

## Calibration Charges: D1.02, Length, Dimension and Nanometrology

(w.e.f. 01.04.2024)

### Length, Dimension and Nanometrology

| Sl. No. | Parameter | Item Type / Group | Item Name                                   | Alias Name     | Limitation / Condition | Charges per Item Rs. | Additional Charges Rs. | Description for Additional Charges                                   | Remarks, if any                          | No. of Points for Calibration  |
|---------|-----------|-------------------|---|----------------|------------------------|----------------------|------------------------|--|--|--|
| 1       | Length    | Line Standard     | Reference Standard Meter Bar / Line Scale   | Meter Bar      | 1m                     | 48000                | 1200                   | For each additional point above 10 points                            |  | 10   |
| 2       | Length    | Line Standard     | Graticule Scale upto 300 mm                 | Glass Scale    | 300 mm                 | 9844                 | 700                    | For each additional point above 10 points                            | Laser_UMM                                | 10   |
| 3       | Length    | Line Standard     | Graticule Scale >300mm -1000 mm             | Glass Scale    | >300 upto600 mm        | 29175                | 1200                   | For each additional point above 10 points                            | Q_vision_CM M                            | 10   |
| 4       | Length    | Line Standard     | Glass Grid                                  | 10X comparator |                        | 10500                | 4750                   | For each additional grid with same setting                           | Mean of upto10 grid spacing of each axis | 1  |
| 5       | Length    | Line Standard     | Measuring Tape (Steel /woven/glass Fibre .) |                | 50 m                   | 5342                 | 600                    | For each additional meter  | IS: 1270-1991                            | One point per meter  |
| 6       | Length    | End Standard      | single Gauge Block                          | Slip Gauge     | By Comparison Method   | 15500                |                        | for first gauge block and each gauge in case the gauges are odd size | IS: 2984-2003, ISO:3650-1998             | for first gauge block or each gauge block of odd size provided NPL-India accepts to calibrate ,Deviation from central length # |

|    |        |              |                 |  |                      |                             |     |   |                              |   |
|----|--------|--------------|-----------------|--|----------------------|-----------------------------|-----|---|------------------------------|---|
| 7  | Length | End Standard | Gauge Block Set | Slip Gauge   | By Comparison Method | 15500 for first gauge block | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-1998 | for first gauge block of set with traditional denomination considered by NPL-india, , Deviation from central length # |
| 8  | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method ( Designated M112) | By Comparison Method | 54350                       | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-1998 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length #   |
| 9  | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / Designated M125  | By Comparison Method | 58900                       | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2000 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length #   |
| 10 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / Designated M122  | By Comparison Method | 57850                       | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2001 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length #   |

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|----|--------|--------------|-----------------|--|----------------------|-------|-----|---|------------------------------|---|
| 11 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method ( Designated M121) | By Comparison Method | 57500 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 12 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / Designated M111  | By Comparison Method | 54000 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 13 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M105             | By Comparison Method | 51900 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 14 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M103             | By Comparison Method | 51200 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |

|    |        |              |                 |                                       |                      |       |     |   |                              |   |
|----|--------|--------------|-----------------|---------------------------------------|----------------------|-------|-----|---|------------------------------|---|
| 15 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M87 | By Comparison Method | 45600 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 16 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M83 | By Comparison Method | 44200 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 17 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M79 | By Comparison Method | 42800 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |

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|----|--------|--------------|-----------------|---------------------------------------|----------------------|-------|-----|---|------------------------------|---|
| 18 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M78 | By Comparison Method | 42450 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 19 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M76 | By Comparison Method | 41750 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 20 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M50 | By Comparison Method | 32650 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 21 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M47 | By Comparison Method | 31600 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |

|    |        |              |                 |                                       |                      |       |     |   |                              |   |
|----|--------|--------------|-----------------|---------------------------------------|----------------------|-------|-----|---|------------------------------|---|
| 22 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M46 | By Comparison Method | 31250 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 23 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M41 | By Comparison Method | 29500 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 24 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M38 | By Comparison Method | 28450 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 25 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M33 | By Comparison Method | 26700 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |

