

Our Ref:CL/DCLE/OSL-CAL/14:1/BID-01(11-12)

Date: 08 June 2011

SUBJECT: PROCUREMENT OF CALIBRATION SERVICES FOR THE EQUIPMENTS IN ELECTRICAL LABORATORY.

Dear Sirs,

Technical & Commercial Bids are invited for the **CALIBRATION SERVICES FOR THE EQUIPMENTS IN ELECTRICAL LABORATORY, Central Laboratory, Sahibabad, Dist. Ghaziabad-201 010**, in separate SEALED covers as per Rule 172 of GFR 2005, which should reach the undersigned latest by **1700 h**, on **29 June 2011**, at the following address.

Director & Head (Electrical),
BIS Central Laboratory, Plot No.20/9, Site-IV, Sahibabad Industrial Area, Distt. Ghaziabad-201010.

2. The List of Parameters for Calibration are given in **Annex-I to V**.
3. Scope of Work and Terms & Conditions for the above services are given in **Annex-VI**.
4. The technical Bids shall consist of compliance with the Scope of Work/ Services required for the listed parameters. Disclosing of Calibration Charges in Technical Bid shall be summarily rejected.
5. The Commercials Bids shall consist of Calibration Charges for the listed parameters including Discount or any additional charges (other than service tax).
6. The technical Bids shall be opened in the **Conference Hall**, of the Central Lab, at the address mentioned above at **1500 h on 30 June 2011** and in the presence of such tenderers or their duly authorized representatives, who may like to attend.
7. Please note that the envelopes containing Technical & Commercials Bids are sealed separately & properly i.e. either wax sealed or with adhesive cello tape on both ends. **Unsigned Bids and Unsealed /stapled envelopes** shall be summarily rejected.
8. The List of Parameters for Calibration, Scope of Work and Terms & Conditions for the above services can also be downloaded from BIS Website – www.bis.org.in

Thanking you,

Encls: as above

Yours faithfully,

(P S RAO)
HEAD (ELECTRICAL)
Ph: 0120-4177130, 9958116968
Email: cle@bis.org.in

ANNEXURE – I**LIST OF INSTRUMENTS: ELECTRICAL PARAMETERS**

S.No.	Name of Instrument	Range (s)	Quantity	Calibration Charges (Rs.)
1.	Digital Power Meter , 1 phase	20A , 300 V, 6 KW, dc/ ac, 50 Hz		
		20A , 250 V, 5 KW, ac, 50 Hz		
2.	3 phase wattmeter	(0-120) x 10 W x 20 W x 30 W		
3.	1 phase AC/DC Wattmeter (Analog)	0-150-300-600-1200W, Class 0.5		
		0 to 300 W, 50 Hz, Class 0.5		
		0-750W, 2.5/5.0A , Class 0.5		
		0 to 1000 W, 50 Hz, Class 1		
		0 to 1500 W, 50 Hz, Class 1		
		0 to 2500 W, 50 Hz, Class 1		
		0 to 4500 W, 50 Hz, Class 1		
		0 to 9000 W, 50 Hz, Class 1		
4.	1 phase AC/DC Wattmeter (Digital)	0-125W,250V/0.5A, 50Hz, Class 0.5		
		0-1250W, 250V/5A, 50Hz, Class 0.5		
		0-2500W,250V/10A, 50Hz, Class 0.5		
5.	Frequency Meter (Digital)	40 Hz to 60 Hz, LC 0.01 Hz		
6.	Energy Meter	5 to 20 A, 230 V, (Class 2)		
7.	Insulation Tester (Analog)	0 to 10 Meg ohm, 500 Vdc		
		0 to 100 Meg ohm, 500 Vdc		
8.	Megohm Meter	(1-100) x 10 ⁰ to 10 ⁶ MΩ		
9.	AC High Voltage Tester (Analog)	0-3 kV, LC 0.1 kV		(In Situ)
		0-5 kV, LC 0.1 kV		(In Situ)
10.	AC High Voltage Tester (Digital)	0-3 kV, LC 0.01 kV		(In Situ)
		0-10 kV, 50 Hz		(In Situ)
		0-5-10 kV, 50 Hz		(In Situ)
		0-50-100 kV, 50 Hz		(In Situ)
		0-10-100 kV, 50 Hz (Source)		(In Situ)

