

# **BIDDING DOCUMENTS**

**TENDER FOR PURCHASE OF LAB EQUIPMENT AT  
ARMED FORCES MEDICAL STORES LABORATORY (AFMSL),  
IE&I, CHAKLALA GARRISON, RAWALPINDI**



**Bid Reference No. AFMSL/Tender-002/2026**

**ARMED FORCES MEDICAL STORES LABORATORY (AFMSL),  
INSPECTORATE OF ELECTRONICS & INSTRUMENTS (IE&I),  
MINISTRY OF DEFENSE, GOVERNMENT OF PAKISTAN**

**Address:**

**AFMSL, Opposite Boys Line, IE&I, Chaklala Garrison, Rawalpindi**

## **1. INVITATION**

# **INVITATION FOR BIDS**

Armed Forces Medical Stores Laboratory (AFMSL), invites sealed bids from eligible Bidders for following tender:

<b>SR #</b>	<b>Description</b>	<b>Bid Security Amount</b>	<b>Tender Opening Date &amp; Time</b>
1	Purchase of Lab Equipment	Rs. 500,000/-	07 May 2026 1200 hours

2. A complete set of Bidding Documents containing the tender's item details, the scope of services, and terms & conditions can be downloaded from the websites ([www.ppra.org.pk](http://www.ppra.org.pk)) free of cost.

3. Bidding shall be conducted through **Single Stage** – Two Envelop bidding procedure, as per PPRA Rules. The envelope shall be marked as “**TECHNICAL PROPOSAL**” and “**FINANCIAL PROPOSAL**” in bold and legible letters in separate envelopes.

4. Sealed bids are required to be submitted by the interested Bidder (s) on **07 May 2026** till **1100 hours** in the **Conference Room of Armed Forces Medical Stores Laboratory (AFMSL), IE&I Chaklala Garrison, Rawalpindi.**

The bids received till the stipulated date & time shall be opened on the same day at **1200 hours** in the presence of the authorized representatives of the firms. Late bids shall not be entertained.

5. The Procuring Agency reserves the right to reject all Bids or Proposal at any time prior to the acceptance of a bid or proposal under PPRA rule.

**COMMANDING OFFICER  
ARMED FORCES MEDICAL STORES LABORATORY(AFMSL)  
INSPECTORATE OF ELECTRONICS & INSTRUMENTS (IE&I),  
CHAKLALA GARRISON, RAWALPINDI  
PHONE NO # 0342-4409676**

## **2. INTRODUCTION:**

Armed Forces Medical Stores Laboratory (AFMSL), Inspectorate of Electronics & Instruments (IE&I), Chaklala Garrison, Rawalpindi invites sealed bids from eligible Bidder s for following tender:

<b>SR #</b>	<b>Description</b>	<b>Bid Security Amount</b>	<b>Tender Opening Date &amp; Time</b>
1	Purchase of Lab Equipment	Rs. 500,000/-	07 May 2026 1100 hours

A complete set of Bidding Documents containing the tender's item details, the scope of services, and terms & conditions can be downloaded from the websites ([www.ppra.org.pk](http://www.ppra.org.pk)) free of cost.

Bidding shall be conducted through **Single Stage** – Two Envelop bidding procedure, as per PPRA Rules. The envelope shall be marked as “**TECHNICAL PROPOSAL**” and “**FINANCIAL PROPOSAL**” in bold and legible letters in separate envelopes.

Sealed bids are required to be submitted by the interested Bidder (s) on **07 May 2026** till **1100 hours** in the Conference Room of Armed Forces Medical Stores Laboratory (AFMSL), IE&I Chaklala Garrison, Rawalpindi.

### **IMPORTANT NOTE:**

Bidders must ensure that they submit all the required documents indicated in the Bidding Documents without fail. Bids received without, undertakings, valid documentary evidence, supporting documents and the manner for the various requirements mentioned in the Bidding Documents or test certificates are liable to be rejected at the initial stage itself. The data sheets, valid documentary evidences for the critical components as detailed hereinafter should be submitted by the Bidder for scrutiny.

### **APPLICABILITY OF PROCUREMENT RULES**

This Bidding Process will be governed under PPRA Rules, as amended from time to time and instructions of the Government of the Pakistan received during the completion of the project.

### **3. INSTRUCTIONS TO BIDDERS**

1. The Bidder must fulfil all eligibility criteria as specified in the Tender Document (refer to the Eligibility Criteria section for details).
2. The Bidder must be an authorized distributor or seller of the principal foreign manufacturer. In cases where the Bidder is a distributor of an authorized agent, the Bidder shall submit a valid authorization letter along with supporting documentary evidence.
3. The Bidder must be duly registered with the relevant Tax Authorities in accordance with prevailing tax laws. Only firms validly registered with the Sales Tax and Income Tax Departments shall be eligible to participate.
4. The Bidder must be a registered/incorporated company/firm in Pakistan with relevant business experience of at two (02) years as of the date of submission of the bid.
5. The Bidder shall submit a Bid Security amounting to “**Rs. 500,000/- (Rupees Five Hundred Thousand only)**” in favor of “**Officer In-Charge, AFMSL Chaklala, Rawalpindi**”, in the form of a CDR issued by any scheduled bank. Failure to submit the Bid Security shall result in disqualification of the bid.
6. Joint Ventures or consortium bids are not permissible.
7. The Bidder must not have been blacklisted by any Federal or Provincial Government Department, Agency, Organization, Autonomous Body, or any Private Sector Organization in Pakistan. Submission of an undertaking to this effect is mandatory.
8. The Bidder must possess the requisite qualified personnel and adequate capacity to successfully fulfil the requirements of the assignment.
9. The bid shall remain valid for a period of one hundred and fifty (150) days from the date of bid opening.
10. The successful Bidder shall ensure timely supply of items in accordance with the approved quality, standards, and specifications for the tender period as mentioned in the Tender Notice and final agreement.
11. All items shall originate from the as describe in specification.
12. The bidder may participate in a single item or multiple.
13. Submission of any false statement, fake document, or concealment of information shall result in disqualification of the Bidder.
14. It shall be the responsibility of the successful Bidder to supply all items within the specified time (within three months after issuance of the Purchase/Supply Order) at “Armed Forces

Medical Stores Laboratory (AFMSL), IE&I, opposite boys' line, IE&I, Chaklala Garrison, Rawalpindi. The Procuring Agency shall not bear any transportation or related costs.

15. The quantity of item(s) may vary depending upon the requirements and/or budget allocation of the Procuring Agency (AFMSL).
16. Delivery shall be completed within the stipulated timeframe (within three months) from the date of issuance of the Purchase/Supply Order or as otherwise specified by the Procuring Agency.
17. All item(s) shall be delivered at the office of Armed Forces Medical Stores Laboratory (AFMSL), during official working hours, i.e., from 08:00 A.M. to 04:00 P.M.
18. Item(s) not conforming to the required specifications and standards shall not be accepted.
19. The Technical Proposal must include clear photographs of the offered products.
20. In case of violation of any term or condition of the agreement, the Bidder shall be responsible for all losses or damages incurred by the Procuring Agency.
21. The Procuring Agency shall open the tenders, including submissions, in the presence of bidders or their authorized representatives who choose to attend, on the date, time, and venue specified in the Tender Notice. Participants who depute an authorized representative for bid opening must submit an authorization letter.
22. The tender documents shall be submitted without alterations, interlineations, or erasures, except where necessary to comply with instructions issued by the Procuring Agency or to correct errors, in which case such corrections shall be duly initialled by the authorized signatory of the Bidder.
23. The successful Bidder shall submit a Performance Guarantee equivalent to **5%** of the total quoted amount, in favor of "**Officer In-charge, AFMSL Chaklala Rawalpindi**", in the form of a CDR from any scheduled bank. Failure to submit the Performance Guarantee shall result in cancellation of the award.
24. Bids not accompanied by the prescribed bid security, or accompanied by an insufficient amount of bid security, shall not be entertained.
25. The bid security/performance guarantee of the successful Bidder shall be retained until completion of delivery and the guarantee period. Thereafter, it shall be returned upon written request by the Bidder.
26. In case the firm fails to supply any or all items within the stipulated time as per agreement and in accordance with the required quality, specifications, and standards, the security deposit shall be forfeited. The supply order for the remaining items may be issued to the next lowest evaluated Bidder, and action for blacklisting of the firm shall also be initiated.

27. No advance payment shall be made against any invoice. AFMSL shall arrange expeditious payments upon submission of valid invoices. Payment shall be made only after complete delivery of all items.
28. A separate agreement shall be executed with the successful Bidder in accordance with the format attached to the Tender Documents.
29. Bidders may visit the office of Armed Forces Medical Stores Laboratory (AFMSL) during working hours for any clarification or query.
30. The Bidder shall submit complete bids, including the Bid Form and all required appendices.
31. The Bidder must fully comply with all applicable PPRA Rules.
32. The Bidder shall be fully and solely responsible for all deliveries and deliverables to the Procuring Agency.
33. It shall be clearly understood that the Terms & Conditions and Specifications are intended to be strictly enforced. No escalation in cost shall be permitted during the contract period, except in cases of an approved increase in quantity by the Procuring Agency.
34. The Bidder must demonstrate financial soundness to execute the tender. The Bidder shall have a cumulative annual turnover of not less than PKR 3.0 Million per year in any two (02) of the last financial years or the current financial year. Income tax returns for the relevant years must be submitted as evidence.
35. The Bidder must be an authorized agent of a foreign manufacturer or a distributor of such an authorized agent. In case of a distributor, the Bidder shall provide a valid authorization letter.
36. The Bidder shall submit the Technical & Financial Bid strictly in accordance with the prescribed format.
37. The Bidder shall submit **four (04) duly signed and stamped copies** of the TECHNICAL BID, sealed in a single separate envelope clearly marked ‘**TECHNICAL PROPOSAL,**’ and **four (04) duly signed and stamped copies** of the FINANCIAL BID, sealed in a single separate envelope clearly marked ‘**FINANCIAL PROPOSAL.**’ Both sealed envelopes are further enclosed in one outer envelope clearly marked ‘TENDER FOR PURCHASE OF LAB EQUIPMENT AT ARMED FORCES MEDICAL STORES LABORATORY (AFMSL), IE&I, CHAKLALA GARRISON, RAWALPINDI”
38. The Bidder must submit under taking as the “**DECLARATIONS**” and include the following statements (as describe in APPENDIX-5):
  - a. We confirm that we have carefully examined the information provided in the Terms of Reference (TOR) and hereby offer to undertake and provide the supply strictly in accordance with the requirements, specifications, and conditions set forth therein.

- b. We declare that our Technical and Financial Proposals have been prepared independently, without any consultation, communication, agreement, or understanding with any other bidder or party, directly or indirectly, for the purpose of restricting or distorting competition.
- c. We certify that all hard copies and documents submitted as part of the Technical Proposal are true, complete, accurate, and valid to the best of our knowledge and belief.
- d. We confirm that we possess, and shall make available, all necessary human resources, technical expertise, equipment, and financial capacity required for the successful execution of the contract, if awarded.
- e. The Bidder shall perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment, where applicable as per the specifications. Detailed and complete documentation for IQ, OQ, and PQ shall be provided.
- f. The Bidder shall be fully responsible for carrying out all site preparation requirements in accordance with the instrument and equipment specifications.
- g. The Bidder shall be responsible for calibration of the equipment through the Original Equipment Manufacturer (OEM) and an ISO-accredited laboratory, where applicable as per the specifications.
- h. The country of origin of each specific item supplied shall strictly and solely be in accordance with the country of origin specified for that item in the tender specifications.
- i. We acknowledge and agree that at any stage, during or after the procurement process, if any document or information submitted by us is found to be forged, fake, tampered with, misleading, or illegal, our bid shall be declared non-responsive and we shall be rendered ineligible. Furthermore, disciplinary action, including blacklisting, shall be initiated against us in accordance with PPRA Rules, without any right to claim or compensation.
- j. We unequivocally undertake that subcontracting, subletting, or assignment of any part of the services, supplies, or obligations under this contract to any third party is strictly prohibited. We further confirm that no such subcontracting shall be carried out at any stage of contract execution.
- k. During the evaluation of the bids, the Procuring Agency may, at its discretion, ask the Bidder for a clarification of its bid as provided in PPRA rule. The request for clarification and the response shall be in writing, and no change in the prices or

substance of bids like an indication or re-indication of make/model/brand, etc. shall be sought, offered, or permitted.

1. I confirm that I have the authority of [name of Service Provider's company] to submit a proposal and to clarify any details on its behalf.

The Primary Contact & Secondary Contact for all correspondence in relation to this bid is as follows:

Sr.	Name	Contact #
<b>Primary Contact Number:</b>		
01	Mr. Abdul Qadeer Khan (Senior Pharmacist AFMSL)	E-Mail: qmsmanager55@gmail.com Contact No: 0342-4409676 Address: Armed Forces Medical Stores Laboratory (AFMSL), IE&I, opposite boys line, IE&I, Chaklala Garrison, Rawalpindi
02	Mr Aizaz Ali (Pharmacist AFMSL)	Contact No: 0345-9008998 Address: Same as above
03	Mr. Nouman Zafar (Pharmacist AFMSL)	Contact No: 0314-5138617 Address: Same as above
<b>Secondary Contact Number:</b>		
01	Lt Col M. Shahid Sajjad (Officer Commanding AFMSL)	<i>Address:</i> Armed Forces Medical Stores Laboratory (AFMSL), IE&I, opposite boys line, IE&I, Chaklala Garrison, Rawalpindi

Bidder should note that during the period from the receipt of the bid and until further notice from the Primary Contact, all queries should be communicated via the Primary Contact and in writing (e-mail) only. In the case of an urgent situation where the Primary Contact cannot be contacted, the Bidder may alternatively direct their enquiries through the Secondary Contact.

Bidders are also required to state, in their proposals, the name, title, contact number (landline, mobile), fax number and e-mail address of the Bidder 's authorized representative through whom all communications shall be directed until the process has been completed or terminated.

The procuring agency will not be responsible for any costs or expenses incurred by bidder s in connection with the preparation or delivery of bids.

Failure to supply required items/services within the specified time period will invoke penalty as specified in this document.

## **Bidding Method & Evaluation**

### **Bidding Method**

According to PPRA Rule **Single Stage, Two Envelopes** Bidding Procedure shall be adopted

### **Rejection of Bids**

1. The Procuring Agency may reject all bids at any time before the acceptance of a bid. The Procuring Agency shall upon request communicate to the Bidder who participated in the process seeking the reasons for its bid's rejection but is not required to justify those grounds.
2. Notice of rejection of any or all bids shall be given promptly to the concerned Bidders that submitted bids.

### **Performance Security**

The successful Bidder shall furnish performance security in the form of a financial instrument i.e., CDR, Bank Guarantee from a scheduled/recognized bank operating in Pakistan on the format attached as **Appendix-2** of the amount equivalent to **5% of the total contract amount**, with a minimum validity of **12 months** from the date of signing of the contract. The performance guarantee shall be renewed at least one month before its expiry for the renewal of the contract.

### **Bid Evaluation**

1. The Bidder must submit the required documents/profile of the Bidder to be considered for financial Bid opening.
2. Financial bids of technically responsive Bidder (s) shall be opened at a date and time fixed and time fixed and notified in advance to the Bidder. The contract may be awarded to the lowest financial Bid of the technically qualified Bidder (s), Procuring Agency may reject all proposals as per PPRA rule.

# **Form -1**

## **TECHNICAL BID FORM**

To \_\_\_\_\_{ Date}

**OFFICER COMMANDING,**  
Armed Forces Medical Stores Laboratory (AFMSL),  
IE&I, Chaklala Garrison, Rawalpindi.

We, the undersigned, offer to provide the requested purchase of items according to your Bidding documents “**TENDER FOR PURCHASE OF LAB EQUIPMENT AT ARMED FORCES MEDICAL STORES LABORATORY (AFMSL), IE&I, CHAKLALA GARRISON, RAWALPINDI**”, Bid Reference No. **AFMSL/Tender-002/2026**. We are hereby submitting our Bid, which includes this Technical Bid, and a Financial Bid sealed under a separate envelope.

