 Class as per OIML R-76-1 :2006 | up to 82 g | 0.04mg |
| 65 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class II, d= 10 g & Coarser | Using Weights of E1, E2 & F1 as per OIML R-76-1 | >60 kg to 150 kg | 3.2g |
| 66 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class II, d= 50 g & Coarser | using weights of E1, E2 and F1 as per OIML R-76-1 | >100 kg to 150 kg | 14.5g |
| 67 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance Class II, d=2g & coarser | Using Weights of E1, E2 & F1 as per OIML R-76-1 :2006 | >30 kg to 60 kg | 1.306g |
| 68 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance d= 100 mg & Coarser , Class II | using E1, E2 and F1 class of Weights as per OIML R-76-1 :2006 | >20 kg to 30 kg | 0.184g |
| 69 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance (50 mg) & coarser Class I | Calibration of Electronic Weighing Balance using Standard weights of E2 Class | >200 g to 20 kg | 0.073g |
| 70 | THERMAL-SPECIFIC HEAT & HUMIDITY | Humidity Indicator with Sensor Of Humidity Chamber at 25 Degree Celsius | Digital Hygrometer Single Position calibration | 15 %rh to 90 %rh | 1.57%rh |

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|---|---|---|---|---|---|
| 71 | THERMAL-SPECIFIC HEAT & HUMIDITY | Humidity Indicators with Inbuild Or External Sensor, Thermo Hygometers at 25 Degree Celsius. | Digital Hygrometer , Humidity Chamber Comparison Method | 15 %rh to 90 %rh | 1.53%rh @ 25 °C |
| 72 | THERMAL-TEMPERATURE | Liquid In Glass Thermometers/Temperature Gauges | Using RTD-4 wire and DMM-6.5 digit,low temperature bath/oil bath Comparision Method | -30 °C to 250 °C | 0.22°C |
| 73 | THERMAL-TEMPERATURE | RTD,Thermocouple with or without Temperature Indicator/Data Logger/Recorder, Digital Thermometer | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C),low temperature bath/oil bath & thermocouple S type and DMM-6.5, Dry Block Furnace (from 250 deg C to 1200 deg C) Comparision Method | 250 °C to 500 °C | 1.83°C |

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|---|---|---|---|---|---|
| 74 | THERMAL-TEMPERATURE | RTD,Thermocouple with or without Temperature Indicator/Data Logger/Recorder, Digital Thermometer | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C),low temperature bath/oil bath & thermocouple S type and DMM-6.5, Dry Block Furnace (from 250 deg C to 1200 deg C) Comparision Method | -30 °C to 50 °C | 0.16°C |
| 75 | THERMAL-TEMPERATURE | RTD,Thermocouple with or without Temperature Indicator/Data Logger/Recorder, Digital Thermometer | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C),low temperature bath/oil bath & thermocouple S type and DMM-6.5, Dry Block Furnace (from 250 deg C to 1200 deg C) Comparision Method | 50 °C to 250 °C | 0.19°C |

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|---|---|---|---|---|---|
| 76 | THERMAL-TEMPERATURE | RTD,Thermocouple with or without Temperature Indicator/Data Logger/Recorder, Digital Thermometer | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C),low temperature bath/oil bath & thermocouple S type and DMM-6.5, Dry Block Furnace (from 250 deg C to 1200 deg C) Comparision Method | 500 °C to 1000 °C | 1.85°C |
| 77 | THERMAL-TEMPERATURE | Temperature Indicator with Sensor Of Dry Block Furnace | Using Thermocouple S type and DMM-6.5 (from 250 deg C to 1200 deg C) Single Position Method | 1000 °C to 1200 °C | 2.24°C |
| 78 | THERMAL-TEMPERATURE | Temperature Indicator with Sensor Of Dry Block Furnace | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C) & thermocouple S type and DMM-6.5 (from 250 deg C to 1200 deg C) Single Position Method | 250 °C to 700 °C | 1.44°C |
| 79 | THERMAL-TEMPERATURE | Temperature Indicator with Sensor Of Dry Block Furnace | Using Thermocouple S type and DMM-6.5 (from 250 deg C to 1200 deg C) Single Position Method | 700 °C to 1000 °C | 2.15°C |

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| 80 | THERMAL-TEMPERATURE | Temperature Indicator with Sensor Of Liquid Bath/Temperature Indicator with Sensor | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C) & thermocouple S type and DMM-6.5 (from 250 deg C to 1200 deg C) Single Position Method | -30 °C to 50 °C | 0.28°C |
| 81 | THERMAL-TEMPERATURE | Temperature Indicator with Sensor Of Liquid Bath/Temperature Indicator with Sensor | Using RTD-4 wire and DMM-6.5 digit (upto 250 deg C) & thermocouple S type and DMM-6.5 (from 250 deg C to 1200 deg C) Single Position Method | 50 °C to 250 °C | 0.30°C |
| 82 | THERMAL-TEMPERATURE | Thermocouple with or without Temperature Indicator/Data Logger/Recorder, Digital Thermometer | Using thermocouple S type and DMM-6.5, Dry Block Furnace (from 250 deg C to 1200 deg C) Comparision Method | 1000 °C to 1200 °C | 1.96°C |

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