|    |        |              |                 |   |                      |       |     |   |                              |   |
|----|--------|--------------|-----------------|---|----------------------|-------|-----|---|------------------------------|---|
| 26 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M32               | By Comparison Method | 26350 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 27 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M27               | By Comparison Method | 24600 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 28 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M18               | By Comparison Method | 21450 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 29 | Length | End Standard | Gauge Block Set | Slip Gauge By Comparison Method / M10/Mic check set | By Comparison Method | 18650 | 350 | for subsequent gauge blocks up to 100mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |

|    |        |              |                     |   |                           |        |       |  |                              |   |
|----|--------|--------------|---------------------|---|---------------------------|--------|-------|--|------------------------------|---|
| 30 | Length | End Standard | Gauge Block Set     | Slip Gauge By Comparison Method / M9          | By Comparison Method      | 18300  | 350   | for subsequent gauge blocks up to 100mm                      | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 31 | Length | End Standard | single Gauge Block  | Slip Gauge                                    | By Interferometric Method | 22860  | 22860 | for first gauge block and subsequent gauge block above 102mm | IS: 2984-2003, ISO:3650-1998 | Deviation from central length #   |
| 32 | Length | End Standard | Gauge Blocks as Set | slip gauges submitted as a set                | By Interferometric Method | 22860  | 1700  | for first gauge block and subsequent gauge block up to 102mm | IS: 2984-2003, ISO:3650-1997 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 33 | Length | End Standard | Gauge Block Set     | Slip Gauge Set By Interferometric Method/M112 | By Interferometric Method | 211560 | 1700  | for subsequent gauge blocks up to 102mm                      | IS: 2984-2003, ISO:3650-1997 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |



|    |        |              |                 |   |                           |        |      |   |                              |   |
|----|--------|--------------|-----------------|---|---------------------------|--------|------|---|------------------------------|---|
| 34 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M125 | By Interferometric Method | 233660 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-1998 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 35 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M122 | By Interferometric Method | 228560 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-1999 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 36 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M121 | By Interferometric Method | 226860 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2000 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 37 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M111 | By Interferometric Method | 209860 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2001 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |

|    |        |              |                 |   |                           |        |      |   |                              |   |
|----|--------|--------------|-----------------|---|---------------------------|--------|------|---|------------------------------|---|
| 38 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M105 | By Interferometric Method | 199660 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2002 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 39 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M103 | By Interferometric Method | 196260 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2003 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 40 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M87  | By Interferometric Method | 169060 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2004 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 41 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M83  | By Interferometric Method | 162260 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2005 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |

|    |        |              |                 |  |                           |        |      |   |                              |   |
|----|--------|--------------|-----------------|--|---------------------------|--------|------|---|------------------------------|---|
| 42 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M79 | By Interferometric Method | 155460 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2006 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 43 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M78 | By Interferometric Method | 153760 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2007 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 44 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M76 | By Interferometric Method | 150360 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2008 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 45 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M50 | By Interferometric Method | 106160 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2009 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |

|    |        |              |                 |  |                           |        |      |   |                              |   |
|----|--------|--------------|-----------------|--|---------------------------|--------|------|---|------------------------------|---|
| 46 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M47 | By Interferometric Method | 101060 | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2010 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 47 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M46 | By Interferometric Method | 99360  | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2011 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 48 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M41 | By Interferometric Method | 90860  | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2012 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |
| 49 | Length | End Standard | Gauge Block Set | Slip Gauge By Interferometric Method / M38 | By Interferometric Method | 85760  | 1700 | for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2013 | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length # |