We hereby submit our bid, **comprising four (04) duly signed and stamped copies** of the TECHNICAL BID, sealed in a single separate envelope clearly marked ‘**TECHNICAL PROPOSAL**,’ and **four (04) duly signed and stamped copies** of the FINANCIAL BID, sealed in a single separate envelope clearly marked ‘**FINANCIAL PROPOSAL**.’ Both sealed envelopes are further enclosed in one outer envelope clearly marked ‘**TENDER FOR PURCHASE OF LAB EQUIPMENT AT ARMED FORCES MEDICAL STORES LABORATORY (AFMSL), IE&I, CHAKLALA GARRISON, RAWALPINDI**.’

We understand that the Procuring Agency is not bound to accept any Bid that the Procuring Agency receives.

Yours Sincerely

Authorized Signature {In full and initials}: \_\_\_\_\_

Name and Title of Signatory: \_\_\_\_\_

Address: \_\_\_\_\_

Contact information (phone and email): \_\_\_\_\_

*\*Note: To be signed & stamped by the Bidder on the company letterhead as per pattern given below.*

## FORM – 2

### TECHNICAL BID

The Technical Bid shall include, but shall not be limited to, the following information:

- Name of each item strictly in accordance with the tender document
- Detailed technical specifications for each item and its components
- Model number, brand name, and complete manufacturer information
- Comprehensive and component-wise specifications clearly describing each items in detail

#### ***MANDATORY REQUIREMENT:***

- ❖ The bidder is permitted to use its own prescribed format for quoting prices.
- ❖ The bidder shall quote **prices for each component** on a separate basis.
- ❖ Upon completion of each item, the quoted price must clearly indicate both the cost **inclusive of sales tax** and the cost **exclusive of sales tax**.
  
- ❖ Consolidated or **lump-sum pricing** at the end of the quotation is strictly prohibited.
  
- ❖ Component-wise price quotation is mandatory, and failure to comply with this requirement may result in disqualification of the bid.

*Note: To be signed & stamped by the Bidder on the company letterhead*

## **4. TECHNICAL EVALUATION**

The following evaluation factors/ criteria will be applied to evaluate the **Technical Bids**.

### **TECHNICAL EVALUATION / PROFILE OF THE BIDDER**

The Bidder must comply with all mandatory parameters set forth herein.

*Non-compliance with any mandatory requirement shall render the Bidder non-responsive, and such Bid shall not be considered for further evaluation under the marking parameters.*

#### **MANDATORY OR PREREQUISITE PARAMETERS**

1. The Bidder shall be a legally registered entity with the formal intent to enter into an agreement or operating under an existing valid agreement.
2. The Bidder must possess an active National Tax Number (NTN).
3. The Bidder must possess an active General Sales Tax (GST) Registration Number.
4. The Bidder must possess a valid professional Tax Certificate.
5. The Bidder shall submit an undertaking on stamp paper of not less than PKR 100/- confirming that the Bidder is not barred, blacklisted, or disqualified by any Government or Semi-Government Department, Agency, or Authority (Appendix-4). Any barred/blacklisted/disqualified Bidder shall be ineligible for the bidding process.
6. The Bidder shall fully comply with the technical specifications of all items to be procured as detailed in Appendix-I of this document.
7. Verifiable documentary evidence in support of all the above requirements and criteria is mandatory. Marks shall be awarded strictly on the basis of such verifiable documentation. The Bidder must include a checklist covering all mandatory requirements within the bid submission.
8. The results of the technical evaluation shall be announced and uploaded on the PPRA website. A period of ten (10) days shall be provided after the announcement for submission of grievances relating to technical qualification or disqualification. No grievance concerning technical evaluation shall be entertained after the lapse of the stipulated period or after the opening of financial bids. Any objection raised after the opening of financial bids shall be restricted to the financial bid only.
9. Groupings and Joint Ventures are not permitted.
10. All items shall originate from country as mentioned in specification of each item.
11. The Bidder must attach the original Bid Security in the form of a CDR issued by any scheduled bank, in favor of "Commanding Officer, AFMSL
12. A valid National Identity Card (CNIC) of the Firm Proprietor or Authorized Person must be provided.
13. The Bidder must demonstrate financial soundness to execute the tender. The Bidder shall have a cumulative annual turnover of not less than PKR 3.0 million per year in any two (02) of the last financial years or the current financial year. Income tax returns for the relevant years must be submitted as evidence.

14. The Bidder shall submit photographic images of all quoted items.
15. The Bidder must be an authorized agent of a foreign manufacturer. In case of a distributor, the Bidder shall provide a valid authorization letter. Authorization letter exempt for items as listed below (see notes).
16. The offered Goods are genuine, brand new, non- refurbished, un-altered in any way, of the most recent / current model, imported through proper channel, and incorporate all recent improvements in design and materials.
17. The offered items comply to the Technical Specifications as mentioned in against each items Annexure – 1 of Tender Document.
18. The Bidder must fulfil all eligibility criteria/requirements as specified in the Tender Document (specially refer to the Eligibility Criteria, Scope, instrument specification and general instruction).
19. The bidder must provide complete import-related documentation/data for the purchased items.
20. The Bidder shall submit a Price Reasonability Certificate confirming that the quoted prices are not lower than those offered to any other Government organization.
21. The Bidder shall have successfully executed at least three (03) projects of similar nature and of similar or higher value in public sector organizations during the last three (03) years. Relevant purchase orders, contracts, and/or performance certificates must be attached.
22. The Bidder must attach the original Bid Security (**Rs: 500,000/-**) in the form of a CDR issued by any scheduled bank, in favor of “**Commanding Officer- Armed Forces Medical Stores Laboratory**”.
23. The Bidder must submit four (04) duly signed and stamped copies of the TECHNICAL BID, sealed in a single separate envelope clearly marked ‘**TECHNICAL PROPOSAL,**’ and four (04) duly signed and stamped copies of the FINANCIAL BID, sealed in a single separate envelope clearly marked ‘**FINANCIAL PROPOSAL.**’ Both sealed envelopes are further enclosed in one outer envelope clearly marked ‘TENDER FOR PURCHASE OF LAB EQUIPMENT AT ARMED FORCES MEDICAL STORES LABORATORY (AFMSL), IE&I, CHAKLALA GARRISON, RAWALPINDI”.

**Note:**

- ✓ *The bidder may participate in a single or multiple items.*
- ✓ *Authorization letter is exempt for group 2,3,4 & 5 group*
- ✓ *Authorization letter is also exempt for items no 9,10,19,25,26,28,30,34,35,36,37,44 &45 listed in group 1.*

# **THE SEQUENCE OF TECHNICAL BID**

(MUST BE AS PER THE BELOW-MENTIONED TABLE)

<u><b>MANDATORY OR PREREQUISITE PARAMETERS</b></u>		<b>ATTACHED AT DOCUMENT / CERTIFICATES</b>
1.	The bidder shall submit duly signed & Stamp the Technical Bid Form ( <b>Form-1</b> ) on the company's official letterhead.	Flag-A
2.	The bidder shall submit the duly signed & Stamp Technical Bid Form ( <b>Form-2</b> ), including a detailed list of items to be supplied along with all required information, on the company's official letterhead and in the prescribed format.	Flag-B
3.	The bidder shall submit an undertaking on stamp paper of not less than PKR 100/- confirming that the bidder is not barred, blacklisted, or disqualified by any Government or Semi-Government Department, Agency, or Authority, as per <b>Appendix-4</b> .	Flag-C
4.	The bidder shall submit a duly signed & Stamp <b>Conflict of Interest Undertaking</b> in the prescribed format as per <b>Appendix-3</b> .	Flag-D
5.	The bidder shall submit a duly signed <b>Declarations</b> in accordance with <b>Appendix-5</b> on the company's official letterhead.	Flag-E
6.	A valid <b>CNIC</b> of the firm's proprietor or the authorized representative must be provided.	Flag-E
7.	The Bidder must possess an active <b>National Tax Number (NTN)</b> .	Flag-G
8.	The Bidder must possess a valid <b>Professional Tax Certificate</b> .	Flag-H
9.	The bidder must be an authorized agent of a foreign manufacturer or a distributor of such an authorized agent. A valid <b>authorization letter</b> must be submitted ( <i>Authorization letter is not mandatory for only exempted as listed</i> ).	Flag-I
10.	The bidder shall submit a <b>Price Reasonability Certificate</b> confirming that the quoted prices are not lower than those offered to any other Government organization.	Flag-J
11.	The bidder must demonstrate financial capability to execute the tender. The bidder shall have a cumulative annual turnover of not less than PKR 5.0 million per year in any two (02) of the last financial years or the current financial year. Relevant <b>income tax returns</b> for the applicable years must be submitted as documentary evidence.	Flag-K
12.	The bidder must sign and stamp each page of the <b>Bidding Documents</b> .	Flag-L
13.	The Bidder shall submit <b>photographic images</b> of all quoted items.	Flag-M

14.	The Bidder shall have successfully executed at least three (03) projects of similar nature and of similar or higher value in public sector organizations during the last three (03) years. Relevant purchase orders, contracts, and/or performance certificates must be attached.	Flag-N
15.	The bidder must attach the original Bid Security in the form of a CDR <b>RS 500,000/-</b> issued by any scheduled bank, drawn in favor of “ <b>Commanding Officer, AFMSL</b> ”. The Bid Security must be enclosed in a separate envelope and attached with the main bid documents.	Separately enclosed in Technical Bid Documents
16.	The Bidder must submit <b>four (04) duly signed and stamped copies</b> of the <b>Technical Bid</b> , sealed in a single separate envelope, and <b>four (04) duly signed and stamped copies</b> of the <b>Financial Bid</b> , sealed in a single separate envelope. Both sealed envelopes shall be enclosed in one outer envelope.	-

**NOTE:**

- ✓ *The bidder shall submit four (04) duly signed and stamped copies of the Technical Bid, sealed in a separate envelope clearly marked “TECHNICAL PROPOSAL.”*
- ✓ *The bidder shall submit four (04) duly signed and stamped copies of the Financial Bid, sealed in a separate envelope clearly marked “FINANCIAL PROPOSAL.”*
- ✓ *Both sealed envelopes shall be enclosed in one outer envelope, clearly marked: “TENDER FOR PURCHASE OF LAB EQUIPMENT AT ARMED FORCES MEDICAL STORES LABORATORY (AFMSL), IE&I, CHAKLALA GARRISON, RAWALPINDI”*
- ✓ *Each set of documents (four copies of the Technical Proposal and four copies of the Financial Proposal) must be properly separately bound using tape, ring binding, or any other binding method. Loose documents shall not be accepted.*
- ✓ *Authorization letter is exempt for group 2,3,4 & 5 group*
- ✓ *Authorization letter is also exempt for items no 9,10,19,25,26,28,30,34,35,36,37,44 &45 listed in group 1.*

## **4. FINANCIAL EVALUATION**

The financial evaluation of the Bid shall be according to the financial evaluation as given in **Financial Form 5** (also attach Form 3 &4). Incomplete bids shall stand rejected.

### **Redressal of Grievances**

1. The Procuring Agency shall constitute a committee, according to PPRA rules, comprising the odd number of persons, with proper powers and authorizations, to address the complaints of Bidder s that may occur during the procurement process.
2. Any Bidder feeling aggrieved by any act of the Procuring Agency after the submission of their bid may lodge a written complaint concerning his grievances not later than **10 days** after the announcement of the Bid Evaluation Report.
3. The committee shall investigate and decide upon the complaint as PPRA rules

**Note: The mere fact of lodging a complaint shall not warrant suspension of the procurement process.**

**FORM – 3**

**FINANCIAL BID FORM**

\_\_\_\_\_ {Location, Date}

To

**Officer Commanding,**  
Armed Forces Medical Stores Laboratory (AFMSL),  
IE&I, Chaklala Garrison, Rawalpindi

We, the undersigned, offer to provide the purchase of goods /items for [Insert title of assignment] according to your Bidding Document dated [Insert Date] and our Technical Bid.

Our attached Financial Bid is for {Indicate the corresponding amount(s) currency} {Insert amount(s) in words and figures}, inclusive of all taxes. The estimated amount of taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. Our Bid shall be binding upon us subject to the modifications resulting from Contract negotiations, up to the expiration of the validity period of the Bid.

No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Bid and Contract execution.

We understand you are not bound to accept any Bid you receive.

We understand that the Procuring Agency is not bound to accept any Bid that the Procuring Agency receives.

Yours Sincerely

Authorized Signature {In full and initials}: \_\_\_\_\_

Name and Title of Signatory: \_\_\_\_\_

Address: \_\_\_\_\_

Contact information (phone and email): \_\_\_\_\_

*Note: This must be printed on Company Letter Head*

# **FORM – 4**

## **FINANCIAL BID FORM (BIDDER INFORMATION)**

**Tender Title:**

TENDER FOR PURCHASE OF LAB EQUIPMENT AT ARMED FORCES MEDICAL STORES LABORATORY (AFMSL), IE&I, CHAKLALA GARRISON, RAWALPINDI

**Name of Bidder:**

**Mailing Address:**

**Income Tax Registration No.**

**General Sales Tax Number**

**Company Bank account Number:**

**Total Amount:**

Sign:

Designation:

Stamp

*Note: This must be printed on Company Letter Head*

# **FORM –5**

## **FINANCIAL BID FORM**

[To be signed & stamped by the Bidder and reproduced on the letter head. To be attached with Financial Bid]

The Financial Bid shall include, but shall not be limited to, the following information:

- Name of each item along with detailed technical specifications
  - Brand name, model number, and complete manufacturer details
  - Comprehensive and component-wise cost clearly describing each items in detail
  - Separate price quotation for each individual item
  - Unit price exclusive of sales tax
  - Unit price inclusive of all applicable taxes, duties, and levies
  - Total price expressed both in figures and in words
- 
- **Lowest bidder determination shall be made on an item-wise basis.**
  - **The procuring agency reserves the exclusive right to increase or decrease the quantities specified in this tender document at any stage.**
  - **A standard warranty period of one (01) year shall be applicable to all supplied items.**

*Note: This must be printed on Company Letter Head*

## **ROLES & RESPONSIBILITIES**

### **Primary Responsibilities of the Firm**

The procuring agency shall determine the substantial responsiveness of the Tender to the Tender Document, prior to the Tender evaluation, on the basis of the contents of the Tender itself without recourse to extrinsic evidence.

A substantially responsive Tender is one which:

1. Meet all requirement of PPRA.
2. Meets the eligibility criteria given herein this tender document.
3. Meets the Technical Specifications for the items.
4. Meets the delivery period / point for the items.
5. Meets all parameters mentioned in General Instructions.
6. In compliance with the rate and limit of liquidated damages;
7. Offers fixed price quotations for the all items, whereby no optional offer /bid or price is allowed;
8. Is accompanied by the required Bid Security as part of financial bid envelope;
9. The original receipt of tender fee submitted, attached with technical bid envelope (if applicable);
10. Conforms to all terms and conditions of the Tender Document, without material deviation or reservation.
11. A material deviation or reservation is one which affects the scope, quality or performance of the items or limits the procuring agency rights or the Bidder's obligations under the Contract.
12. The Tender determined as not substantially responsive shall not subsequently be made responsive by the Bidder by correction or withdrawal of the material deviation or reservation

### **Determination of Responsiveness of Bid**

- Prior to the detailed evaluation of the bid, the Client will examine and determine the substantial responsiveness of the bid to the requirements of the bidding documents. A substantially responsive bid is one which:
  - meets the eligibility criteria.
  - has been properly signed on the Bid Form;

- The technical specifications should meet the technical. A Technical Specifications/Technical Bid Form of this document;
- Offers fixed price exclusive of GST quotations i.e. the bid do not offer any scalable price quotation (The price with inclusive GST add in final column of FINANCIAL BID FORM) ;
- is otherwise complete and generally in order;
- Conforms to all the terms, conditions and Specifications of the bidding documents, without deviation or reservation. A material deviation or reservation is one that:
  - i. Affects in any substantial way the scope, quality or performance of the Goods; or
  - ii. Limits in any substantial way, inconsistent with the bidding documents, the Client's rights or the Bidder 's obligations under the Contract.
- The Bidder 's responsiveness shall be based on the contents of the bid itself without recourse to extrinsic evidence.
- The bid determined as not substantially responsive will be rejected by the Client and may not subsequently be made responsive by the Bidder by correction or withdrawal of the nonconforming deviation or reservation.
- The Client may waive any minor informality or non-conformity or irregularity in the bid.
- Correction of Arithmetical Errors: Bid determined to be substantially responsive will be checked by the Client for any arithmetic errors. Errors will be rectified as follows:
  - a. for the item wise bid price entered in paragraph of the Bid Form, if there is a discrepancy between the amounts in Figures and in words, the amount which tallies with the total Bid Price, shown in the Price Schedule, will govern unless the Bid Contains a specific statement confirming the total Bid Price.
  - b. Where there is a discrepancy between the unit rate and the total price resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern and the total price shall be corrected, unless in the opinion of the Bidder, there is an obviously gross misplacement of the decimal point in the unit rate, in which case the total price for each item / equipment as quoted will govern and the unit rate will be corrected, and
  - c. Where there is a discrepancy in the total price quoted in the Price Schedule vis-vis addition of each item / equipment, the total of the itemized prices will govern. The amount stated in the Bid Form will be adjusted by the Client in accordance with the

above procedure for the correction of errors and shall be considered as binding upon the Bidder. If the Bidder does not accept the correction of the errors for any item / equipment in the Bid, his Bid will be rejected for the specific item / equipment and the Bid Security for that item / equipment will be forfeited.