11.	DC High Voltage Tester (Analog)	0 to 3 kV, LC 0.1 kV		(In Situ)
		0 to 20 kV (Source)		(In Situ)
12.	Kelvin Double Bridge	up to 1 Ω , LC 0.000002 Ω		
		up to 2 Ω , LC 0.000002 Ω		
13.	Wheatstone Bridge	up to 11110 k Ω , LC 0.001 Ω		
		up to 11110 M Ω , LC 0.001 Ω		
14.	Standard (Low) Resistance (dc)	0.000 05 ohm to 10 000 ohm (Fixed Values)		
15.	Standard (High) Resistance (at 10 V & 500 V dc)	1 Meg ohm to 1 Tera ohm ((Fixed Values)		
16.	AC Ammeter (Analog)	5 A		
		10 A		
		30 A		
		100 A		
		1.0-5.0 A		
		10-30 A		
		1 – 3 – 10 – 30 – 100 A		
17.	AC Ammeter (Digital)	1.999 A		
		19.99 A		
		5 A		
		10 A		
		10 – 30 A		
		15 – 60 A		
		5 – 50 – 100 A		
18.	AC micro Ammeter (Digital)	99.9 μ A		
		999.9 μ A		
		0 to 1000 μ A		
19.	Leakage Current Meter (Digital)	0-1.999mA, LC 0.001mA		
		0-19.99mA, LC 0.01mA		
20.	DC Ammeter (Digital)	2 A, LC 0.0001 A, Class 0.1		
21.	DC Ammeter	0 to 20 A		
22.	AC milli Voltmeter	0 to 100 mV, 50 Hz		
		0 to 200 mV, 50 Hz		

23.	AC Voltmeter (Analog)	0 to 3 V, LC 0.1		
		0 to 5 V, LC 0.1		
		0-300V 50Hz		
		0 to 600 V, 50 Hz		
24.	AC Voltmeter (Digital)	0 to 3 V, 0.1V 50 Hz		
		0 to 5 V, 0.1V 50 Hz		
		0 to 50 V, 0.5V 50 Hz		
		0 to 100 V, 1V 50 Hz		
		0 to 300 V		
		0 to 500 V		
		0 to 750 V		
		0 to 300 – 600 V		
25.	DC Voltmeter	0 to 300 V, Class 0.1		
26.	Digital Multi meter	Voltage: 400 mV, 4 V, 40 V, 750 V		
		Current:		
		Resistance:		
27.	Electrostatic Voltmeter with Range Multipliers (DC & AC 50 Hz)	0 to 1 KV		
		0 to 5 KV		
		0 to 20 KV		
		0 to 100 KV		
28.	AC/DC Precision Calibrator	Rotek 3950 A		
29.	High Current Amplifier	Rotek 380 A		
30.	Digital Teraohmmeter	Guildline 6500 A		
31.	Current Transformer Class 0.2	10A/5A		
		20A/5A		
		25A/5A		
		50A/5A		
		300A/5A, Class 1.0		
32.	Power Factor Meter (Digital)	- 1.00 to +1.00 Class 0.2		
33.	DSO, 100 MHz, 2 Channels	Amplitude: 10 KV RMS LC 1 V Time: 20 ms LC 0.01 us		
34.	HV Probe, 1000X	10 KV RMS, 1000:1± 1%		