|    |        |              |  |  |                                    |                            |                         |  |  |  |
|----|--------|--------------|--|--|------------------------------------|----------------------------|-------------------------|--|--|--|
| 50 | Length | End Standard | Gauge Block Set                                      | Slip Gauge By Interferometric Method / M33                           | By Interferometric Method          | 77260                      | 1700                    | for subsequent gauge blocks up to 102mm                          | IS: 2984-2003, ISO:3650-2014                     | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length #                      |
| 51 | Length | End Standard | Gauge Block Set                                      | Slip Gauge By Interferometric Method / M27                           | By Interferometric Method          | 67060                      | 1700                    | for subsequent gauge blocks up to 102mm                          | IS: 2984-2003, ISO:3650-2016                     | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length #                      |
| 52 | Length | End Standard | Gauge Block Set                                      | Slip Gauge By Interferometric Method / M18                           | By Interferometric Method          | 51760                      | 1700                    | for subsequent gauge blocks up to 102mm                          | IS: 2984-2003, ISO:3650-2017                     | for first gauge block of set with traditional denomination considered by NPL-india, Deviation from central length #                      |
| 53 | Length | End Standard | Gauge Block Set for Mechncial comparator calibration | Special Gauge Set viz. M10/M11/M12/M18 (Excluding bridge type Gauge) | By Interferometric Method          | 55000 for first ten gauges | 3500                    | for first ten gauges and for subsequent gauge blocks up to 102mm | IS: 2984-2003, ISO:3650-2018 , Euramet-Cg-2,2011 | Deviation from central length by inteferometry and ( Fo, Fu by comparison or Length variation 1mm, 1.005mm, 1.01mm size of gauge blocks) |
| 54 | Length | End Standard | Length Bar   | Long Slip Gauge  | By Comparison Method ( Horizontal) | 8200                       | above 100mm upto 300 mm | per gauge Single Point (length)                                  | IS: 7014-1973 (Reaffirmed 2005)                  | per gauge (central length dev)   |

|    |        |                    |  |                   |                                    |       |                            |                                    |   |                                    |
|----|--------|--------------------|--|-------------------|------------------------------------|-------|----------------------------|------------------------------------|---|------------------------------------|
| 55 | Length | End Standard       | Length Bar                                   | Long Slip Gauge   | By Comparison Method ( Horizontal) | 8500  | above 300mm upto 500 mm    | per gauge Single Point (length)    | IS: 7014-1973 (Reaffirmed 2005)                 | per gauge (central length dev)     |
| 56 | Length | End Standard       | Length Bar                                   | Long Slip Gauge   | By Comparison Method ( Horizontal) | 11500 | above 500 to 1000 mm       | per gauge Single Point (length)    | IS: 7014-1973 (Reaffirmed 2005)                 | per gauge (central length dev)     |
| 57 | Length | Thickness Standard | Feeler Gauge                                 | Leaf Gauge / Slip | By Comparison Method ( Horizontal) | 6000  | 3000 each leaf             | for first leaf and subsequent leaf | IS: 3179-1990 (Reaffirmed 2005)                 | Thickness                          |
| 58 | Length | Diameter Standard  | Plain Ring / Plug Gauge/sphere 3 Pi wire set |                   | By Comparison Method ( Horizontal) | 8500  |                            | (Upto 100 mm)                      | IS: 3484-1993 / IS: 3485-1993 (Reaffirmed 1998) | Diameter and Variation in Diameter |
| 59 | Length | Dia Standard       | Plain Ring / Plug Gauge/sphere               |                   | By Comparison Method ( Horizontal) | 11000 |                            | >100 to 300 mm                     | IS: 3484-1993 / IS: 3485-1993 (Reaffirmed 1998) | Diameter and Variation in Diameter |
| 60 | Length | Dia Standard       | Taper Plug/ Ring Gauge                       |                   | By Comparison Method ( Horizontal) | 11500 | Upto 250 mm                |                                    |   | Taper                              |
| 61 | Length | Instrument         | Dial Gauge, Plunger Type                     |                   | By Comparison Method ( Horizontal) | 8000  | 0 to 50 mm (for 10 points) | Rs 700/- for each additional point |   | IS: 2092-1993                      |
| 62 | Length | Instrument         | Dial Gauge, Lever Type                       |                   | By Comparison Method ( Horizontal) | 8000  | 0 to 10 mm                 | Rs 700/- for each additional point |   | IS: 11498-1995                     |
| 63 | Length | Instrument         | Engineering Parallel                         |                   |                                    | 3880  | Upto 1000 mm               |                                    |   | IS: 4241-1995                      |
| 64 | Length | Instrument         | Gauge Block Calibrator *                     | Comparator        | By Comparison Method               | 18715 |                            |                                    |   | Single Scale only                  |