- d. Corrected Total Bid Price: The price as determined after the application of arithmetic corrections shall be termed as Corrected Total Bid Price.

**Responsibilities of the Procuring Agency**

1. Facilitate the Bidder in the smooth provision of services.
2. Preventively performance monitoring of Bidder through a designated officer/officers.
3. Timely payment of Bidder invoices after provision of requisite documents and generation of the satisfactory monthly report.
4. Provide space/storage for equipment and miscellaneous items.

## **FORM OF CONTRACT**

This contract (hereinafter called the “contract”) is made at Rawalpindi, the -----,

Between

Armed Forces Medical Stores Laboratory (AFMSL), Inspectorate of Electronics & Instruments (IE&I), through “Officer Commanding -AFMSL”

(Hereinafter Called the “Procuring Agency”)

And

Services having registered office at (ABC) through its “(XYZ)”

(Hereinafter Called the “Bidder”):

WHEREAS

- a) Armed Forces Medical Stores Laboratory (AFMSL), invited the bids/tender “**TENDER FOR PURCHASE OF LAB EQUIPMENT AT ARMED FORCES MEDICAL STORES LABORATORY (AFMSL), IE&I, CHAKLALA GARRISON, RAWALPINDI**” thereafter in which the Bidder also participated and was declared as Lowest Evaluated Responsive Bidder.
- b) The Bidder has represented to the Procuring Agency that they have the required professional skills and personnel and technical resources have agreed to provide the goods/items on terms and conditions outlined in this Contract as defined in the General Conditions/Special Conditions of the Contract and the Scope of services (hereinafter called as “Services”)
- c) The Procuring Agency has received a budget from the Ministry of Defense, Government of the Pakistan. It intends to apply a portion of the proceeds of this budget to eligible payments, if any, under the Contract. The procuring agency in response thereof after conducting need analysis has decided to purchase of all items for an amount PKR \*\*\*\*\* /- (In words) (The contract amount is not fixed cost; it shall be determined on as per Actual (APA) basis.

**NOW THIS CONTRACT WITNESSETH AS FOLLOWS:**

1. In this Contract words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of this Contract hereinafter referred to as “Contract”:
2. In consideration of the payments to be made by the Procuring Agency to the Bidder as hereinafter hereby covenants with the Procuring Agency to provide the Services and to remedy defects therein in conformity in all respects with the provisions of this Contract.
3. The Procuring Agency hereby covenants to pay the Bidder in consideration of the provision of the goods/items and the remedying of defects therein, the Contract Price, or such other sum as may become payable under the provisions of this Contract at the time and in the manner prescribed by this Contract.
4. The Bidder hereby declares that it has not obtained or induced the procurement of any Contract, right, interest, privilege, or other obligation or benefit from Government of the Pakistan or any administrative subdivision or agency thereof or any other entity owned or controlled by it (Government of the Pakistan) through any corrupt business practice.
5. Without limiting the generality of the fore going, Bidder represents and warrants that it has fully declared the brokerage, commission, fees, etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder’s fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or including the procurement of a Contract, right interest, privilege or other obligation or benefit in whatsoever form from Government of the Pakistan, except that which has been expressly declared pursuant hereto.
6. The Bidder certifies that has made and shall make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with the Government of the Pakistan and has not taken any action or shall not take any action to circumvent the above declaration, representation, or warranty.
7. The Bidder accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts, or taking any action likely to defeat the purpose of this declaration, representation, and warranty. It agrees that any Contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without

prejudice to any other right and remedies available to Government of the Pakistan under any law, contract, or other instruments, be voidable at the option of Government of the Pakistan.

8. Notwithstanding any rights and remedies exercised by the Government of the Pakistan in this regard, Bidder agrees to indemnify the Government of the Pakistan for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to the Government of the Pakistan in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by Bidder as aforesaid to obtain or induce the procurement of any Contract, right, interest, privilege or other obligation or benefit in whatsoever form from Government of the Pakistan.
9. In case of any dispute concerning the interpretation and/or application of this Contract shall be settled through arbitration. The decisions taken and/or awards made by the Arbitrator shall be final and binding on the Parties.
10. The Contract shall not constitute a partnership between the parties and that the Bidder shall not in any manner represent itself as agent or authorized representative of the Procuring Agency of the Government of the Pakistan etc. or be considered as such included.
11. This Contract shall be governed by the laws of Pakistan and the courts of Pakistan shall have exclusive jurisdiction.

NOW, THEREFORE the parties hereto hereby agree as follows:

1. The following documents shall be deemed to form and be read and construed as part of this Contract.
  - General Conditions of Contract;
  - Special Conditions of Contract;
  - Notification of Award / Advance Acceptance of Tender (AAT);
  - Scope of Services;
  - Appendices;
  - Bidding Documents;
  - any other Documents deem appropriate;
2. The mutual rights and obligations of the Procuring Agency and the Bidder shall be as outlined in the Contract, in particular:
  - (a) The Bidder shall carry out the Services/Goods/Items according to the provisions of the Contract; and

(b) The Procuring Agency shall make payments, to the Bidder according to the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

Armed Forces Medical Stores Laboratory (AFMSL),  
Inspectorate of Electronics & Instruments (IE&I),  
Ministry of Defense, Government of Pakistan

\_\_\_\_\_  
Witness 1

\_\_\_\_\_  
Witness 2

\_\_\_\_\_  
Bidder

\_\_\_\_\_  
Witness 1

\_\_\_\_\_  
Witness

### **Preface of Contract**

1. The standard Contract form consists of four parts: The Form of Contract to be signed by the Bidder and the Procuring Agency, the General Conditions of Contract (GCC); the Special Conditions of Contract (SCC); the Scope of Service & Appendices.
2. The General Conditions of Contract shall not be modified. The Special Conditions of Contract that contain clauses specific to each Contract intend to supplement, but not over-write or otherwise contradict the General Conditions.
3. Full requirements, terms, and conditions of the agreement will be agreed upon during clarification with the technical responsive Services/Goods/Items providers. The form and content of the negotiated contract are expected to conform closely to the draft Contract Agreement as included in these Bidding Documents. Services/Goods/Items providers will be expected to address all of the aspects of the General Conditions of Concession Contract in their submissions.

## **6. GENERAL CONDITIONS OF CONTRACT (GCC)**

### **1. General Provisions**

#### **1.1 Definitions**

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

- a) The Arbitrator is the person appointed jointly by the Procuring agency and the Bidder to resolve disputes in the first instance, as provided in PPRA rules hereunder.
- b) “Consideration Amount” means the procuring agency shall make payment to the Bidder after deducting all applicable taxes in consideration of the services rendered to be performed by the Bidder under the contract.
- c) “Contract” means the contract signed by the Parties, to which these General Conditions of Contract (GCC) are attached, together with all the documents listed in Clause 1 of such signed Contract;
- d) “Contract Price” means the price to be paid for the performance of the Services, according to Clause 6;
- e) “Day works” means varied work inputs subject to payment on a time basis for the Bidder’s employees and equipment, in addition to payments for associated materials and administration.
- f) “Procuring agency” means the party who employs the Bidder
- g) “Foreign Currency” means any currency other than the currency of the country of the Procuring agency;
- h) “GCC” means these General Conditions of Contract;
- i) “Government” means the Government of the Pakistan;
- j) “Local Currency” means Pak Rupee (PKR);
- k) “Party” means the Procuring agency or the Bidder, as the case may be, and “Parties” means both of them;
- l) “Personnel” means persons hired by the Bidder as employees and assigned to the performance of the Services or any part thereof;
- m) “Bidder” is a person or corporate body whose Bid / Proposal to provide the Services has been accepted by the Procuring agency;

- n) “Bidder’s Proposal” means the completed Proposal / Bid submitted by the Bidder to the Procuring agency
- o) “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented;
- p) “Specifications” means the specifications of the service included in the Bidding Document submitted by the Bidder to the Procuring agency
- q) “Services” means the work to be performed by the Bidder according to this Contract, as described in Scope of services, Bidding Document, and attached Appendixes.

### **1.2 Applicable Law**

The Contract shall be interpreted under the laws of the Islamic Republic of Pakistan.

### **1.3 Language**

This Contract has been executed in the language **specified in the SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

### **1.4 Notices**

Any notice, request, or consent made according to this Contract shall be in writing and shall be deemed to have been made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram, or facsimile to such Party at the address **specified in the SCC**.

### **1.5 Location**

The Services shall be performed at such locations as are specified in Scope of services, in the specifications and, where the location of a particular task is not so specified, at such locations, whether in the Government’s country or elsewhere, as the Procuring agency may approve.

### **1.6 Authorized Representatives**

Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Procuring agency or the Bidder may be taken or executed by the officials **specified in the SCC**.

### **1.7 Inspection and Audit by the Procuring Agency**

The Bidder shall permit the Procuring Agency to inspect its accounts and records relating to the performance of the Services and to have them audited by auditors appointed by the Procuring Agency if so required.

### **1.8 Taxes and Duties**

The Bidder and their Personnel shall pay such taxes, duties, fees, and other impositions as may be levied under the Applicable Law

## **2. Commencement, Completion, Modification, and Termination of Contract**

### **2.1 Effectiveness of Contract**

This Contract shall come into effect on the date the Contract is signed by both parties and such other later date as may be stated in the SCC (Special Conditions of Contract).

### **2.2 Commencement of Services**

#### **2.2.1 Work Program**

Before commencement of the Services, the Bidder shall submit to the Procuring agency for approval a Work Program showing the general methods, arrangements, order, and timing for all activities. The Services shall be carried out following the approved Work Program as updated.

#### **2.2.2 Starting Date**

The Bidder shall start carrying out the Services as specified in the SCC.

### **2.3 Intended Completion Date**

Unless terminated earlier according to ~~Sub-Clause 2.6~~, the Bidder shall complete the activities by the Intended Completion Date, as is specified in the SCC.

### **2.4 Modification**

Modification of the terms and conditions of this Contract, including any modification of the scope of the Services or the Contract Price, may only be made by written agreement between the Parties.

### **2.5 Force Majeure**

#### **2.5.1 Definition**

For this Contract, "Force Majeure" means an event that is beyond the reasonable control of a Party, and which makes a Party's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.

#### **2.5.2 No Breach of Contract**

The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the party affected by such an event (a) has taken all reasonable precautions, due care, and reasonable alternative measures to carry out the terms and conditions of this Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.

#### **2.5.3 Extension of Time**

Any period within which a Party shall, according to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such activities because of Force Majeure.

## **2.6 Termination**

### **2.6.1 By the Procuring agency**

The Procuring Agency may terminate this Contract, by not less than thirty (30) days written notice of termination to the Bidder, to be given after the occurrence of any of the events specified in below mentioned paragraphs.

- (a) if the Bidder does not remedy a failure in the performance of its obligations under the Contract, within twenty-one (21) days after being notified or within any further period as the Procuring agency may have subsequently approved in writing.
- (b) The performance of services by the Bidder under this agreement shall remain under observation during the whole period of the agreement. In case the services are found unsatisfactory, below the specified standard or non-performance due to strike of the Bidder staff/manpower, this contract shall be terminated by the Procuring Agency after evaluation/probe report of the incident, if the subject was at the behest of the company or its employees, the contract will be terminated upon service of a notice period i.e., 30 days.
- (c) The Procuring Agency shall be entitled to terminate this Agreement forthwith at any time upon serving notice in the event of misconduct either on the part of the Bidder or its employees or non-performance of responsibilities and services by the Bidder. The termination shall be without prejudice to the acquired rights and liabilities of either party before termination. (Read with the previous clause)
- (d) Without prejudice to any other available rights/remedies, the Procuring Agency shall have the right to terminate this agreement at its option for any reason specifically provided hereunder or otherwise in case of any breach of this agreement by the Bidder.
- (e) In such events e.g., non-performance due to strike or violation of contract, the Bidder shall be **BLACKLISTED** as per the prevailing PPRA rules and Performance Guarantee will be encashed or the toolkits/tools/equipment may be confiscated.
- (f) Notwithstanding anything contained in this agreement, each party shall have the right to terminate this agreement upon 30 Days' written notice to the other party and upon written/recorded reasons for the same.
- (g) The Procuring Agency shall be entitled to terminate this Agreement forthwith at any time upon serving notice in the event of misconduct either on the part of the Bidder or its employees or non-performance of responsibilities and services by the Bidder.
- (h) If a procuring agency in its sole discretion and for any reason whatsoever decides to terminate the service contract, the termination shall be without prejudice to the acquired rights and liabilities of either party before termination.

- (i) if, as the result of Force Majeure, the Bidder is unable to perform a material portion of the Services for a period of not less than thirty (30) days; or
- (j) If, the Bidder, in the judgment of the Procuring agency has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. For this sub-clause, the terms set forth constitute corrupt or fraudulent activity:
  - i. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official, Bidder, or Bidder in the procurement process or contract execution to the detriment of the procuring agency; or misrepresentation of facts to influence a procurement process or the execution of a contract;
  - ii. “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
  - iii. “collusive practices” is an arrangement among Bidders (before or after Bid submission) designed to establish Bid prices at artificial, non-competitive levels for any wrongful gain, and to deprive the procuring agency of the benefits of free and open competition, and any request for, or solicitation of anything of value by any public official in the course of the exercise of his duty;
  - iv. “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any person or the property of the person (participant in the selection process or contract execution) to influence improperly the actions of that person;
  - v. “obstructive practice” is deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements before investigators to materially impede an investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or acts intended to materially impede the exercise of the Client’s inspection and audit rights.

### **2.6.2 By the Bidder**

The Bidder may terminate this Contract, by not less than thirty (30) days written notice to the Procuring Agency, such notice to be given after the occurrence of any of the events specified in paragraphs (a) and (b) of this Sub-Clause 2.6.2:

- (a) If the Procuring agency fails to pay any monies due to the Bidder within the agreed timeline according to this Contract, and not subject to dispute according to Clause 7, the Bidder shall

issue first notice that such payment is overdue. After forty-five (45) days of giving written first notice, if the procuring agency still fails to pay, the Bidder shall issue a second written notice. After fifteen days (15) of no response on second notice, the Bidder may give thirty (30) days termination notice; or

- (b) if, as the result of Force Majeure, the Bidder is unable to perform a material portion of the Services for a period of not less than sixty (60) days.

### **3. Obligations of the Bidder**

#### **3.1 General**

The Bidder shall perform the Services according to the Specifications and Scope, and carry out its obligations with all due diligence, efficiency, and economy, according to the generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology and safe methods. The Bidder shall always act, in respect of any matter relating to this Contract or the Services, as a faithful adviser to the Procuring agency, and shall at all times support and safeguard the Procuring agency's legitimate interests in any dealings with third parties.