ANNEXURE – II**LIST OF INSTRUMENTS: TEMPERATURE**

S.No.	Name of Instrument	Range (s)		Calibration Charges (Rs.)
1.	Mercury in Glass Thermometer	50 °C		
		-10 °C to 110 °C		
		0-250 °C		
2.	Digital Temperature Indicator Oxygen Bomb	0-250°C L.C. 1°C		
3.	Digital Temperature Indicator Air Bomb	0-250°C L.C. 1°C		
4.	Digital Temperature Indicator with Type J Thermocouple	Ambient to 300 °C		
5.	Digital Temperature Indicator with Type J Thermocouple	Ambient to 400 °C		
6.	Digital Temperature Indicator with Type J Thermocouple	Ambient to 199.9 °C		
7.	2 - Channel Temperature Indicator with Type J Thermocouple	Ambient to 199.9 °C		
8.	4 - Channel Digital Temperature Indicator with Type J Thermocouple	Ambient to 400 °C		
9.	10 - Channel Digital Temperature Indicator	0 °C to 200 °C		
10.	RTD Type Temperature Indicator	Ambient to 400 °C		
11.	Thermal Stability test apparatus	0-250°C L.C. 0.1°C		(In Situ)
12.	Digital Thermo-Hygrometer	10 °C to 50 °C, RH: 20% to 95%		
13.	Hot-Cold Chamber	-10 °C to +50 °C		(In Situ)
14.	Humidity Chamber	15 °C to 35 °C and 15 to 40°C, RH: 45% to 95%		(In Situ)
15.	Oven	Ambient to 100 °C		(In Situ)
16.	Oven	Ambient to 200 °C		(In Situ)
17.	Oven	Ambient to 250 °C		(In Situ)
18.	Oven	Ambient to 300 °C		(In Situ)
19.	Deep Freezer	-20 °C to +40 °C		(In Situ)

20.	Deep Freezer	-40 °C		(In Situ)
21.	Water Bath	0-100°C LC 1°C		(In Situ)
22.	Cold Water Bath	20-30°C LC 1°C		(In Situ)
23.	Temperature Data Logger	-30 °C to +50 °C		(In Situ)
24.	Temperature Data Logger (2 Channel)	Ambient to 400 °C		(In Situ)
25.	Temperature Data Logger (36 Channel)	Ambient to 400 °C		(In Situ)
26.	Temperature Data Logger (45 Channel)	Ambient to 400 °C		(In Situ)
27.	Temperature Data Logger (144 Channel)	Ambient to 400 °C		(In Situ)
28.	Glow Wire Test Apparatus	0-1000°C		(In Situ)

ANNEXURE – III**LIST OF INSTRUMENTS: MECHANICAL PARAMETERS**

S.No.	Name of Instrument	Range (s)		Calibration Charges (Rs.)
1.	Vernier Calipers	0 to 150 mm LC 0.01mm		
		0 to 300 mm LC 0.01mm		
		0 to 600 mm LC 0.01mm		
2.	Digital Calipers (Pressure type)	0-180mm LC 0.01mm		
3.	Digital Micrometer	0 to 25 mm L.C. 0.001mm		
		0 to 50 mm L.C. 0.001mm		
4.	Digital Micrometer (Pointed)	0 to 25 mm L.C. 0.001mm		
5.	Digital Height Gauge	600 mm LC 0.01mm		
6.	Travelling Microscope	0-220mm L.C. 0.001mm		
7.	Steel Scale	300 mm, L.C. 0.5mm		
		500 mm, L.C. 0.5mm		
		1000 mm L.C. 0.5mm		
8.	Steel Tape	0-20m L.C. 0.5mm		
9.	Pressure Gauge	0 to 1 kg/cm ² , L.C. 0.02 kg/cm ²		
		0 to 2.5 kg/cm ² , L.C. 0.1 kg/cm ²		
		0 to 3.5 kg/cm ² , L.C. 0.1 kg/cm ²		
		0 to 10.6 kg/cm ² , L.C. 0.2 kg/cm ²		
		0 to 21.0 kg/cm ² , L.C. 0.5 kg/cm ²		
10.	Pressure Gauge (O ₂ Bomb)	0 to 50 kg/cm ² , L.C. 0.1 kg/cm ²		
11.	Pressure Gauge (Air Bomb)	0 to 50 kg/cm ² , L.C. 0.1 kg/cm ²		
12.	Vacuum Gauge	0-760mm Hg		
13.	Dead Weights	1 g to 500 g		
		1 kg to 20 kg		
		10 N		
		20 N		