|    |                                 |            |  |  |                      |       |      |  |                        |   |
|----|---------------------------------|------------|--|--|----------------------|-------|------|--|------------------------|---|
| 65 | Length                          | Instrument | Gauge Block Calibrator   | Comparator   | By Comparison Method | 37500 |      |  |                        | Three Scales  |
| 66 | Length                          | Instrument | Mechanical Comparator  |  | By Comparison Method | 24500 |      |  |                        |   |
| 67 | Length                          | Instrument | Floating Carriage Diameter Measuring Machine                         | FCDMM  | By Comparison Method | 30000 |      |  |                        |   |
| 68 | Error of Indiacate Displacement | Instrument | Length Measuring Machine / Dial Gauge Tester / Dial Gauge Calibrator | LMM / Horizontal Metroscope / I Checker /Universal Measuring Machine /Digital Height Gauge |                      | 20500 |      |  | wavelenght compensated | Upto 25 mm (per Axis )  |
| 69 | Length                          | Instrument | Length Measuring Machine / Dial Gauge Tester                         | LMM or Horizontal Metroscope or Universal Measuring Machine/Digital Height Gauge           |                      | 20500 | 2500 | for subsequent 100 mm up to 1000 mm  | wavelength compensated | for first 100mm (above 25 mm upto 100mm) of Single Axis in one orientation /each axis |
| 70 | Length                          | Instrument | Length Measuring Machine (Single Axis)                               | LMM or Horizontal Metroscope or Universal Measuring Machine /Digital Height Gauge          |                      | 46000 | 8800 | For each additional meter  |                        | up to 1000 mm (Single Axis/each axis)   |
| 71 | Length                          | Instrument | Caliper Checker/ Check Master  | step gauge   |                      | 28000 | 3000 | Rs 28000 for first 300 mm,then Rs 3000 for subsequent 100 mm up to 1000 mm |                        | Rs 28000 for first 300mm ,then Rs 3000 for subsequent 100mm upto 1000mm               |

|    |        |                |                                  |  |               |        |      |   |  |  |
|----|--------|----------------|----------------------------------|--|---------------|--------|------|---|--|--|
| 72 | Length | Instrument     | 3D-Coordinate Measuring Machine  | CMM/Articulated CMM  |               | 48000  | 8800 | subsequent 220 mm per axis above 1 m upto 1220 mm *   | single axis                                | up to 1m (additional charges for subsequent 220mm upto 1220mm )  |
| 73 | Length | Instrument     | 3D-Coordinate Measuring Machine  | CMM/Articulated CMM  |               | 150000 | 8800 | Rs 150000 for three axes, upto 1000 mm then Rs 8800 for subsequent 220mm per axis upto 1220 mm maximum range* | three axis                                 | Rs 150000 for three axes, upto 1000 mm then Rs 8800 for subsequent 220mm per axis upto 1220 mm maximum range |
| 74 | Length | Instrument     | CNC Machine                      | Boring Machine /automatic moving machine up to 30m single axis |               | 50000  | 8800 | subsequent 1m per axis above 1m   |  | up to 1m x1m x 1m (additional charges for subsequent 1m per axis )   |
| 75 | Length | Instrument     | CNC Machine                      | Boring Machine /automatic moving machine up to 30m three axis  |               | 139000 | 8800 | For each additional meter   |  | Three axes, upto 1000 mm per axis  |
| 76 | Length | Instrument     | Dial Gauge Tester / Extensometer | (Except I Checker / Motorized dial tester)                     |               | 24500  | 5000 | per additional orientation/axis   | (Except I Checker / Motorized dial tester) |  |
| 77 | Length | Instrument     | Electronic Probe/LVDT Probe      |  |               | 24500  | 5000 | per additional scale  |  |  |
| 78 | Length | Accessory      | Test Sieve                       | Sieve  | IS: 460- 1985 | 16000  |      |   |  |  |
| 79 | Angle  | Angle Standard | Angle Gauge block                |  | IS: 6231-1994 | 9500   | 2000 | for subsequent angle measurment on each angle block or on same block  |  |  |