#### **3.2 Conflict of Interests**

##### ***3.2.1 Bidder Not to Benefit from Commissions and Discounts.***

The remuneration of the Bidder according to PPRA rules shall constitute the Bidder's sole remuneration in connection with this Contract or the Services, and the Bidder shall not accept for their benefit any trade commission, discount, or similar payment in connection with activities according to this Contract or the Services or the discharge of their obligations under the Contract, and the Bidder shall use their best efforts to ensure that the Personnel and agents shall not receive any such additional remuneration.

##### ***3.2.2 Bidder and Affiliates Not to be Otherwise Interested in Project***

The Bidder agrees that during the term of this Contract and after its termination, the Bidder and its affiliates shall be disqualified from providing goods, works, or Services (other than the Services and any continuation thereof) for any project resulting from or closely related to the Services.

##### ***3.2.3 Prohibition of Conflicting Activities***

Neither the Bidder nor the Personnel shall engage, either directly or indirectly, in any of the following activities:

- (a) during the term of this Contract, any business or professional activities which would conflict with the activities assigned to them under this Contract;

- (b) during the term of this Contract, the Bidder shall not hire such public employees, in active duty or on any type of leave, which would conflict with the activities assigned to the Bidder to perform any activity under this Contract;
- (c) after the termination of this Contract, such other activities as may be specified in the SCC.

### **3.3 Confidentiality**

The Bidder and its Personnel shall not, either during the term or within two (2) years after the expiration of this Contract, disclose any proprietary or confidential information relating to the Project, the Services, this Contract, or the Procuring agency's business or operations without the prior written consent of the Procuring agency.

### **3.4 Insurance to be Taken Out by the Bidder**

The Bidder (a) shall take out and maintain at its own cost but on terms and conditions approved by the Procuring agency, insurance against the risks, and for the coverage, as shall be specified in the SCC; and (b) at the Procuring agency's request, shall provide evidence to the Procuring agency showing that such insurance has been taken out and maintained and that the current premiums have been paid.

### **3.5 Bidder's Actions Requiring Procuring Agency's Prior Approval**

The Bidder shall obtain the Procuring agency's prior approval in writing before taking any of the following actions:

- (a) entering a subcontract for the performance of any part of the Services,
- (b) appointing such members of the Personnel not listed by name in Scope ("Key Personnel"),
- (c) changing the Program of activities; and
- (d) any other action that may be specified in the SCC.

### **3.6 Reporting Obligations**

The Bidder shall submit to the Procuring agency the reports and documents specified in Scope in the form, in the numbers, and within the periods outlined in the said scope.

### **3.7 Documents Prepared by the Bidder to be the Property of the PA**

All plans, drawings, specifications, designs, reports, and other documents and software submitted by the Bidder according to Sub-Clause 3.6 shall become and remain the property of the Procuring agency, and the Bidder shall, not later than upon termination or expiration of this Contract, deliver all such documents and software to the Procuring agency, together with a detailed inventory thereof. The Bidder may retain a copy of such documents and software. Restrictions about the future use of these documents, if any, shall be specified in the SCC.

### **3.9 Performance Guarantee**

The Bidder shall provide the Performance Guarantee to the Procuring agency no later than the date specified in the Letter of acceptance / Advance Acceptance of Tender (AAT) in a form as specified in AAT. The Performance Guarantee shall be valid until a date 6 Months from the Completion Date of the Contract.

## **4. Bidder**

### **4.1 Client:**

The Client shall only carry out such duties and exercise such authority as specified in the Contract. The Client shall have no authority to relieve the Contractor of any of his obligations under the Contract, except as expressly stated in the Contract. The Contractor shall proceed with the decisions, instructions or approvals given by the Client in accordance with these Conditions. The Client shall conform to all the relevant clauses of this Tender Document to carry out all responsibilities assigned thereto in a timely manner.

## **5. Obligations of the Procuring Agency**

### **5.1 Assistance and Exemptions**

The Procuring agency shall use its best efforts to ensure that the Government shall provide the Bidder with such assistance and exemptions as **specified in the SCC**.

### **5.2 Services and Facilities**

The Procuring agency shall make available to the Bidder the Services and Facilities listed under Section – C, Scope of Services. Provision of the site free from all encumbrances for construction activity shall be the responsibility of the Procuring Agency.

## **6. Payments to the Bidder**

### **6.1 Payment as per Actual Work Done**

The Bidder's remuneration shall be paid on actual work done upon provision of invoice and complete set of documents required.

### **6.2 Contract Price**

The price payable in Pak Rupees (PKR).

## **7. Quality Control**

### **7.1 Identifying Defects**

The principle and modalities of Inspection of the Goods/Services by the Procuring agency shall be as **indicated in the SCC and scope of services**. The Procuring agency shall check the Bidder's performance and notify him of any Defects that are found. Such checking shall not affect the Bidder's responsibilities. The Procuring agency may instruct the Bidder to search for a Defect and to uncover

and test any service that the Procuring agency considers may have a Defect. The building defects liability period is 4 months, starting from the date mentioned on the “Completion Certificate”.

## **7.2 Correction of Deficiencies, and Non-Performance Penalty**

- (a) The Procuring agency shall give notice to the Bidder of any Defects before the end of the Contract. The Defects liability period shall be extended for as long as Deficiencies remain to be corrected.
- (b) Every time notice of Deficiency is given, the Bidder shall correct the notified Deficiency within the length of time specified by the Procuring agency’s notice.
- (c) If the Bidder has not corrected a Deficiency within the time specified in the Procuring agency’s notice, the Procuring agency will assess the cost of having the Deficiency corrected, the Bidder will pay this amount, and a Penalty for Non- Performance.

## **8. Force Majeure**

- 8.1 For this Contract, “Force Majeure” means an event that is beyond the reasonable control of a Party, and which makes a Party’s performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.
- 8.2 The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of, or default under, this Contract in so far as such inability arises from an event of Force Majeure, provided that the party affected by such an event (a) has taken all reasonable precautions, due care, and reasonable alternative measures to carry out the terms and conditions of this Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.
- 8.3 Any period within which a Party shall, under this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such activities as a result of Force Majeure.

## **9. Forfeiture of Performance Security**

- 9.1 The Performance Security shall be forfeited by the Bidder, on occurrence of any / all of the following conditions:
  - 9.1.1 If the Contractor commits a default under the Contract;
  - 9.1.2 If the Contractor fails to fulfill any of the obligations under the Contract;
  - 9.1.3 If the Contractor violates any of the terms and conditions of the Contract.

- 9.2 The Contractor shall cause the validity period of the performance security to be extended for such period(s) as the contract performance may be extended.
- 9.3 If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract the Bidder may, without prejudice to any other right of action / remedy it may have, forfeit Performance Security of the Contractor.

## **10. Termination for Default**

If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract the Bidder may, at any time, without prejudice to any other right of action / remedy it may have, by written notice served on the Contractor with a copy to the Client, indicate the nature of the default(s) and terminate the Contract, in whole or in part, without any compensation to the Contractor. Provided that the termination of the Contract shall be resorted to only if the Contractor does not cure its failure / delay, within fifteen working days (or such longer period as the Client may allow in writing), after receipt of such notice.

## **11. Termination for Insolvency**

If the Contractor becomes bankrupt or otherwise insolvent, the Bidder may, at any time, without prejudice to any other right of action / remedy it may have, by written notice served on the Contractor with a copy to the Client, indicate the nature of the insolvency and terminate the Contract, in whole or in part, without any compensation to the Contractor.

## **12.1 Termination of Contract**

12.1 If contract fail to ensure the delivery of items within frame time as per specified, procuring agency has right to terminate the contract.

12.2 No composition is by procuring agency upon termination of contract.

## **13. Settlement of Disputes**

### **13.1 Amicable Settlement**

- 13.1.1 The Procuring Agency and the Bidder shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 13.1.2 If, after thirty (30) days from the commencement of such informal negotiations, the Procuring Agency and the Bidder have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred to the Arbitrator for resolution through arbitration.
- 13.1.3 In case of any dispute concerning the interpretation and/or application of this Contract shall be settled through arbitration. The arbitrator will be appointed with the mutual consent of both the parties as referred in SCC. The decisions of the Arbitrator shall be final and binding on the Parties.

### **13.2 Dispute Settlement**

- 13.2.1 If any dispute arises between the Procuring agency and the Bidder in connection with, or arising out of, the Contract or the provision of the Services, whether during carrying out the Services or after their completion, the matter shall be referred to the Arbitrator within 14 days of the notification of disagreement of one party to the other.
- 13.2.2 The Arbitrator shall give a decision in writing within 28 days of receipt of a notification of a dispute.
- 13.2.3 Should the Arbitrator resign or die or should the Procuring agency and the Bidder agree that the Arbitrator is not functioning according to the provisions of the Contract, a new Arbitrator will be jointly appointed by the Procuring agency and the Bidder.

## **14. Authorized Representative**

The procuring agency, the Client or the Contractor may, at their exclusive discretion, appoint their Authorized Representative and may, from time to time, delegate any / all of the duties / authority, vested in them, to their authorized Representative(s), including but not limited to, signing on their behalf to legally bind them, and may, at any time, revoke such delegation.

- 14.1 The Authorized Representative shall only carry out such duties and exercise such authority as may be delegated to him, by the Bidder, the Client or the Contractor.

14.2 Any such delegation or revocation shall be in writing and shall not take effect until notified to the other parties to the Contract.

14.3 Any decision, instruction or approval given by the Authorized Representative, in accordance with such delegation, shall have the same effect as though it had been given by the Principal.

14.4 Any decision, instruction or approval given by the Authorized Representative, in accordance with such delegation, shall have the same effect as though it had been given by the Principal.

## **15. Fines & Penalties**

15.1 Liquidated damages shall be levied @ 0.25% of the Contract Price which is attributable to such part of the Goods / the Services / the Works as cannot, in consequence of the failure / delay, be put to the intended use, for every day between the scheduled delivery date(s), with any extension of time thereof granted by the Bidder, and the actual delivery date(s). Provided that the amount so deducted shall not exceed, in the aggregate, 50% of the Contract Price. (This penalty will also be invoked on the commitments given by the Contractor in the technical proposal).

## **7. GENERAL GUIDELINES**

1. The Bidder shall be liable to pay compensation for any loss and damage caused to the property of the Procuring Agency or its staff by the Bidder or its workers. The Bidder can also partner with an insurance company that will pay to compensate for the damage on behalf of the Services/Goods Provider.
2. The Bidder shall be entirely responsible for the conduct of its staff and in case of any complaint against any staff, Bidder will be under obligation to take necessary action to replace any staff (under the clause of persona non grata) when instructed in writing by the focal person appointed by the Procuring Agency. The Bidder shall observe all the laws and will be responsible for any prosecution or liability arising from breach of labor laws. The Procuring Agency shall not be responsible for any such action concerning staff on the rolls of the Bidder whatsoever.
3. In such circumstances when the Bidder is unable to provide the required services/goods, the Procuring Agency has the right to withhold payment and procure the services/goods of any other Bidder for the same financial amount.

## 8. SPECIAL CONDITIONS OF CONTRACT

Number of GC Clause	Supplements to, Clauses in the General Conditions of Contract
1.1 (a)	The Arbitrator / Adjudicator is: Armed Forces Medical Stores Laboratory, IE&I, Ministry of Defense
1.1 (b)	“Consideration Amount” means the procuring agency shall make payment to the Bidder after deducting all penalties, applicable taxes in consideration of the services rendered to be performed by the Bidder under the contract.
1.1 (c)	The contract name is: “TENDER FOR PURCHASE OF LAB EQUIPMENT AT ARMED FORCES MEDICAL STORES LABORATORY (AFMSL), IE&I, CHAKLALA GARRISON, RAWALPINDI” Bid Reference No. AFMSL/Tender-001/2026.
1.1 (f)	The Procuring Agency is: Officer Commanding, Armed Forces Medical Stores Laboratory (AFMSL), IE&I, Chaklala Garrison, Rawalpindi.
1.1 (m)	The Bidder is>..... having registered office at -----, Rawalpindi through its “-----”
1.2	The Applicable Law is: Laws of Islamic Republic of Pakistan
1.3	The language is: English
1.4	The addresses <b>Officer Commanding,</b> Armed Forces Medical Stores Laboratory (AFMSL), Inspectorate Of Electronics & Instruments (IE&I), opposite boys line, Chaklala Garrison, Rawalpindi. MINISTRY OF DEFENSE, GOVERNMENT OF PAKISTAN  Bidder: M/s **** Attention: CNIC: Tel: Email:
1.6	The Authorized Representatives are: For the Procuring Agency: Armed Forces Medical Stores Laboratory (AFMSL) For the items/ Goods/ Services Provider:
2.1	The Contract shall come into force with effect from the date on which both parties have signed the contract i.e., *****
2.2.2	Bidder shall commence the Items/ Goods/ Services as per defined time period from the award of the contract.
2.3	2. Performance review of the Bidder. 3. Approval of Competent Authority. 4. Renewal of the Performance Guarantee by the Goods/ Services Provider.
6.2(a)	The approx. cost of the contract is PKR ***** /- (In words)

## 9. SCOPE OF SERVICES

The Armed Forces Medical Stores Laboratory (AFMSL), Chaklala Garrison, Rawalpindi require the services for purchase of lab equipment.

SR #	Description	Bid Security Amount	Tender Opening Date & Time
1	Purchase of Lab Equipment	Rs. 500,000/-	07 May 2026 1200 hours

The successful bidder (Services Provider) shall be required to perform the following scope of work in full compliance with the terms and conditions of the tender:

1. The bidder shall deliver all supplied items to the office of Armed Forces Medical Stores Laboratory (AFMSL), Chaklala Garrison Rawalpindi.
2. The bidder shall ensure the timely supply of all items in strict accordance with the approved quality, standards, specifications, and instructions as stipulated in the tender notice and related documents.
3. The offered Goods are genuine, brand new, non- refurbished, un-altered in any way, of the most recent / current model, imported through proper channel, and incorporate all recent improvements in design and materials
4. The bidder shall strictly adhere to all provisions of the agreement and shall not commit any violation of contractual terms and conditions.
5. All supplied items must be original, genuine, traceable, and free from any defects. In the event that any defects are identified, the Procuring Agency reserves the right to reject and return such items to the bidder at the bidder's own cost and risk.
6. No deviation from the specified technical requirements or special instructions outlined in the tender documents shall be permitted.
7. The Bidder shall perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment, where applicable as per the specifications. Detailed and complete documentation for IQ, OQ, and PQ shall be provided.
8. The Bidder shall be fully responsible for carrying out all site preparation requirements in accordance with the instrument and equipment specifications.

9. The Bidder shall be responsible for calibration of the equipment through the Original Equipment Manufacturer (OEM) and an ISO-accredited laboratory, where applicable as per the specifications.
10. The country of origin of each specific item supplied shall strictly and solely be in accordance with the country of origin specified for that item in the tender specifications.
11. All items shall be properly packed, protected, and labeled, and delivered safely to the designated site/place to prevent damage during transportation and handling.
12. The bidder shall provide a minimum warranty period of two (02) years against any quality-related defects or failures.
13. The bidder must be an authorized agent of the foreign manufacturer or appointed distributor of such an authorized agent. Relevant authorization documents shall be provided as part of the bid.
14. The bidder shall submit clear photographic images of all quoted items, indicating reference/catalogue numbers, along with the technical bid.
15. Groupings, or joint ventures shall not be permitted under this tender.
16. The bidder shall provide documentary evidence of importation of the supplied items and shall also arrange a manufacturer's certificate of purchase issued in the name of the Procuring Agency.
17. Authorization letter is exempt for Group 2,3,4 & 5 group (other than instrument)
18. Authorization letter is also exempt for items no 9,10,19,25,26,28,30,34,35,36,37,44 &45 listed in Group 1.
19. The bidder shall clearly highlight compliance with all technical specifications in the technical bid, supported by relevant documentation and evidence.
20. The bidder shall be solely responsible for ensuring full compliance with all applicable national and international laws, regulations, safety standards, and import/export requirements relevant to the supplied goods and services.

