

## Annexure-A: Technical Specifications

### Langmuir Probe

#### 1) Scope:

The tender is invited for the “Langmuir probe” as per the following technical specification.

- Para 2 gives scope of supply and deliverables.
- Para 3 gives technical requirements of the product. Supplier has to offer their product equivalent to this specification along with complete product sheet for technical evaluation.
- Para 4 gives general instructions.

#### 2) Scope of supply and deliverables:

The successful bidder shall deliver following items and shall quote for the full quantity as mentioned in the table given below:

S. No.	Description of items	Quantity
1)	Langmuir probe	1 No.

Table-1: List of deliverables

#### 3) Technical requirements for Langmuir probe:

3.1) For plasma diagnostics and characterisation Langmuir probe is required to have following features:

S. No	Parameter	Value
1.	Floating Potential Range	-145 V to 145 V
2.	Plasma Potential Range	-100 V to 145 V
3.	Plasma Density Measuring Capability	$10^6 \text{ cm}^{-3}$ to $3 \times 10^{13} \text{ cm}^{-3}$
4.	Electron Temperature Range	0.1 to 15 eV
5.	Ion Current Density Range	$1 \mu\text{A}/\text{cm}^2$ to $300 \text{ mA}/\text{cm}^2$
6.	Electron Energy Distribution Function	0 to 100eV
7.	Probe Length	300 mm to 1200 mm
8.	Probe Diameter	10 mm
9.	Probe Tip Length	10 mm
10.	Probe Tip Diameter	0.2 mm
11.	Probe Bend	90°
12.	Operating Temperature	>1100° C
13.	Tip Material	Tungsten
14.	Flange	KF 40
15.	Probe system	Interchangeable Single & Double Probe system
16.	Operating Pressure (Pascal)	0 to 1,000 Pa

17.	Gas Temperature	20° to 1000°
18.	Gas Reactivity	Inert to Highly Reactive
19.	Plasma power source	Pulsed plasma

*Table-2: Technical Specification of Langmuir probe*

### **3.2) Software suite**

Application software suite should be compatible to Windows 7 or higher version.

### **4) General Instructions:**

- a) Mandatory information: Suppliers shall give complete details of their product, country of origin and compliance certificates from users for technical evaluation (Purchase order reference shall be attached if same equipment or equivalent has been supplied to any Government or defence Laboratory). Quotations submitted with incomplete details are viable for rejection.
- b) Test Certificates and calibration certificates: Calibration certificate shall be provided along with instruments.
- c) Warranty: Warranty shall be 12 months from the date of acceptance at purchaser premises.