|    |                |                |  |   |                |       |      |  |  |   |
|----|----------------|----------------|--|---|----------------|-------|------|--|--|---|
| 80 | Angle          | Angle Standard | Angle square block                                       |   | IS: 6231-1994  | 15500 |      |  |  |   |
| 81 | Angle          | Instrument     | Polygon /Indexing Table/Optical Dividing Head with Scale | angular encoder,optical level   | IS: 6987 / and | 55000 | 3300 | upto 12 Faces and For each additional face beyond 12 faces |  |   |
| 82 | Angle          | Instrument     | Spirit Level   | Level meter/Point laser level/optical level/line laser level/<br>Inclinometer | IS: 5706-1991  | 14000 |      |  |  |   |
| 83 | Angle          | Instrument     | Electronic Level   | Level meter/Point laser level/optical level/line laser level                  |                | 34000 | 6000 | per point after 10 points                                  |  | Angle   |
| 84 | Angle          | Instrument     | Auto-collimeter (Single Axis)                            | Collimator/<br>thodolite station collimator/Angle dekker                      |                | 28000 |      |  |  | Angle   |
| 85 | Angle          | Instrument     | Auto-collimeter (Dual Axis)                              | Collimator/<br>thodolite station collimator/Angle dekker                      |                | 42000 |      |  |  | Angle   |
| 86 | Length & Angle | Instrument     | Profile Projector  | vedio profiler/vedio measuring machine  |                | 48000 | 8800 | for subsequent 100 mm up to 1000 mm                        |  | Linear Scales up to 300mm and magnifications only |

|    |                    |              |                          |  |                              |       |       |                                     |              |  |
|----|--------------------|--------------|--------------------------|--|------------------------------|-------|-------|-------------------------------------|--------------|--|
| 87 | Length & Angle     | Instrument   | Profile Projector        | video profiler/video measuring machine   |                              | 24000 |       |                                     |              | Angular Scale only   |
| 88 | Length & Angle     | Instrument   | Profile Projector        | video profiler/video measuring machine   |                              | 65500 | 8800  | for subsequent 100 mm up to 1000 mm |              | Linear scales up to 300mm, magnifications                            |
| 89 | Length & Angle     | Instrument   | Profile Projector        | video profiler/video measuring machine   |                              | 72000 | 8800  | for subsequent 100 mm up to 1000 mm |              | Linear up to 300mm, Angular Scales & magnifications                  |
| 90 | Length & Angle     | Instrument   | Sine Bar / tilting table | Sine Bar   | IS:5359-1993 / IS: 5979-1991 | 30000 |       |                                     | up to 300mm  | Centre distance of rollers, Flatness of Face, parallelism of rollers |
| 91 | Length & Angle     | Instrument   | Sine Bar / tilting table | Sine Bar   | IS:5359-1993 / IS: 5979-1991 | 34000 |       |                                     | above 300 mm | Centre distance of rollers, Flatness of Face, parallelism of rollers |
| 92 | Length & Frequency | Laser Source | Laser Interferometer     | Customer needs to ensure its frequency stability (preferable by its prior calibration-certificate) | Distance / fringe count      | 48000 |       |                                     |              | Linear Displacement  |
| 93 | Form               | Instrument   | Tool Maker's Microscope  | Universal Measuring Microscope   |                              | 41000 | 11000 | For Z axis                          |              | Linear Scales and magnifications only                                |
| 94 | Form               | Instrument   | Tool Maker's Microscope  | Universal Measuring Microscope   |                              | 26500 |       |                                     |              | Angular Scale only   |