## **APPENDIX-1**

### **LIST OF LAB EQUIPMENT WITH SPECIFICATIONS**

#### **A. GROUP A: INSTRUMENT**

##### **1. AIRBORNE PARTICLE COUNTER**

###### **AIRBORNE PARTICLE COUNTER:**

###### **SPECIFICATION:**

Airborne particle counters are specialized devices used to detect, count, and size particles in the air, primarily for environmental monitoring and contamination control for microbiological sterility lab. Equipment should be 21-CFR compliant and ISO-14644-1 compliant

###### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Type: Handheld, portable
- b. Measuring Range (Particle size): 0.2 to 10  $\mu\text{m}$
- c. Flow Rate:  $\geq 100\text{LPM}$
- d. Size Channels: Fully user-selectable size channels
- e. Data Storage:  $\geq 10000$  samples
- f. Locations:  $\geq 2000$
- g. Display: Digital Display with touch screen or better
- h. Run time: battery backup up to 6 hours or above.
- i. Data integrity: Real time monitoring with thermal printer attached or USB data storage

###### **2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.

- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**2. AIR SAMPLER**

**ACTIVE AIR SAMPLER:  
SPECIFICATION:**

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Type: Handheld, portable
- b. Petri dish holder: Autoclave-able and removable
- c. Flow Rate: 100LPM or above
- d. Size Channels: Fully user-selectable size channels
- e. Data Storage: ≥1000 samples
- f. Locations: ≥200
- g. Display: Digital Display with touch screen or better
- h. Calibration: Auto calibration
- i. Run time: battery backup up to 6 hours or above.
- j. Data integrity: Real time monitoring with thermal printer attached or USB data storage

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee

- i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
- ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
- iii. Full responsibility during the warranty period shall lie with the supplier.
- iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**3. COOLED INCUBATOR**

**COOLED INCUBATOR**

**SPECIFICATION:**

Cooled incubators (refrigerated incubators) are specialized laboratory devices designed to maintain precise, stable temperatures below, at, or above ambient room temperature for storage/incubation of microbiological items.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Capacity:  $\geq 400$  Liters
- b. Temperature range: 0°C up to +70 °C or better
- c. Temperature accuracy:  $\leq 0.1$ °C
- d. Display: Digital
- e. Adjustable parameters: Temperature & time
- f. Timer range: 1 minute to 99 days
- g. Temperature control technology.
- h. Calibration: Internal calibration function must available
- i. Material for Casing & Interior: Stainless steel
- j. Communication: USB stick, programmed stored, data logger via Ethernet interface

- k. Over Temperature Protection: Feature available
- l. Ventilation system: Available

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall be responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**4. ADDITIONAL REQUIREMENTS:**

- a. Online pure sine waves UPS 5KV with backup 30 minutes or more.

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## **4. COOLED INCUBATOR**

### **COOLED INCUBATOR**

#### **SPECIFICATION:**

Cooled incubators (refrigerated incubators) are specialized laboratory devices designed to maintain precise, stable temperatures below, at, or above ambient room temperature for storage/incubation of microbiological items.

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Capacity:  $\geq 700$
- b. Temperature range:  $0^{\circ}\text{C}$  up to  $+70^{\circ}\text{C}$  or better
- c. Temperature accuracy:  $\leq 0.1^{\circ}\text{C}$
- d. Display: Digital
- e. Adjustable parameters: Temperature & time
- f. Timer range: 1 minute to 99 days
- g. Temperature control technology.
- h. Calibration: Internal calibration function must available
- i. Material for Casing & Interior: Stainless steel
- j. Communication: USB stick, programmed stored, data logger via Ethernet interface
- k. Over Temperature Protection: Feature available
- l. Ventilation system: Available

#### **1. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, or Japan
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**2. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**3. ADDITIONAL REQUIREMENTS:**

- a. Online pure sine waves UPS 5KV with backup 30 minutes or more.

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**5. AUTO CATHETER FLOW RATE TESTER**

**AUTO CATHETER FLOW RATE TESTER**

**SPECIFICATION:**

The Auto Catheter Flow Rate Tester is designed to measure the flow rate of water through the catheters, in compliance with the following standards ISO 10555-1-2023, ISO8536-4, ISO 20698, EN1618, etc.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Test Type: Flow rate measurement
- b. Balance Range: 0 - 3000g
- c. Accuracy:  $\leq 0.5g$
- d. Flow Rate: 525mL/min, 500ml/min or better
- e. Speed Deviation: 3mL/min or better
- f. Test time range: 1~99999s
- g. Time Deviation:  $\leq \pm 1$

**2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

**3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements

- i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
- ii. A valid calibration certificate shall be provided at the time of installation.
- iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**5. ADDITIONAL REQUIREMENTS:**

- a. Online pure sine waves UPS 5KV with backup 30 minutes or more.
- b. Air conditioner split, 2-ton capacity for instrument environment condition control

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## **6. STAPLER BLADE SHARPNESS TESTER**

### **STAPLER BLADE SHARPNESS TESTER**

#### **SPECIFICATION:**

The Stapler Blade Sharpness Tester is circular linear cutters stapler blade sharpness tester is suitable for measuring the sharpness of medical stapler circular cutters, linear cutters, and circular cutters. The instrument complies with ISO YY0174, YY0876.

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Test Type: Sharpness
- b. Test Range: 0-50N (100N 250N optional)
- c. Accuracy:  $\leq 0.5\%$  FS
- d. Resolution:  $\leq 0.05$ N
- e. Testing Speed: 0.05-600mm/min
- f. Calibration: Automatic, self-calibration
- g. Storage Function:  $\geq 50,000$  data
- h. Software: Fully computer control

#### **2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

#### **3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.

- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**5. ADDITIONAL REQUIREMENTS:**

- a. Online pure sine waves UPS 5KV with backup 30 minutes or more.
- b. Air conditioner split, 2-ton capacity for instrument environment condition control

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**7. HOT INCUBATOR**

**HOT INCUBATOR**

**SPECIFICATION:**

Hot incubators, or laboratory incubators, are used to create controlled, heated environments to grow and maintain microbiological cultures, cell/tissue cultures, and microorganisms.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Capacity: ≥400 Liters
- b. Adjustable parameters: Temperature & time
- c. Temperature range: 10°C up to +80 °C or better
- d. Temperature accuracy: ≤0.1°C
- e. Timer range: 1 minute to 99 days, 23 hours
- f. Material for Casing & Interior: Stainless steel
- g. Over Temperature Protection: Feature available
- h. Over Temperature Protection
- i. Display: Digital
- j. Temperature control technology.
- k. Calibration: Internal calibration function must available
- l. Material for Casing & Interior: Stainless steel
- m. Communication: USB stick, programmed stored, data logger via Ethernet interface
- n. Ventilation system: Available

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**4. ADDITIONAL REQUIREMENTS:**

- b. Online pure sine waves UPS 5KV with backup 30 minutes or more.

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## **8. HOT INCUBATOR**

### **HOT INCUBATOR**

#### **SPECIFICATION:**

Hot incubators, or laboratory incubators, are used to create controlled, heated environments to grow and maintain microbiological cultures, cell/tissue cultures, and microorganisms.

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Capacity:  $\geq 700$  Liters
- b. Adjustable parameters: Temperature & time
- c. Temperature range: 10°C up to +80 °C or better
- d. Temperature accuracy:  $\leq 0.1^\circ\text{C}$
- e. Timer range: 1 minute to 99 days, 23 hours
- f. Material for Casing & Interior: Stainless steel
- g. Over Temperature Protection: Feature available
- h. Over Temperature Protection
- i. Display: Digital
- j. Temperature control technology.
- k. Calibration: Internal calibration function must available
- l. Material for Casing & Interior: Stainless steel
- m. Communication: USB stick, programmed stored, data logger via Ethernet interface
- n. Ventilation system: Available

#### **2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**4. ADDITIONAL REQUIREMENTS:**

- c. Online pure sine waves UPS 5KV with backup 30 minutes or more.

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**9. MINI-FOLD FILTRATION ASSEMBLY**

**MINI-FOLD FILTRATION ASSEMBLY WITH VACUUM PUMP**

Mini-Fold Filtration Assembly (often referred to as a mini-manifold) made of stainless steel is a laboratory tool designed for simultaneous, high-throughput microfiltration of multiple samples

**SPECIFICATION:**

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. System type: mini-fold membrane filtration assembly
- b. Channel: 06-Channel
- c. Material made up of: stainless steel filtration assembly and shall be suitable for simultaneous filtration of three samples
- d. Filtration Funnel: shall be complete with stainless steel filtration holder, funnel, membrane support, and required sealing arrangement for leak-free operation
- e. Vacuum pump: an oil-free diaphragm pump
- f. Vacuum pump design: single-head, single-stage design or better
- g. Pumping Speed: 0.7-3.8 m<sup>3</sup>/h or better
- h. Frequency: ≤50 Hz
- i. Vacuum: 100 mbar absolute or better
- j. Maximum outlet pressure: 1-4 bar or better
- k. Noise level: NMT 49 dBA
- l. Inlet nozzle hose: DN 6–10 mm or better
- m. Vacuum pump protection class: Minimum IP40
- n. Motor power: ≤0.18 kW

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).

- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**10. MINI-FOLD FILTRATION**

**MINI-FOLD FILTRATION ASSEMBLY STAINLESS STEEL WITH VACUUM PUMP**

Mini-Fold Filtration Assembly (often referred to as a mini-manifold) made of stainless steel is a laboratory tool designed for simultaneous, high-throughput microfiltration of multiple samples

**SPECIFICATION:**

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. System type: mini-fold membrane filtration assembly
- b. Channel: 03-channel
- c. Material made up of: stainless steel filtration assembly and shall be suitable for simultaneous filtration of three samples
- d. Filtration Funnel: shall be complete with stainless steel filtration holder, funnel, membrane support, and required sealing arrangement for leak-free operation
- e. Vacuum pump: an oil-free diaphragm pump
- f. Vacuum pump design: single-head, single-stage design or better

- g. Pumping Speed: 0.7-3.8 m<sup>3</sup>/h or better
- h. Frequency: ≤50 Hz
- i. Vacuum: 100 mbar absolute or better
- j. Maximum outlet pressure: 1-4 bar or better
- k. Noise level: NMT 49 dBA
- l. Inlet nozzle hose: DN 6–10 mm or better
- m. Vacuum pump protection class: Minimum IP40
- n. Motor power: ≤0.18 kW

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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## **11. VISCOMETER**

### **VISCOMETER:**

#### **SPECIFICATION:**

A viscometer is a laboratory instrument used to measure a fluid's internal resistance to flow, known as viscosity.

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Parameter: viscosity, temperature
- b. Measuring units (Viscosity): Centipoise (cP), millipascal-second (mPa-s), pascal-second (Pa-s)
- c. Speed limit (No of increment)  $\geq 700$
- d. Speed range: 0.0 to 59.9 RPM  $\pm 0.1$ .RMP: 60 to 200 RPM  $\pm 1$ .RMP
- e. Speed accuracy:  $\leq \pm 1.0\%$  of set value
- f. Temperature range:  $-100^{\circ}\text{C}$  to  $+300^{\circ}\text{C}$
- g. Temperature accuracy:  $\leq \pm 1.0\%$  of set value
- h. Temperature unit:  $^{\circ}\text{C}$ ,  $^{\circ}\text{F}$  or K
- i. Torque: %, mmilli-Newton, dyne-centimete
- j. Repeatability:  $\pm 0.2\%$  or better
- k. Temperature probe for viscometer: must available
- l. Spindle: sets of complete range of spindle for measuring viscosity of medicines

#### **2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**12. COLONY COUNTER**

**COLONY COUNTER**

**SPECIFICATION:**

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Type: Automatic Counting
- b. Display: 3 Digital (as well as image on computer screen)
- c. Lighting: Dark & White
- d. Count: 0-999
- e. Plate Capacity: 90 mm diameter or better
- f. Imaging: high-resolution digital CCD camera
- g. Function; Software base
- h. Communication: USB or PC

**2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

**3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements

- i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
- ii. A valid calibration certificate shall be provided at the time of installation.
- iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**13. CATHETER FLOW RATE TESTER**

**CATHETER FLOW RATE TESTER:**

**SPECIFICATION:**

The Catheter Flow Rate Tester is designed to measure the flow rate of water through the catheters, in compliance with the following standards ISO8536-4, EN1618. Instrument is suitable for Nelaton catheters, suction catheters, and other non-intravascular catheters.

**5. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Pressure System: up to 1000
- b. Pressure Accuracy:  $\leq \pm 10$ mm
- c. Flow rate: 525ml/min or better
- d. Output unit: L/min and g/min

- e. Constant temperature option: Constant temperature water tank option available
- f. Timer: Adjustable time feature available
- g. Flow Rate Calculation: Automatic, high-precision, real-time
- h. Up & down moving feature: Available
- i. Display: Digital
- j. Printer: connectivity for Laser printer, thermal printer or micro printer and USB interface

**6. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

**7. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**8. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.

- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**9. ADDITIONAL REQUIREMENTS:**

- c. Online pure sine waves UPS 5KV with backup 30 minutes or more.
- d. Air conditioner split, 2-ton capacity for instrument environment condition control

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## **14. KJELDHAL APPARATUS**

### **KJELDHAL APPARATUS**

**SPECIFICATION:**

Kjeldhal apparatus is used for quantitative determination of nitrogen and crude protein in organic and inorganic materials.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Measuring range: 0.05 to 200 mg N or better
- b. Analysis time:  $\leq 5$  minute per 100ml
- c. Reproducibility:  $\leq 1\%$  RSD
- d. Nitrogen recovery:  $\geq 99.5\%$
- e. Limit of detection: 0.02 or better
- f. Steam generation: 15-100% output
- g. Timer: minimum 05 sec to 99 hours
- h. Heating option: rapid heating option must available
- i. Condenser: titanium technology or equivalent, corrosion-resistant
- j. water consumption on cooling: 0.7-1.2 L/min
- k. output from 10% to 100% for analytical flexibility
- l. Data storage:  $\geq 5$  customizable methods
- m. communication: USB, Ethernet interface or PC

**2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

**3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.

- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**15. SONICATOR**

**SONICATOR**

**SPECIFICATION:**

A sonicator uses high-frequency ultrasonic sound waves (cavitation) to break down, agitate, or mix particles in liquid samples.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Capacity: ≥2.5 Liter or better
- b. Temperature Range: 30-80°C (minimum set 5°C)
- c. Time: 1-30 minutes
- d. Ultrasonic frequency: 37 kHz or better
- e. Ultrasonic power range: 50-300 W or better

- f. Tank: Stainless steel
- g. Outer casing: Stainless steel or noncorrosive material, insulated

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall be responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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## **16. WATER BATH**

### **WATER BATH:**

Water bath is essential, thermostatically controlled device used to heat samples gently and uniformly to a constant temperature.

### **SPECIFICATION:**

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Volume:  $\geq 2$  liters
- b. Temperature range: 15°C to 90°C
- c. Working temperature range:  $\leq 5^\circ\text{C}$  or better
- d. Fault detection: Equipped with auto diagnostic system and fault indication system
- e. Display: Digital Display
- f. Temp. resolution:  $\leq 0.1^\circ\text{C}$  or better
- g. Timer system: Integrated digital timer adjustable
- h. Time resolution:  $\leq 1$  minute or better
- i. Construction: A class stainless steel, inner and outer surface should be corrosion-proof

#### **2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

#### **3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall be responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification

- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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## **17. WATER BATH**

### **Water Bath:**

Water bath is essential, thermostatically controlled device used to heat samples gently and uniformly to a constant temperature.

### **SPECIFICATION:**

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Volume:  $\geq 4$  liters
- b. Temperature range: 15°C to 90°C
- c. Working temperature range:  $\leq 5^\circ\text{C}$  or better
- d. Fault detection: Equipped with auto diagnostic system and fault indication system
- e. Display: Digital Display
- f. Temp. resolution:  $\leq 0.1^\circ\text{C}$  or better
- g. Timer system: Integrated digital timer adjustable
- h. Time resolution:  $\leq 1$  minute or better
- i. Construction: A class stainless steel, inner and outer surface should be corrosion-proof

#### **2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
- iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.

v.

- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**18. WATER BATH**

**Water Bath:**

Water bath is essential, thermostatically controlled device used to heat samples gently and uniformly to a constant temperature.

