

Technical Specifications of “pH, Conductivity Meter, Electrodes”

Bidder Eligibility Criteria:

I	Bidder Eligibility Criteria-I (Public Procurement – Preference to Make in India)	Class I / Class II	Local Content value	Reference, Page No.
I	Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE II) dated 16 th September 2020 and other subsequent orders issued therein.			
2.0	Bidder Eligibility Criteria-II	Complied/Not Complied	Reference Page No.	Remarks, If any
1	The supplier/vendor must be an original equipment manufacturer or an authorized agent/dealer/seller of the item. The vendor should have supplied at least 5 similar units at other IITs or NITs, or national laboratories and research centres (DRDO/CSIR/BARC/IGCAR), or R&D centres of reputed multinational companies, or globally recognized universities, in the last 5 years. PO copy, or performance certificate, along with contact details (for these organizations) needs to be submitted.			

3.0 Technical Compliance:

Sl.No.	Specifications	Complied/Not Complied	Reference Page No.
General			
1	Each piece of the instrument should have the capability of measuring pH, mV, temperature, ISE, conductivity, salinity, resistivity, and TDS. The equipment should have the following characteristics or better and should satisfy and demonstrate the performance criteria given in Section 2		
2.1 Hardware, electrodes, solutions			
2.1.1	Meter should be a benchtop type with a backlit LCD display		
2.1.2	Two Meters with two pH electrodes, two conductivity/temperature probes and two electrode stands		
2.1.3	Five chloride electrodes (9617BNWP Orion Ionplus Chloride combination Ion Selective electrode or equivalent) and filling solutions		

2.1.4	Ionic Strength Adjustor solution (500 ml) for chloride electrodes		
2.1.5	1000 ppm chloride standard/calibration solution (1000 ml)		
2.1.6	Connections: pH terminal – BNC; Temperature terminal - 2.5 mm diameter jack; must be compatible with the pH and chloride electrodes supplied		
2.1.7	The meter should have a facility for storing at least 500 data sets		
2.1.8	The meter should have a user-selectable visual and audio alarm		
2.1.9	The meter should have pH measurement with a calibration facility with automatic buffer recognition options		
2.1.10	The meter should be able to store and retrieve from memory previous calibration points, electrode slope and offset, and conductivity/TDS cell constants		
2.1.11	The meter should have the facility to export data to a PC via RS-232 or USB		
2.1.12	Operating power range: 220 V AC, 50 Hz		
2.2 Equipment Range			
2.2.1	pH: 0 to 14		
2.2.2	mV: ± 2000 mV		
2.2.3	Ion: 0.001 to 20000 ppm		
2.2.4	Conductivity: 0.05 to 500 mS		
2.2.5	Temperature: -10 to 110°C		
2.2.6	TDS: 0.050 ppm to 500 ppt		
2.2.6	Resistivity: 2 Ω to 20 M Ω		
2.3 Equipment Resolution			
2.3.1	pH: 0.1 pH or smaller		
2.3.2	mV: 1 mV or smaller		
2.3.3	Ion: 2- or 3-digit options		
2.3.4	Conductivity: 0.01 mS or smaller		
2.3.5	Temperature: 0.1°C or smaller		
2.3.6	TDS: 0.01ppt or smaller		
2.3.7	Resistivity: 0.1 k Ω or smaller		
2.4 Equipment Accuracy			
2.4.1	pH: ± 0.002 pH		
2.4.2	mV: ± 0.2 mV		
2.4.3	Ion: 0.5% full scale (monovalent) or 1% full scale (divalent)		
2.4.4	Conductivity: $\pm 1\%$ of the measurement		
2.4.5	Temperature: $\pm 0.1^\circ\text{C}$		
2.4.6	TDS: $\pm 1\%$ of the measurement		
2.4.5	Resistivity: $\pm 1\%$ of the measurement		

2.5 Equipment type and calibration

2.5.1	Both the instruments must be identical			
2.5.2	NIST - Traceable calibration certificate must be provided for both the instruments			
	Warranty	3 Years		
		Optional Quote-1: Additional 2 years warranty may be quoted separately.		
		Optional Quote-2: AMC beyond 3 Years Warranty period		
	(Optional quotes will not be taken up for price comparison)			

General Terms and Conditions

1.	The system should be delivered within 14-16 weeks from the opening of the letter of credit or issue of the purchase order, whichever is later.		
2.	Costs and related information should be given only in the financial bid.		
3.	The cost should include all delivery costs up to IIT Madras.		
4.	The warranty shall commence only from the date of equipment installation at IITM.		
5.	IIT Madras reserves the right to exclude some items from the purchase.		
6.	As part of tender technical evaluation, IIT Madras will approach the past end users for feedback and in case of any adverse feedback the bidder will be technically disqualified.		
7.	The system should be installed and commissioned with no additional cost.		
8.	Training at IIT Madras should be provided with no additional cost.		
9.	System manual should be provided in CD or pen drive form.		
10.	Services and spares should be necessarily available within India.		

Technical Bid should comprise of the following:

11.	Detailed Technical brochure		
12.	Detailed technical write up explaining how each of the Technical Specifications are complied with, indicating the location in the brochure		
13.	The vendor should guarantee round the clock technical support not only during the warranty period but even beyond through an annual maintenance contract. Demonstration of having provided such satisfactory		

	technical support to customers shall be enclosed with the technical bid.		
14.	The manufacturer must have a well-qualified technical support team		

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the Above points with document proof as required. Failing which bidders will be technically disqualified)