|     |            |                        |  |  |   |        |       |  |            |   |
|-----|------------|------------------------|--|--|---|--------|-------|--|------------|---|
| 95  | Form       | Instrument             | Tool Maker's<br>Microscope   | Universal<br>Measuring<br>Microscope                                       |   | 67500  | 10000 | For Z axis   |            | Linear, Angular<br>Scales &<br>magnifications   |
| 96  | Form       | Instrument             | Formtester   | Formtester/Round<br>ness measuring<br>machine                              |   | 26200  |       |  |            | Roundness,  |
| 97  | Form       | Instrument             | Formtester   | Formtester/Round<br>ness measuring<br>machine                              | up to 100mm<br>straightness<br>wayguide length          | 50400  |       | up to 100mm<br>straightness wayguide<br>length   |            | Roundness,<br>Staightness,  |
| 98  | Form       | Instrument             | Formtester   | Formtester/Round<br>ness measuring<br>machine                              | up to 100mm<br>straightness<br>wayguide length          | 115000 |       | up to 100mm<br>straightness wayguide<br>length   |            | Roundness,<br>Staightness, R-axis, Z-<br>axis   |
| 99  | Roughness  | Roughness<br>Standard@ | Groov Depth<br>Standards (Type D)<br>/ Roughness<br>Comparison<br>Specimen | Groov Depth<br>Standards (Type<br>D) / Roughness<br>Comparison<br>Specimen | ISO: 5436 (Type D)<br>/ IS: 4290-1992, IS:<br>3073-1991 | 9500   | 1000  | per subsequent<br>roughness paramter   | up to 50µm | upto one roughness<br>paramter on the same<br>specimen  |
| 100 | Roughness  | Roughness<br>Standard@ | Roughness<br>measuring machine   | Roughness<br>measuring<br>machine/<br>Roughness tester                     | ISO: 5436 (Type D)<br>/ IS: 4290-1992, IS:<br>3073-1991 | 28500  | 8800  | per axis calibration<br>with a dispalcement<br>standard(laser<br>interferometer/ dial<br>indicator/ glass scale) |            | with atleast three<br>Groov Depth<br>Standards (Type D)<br>/three Roughness<br>Comparison<br>Specimen |
| 101 | Roundness  | Roundness<br>Standard  | Hemispherical<br>Standard  |  |   | 26200  |       |  |            | Roundness   |
| 102 | Roundness  | Roundness<br>Standard  | Flick Standard   | maginification<br>standard   |   | 26200  |       |  |            | Roundness   |
| 103 | Squareness | Squareness<br>Standard | Engineer's Square  |  | IS: 2103-1980<br>reaffirmed 2006                        | 15900  |       |  |            | Squareness  |

|     |              |  |  |  |  |       |  |        |   |  |
|-----|--------------|--|--|--|--|-------|--|--------|---|--|
| 104 | Squareness   | sqness, straightness, roundness, parallelism | Reference /Standard cylinder   |  | Roundness , parallelism (four readings) ,cylindricilty | 74500 |  |        |   | Roundness , parallelism (four readings) ,cylindricilty |
| 105 | Squareness   | Squareness Standard                          | Cylindrical Square   |  | On CMM   | 18300 |  |        | IS: 6952-1990 reaffirmed 2006           | Squareness   |
| 106 | Squareness   | Squareness Standard                          | Engineer's Square  |  | On CMM   | 24200 |  |        | IS: 2103-1980 reaffirmed 2006           | Squareness   |
| 107 | Squareness   | Squareness Standard                          | Cylindrical standard   |  | On roundness Machine                                   | 24200 |  |        |   | Squareness /Parallelism                                |
| 108 | Squareness   | Squareness Standard                          | Angle Plate, Cast Iron   |  | Upto 300 mm  | 16300 |  |        | IS: 2554-1971 (Reaffirmed 2005) On CMM  | Squareness / Angularity                                |
| 109 | Squareness   | Squareness Standard                          | Angle Plate, Cast Iron   |  | >300 to 600 mm   | 24400 |  |        | IS: 2554-1971 (Reaffirmed 2005) On CMM  | Squareness / Angularity                                |
| 110 | Squareness   | Squareness Standard                          | Precision Box Angle Plate  |  | Upto 300 mm  | 30300 |  |        | IS: 6985-1973 (Reaffirmed 2005) ,On CMM | Squareness / Angularity                                |
| 111 | Squareness   | Squareness Standard                          | Precision Box Angle Plate  |  | >300 to 600 mm   | 44500 |  | On CMM | IS: 6985-1973 (Reaffirmed 2005), On CMM | Squareness / Angularity                                |
| 112 | Straightness | Accessory                                    | Straight Edge (Bow Shaped)/ (Camel Back type)/ (I-Section)/ (Parallel) | (Bow Shaped)/ (Camel Back type)/ (I-Section)/ (Parallel) | Upto 500 mm  | 11800 |  |        | IS: 2220-1995 (Reaffirmed 2005)         | Straightness   |