**SPECIFICATION:**

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Volume:  $\geq 12$  liters
- b. Temperature range: 15°C to 90°C
- c. Working temperature range:  $\leq 5^\circ\text{C}$  or better
- d. Fault detection: Equipped with auto diagnostic system and fault indication system
- e. Display: Digital Display
- f. Temp. resolution:  $\leq 0.1^\circ\text{C}$  or better
- g. Timer system: Integrated digital timer adjustable
- h. Time resolution:  $\leq 1$  minute or better
- i. Construction: A class stainless steel, inner and outer surface should be corrosion-proof

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee

- i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
- ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
- iii. Full responsibility during the warranty period shall lie with the supplier.
- iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- v.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- ⊕ All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**19. ORBITAL SHAKER**

**ORBITAL SHAKER SPECIFICATION:**

Orbital shakers are versatile laboratory instruments used for mixing, dissolving, and agitating samples (liquids) in flasks via a circular shaking motion.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Speed range: 50 to 450 rpm
- b. Maximum permissible load: ≥ 4 5 kg
- c. Driven system: EC motor or equivalent
- d. Orbit diameter: ≥ 10 mm or better
- e. Noise level: ≤ 50 dB(A)
- f. Flask holder: all range of holder cover 50ml-2Ltr holding capacity

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.

- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**20. SONICATOR**

**SONICATOR**

**SPECIFICATION:**

A sonicator uses high-frequency ultrasonic sound waves (cavitation) to break down, agitate, or mix particles in liquid samples.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Capacity: ≥5.0 Liter or better
- b. Temperature Range: 30-80°C (minimum set 5°C)
- c. Time: 1-30 minutes
- d. Ultrasonic power range: 100-450 W or better
- e. ultrasonic frequency: 37 kHz or better
- f. Tank: Stainless steel
- g. Outer casing: Stainless steel or noncorrosive material, insulated

h. Drain connection: Available

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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## **21. THIN-LAYER CHROMATOGRAPHY (TLC)**

### **THIN-LAYER CHROMATOGRAPHY (TLC) APPARATUS**

#### **SPECIFICATION:**

Thin-layer chromatography (TLC) is a rapid, inexpensive, and sensitive analytical technique used to separate, identify, and monitor the purity of compounds in a mixture. TLC using conventional layers, enabling sample application, chromatogram development, derivatization, UV evaluation, and functional system checks.

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. TLC Plate capability: self-coated plates up to 20 × 20 cm, HPTLC plates 10 × 10 cm, 20 × 10 cm, and TLC/HPTLC sheets up to 20 × 20 cm or better
- b. Capillary volumes range: 1 - 5 µL
- c. Capillary dosage precision:  $\leq \pm 0.3\%$
- d. Development chambers:  $\leq 2$
- e. Derivatization system: all-glass reagent sprayer with Erlenmeyer flask or equivalent
- f. Chromatogram evaluation system: UV cabinet for inspection of chromatograms
- g. UV lamp: Dual (wavelength 254/366 nm UV lamp)
- h. UV viewing system: protective filter glass
- i. Communication:

#### **2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

#### **3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.

- iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**22. MELTING POINT METER**

**Melting Point Meter:**

**SPECIFICATION:**

Melting point meters (or apparatus) are laboratory instruments used to determine the temperature at which a solid substance turns into a liquid.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Measuring Temperature Range: 30- 300 °C
- b. Temperature accuracy: ±0.5 °C
- c. Temperature resolution: ≤ 0.1 °C or better
- d. Preheating rate time limit: ≤5 minutes up to 200 °C
- e. Heating rate: ≤ 1 °C/min or equivalent
- f. Observation type: optics of 10× magnification or better
- g. Communication: RS-232 interface

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, German, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.

- ii. A valid calibration certificate shall be provided at the time of installation.
- iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. **Warranty / Guarantee**
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. **Maintenance:** The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**4. ADDITIONAL REQUIREMENTS:**

- a. 30 set 100 capillaries compatible with equipment

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## **23. POTENTIOMETRIC TITRATOR**

### **POTENTIOMETRIC TITRATOR:**

#### **SPECIFICATION:**

Potentiometric titrator used to determine an analyte's concentration by measuring the electric potential change between electrodes, rather than relying on color indicators. They are widely used for acid-base, redox, precipitation, and complexometric titrations in industries like pharmaceuticals, food, and environmental testing for high accuracy and precision

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Measuring Parameter: pH, mV, ISE, redox and photometric measurement
- b. pH measuring range: -3.0 to 17.0 pH
- c. pH resolution:  $\leq 0.002$
- d. mV measuring range: -1500 to +1900 mV
- e. mV display resolution:  $\leq 0.2$
- f. Endpoint:  $\geq 2$  end points
- g. Data storage:  $\geq 30$  user methods
- h. Measuring input: double platinum electrodes with adjustable polarization voltage from 40 to 220 mV
- i. Temperature input: Pt1000 and NTC 30 k $\Omega$  sensors
- j. Temperature resolution: -75 to 195 °C with Pt1000 and -40 to 125 °C with NTC 30 k $\Omega$
- k. Display: Digital
- l. Burette resolution:  $\geq 15,000$
- m. Display resolution:  $\leq 0.1$  °C
- n. Reference electrode: 24-bit transducer technology, analog pH/mV measuring
- o. Electrode connection: through DIN 19 262 socket or equivalent
- p. Communication interfaces: USB or RS232
- q. Balance connection: option Available
- r. Burette modules: 5 mL, 10 mL, 20 mL, and 50 ml

#### **2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.

- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**24. POLARIMETER**

**POLARIMETER**

**SPECIFICATION:**

A polarimeter is used to measure the angle of rotation caused by passing polarized light through an optically active substance.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Measuring Parameter: Optic rotation, angular rotation, temperature
- b. Optical density: up to 3.0 OD at 589 nm
- c. Polarimeter tubes: 10 mm up to 200 mm
- d. Measuring range: -355 to +355 °Angular or -225 to +225 °Z
- e. Resolution: 0.01 °Angular
- f. Reproducibility: ±0.002 °Angular or better
- g. Temperature measuring range: 10 to 35 °C
- h. Temperature sensor accuracy: ≤ ±0.2°C
- i. Communication: USB, Ethernet, PC & LIMS connectivity
- j. Display: Digital, touch screen
- k. Calibration: Automatic self-calibration option must available
- l. Regulatory requirement: complies with FDA 21 CFR Part 11
- m. Storage Capacity: Over 5000 reading

**2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)

- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

**3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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## **25. MICROSCOPE WITH CAMERA**

### **MICROSCOPE WITH CAMERA:**

#### **SPECIFICATION:**

##### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Microscope should be: Binocular or better
- b. Eye pieces: 10X/22mm or better
- c. Objective Lens:  $\geq 4X$ , 10X, 20X, 40X, and 100X
- d. Stage: Mechanical stage with ceramic-coated surface, 0.1 mm precision, X-axis arrangement with two slides holding.
- e. Illumination system: Should be high-efficiency LED with continuous intensity adjustment or better
- f. Focusing system: Coarse and fine coaxial focusing system at low hand level of operation
- g. Camera: Imported camera  $\geq 0.65X$

##### **2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

##### **3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.

- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**26. REFRIGERATOR**

**REFRIGERATOR**

**SPECIFICATION:**

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Temperature range:  $\geq -30$  °C
- b. Temperature Accuracy:  $\leq 1$  °C
- c. Environmental Operation condition: 5 to 30 °C
- d. Storage capacity:  $\geq 300$  Liters
- e. Display: Digital Display
- f. Alarm system: System shall include high temperature alarm and low temperature alarm
- g. Data Storage Capacity: Internal memory storage or printable.

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.

- iii. Full responsibility during the warranty period shall lie with the supplier.
- iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall be responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**4. ADDITIONAL REQUIREMENTS:**

- a. Online pure sine waves UPS 5KV with backup 30 minutes or more.

## **27. BENCHTOP CENTRIFUGE**

**BENCHTOP CENTRIFUGE:**

**SPECIFICATION:**

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Tubes: ≤12 x 15ml tubes
- b. Speed Range: ≤6000 rpm
- c. Cooling system: At least air cooled or better
- d. Running time: ≤100 hours
- e. Storage memory: 90 programs or above
- f. Display: Digital Display
- g. Temp. working range: 5 °C to 30 °C

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.

- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**28. Vacuum Pump**

**Vacuum Pump:**

**SPECIFICATION:**

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Pumping speed:  $\geq 2.8 \text{ m}^3/\text{h}$
- b. Frequency: 50 Hz
- c. Vacuum: 100 mbar absolute or better
- d. Maximum outlet pressure:  $\leq 1 \text{ bar}$  or better
- e. Noise level: NMT 43 dBA
- f. Inlet nozzle hose: DN 6–10 mm or better

- g. Vacuum pump protection class: Minimum IP20
- h. Motor power: ≤0.53 kW

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
- e. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
- f. A valid calibration certificate shall be provided at the time of installation.
- g. The supplier shall undertake calibration of the equipment during the entire warranty period.
- h. Warranty / Guarantee
- i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
- j. The warranty shall cover all components and modules, including consumable and non-consumable parts.
- k. Full responsibility during the warranty period shall lie with the supplier.
- l. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- m. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- n. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

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## **29. Primary Adhesive Tester**

### **Primary Adhesive Tester**

#### **SPECIFICATION:**

#### **PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Angle Range: 20°, 30°, 40° (0~60° adjustable)
- b. Testable Area: Glass plate (1 piece)
- c. Panel Length: 100mm

#### **3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- c. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- d. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

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## **30. LABORATORY FUME HOOD:**

### **Laboratory Fume Hood:**

#### **SPECIFICATION:**

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. External dimensions of approximately 1200 × 875 × 1500 mm W × D × H
- b. Internal working area of approximately 1120 × 682 × 1435 mm W × D × H
- c. Face velocity: 0.5 m/s or better
- d. Exhaust volume: 1109 cmh at 68 Pa static pressure or better
- e. Body: steel and aluminum

#### **2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Korea, Japan, Switzerland or Singapore
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.

- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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**31. CATHETER BURST PRESSURE TESTER**

**CATHETER BURST PRESSURE TESTER**

**SPECIFICATION:**

Catheter Burst Pressure tester, adopting positive pressure test principle, is applicable to determination of rated burst pressure (RBP), balloon fatigue for freedom from leakage and damage on inflation, balloon deflation time, the relationship between the balloon diameter and the inflation pressure in compliance with the following standards ISO10555-1, ISO10555-4, YY0285.1, YY0285.4

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Test Range: 0~10Mpa
- b. Accuracy: ≤ 0.1% FS
- c. Connector: Luer taper
- d. Gas Supply Pressure: 0.7~0.8MPa
- e. Display: Digital Display
- f. Voltage safety option: Yes

- g. Port of Gas Supply:  $\Phi 6$  mm PU Tubing
- h. Data Storage Capacity: Minimum 50,000 test records
- i. Computer Control: Fully computer-controlled via dedicated software

**2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

**3. ESSENTIAL REQUIREMENTS:**

- h. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- i. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- j. The system shall operate on a 220 V, 50 Hz power supply.
- k. Calibration Requirements
  - iv. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - v. A valid calibration certificate shall be provided at the time of installation.
  - vi. The supplier shall undertake calibration of the equipment during the entire warranty period.
- l. Warranty / Guarantee
  - v. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - vi. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - vii. Full responsibility during the warranty period shall lie with the supplier.
  - viii. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- m. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- n. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- e. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- f. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- g. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- h. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

## **5. ADDITIONAL REQUIREMENTS:**

- a. Online pure sine waves UPS 5KV with backup 30 minutes or more.
- b. Gas Supply Pressure ( 0.7~0.8MPa) equipment compatible with machine
- c. Air conditioner split, 2-ton capacity for instrument environment condition control
- d. Laser printer

## **32. BLOOD BAG EMPTYING UNDER PRESSURE TESTER**

### **BLOOD BAG EMPTYING UNDER PRESSURE TESTER**

#### **SPECIFICATION:**

Blood Bag Emptying under Pressure Tester is used to test the pressurized emptying test of plastic containers for single use in complies with ISO 3826-1, GB14232.1

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Compression Speed: 1-1000mm/min
- b. Pressure loading range: 100kpa or better
- c. Pressure Resolution:  $\leq 0.1$ kpa
- d. Working Stroke: 200mm
- e. Test Size: 450mmx270mm or better
- f. Working Temperature: 15-50°C
- g. Printer: connectivity for Laser printer, thermal printer or micro printer and USB interface
- h. Computer Control: Fully computer-controlled via dedicated software

#### **2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

#### **3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee

- i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
- ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
- iii. Full responsibility during the warranty period shall lie with the supplier.
- iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**5. ADDITIONAL REQUIREMENTS:**

- a. Online pure sine waves UPS 5KV with backup 30 minutes or more.
- b. Air conditioner split, 2-ton capacity for instrument environment condition control

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**33. MEDICAL NEEDLE TOUGHNESS TESTER**

**Medical Needle Toughness Tester**

**SPECIFICATION:**

Medical Needle Toughness Tester is suitable for measuring the toughness of human intradermal, subcutaneous, muscle and intravenous injection needle tubes and other rigid stainless steel needle tubes for medical equipment, in compliance with the following standards ISO ISO9626, GB/T 18457, GB/T 15811.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Test Principle: Fix one end of the needle tube on the fixture, adjust the prescribed span and select bending angles as following, 25° for normal wall, 20° for thin wall, and 15° for ultra-thin wall

- b. Bending Angle: 15°, 20°, 25° or better
- c. No. of Test: ≥Bi-directional force 20 times
- d. Needle Tube Specification: Regular wall, thin wall, ultra thin wall optional
- e. Nominal Specifications: 0.2~3.4mm
- f. Bending Distance: Accuracy: ±0.1mm
- g. Display: Digital Display
- h. Calibration: Automatic calibration function
- i. Data Storage Capacity: Minimum 50,000 test records
- j. Computer Control: Fully computer-controlled via dedicated software

## **2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

## **3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

## **4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification

- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**5. ADDITIONAL REQUIREMENTS:**

- a. Online pure sine waves UPS 5KV with backup 30 minutes or more
- b. Air conditioner split, 2-ton capacity for instrument environment condition control
- c. Laser jet printer

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### **34. DEHUMIDIFIER**

**DEHUMIDIFIER**

**SPECIFICATION:**

A dehumidifier is a device that removes excess moisture (humidity) from the air to make an indoor space drier and more comfortable. The instrument offered shall comply with the minimum specifications listed below or provide better.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Dehumidification Capacity (30°C / RH80%): 31 L/day
- b. Bucket Capacity: ≥ 5 L
- c. Compressor Type: Dual Inverter Compressor
- d. Refrigerant Type: R-134a or better
- e. Noise Level: ≤40 dB
- f. Smart Wi-Fi control: Yes
- g. Type: Portable
- h. Auto humidity control with intelligent sensors: Available
- i. Sleek, portable design with easy-drain system
- j. Built-in Ionizer for cleaner, fresher air

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be local or USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. The system shall operate on a 220 V, 50 Hz power supply.
- c. Warranty / Guarantee: Two (02) years from the date of clearance of CRV.

**3. ADDITIONAL REQUIREMENTS:**

- a. Drain system: Complete drain system with pump and tube compatible with main instrument.

## **35. CONTINUOUS EXTRACTION APPARATUS**

### **CONTINUOUS EXTRACTION APPARATUS:**

#### **SPECIFICATION:**

Designed for continuous solid-liquid & liquid-liquid extraction of soluble constituents from solid materials using suitable organic solvents in laboratory-scale operations. The instrument offered shall comply with the minimum specifications listed below or provide better.