		50 N		
		60 N		
14.	Weighing Balance	0 to 180 g, LC 0.1 mg		
		0 to 1 kg, LC 5 g		
		0 to 10 kg, LC 0.001 kg		
15.	Spring Balances	1.00 kg, LC 10 g		
		2.0 kg, LC 20 g		
		10 kg, LC 50 g		
		20 kg, LC 0.1 kg		
		50 kg, LC 0.5 kg		
16.	Torque Dial Gauge	1.0 Nm, LC 0.01 Nm		
17.	Torque Screw Driver	0.4 Nm		
		1.0 Nm		
		2.4 Nm		
		75 Cmkp		
18.	Digital Torsion Meter	0-5.00 Nm, LC 0.01 Nm		
19.	Torque Test Apparatus for B22 Cap	0-5.00 Nm, LC 0.01 Nm		
20.	Vane Anemometer	0.02 m/s to 24 m/s		
21.	Vane Anemometer	1 m to 1000 m		
22.	Dynamometer	0 to 15 kg		(In Situ)
23.	Graduated Flask/Jar	200 ml, 1000 ml, 2 litre		
24.	Measuring Cylinder (Graduated)	100 ml, 1000 ml, 2000 ml		
25.	Spring Loaded Impact test Apparatus	0-0.5N		
26.	Insertion Gauge for B 22 Caps	Data sheet No. 7006-4A IS 15518(Part 1) :2004		
27.	Retention Gauge for B 22 Caps	Data sheet No. 7006-4B IS 15518(Part 1) :2004		
28.	NOT GO Gauge for B 22 Caps	Data sheet No. 7006-10 IS 15518(Part 1) :2004		
29.	GO Gauge for B 22 Caps	Data sheet No. 7006-11 IS 15518(Part 1) :2004		

30.	Filler Gauges, Mitutoyo Make	0.05-1.0mm (20 Leaf)		
31.	Radius Gauge	7.5 mm to 15.0 mm (16 Leaf)		
32.	Dial Thickness Gauge	0.01 mm to 20 mm		
33.	GO gauge 6A-Plug	Annex B, IS 1293: 2005		
34.	GO gauge 16A-Plug	Annex B, IS 1293: 2005		
35.	GO gauge-Min 6A-Socket	Annex B, IS 1293: 2005		
36.	GO gauge-Min 16A-Socket	Annex B, IS 1293: 2005		
37.	GO gauge-Max 6A-Socket	Annex B, IS 1293: 2005		
38.	GO gauge-Max 16A-Socket	Annex B, IS 1293: 2005		
39.	Gauges for Max Withdrawal Force	CI 22.1, Fig 13 of IS 1293:2005		
40.	Gauges for Min Withdrawal Force	CI 22.2, Fig 42 of IS 1293:2005		
41.	Gauges for Metric ISO Threads	CI 9.2, Fig 14 of IS 1258:2005		
42.	Gauges for Contact Position and Contact Force	Data sheet 7006-15A of IS 1258:2005		
43.	Acceptance Gauge for B22 Cap	Data sheet 7006-3 of IS 1258:2005		
44.	Plug Gauges for B22 Cap	Data sheet 7006-12 of IS 1258:2005		
45.	Hemispherical Steel Rod for Mech. Strain Test	Dia 3 mm, Radius of End 1.5 mm		
46.	Gauge for Non-accessibility of Live Parts (After N.O.)	CI 21, Fig 3 of IS 1293:2005		
47.	Gauge for Non-accessibility of Live Parts (With Increased Protection)	CI 10.5, Fig 4 of IS 1293:2005		

