

Incident No: C/6180/2016/5352/T

Annexure-A

SCOPE FOR BENCHTOP DIGITAL MULTIMETER

Sl. No	Description	Quantity	Accepted (Yes/No)	Deviation	Remarks
1.	MATERIAL SUPPLY INCLUDING SCOPE OF WORK				
1.1	Make and Model No of offered equipment	1 No			Vendor to offer standard models only with model no and provide details.
1.2	Technical specifications :				
1.2.1	Resolution: 6½ or more				<u>Bidder to provide details & comply</u>
1.2.2	Trigger				
1.2.2A	Sample per trigger : 1-50,000 or more				<u>Bidder to provide details & comply</u>
1.2.2B	Trigger Input: TTL				<u>Bidder to comply</u>
1.2.3	DC Voltage				
1.2.3A	Input Range: 100mV – 1000V or more				<u>Bidder to provide details & comply</u>
1.2.3B	Common Mode Rejection Ratio: 140dB or better				<u>Bidder to provide details & comply</u>
1.2.3C	Input Bias Current: <90pA				<u>Bidder to provide details & comply</u>
1.2.3D	Accuracy for 1 year: 100mV = 0.005% of measurement or better 1V = 0.005% of measurement or better 10V = 0.005% of measurement or better 100V = 0.005% of measurement or better 1000V = 0.005% of measurement or better				<u>Bidder to provide details & comply</u>
1.2.4	AC Voltage				
1.2.4A	Input Range: 100mV – 750V or better				<u>Bidder to provide details & comply</u>
1.2.4B	Input Impedance: 1MΩ or better				<u>Bidder to provide details & comply</u>
1.2.4C	CMMR: 70dB or better				<u>Bidder to provide details & comply</u>
1.2.4D	Measurement Method: AC Couple True RMS/RMS				<u>Bidder to provide details & comply</u>
1.2.4E	Accuracy at 10Hz – 20KHz Frequency for 1 year: 0.1% of measurement of all range or better				<u>Bidder to comply and provide details</u>

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1.2.5	Resistance			
1.2.5A	Measurement range: 100Ω-100MΩ or better			Bidder to provide details & comply
1.2.5B	Input Protection: 750V or more			Bidder to provide details & comply
1.2.5C	Accuracy for 1 year: 100 Ω =0.05% of measurement or better 1k Ω =0.05% of measurement or better 10k Ω =0.05% of measurement or better 100k Ω =0.05% of measurement or better 1MΩ =0.05% of measurement or better 10MΩ =0.05% of measurement or better 100MΩ =1.00% of measurement or better			Bidder to provide details & comply
1.2.6	AC Current			
1.2.6A	Input Range: 1A-3A or better			Bidder to provide details & comply
1.2.6B	Accuracy at 10Hz – 5 KHz frequency for 1 year: 1A =0.3% of measurement or better 3A =0.3% of measurement or better			Bidder to provide details & comply
1.2.7	DC Current			
1.2.7A	Input Range: 10mA to 3A or better			Bidder to provide details & comply
1.2.7B	Accuracy for 1 year: 10mA = 0.05% of Reading or better 100mA = 0.05% of Reading or better 1A = 0.1% of Reading or better 3A = 0.2% of Reading or better			Bidder to provide details & comply
1.2.8	Frequency			
1.2.8A	Input Range: 3Hz-300KHz or better			Bidder to provide details & comply
1.2.8B	Accuracy for 1 year in all range: 3-5 Hz = 0.1% of measurement or better 5-10Hz = 0.1% of measurement or better 10-40 Hz = 0.03% of measurement or better 40-300kHz = 0.03% of measurement or better			Bidder to provide details & comply
1.2.9	Continuity			
1.2.9A	Response Time: 300 samples/sec with audible tone			Bidder to provide details & comply
1.2.9B	Continuity Threshold: 1K Ω or better			Bidder to provide details & comply

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1.2.9C	Accuracy for 1 year: 0.01% of measurement or better				Bidder to provide details & comply
1.2.10	Diode Test				
1.2.10A	Response Time: 300 samples/sec				Bidder to provide details & comply
1.2.10B	Test Current: 1 mA				Bidder to comply
1.2.10C	Accuracy for 1 year: 0.01% of measurement or better				Bidder to provide details & comply
1.2.11	Capacitance				
1.2.11A	Measurement Range: 1nF -100μF or better				Bidder to provide details & comply
1.2.11B	Accuracy for 1 year: 1 nF = 2% of measurement or better 10 nF = 2% of measurement or better 100 nF = 2% of measurement or better 1 μF = 2% of measurement or better 10 μF = 2% of measurement or better 100 μF = 2% of measurement or better				Bidder to provide details & comply
1.2.12	Temperature				
1.2.12A	Measurement Temp. : -200°C - 600°C or better				Bidder to provide details & comply
1.2.13	Safety				
1.2.13A	CAT II: 300V or better				Bidder to provide details & comply
1.2.13B	Input Protection: 750V or better				Bidder to provide details & comply
1.2.14	Power Supply				
1.2.14A	Input: 220 V AC ±10% or better				Bidder to provide details & comply
1.2.14B	Frequency: 50 Hz ± 5% or better				Bidder to provide details & comply
1.2.15	Other Features				
1.2.15A	Display: Color Display/Vacuum Fluorescent display of Appropriate size, dual display. Vendor to specify size and details.				Bidder to provide details & comply
1.2.15B	Memory: Provision of Internal and external storage				Bidder to provide details & comply
1.2.15C	Math Function: Zero/Nill, dBm, dB, Statistics (Min, Max, Average)				Bidder to provide details & comply
1.2.15D	Computer Interface: USB/RS232 or more				Bidder to provide details & comply
1.2.15E	Operating Temperature=0°C - 50°C or better				Bidder to provide details & comply
1.2.16	Accessories				
1.2.16A	Power cord of length 3m or more	I No			Bidder to comply

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1.2.16B	Test Lead including lead for resistance measurement	1 Set			<u>Bidder to provide details & comply</u>
2.	<u>COMMISSIONING:</u>				
2.1.	Party shall undertake commissioning of all the supplied components at HEEP, BHEL, Haridwar. All material required for commissioning of the machines shall be supplied by the party free of cost and obligation. All commissioning materials shall be supplied by party.				<u>Bidder to comply</u>
2.2	Party shall demonstrate working of all the functions of the equipment as described above and as required by BHEL at HEEP, BHEL, Haridwar.				<u>Bidder to comply</u>
3.	<u>DOCUMENTATION</u>				
	Following documents shall be supplied by the Party:				
3.1	Hard copy of user manual	01 Set			<u>Bidder to comply</u>
4.	<u>WARRANTY:</u>				
	Party shall stand warranty for a period of 3 Years from the date of successful commissioning of the equipment at HEEP, BHEL, Haridwar.				<u>Bidder to comply</u>
5	<u>GENERAL CONDITIONS:</u>				
5.1	A point wise compliance statement shall be submitted by the party with reference to the above scope of supply against each clause/sub-clause with relevant details & comments. Non-compliance to any of the above clauses & quoting inadequate quantity can lead to disqualification of the offer.				<u>Information to bidder</u>
5.2	Vendor must compulsorily quote the quantity exactly as per the Scope of supply. No reduction in quantity as per the above Scope of supply is permissible.				<u>Information to bidder</u>

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Bidder
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