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Capacity of Soxhlet Apparatus Assembly:  $\geq 1000\text{ml}$
- b. Extraction solvent capacity:  $\geq 1000\text{ mL}$
- c. Continuous flow: Material and solvent/contacting phase are continuously fed and discharged without stopping the process
- d. Typical modes: Solid-liquid systems and liquid-liquid extraction
- e. Type: Soxhlet type, continuous reflux extraction system and Suitable for prolonged and repeated extraction cycles
- f. Operating Mode:
  - o Continuous solvent reflux and siphon-based extraction
  - o Efficient solvent circulation for maximum extraction yield
- g. Construction and Components
  - o Round-bottom flask (capacity  $\geq 1000\text{ mL}$ )
  - o Soxhlet extraction chamber with siphon tube
  - o holder
  - o Interchangeable ground glass joints
- h. Joint Specifications:
  - o Standard ground glass joints
  - o Leak-proof and chemically resistant
- i. Heating Compatibility:
  - o Suitable for use with heating mantle with temperature control
- j. Temperature Resistance:
  - o Capable of operating safely at solvent boiling temperatures typically used in laboratory extraction
- k. Glass Type: Type A
- l. Heating Mental:
  - o Chamber: Six (6) independent heating chambers
  - o Capacity of heating mental: Each chamber suitable for round-bottom flasks of specified capacity  $\geq 1000\text{ml}$
  - o Material: Mantle made of high-quality heat-resistant and Outer casing insulated suitable coating material
  - o Heating Element: Nichrome or equivalent resistance heating element
  - o Temperature Control: Adjustable temperature control for each chamber

#### **2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. Full responsibility during the warranty period shall lie with the supplier.
- e. The supplier shall provide training for a duration of 05 days on the operation.

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## 36. PERCOLATOR

### PERCOLATOR:

#### 1. PHYSICAL AND TECHNICAL CHARACTERISTICS:

- a. Type: Reaction Kettle
- b. Capacity: 05 Liter size
- c. Material: Borosilicate Glass
- d. Bath: Spray anti-corrosion, Stainless Steel
- e. Move way: Brake type universal angle wheel
- f. Reaction Volume: Ball shape 50L
- g. Mixing Volume: Not less than 10L, max 40L
- h. Reaction Bottle Size: Seven sizes
- i. Kettle reaction temperature: -80°C to +250°C
- j. Vacuum: 0.098Mpa
- k. Rotational Speed: 0-450rpm/min (Customizable)
- l. Stir Speed Display: LCD
- m. Reflux (Distillation) Unit: Reflow elbow with discharge switch
- n. Sealing Method: PTFE assembly seal, 70 flange stirrers
- o. Condenser: Vertical high efficiency double reflux condenser tube & standard
- p. Drip Device: 2L constant pressure funnel-34 #
- q. Stirring Point Connection: Universal joint connection
- r. Vacuum pump: 0.098Mpa pressure or better

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## 37. FUME EXTRACTOR

### FUME EXTRACTOR

#### SPECIFICATION:

Fume extractor is a ventilation system that uses a fan to capture, filter, and remove hazardous particles, dust, and toxic gases at the source of production, preventing inhalation.

#### 1. PHYSICAL AND TECHNICAL CHARACTERISTICS:

- a. Type: Arm type, roof-mounted smoke & dust extractor for lab
- b. Airflow capacity: 110 – 240 m<sup>3</sup>/h or better
- c. Efficiency: High efficiency to remove contaminants (dust & fume)
- d. Noise Level: Low noise operation ( $\leq 5$  dB)
- e. Max fume temperature: 70°C
- f. Rotation: 360° rotation joints for easy positioning
- g. Position: Stable positioning with friction joints
- h. Mounting options: Multiple mounting options (bench, wall, ceiling, floor)
- i. Arm tubes: Aluminum or equivalent (corrosion resistant)
- j. Duct connector: Leak-proof

- k. Joints: Composite
- l. Adjustability: Height & position adjustable
- m. Hood: Mini hood

**2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, New Zealand, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable parts. Full responsibility during the warranty period shall lie with the supplier.
  - iii. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.

**3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall be responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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## **38. THICKNESS TESTER**

### **THICKNESS TESTER**

#### **SPECIFICATION:**

Thickness Tester, basing on mechanical contacting method, is applicable to thickness measurements of plastic films, sheeting, paper, rubber, separators, aluminum foils, textiles, non-woven fabrics, silicon wafers, etc in compliance with ISO 4593, ISO 9073-2, ISO 12625-3, ISO 5084, ISO 534, ISO 3034,

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Test Range: 0-2mm
- b. Resolution:  $\leq 0.1\mu\text{m}$
- c. Adjustable Speed: 1-25/min
- d. Parallelism of Pressure Foot:  $\pm 2\mu\text{m}$
- e. Repeatability:  $0.2\mu\text{m}$
- f. Test Pressure:  $17.5\pm 1\text{kPa}$
- g. Computer Control: Fully computer-controlled via dedicated software
- h. Printing and Data Interface: Connectivity for laser printer, thermal printer, or micro printer and USB interface supported

#### **2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

#### **3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.

- iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**5. ADDITIONAL REQUIREMENTS:**

- a. Online pure sine waves UPS 5KV with backup 30 minutes or more
- b. Air conditioner split, 2-ton capacity for instrument environment condition control
- c. Laser jet printer

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**39. PRESSURE TRANSFER FLOW TESTER**

**PRESSURE TRANSFER FLOW TESTER SPECIFICATION:**

Pressure Transfer Flow Tester is designed in accordance with GB/T 19335-2022 and YY/T 0328-2015, this device is used to evaluate the pressure transmission, blood-blocking performance of pressure monitoring connectors and sensor protectors, as well as the flow performance of arteriovenous puncture sets under various specifications and pressure conditions.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Test Range: 0–10kPa
- b. Accuracy: ≤ 0.5%FS
- c. Gas Supply Pressure: ≤ 0.7MPa
- d. Gas Supply: Φ8 mm PU Tubing
- e. Test Mode: Multiple
- f. Data Storage Capacity: Minimum 50,000 test records
- g. Computer Control: Fully computer-controlled via dedicated software
- h. Printing and Data Interface: Connectivity for laser printer, thermal printer, or micro printer and USB interface supported

- i. Printer: connectivity for Laser printer, thermal printer or micro printer and USB interface
- j. Air Source: External air compressor connection
- k. Air Source Pressure: Oil Free air compressor, Maximum pump pressure: 0.7 MPa, fully compatible with the instrument

## **2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

## **3. ESSENTIAL REQUIREMENTS:**

- h. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- i. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- j. The system shall operate on a 220 V, 50 Hz power supply.
- k. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- l. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- m. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- n. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

## **4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- e. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- f. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- g. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.

- h. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**5. ADDITIONAL REQUIREMENTS:**

- a. Online pure sine waves UPS 5KV with backup 30 minutes or more
- b. Air conditioner split, 2-ton capacity for instrument environment condition control
- c. Laser jet printer

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**40. SYRINGE SLIDING RESISTANCE TESTER**

**SYRINGE SLIDING RESISTANCE TESTER**

**SPECIFICATION**

Syringe Sliding Resistance Tester is used to determine the sliding resistance of various syringes such as medical syringes, prefilled syringes, insulin injection pen, etc.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Test Principle: Push force
- b. Test Range: 0 - 50N
- c. Accuracy: ≤0.5% FS
- d. Test Time: 0 - 99999s (Setting freely)
- e. Test Speed: 0.05-500mm/mi
- f. Speed Accuracy: ≤ 2%FS
- g. Nominal Capacity: 0-100ML
- h. Display: Digital Display
- i. Calibration: Automatic calibration function
- j. Data Storage Capacity: Minimum 50,000 test records
- k. Computer Control: Fully computer-controlled via dedicated software
- l. Printing and Data Interface: Connectivity for laser printer, thermal printer, or micro printer and USB interface supported
- m. Printer: connectivity for Laser printer, thermal printer or micro printer and USB interface

**2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

**3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- i. The supplier shall be responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- j. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- k. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- l. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**5. ADDITIONAL REQUIREMENTS:**

- a. Online pure sine waves UPS 5KV with backup 30 minutes or more
- b. Air conditioner split, 2-ton capacity for instrument environment condition control
- c. Laser jet printer

## **41. MEDICAL NEEDLE TUBING STIFFNESS TESTER**

### **MEDICAL NEEDLE TUBING STIFFNESS TESTER**

#### **SPECIFICATION:**

Medical Needle Tubing Stiffness Tester is suitable for the determination of the stiffness value of the rigid straight stainless steel needle tube for human intradermal, subcutaneous, intramuscular and intravenous disposable injection needles, prefilled syringe needles, in compliance with the following standards ISO 9626, GB 15811, YBB00092004-2015, GB 18457

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Test Principle: bending force
- b. Deflection Range: 0-5mm
- c. Deflection Accuracy:  $\leq \pm 0.01$ mm
- d. Bending Force: 1-80N
- e. Force Accuracy:  $\leq \pm 0.01$ N
- f. Needle Span: 0-60mm
- g. Span Accuracy:  $\leq 0.1$ mm
- h. Needle Tube Specifications Range: 0.3mm-3.4mm
- i. Loading Speed: 0-10mm/min
- j. Speed Accuracy:  $\pm 0.1$ mm/min
- k. Display: Digital Display
- l. Calibration: Automatic calibration function
- m. Data Storage Capacity: Minimum 50,000 test records
- n. Computer Control: Fully computer-controlled via dedicated software
- o. Printing and Data Interface: Connectivity for laser printer, thermal printer, or micro printer and USB interface supported
- p. Printer: connectivity for Laser printer, thermal printer or micro printer and USB interface

#### **2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

#### **3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements

- i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
- ii. A valid calibration certificate shall be provided at the time of installation.
- iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**5. ADDITIONAL REQUIREMENTS:**

- a. Online pure sine waves UPS 5KV with backup 30 minutes or more
- b. Air conditioner split, 2-ton capacity for instrument environment condition control
- c. Laser jet printer

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## **42. GUIDEWIRES TIP FLEXIBILITY TESTER**

### **GUIDEWIRES TIP FLEXIBILITY TESTER:**

#### **SPECIFICATION:**

Guidewires Tip Flexibility Tester is suitable for measuring the tip flexibility of various interventional guide wire catheters, in compliance with the following standards ISO 11070, YY 0450.1-2003, YY/T 1554-2017

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Test Range: 0-5N
- b. Accuracy:  $\leq 0.5\%$  FS
- c. Resolution:  $\leq 0.001$ N
- d. Displacement Range: 0.001-40.000mm
- e. Displacement Resolution:  $\leq 0.01$ mm
- f. Test Speed: 0-10mm/s
- g. Speed Accuracy: 0.01mm/s
- h. Display: Digital Display
- i. Calibration: Automatic calibration function
- j. Data Storage Capacity: Minimum 50,000 test records
- k. Computer Control: Fully computer-controlled via dedicated software
- l. Printing and Data Interface: Connectivity for laser printer, thermal printer, or micro printer and USB interface supported
- m. Printer: connectivity for Laser printer, thermal printer or micro printer and USB interface

#### **2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

#### **3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.

- ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
- iii. Full responsibility during the warranty period shall lie with the supplier.
- iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**5. ADDITIONAL REQUIREMENTS:**

- a) Online pure sine waves UPS 5KV with backup 30 minutes or more
- b) Air conditioner split, 2-ton capacity for instrument environment condition control
- c) Laser jet printer

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## **43. VACUUM DRYING OVEN**

### **VACUUM DRYING OVEN**

#### **SPECIFICATION:**

##### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Capacity:  $\geq 29$ Ltr
- b. Temperature range: 5-200°C
- c. Temperature accuracy:  $\leq 0.1$ °C
- d. Temperature sensors : probe Pt100 Class A or better
- e. Display: Digital
- f. Control: Digital electronic pressure control for a speed-controlled vacuum pump.
- g. Pump control: signal output for pump ON/OFF
- h. Casing: SS, insulated
- i. Vacuum : Tubing for vacuum

##### **2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

##### **3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall be responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.

- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**4. ADDITIONAL REQUIREMENTS:**

- a. Vacuum Source Pressure: Oil Free air compressor, Maximum pump pressure compatible.

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**44. MAGNETIC STIRRER WITH HOTPLATE**

**MAGNETIC STIRRER WITH HOTPLATE**

**SPECIFICATION:**

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Temperature range: Room to 500°C
- b. Stirring volume: ≥ 12 Ltr
- c. Speed: 100-1200rpm
- d. Material: Ceramic Top plate

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**45. MAGNETIC STIRRER WITH HOTPLATE**

**MAGNETIC STIRRER WITH HOTPLATE**

**SPECIFICATION:**

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Temperature range: Room to 300°C
- b. Stirring volume: ≥ 12 Ltr
- c. Speed: 100-1000rpm
- d. Material: Aluminum Alloy

\*\*\*\*\*

## **46. FUME HOOD**

### **MAGNETIC STIRRER WITH HOTPLATE**

#### **SPECIFICATION:**

##### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Temperature range: Room to 300°C
- b. Size: 1.2 meters (4') Air flow: Phenolic resin laminate baffle system ensures airflow uniformity throughout the main chamber of the hood
- c. Construction Material: Grade 304 stainless steel (Air foil), EG steel with aluminum and oven-baked Epoxy-polyester hybrid (Main body)
- d. External Dimensions (approx.): 1200 x 873 x 1500 mm (W x D x H)
- e. Internal Dimensions (approx.): 1120 x 682 x 1435 mm (W x D x H)

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## **47. HANDHELD ALCOHOL METER**

### **HANDHELD ALCOHOL METER**

#### **SPECIFICATION:**

Handheld alcohol meters, measure alcohol concentration (%v/v) directly from storage containers in seconds without manual temperature corrections

##### **2. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Test Principle: Negative Pressure Leak Test
- b. Measuring range: Alcohol: 0 % v/v to 100 % v/v
- c. Accuracy: Alcohol: 0.2 % v/v
- d. Repeatability: Alcohol: 0.1 % v/v
- e. Resolution Alcohol: 0.01 % v/v,
- f. Ambient temperature: 0 °C to 35 °C
- g. Measuring principle: Oscillating U-tube technology
- h. Resolution Alcohol: 0.1 °C

##### **3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.

- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

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## **48. BLOCKING PERFORMANCE TESTER**

### **BLOCKING PERFORMANCE TESTER**

#### **SPECIFICATION:**

Blocking Performance Tester, designed and manufactured with reference to "ISO 8536-12:2121, Infusion equipment for medical use-Part 12.

#### **1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Test Range: 0-10K pa
- b. Accuracy:  $\leq 0.5\%$  FS
- c. Resolution:  $\leq 0.001$ N
- d. Gas Supply Pressure:  $\leq 0.7$ MPa
- e. Port Size:  $\Phi 8$ mm PU tubing
- f. Calibration: Automatic calibration function
- g. Data Storage Capacity: Minimum 50,000 test records
- h. Computer Control: Fully computer-controlled via dedicated software
- i. Printing and Data Interface: Connectivity for laser printer, thermal printer, or micro printer and USB interface supported
- j. Printer: connectivity for Laser printer, thermal printer or micro printer and USB interface

#### **2. COMPUTER SPECIFICATION:**

- a. Windows: Original Window 10 with DVD or better / as per manufacture specification
- b. Processor: Intel Core i7 7th generation or better
- c. RAM: Minimum 16 GB
- d. Graphics: Integrated Intel HD graphic 610/630 or better
- e. Ethernet: 1 x RJ45 built-in (Gigabit)
- f. Mouse: Optical Mouse with scrolling wheel + double click button
- g. Keyboard: 104 key standard board
- h. LED/ Monitor Display: Minimum 32" or better

#### **3. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, China, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - i. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - ii. A valid calibration certificate shall be provided at the time of installation.
  - iii. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - i. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - ii. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - iii. Full responsibility during the warranty period shall lie with the supplier.
  - iv. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.

- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

**4. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- a. The supplier shall responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- b. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- c. The supplier shall ensure proper installation and commissioning of the equipment at the user’s premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- d. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**5. ADDITIONAL REQUIREMENTS:**

- d) Online pure sine waves UPS 5KV with backup 30 minutes or more
- e) Air conditioner split, 2-ton capacity for instrument environment condition control
- f) Laser jet printer
- g) Gas supplier compatible with equipment

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**49. DRY HEAT INCUBATOR**

**DRY HEAT INCUBATOR SPECIFICATION:**

Dry heat incubators (or dry bath incubators) for endotoxin testing are specialized, compact devices designed to maintain precise temperatures, usually, for LAL (Limulus Amebocyte Lysate) gel-clot or kinetic assays.