|     |              |           |  |  |                      |       |  |  |  |                          |
|-----|--------------|-----------|--|--|----------------------|-------|--|--|--|--------------------------|
| 113 | Straightness | Accessory | Straight Edge (Bow Shaped)/ (Camel Back type)/ (I-Section)/ (Parallel) | (Bow Shaped)/ (Camel Back type)/ (I-Section)/ (Parallel) | >500 to 1000 mm      | 18300 |  |  | IS: 2220-1995 (Reaffirmed 2005)        | Straightness             |
| 114 | Flatness     | Accessory | Surface Plate  |  | 160 x 160 mm         | 11114 |  |  | IS: 2285-2003<br>IS: 7327-2003 /On CMM | Flatness                 |
| 115 | Flatness     | Accessory | Surface Plate  |  | 450 x 450 mm         | 11114 |  |  | IS: 2285-2003<br>IS: 7327-2003/On CMM  | Flatness                 |
| 116 | Flatness     | Accessory | Surface Plate  |  | 630 x 630 mm         | 18018 |  |  | IS: 2285-2003<br>IS: 7327-2003         | Flatness                 |
| 117 | Flatness     | Accessory | Surface Plate  |  | 1000 x 630 mm        | 22620 |  |  | IS: 2285-2003<br>IS: 7327-2003         | Flatness                 |
| 118 | Flatness     | Accessory | Surface Plate  |  | 1000 x 1000 mm       | 29524 |  |  | IS: 2285-2003<br>IS: 7327-2003         | Flatness                 |
| 119 | Flatness     | Accessory | Surface Plate  |  | 1600 x 1000 mm       | 50235 |  |  | IS: 2285-2003<br>IS: 7327-2003         | Flatness                 |
| 120 | Flatness     | Accessory | Surface Plate  |  | 2000 x 1000 mm       | 59440 |  |  | IS: 2285-2003<br>IS: 7327-2003         | Flatness                 |
| 121 | Flatness     | Accessory | Surface Plate  |  | 2000 x 1400 mm       | 59440 |  |  | IS: 2285-2003<br>IS: 7327-2003         | Flatness                 |
| 122 | Flatness     | Accessory | Surface Plate  |  | 3000 x 2000 mm       | 87055 |  |  | IS: 2285-2003<br>IS: 7327-2003         | Flatness                 |
| 123 | Flatness     | Accessory | Optical Flat/Parallel  |  | up to 100mm Diameter | 22315 |  |  | IS: 5440-1969 (Reaffirmed 2005)        | Flatness of one surface  |
| 124 | Flatness     | Accessory | Optical Flat/Parallel  |  | up to 100mm Diameter | 32876 |  |  | IS: 5440-1969 (Reaffirmed 2005)        | Flatness of both surface |