48.	Load Cell – Earth Contact Test	0 – 500 N, LC 0.05 N		(In Situ)
49.	Load Cell – Removal & Non-removal Force	0 – 200 N, LC 0.02 N		(In Situ)
50.	Load Cell – Pull Test	0 – 200 N, LC 0.02 N		(In Situ)
51.	Load Cell – Compression Test	0 – 500 N, LC 0.05 N		(In Situ)
52.	Load Cell – Mech. Strain Test	0 – 20 Kg, LC 0.001 Kg		(In Situ)
53.	Load Cell – Un-jointed Test Finger	0 – 200 N, LC 0.02 N		
54.	Jointed Test Finger	CI 10, Fig 2 of IS 1293:2005		
55.	Un-jointed Test Finger	CI 10, Fig 2 of IS 1293:2005		
56.	Tensile Testing Machine	0.5 KN, LC 0.01 N		(In Situ)
		1 KN, LC 0.1 N		(In Situ)
		2 KN, LC 0.1 N		(In Situ)
		10 KN, LC 0.1 N		(In Situ)
		25 KN, LC 0.1 N		(In Situ)
57.	Profile Projector Make - Mitutoyo (Distance on X & Y axis)	On X & Y axis: Distance 25 mm, LC 0.001 mm		(In Situ)

ANNEXURE – IV**LIST OF INSTRUMENTS: TIME, ILLUMINATION & NOISE LEVEL**

S.No.	Name of Instrument	Range (s)		Calibration Charges (Rs.)
1.	Time Totalizer	999.9h & up to 999999.9h		
2.	Digital Timer	0-999 s		
3.	Preset timer	0-24h, 999 h		
4.	MCB Tripping Timer (With 4 Auto Ranges)	9.99 s, LC=0.01 s		
		99.99 s, LC=0.01 s		
		999.9 s, LC=0.1 s		
		9999 s, LC=1 s		
5.	Time Interval Meter	9.999 sec, LC=0.001 s		
6.	Time Interval Meter	999 h		
7.	Repeat Cycle timer	0-24h, 99 h, 999 h		
8.	Stop Watch (Analog)	0.1 s to 15 minute		
9.	Stop Watch (Digital)	0.01 s to 60 s		
		15 minutes,		
		30 minutes		
10.	Digital Optical Tachometer	0 to 99999 rpm		
11.	Reference GLS Lamps	230/240/250 V 25/40/60/100 W		
12.	Lux Meter	0 to 1000 lux		
13.	Acoustic Noise Level Meter	10 dB to 120 dB		
14.	Vibration Meter	0.001 to 1000 mm, 0.1 to 20 mm/s		
15.	Air Flow Meter	0 to 30 Changes/hour		(In Situ)

ANNEXURE – VI

SCOPE OF WORK AND TERMS & CONDITIONS

SERVICES REQUIRED : CALIBRATION OF EQUIPMENTS

1. The Services of Calibration of Equipments with NABL Logo or with the Standards Traceable to National / International Standards is required to be provided for the Equipments available in Electrical Laboratory, Central Lab, BIS, Sahibabad, Dist. Ghaziabad for two years.
2. The Estimated Cost of the Service Required, based on last two years calibration charges paid, is Rs. 420,000.00 for two years.
3. The Parameters of Calibration Work shall be accredited with NABL.
4. The Calibration Certificates shall be issued in the formats as per IS/ISO/IEC 17025.
5. The Measurement Uncertainty shall be calculated and reported at each calibration point.
6. The Calibration Validity shall not be mentioned in the Calibration Certificates. It is to be decided by the user.
7. Facility of Pick & Drop of Equipments/ Instruments and Calibration Certificates shall be free without any charge.
8. No additional charges shall be paid for On-Site Calibration.
9. All possible care shall be taken by the Service Provider in handling/ transportation to avoid any damage of the Equipments/ Instruments.
10. Any damage, mal-functioning or error beyond limit shall be informed immediately to the user lab before starting the Calibration Work.
11. Adjustment of Zero setting shall be done by the Service Provider before calibration.
12. The Equipments/ Instruments shall be sealed properly and labeled with Calibration Stickers.
13. The Service Provider shall mention the Time required for Calibration.
14. The Service Provider is required to send the Scope of NABL Accreditation for the facility available as per our requirement.
15. The Service Provider shall have valid Service Tax Registration and details of the same be provided in Technical bid.