|     |                 |                    |                                  |                                 |   |       |     |                       |   |  |
|-----|-----------------|--------------------|----------------------------------|---------------------------------|---|-------|-----|-----------------------|---|--|
| 125 | Flatness        | Accessory          | Optical Flat/Parallel            |                                 | up to 100mm Diameter  | 46454 |     |                       | IS: 5440-1969 (Reaffirmed 2005)                       | Flatness and parallelism/ wedge angle between two surface          |
| 126 | Flatness        | Accessory          | Optical Flat/Parallel            |                                 | >100mm to 150mm Diameter  | 46454 |     |                       | IS: 5440-1969 (Reaffirmed 2005)                       | Flatness of one surface  |
| 127 | Flatness        | Accessory          | Optical Flat/Parallel            |                                 | >100mm to 150mm Diameter  | 55506 |     |                       | IS: 5440-1969 (Reaffirmed 2005)                       | Flatness of both surface   |
| 128 | Laser frequency | frequency standard | Laser head                       |                                 | frequency Standard  | 51877 |     |                       |   |  |
| 129 | Step height     | End standard       | step height                      | End standard                    | above 50 $\mu$ m upto to 2 mm   | 14142 |     |                       | ISO 5436  | height of the step/ groove   |
| 130 | Length          | Instrument         | Vernier Caliper/ Bevel Protector | instrument                      | up to 300 mm  | 7200  | 100 | per additional 100 mm | IS 3651   | Linear scale including vernier scale                               |
| 131 | Length          | Instrument         | Micrometer / Micrometer Head     | instrument                      | up to 25 mm   | 7200  | 150 | per additional 25 mm  | IS 2967   | Linear scale including vernier scale                               |
| 132 | Length          | Instrument         | Hardness tester Scale            | depth measuring system          | When the requisite fixtures and accessories are facilitated by customer | 48000 |     |                       | 0.0003 mm accuracy up to 100mm                        | Nonmagnetic method   |
| 133 | Angle           | Instrument         | Theodelite calibration station   | universal station/ 3D simulator | When the requisite fixtures and accessories are facilitated by customer | 60000 |     |                       | Three pitch angle and a rotary axis up to 10 readings | Three pitch angle and a rotary axis with reference to ground level |

|     |        |            |  |  |  |       |       |   |   |   |
|-----|--------|------------|--|--|--|-------|-------|---|---|---|
| 134 | Angle  | Instrument | Theodelite calibration station                     | universal station/<br>3D simulator       | When the requisite fixtures and accessories are facilitated by customer      | 60000 | 43000 | Additional dual axis collimator upto 40 readings  | Three pitch angle and a rotary axis up to 10 readings | Three pitch angle and a rotary axis with reference to ground level                              |
| 135 | Length | artifact   | Test rail  | Defects in test rail                     | Notch size (length:5mm to 10 mm)X (width: 0.4mm to 5 mm)X(depth: up to 2 mm) | 47500 | 2500  | subsequent each Notche/ hole  | length Xwidth Xdepth                                  | up to 20 Notches or holes   |
| 136 | Length | artifact   | Ball bar   | Center to center sphere spacing/distance | upto 1000 mm   | 28000 | 14000 | Rs 14000 for subsequent ball spacing in same artifact. If diameter required then Rs 14000 for each sphere |   | Rs 28000 for center distance of sphere only, If diameter required then Rs 14000 for each sphere |
| 137 | Length | artifact   | Airline/<br>Waveguide/Snap gauge/wedge/Misc. items | Diameter/length / thikness/width         | upto 1000 mm   | 17300 | 8000  | Rs 8000 for subsequent length/diameter in same artifact   |   | length, diameter, width etc.  |

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|--|---|
| <b>NOTE</b>  | <b># Rs 100 per gauge will be charged extra for addition of fo , fu using comparator (except for special gauge block set of Mech. comparator</b>    |
|  | <b># Rs 300 per gauge block for flatness and length variation by interferometric method (in case interferometric central deviation calibration)</b> |
|  | <b># Given below are charges for Gauge block calibration by interferometry. For the gauge block set which is sent to NPL for first time by</b>      |
|  | <b>M122 is known as designated (The suffix M denote ) gauge block set with conventional denominations of gauge block sizes</b>                      |
| <b>* Our measurement capability is upto 1220 mm, as we have the standard of 1220 mm.</b> |   |