**1. PHYSICAL AND TECHNICAL CHARACTERISTICS:**

- a. Temperature Control: 37°C ± 1°C
- b. Uniformity: ≤ ± 0.3°C to ± 0.5°C

- c. Heating speed: 25°C to 100°C in 12-15 minutes
- d. Gas Supply Pressure:  $\leq 0.7\text{MPa}$
- e. Display: Digital display or LED/LCD display showing real time temp. and time
- f. Safety features: Automatic fault detection, buzzer alarms, and over-temperature protection
- a. Module design: Interchangeable blocks to fit various tubes (10mm,12mm etc.)

## **2. ESSENTIAL REQUIREMENTS:**

- a. Country of manufacturing should be USA, UK, Europe, Germany, Korea, Japan or Switzerland.
- b. Availability of at least one manufacturer-trained service engineer to provide maintenance and reduce downtime (24/7 or on-call support).
- c. The system shall operate on a 220 V, 50 Hz power supply.
- d. Calibration Requirements
  - iv. The supplier shall be responsible for calibration of the equipment through the OEM and ISO-accredited laboratory.
  - v. A valid calibration certificate shall be provided at the time of installation.
  - vi. The supplier shall undertake calibration of the equipment during the entire warranty period.
- e. Warranty / Guarantee
  - v. The instrument shall be provided with a comprehensive warranty of two (02) years from the date of clearance of CRV.
  - vi. The warranty shall cover all components and modules, including consumable and non-consumable parts, hardware (all PCB boards and related hardware), and software.
  - vii. Full responsibility during the warranty period shall lie with the supplier.
  - viii. Supplier shall supply the equipment with all types of compatible assemblies and kits required for the analysis of the full range of disposable sterile syringes, prefilled syringes, drainage tubes, and non-intravascular catheters.
- f. Maintenance: The supplier shall provide a minimum of six (06) scheduled preventive maintenance visits per year and emergency maintenance support shall be provided in case of instrument malfunction till warranty period.
- g. The supplier shall provide training for a duration of 15 days on the operation, maintenance, and basic troubleshooting of the instrument for up to 10 staff members.

## **3. INSTALLATION, COMMISSIONING & QUALIFICATION:**

- e. The supplier shall be responsible to perform Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) for the supplied equipment.
- f. Supplier will provide detailed documentation for Installation Qualification, Operational Qualification and Performance Qualification
- g. The supplier shall ensure proper installation and commissioning of the equipment at the user's premises. This shall include verification of power supply, electrical safety, and all site-related requirements in accordance with approved documents & protocols.
- h. All charges and provisions required for the proper functioning of the equipment, including but not limited to installation kits, calibration kits, site preparation, utilities, tools, accessories, and any other necessary requirements, shall be the sole responsibility of the supplier.

**B. GROUP B: PURCHASE OF ISO STANDARDS (PURCHASE OF ISO STANDARDS FOR SURGICAL ITEMS TESTING)**

*Note: Quote price of each standard separately in PKR*

<b>SR</b>	<b>PRODUCT TYPE</b>	<b>ISO STANDARD NUMBER</b>
1.	<b>Syringes</b>	ISO 7886-1:2017
2.	<b>Cannula</b>	ISO 10555-1:2023
3.	<b>Bandages</b>	ISO 13485:2016 ISO 13485:2016 ISO 13485 ISO 11135 ISO 11137 ISO 11607 ISO 10993-1 ISO 9073 ISO 13485 ISO 11607 EN 14079 ISO 13688 ISO 14644 EN ISO 11612 EN ISO 20471 EN ISO 13982-1 ISO 9920 ISO 13485 ISO 13485 ISO 10993
4.	<b>Blood Bag</b>	ISO 3826-1:2019 ISO 3826-2:2008 ISO 3826-3:2006 ISO 3826-4:2015
5.	<b>Urine Bag</b>	ISO 8669-1:1988 ISO 8669-2:1996
6.	<b>Catheter</b>	ISO 10555-1:2023 ISO 10555-3:2013 ISO 10555-4:2023 ISO 10555-5:2013
7.	<b>Needle</b>	ISO 7864:2016 ISO 13485-2016 ISO 7153-1 ISO 10993-1

8.	<b>Suture</b>	ISO 10334:1994 ISO 5832-1 ISO 13485 ISO 13485, ISO 11135
9.	<b>Skin Stapler</b>	ISO 6335-1:2026 ISO 6335-2:2026 ISO 6335 Series
10.	<b>Anesthesia Mask</b>	ISO 23372:2022
11.	<b>Guedel Oropharyngeal Airway</b>	ISO 5364:2016
12.	<b>Blades</b>	ISO 7740:1985 ISO 7153-1:2016 ISO 13485
13.	Disposable Pre-Pressure Line	ISO 8536-9:2015 ISO 5359
14.	<b>Laryngeal Mask Airway</b>	ISO 11712:2023 ISO 8536-8 ISO 8536-5 ISO 8536-13
15.	<b>IV Infusion Set</b>	ISO 8536-4:2019
16.	<b>Epidural Set 18G</b>	ISO 20698:2018 ISO 80369-6:2025
17.	<b>Endotracheal Tube</b>	ISO 5361:2023 ISO 5366:2016 ISO 5356-1 ISO 18190-2025
18.	<b>Disposable Drain Tube</b>	ISO 20697:2018 ISO 13485:2016 ISO 15749-1:2004
19.	<b>Disposable Drap Kit (Sterilized)</b>	ISO 13485:2016 ISO 11135 ISO 11137 ISO/DIS 20384 ISO 11810:2015
20.	<b>Surgical Gloves</b>	ISO 10282 ISO 11193-1, ISO 13485 EN 455 ASTM D3577
21.	<b>Examination Gloves</b>	ISO 11193-1:2020
22.	<b>Stomach Tube</b>	ISO 20695:2020
23.	<b>Wool Cotton</b>	ISO 10290:2018 ISO 2403:2021 ISO 3060:1974 ISO 4913:1981 ISO 137:2015 ISO 3072:1975 ISO 3074:2014

		ISO 920:1976 ISO 105-F ISO 1833-12 ISO 13934-1:2013 ISO 13934-2:2013 ISO 2062:2009
24.	<b>Three Way Stopper</b>	ISO 8536-10
25.	<b>Blood Lancet</b>	ISO 23908:2024
26.	<b>IV Burette</b>	ISO 8536-4 ISO 8536-5 ISO 385:2005
27.	<b>Sheeting Water Proof</b>	ISO 811:2018 ISO 1420 ISO 22958 ISO 4920 ISO 15106
28.	<b>Sterile Disposable Reinforced Surgical Gown</b>	ISO13485, EN13795-1 EN13795-1 AAMI Level 3/4
29.	<b>Dial Flow Meter</b>	ISO 15002:2023 ISO 4064-2024 ISO 11631:1998
30.	<b>Glucose Strips</b>	ISO 15197:2013

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**C. GROUP C: PURCHASE OF REFERENCE BOOKS (ONLINE SUBSCRIPTION)**

<b>Sr.</b>	<b>Book</b>	<b>Description</b>
<b>1</b>	<b>Reference Book-1</b>	Online subscription United State Pharmacopeia (USP) 8 Users
<b>2</b>	<b>Reference Book-1</b>	Online subscription British Pharmacopeia (BP) 8 Users
<b>3</b>	<b>Reference Book-3</b>	Online subscription International Pharmacopeia (BP) 4 Users

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**D. GROUP D: PURCHASE OF UHPLC COLUMN**

<b>Sr</b>	<b>Colum Specification</b>	<b>Qty</b>
1.	4.6-mm × 5-cm; 3-µm packing L1	01
2.	4.6-mm × 5-cm; 3.5-µm packing L1	01
3.	4.6-mm × 5-cm; 5-µm packing L1	01
4.	4.6-mm × 5-cm; 5-µm packing L1	01
5.	4.6-mm × 7.5-cm; 3-µm packing L1	01
6.	4.6-mm × 10-cm; packing L1	01
7.	4.6-mm × 10-cm; 3-µm packing L1	01
8.	4.6-mm × 10-cm; 3.5-µm packing L1	01
9.	4.6-mm × 10-cm; 5-µm packing L1	01
10.	4.6-mm × 12.5-cm; 5-µm packing L1	01
11.	4.6-mm × 15-cm; 1.8-µm packing L1	01
12.	4.6-mm × 15-cm; 2.6-µm packing L1	01
13.	4.6-mm × 15-cm; 3-µm packing L1	01
14.	4.6-mm × 15-cm; 3.5-µm packing L1	01
15.	4.6-mm × 15-cm; 5-µm packing L1	01
16.	4.6-mm × 20-cm; 5-µm packing L1	01
17.	4.6-mm × 20-cm; 5-µm packing L1	01
18.	4.6-mm × 25-cm; 5-µm packing L1	01
19.	4.6-mm × 30-cm; 5-µm packing L1	01
20.	4-mm × 5.5-cm; 3-µm packing L1	01
21.	4-mm × 15-cm; 5-µm packing L1	01
22.	4-mm × 25-cm; 5-µm packing L1	01
23.	4-mm × 25-cm; 10-µm packing L1	01

24.	4-mm × 30-cm; packing L1	01
25.	4-mm × 30-cm; 5-µm packing L1	01
26.	3.9-mm × 15-cm; packing L1	01
27.	3.9-mm × 30-cm; packing L1	01
28.	3.9-mm × 30-cm; 10-µm packing L1	01
29.	3.2-mm × 25-cm; 5-µm packing L1	01
30.	3-mm × 5-cm; packing L1	01
31.	3-mm × 10-cm; 3.5-µm packing L1	01
32.	3-mm × 15-cm; 3-µm packing L1	01
33.	3-mm × 25-cm; 4-µm packing L1 (Merck Superspher 100-RP-18e is suitable).	01
34.	2.0-mm × 10-cm; 2.5-µm packing L1	01
35.	2.1-mm × 10-cm; 1.7-µm packing L1	01
36.	5-mm × 10-cm; 5-µm packing L1	01
37.	6-mm × 25-cm; 5-µm packing L1	01
38.	3.9-mm × 30-cm packing L3	01
39.	4.6-mm × 25-cm; 5-µm packing L3	01
40.	4.6-mm × 5-cm; packing L7	01
41.	4.6-mm × 7.5-cm; 3.5-µm packing L7	01
42.	4.6-mm × 10-cm; 3-µm packing L7	01
43.	4.6-mm × 12.5-cm; packing L7	01
44.	4.6-mm × 15-cm; 3-µm packing L7	01
45.	4.6-mm × 15-cm; 5-µm packing L7	01
46.	4.6-mm × 25-cm; 5-µm packing L7 (Kromasil/Equivalent)	01
47.	4.6-mm × 25-cm; 5-µm packing L7	01
48.	4.6-mm × 25-cm; 10-µm packing L7	01
49.	4.6-mm × 33-cm; packing L7	01
50.	3.9-mm × 15-cm; 5-µm packing L7	01
51.	2.1-mm × 5-cm; 1.7-µm packing L7	01
52.	4.6-mm × 15-cm; 3-µm packing L8	01
53.	4.6-mm × 25-cm; 5-µm packing L8	01
54.	4.6-mm × 15-cm; packing L10	01
55.	4.6-mm × 20-cm; packing L10	01
56.	4.6-mm × 25-cm; 5-µm packing L10	01
57.	3-mm × 4-mm packing L11 (Guard column)	01
58.	3-mm × 10-cm; 5-µm packing L11	01
59.	3.9-mm × 15-cm; 4-µm packing L11	01
60.	3.9-mm × 15-cm; 10-µm packing L11	01
61.	4-mm × 30-cm; packing L11	01
62.	4.6-mm × 10-cm; 3-µm packing L11	01
63.	4.6-mm × 15-cm; 4-µm packing L11	01
64.	4.6-mm × 15-cm; 5-µm packing L11	01
65.	4.6-mm × 25-cm; 5-µm packing L11	01
66.	Phenyl silica gel (25cm x 30 mm) (5µm) packing L11	01
67.	4.6-mm × 15-cm; 5-µm packing L29	01
68.	4-mm × 25-cm; 5-µm packing L43	01

69.	4-mm × 25-cm; 7.5-µm packing L47	01
70.	4.6-mm × 15-cm; 5-µm packing L49	01
71.	3-mm × 15-cm; 3.5-µm packing L56	01
72.	4.6-mm × 15-cm; 5-µm packing L57	01
73.	4.6-mm × 15-cm; 5-µm packing L60	01
74.	2-mm × 25-cm; packing L81	01
75.	end-capped butylsilyl silica gelfor chromatography R (5 µm) with a pore size of 30 nm	01
76.	0.32-mm × 60-m; fused-silica capillary coated with a 1.0-µm film of G16	01
77.	Size exclusion chromatography (7.5-mm × 0.6-m)	01
78.	Size exclusion chromatography size: l = 0.3 m, Ø = 7.8 mm	01

**Note:**

- Country of manufacturing for column should be USA, UK, Europe, Germany, Japan or Switzerland.

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**E. GROUP E: PURCHASE OF BATTERIES**

<b>Sr.</b>	<b>Specification</b>	<b>Qty</b>
1	<ul style="list-style-type: none"> <li>• Volt: 12Volt, 5Ah</li> <li>• Battery chemistry: SLA</li> <li>• Recharge time: 2.5-4 hrs on 90% capacity</li> <li>• Maintaince free battery</li> <li>• Leak proof</li> <li>• Compatible with USP (APC Smart UPS RT 5000)</li> </ul>	Set of 16 batteries

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## **APPENDIX-2: PERFORMANCE GUARANTEE**

### **PERFORMANCE GUARANTEE**

To:

Officer Commanding, Armed Forces Medical Stores Laboratory,  
\*\* Address\*

PERFORMANCE SECURITY NO. .... (the **Guarantee**)

We, [●]<sup>3</sup>, being the Guarantee issuing bank (the **Issuing Bank**) understand that [●] a company incorporated under the laws of [●] having its registered office located at [●] (the **Service / Goods Provider**) has been selected as the successful Bidder following a tendering process for the Procurement of Security Services for \*\* Name\*\*.

Further, we understand that pursuant to such tender process, the Bidder is required to provide \*\* Name\*\* with a performance bond equal to PKR \_\_\_\_\_ (05% of annual quoted price of contract).

The above premised, we (the Issuing Bank) hereby undertake irrevocably and unconditionally to pay to \*\*Name\*\*, without any notice, reference or recourse to the Bidder or to any other entity or without any recourse or reference to the Contract, any sum or sums (or any part thereof) equivalent in aggregate up to but not exceeding a maximum amount of:

PKR \_\_\_\_\_

(The **Guaranteed Amount**)

<sup>3</sup>Insert name of Issuing Bank;

at sight and immediately, however not later than within five (5) business days from the date of receipt of the \*\* Name\*\* first written demand (the **Demand**) at the Issuing Bank's offices located at [●], such Demand shall state that the Bidder is entitled to make a demand under the Guarantee and shall set out the total amounts demanded.

The Demand shall only be honored by us, if it is made by and bears the signature of the officer Commanding Armed Forces Medical Stores Laboratory of\*\* Name\*\*.

We, the Issuing Bank, shall unconditionally honor a Demand hereunder made in compliance with this Guarantee at sight and immediately on the date of receipt of your Demand, as stated earlier, and shall transfer the amount specified in the Demand to the bank account, as notified in the Demand, in immediately available and freely transferable funds in the currency of this Guarantee, free and clear of and without any set-off or deduction for or on account of any present or future taxes, levies, imposts, duties, charges, fees, deductions or withholdings of any nature whatsoever and by whomsoever imposed.

This Guarantee shall come into force and shall become automatically effective upon the signing of the contract between \*\* Name\*\* and Bidder.

After having come into force, this Guarantee and our obligations hereunder will expire on [*Insert date and time*] (the **Guarantee Expiry Hard Date**) (6-months after the expiry of the contract) provided that, in the event that the Procuring Agency issues a Demand to the Issuing Bank on or immediately prior to the Guarantee Expiry Hard Date, the Issuing Bank shall honour that Demand.

Upon expiry, this Guarantee shall be returned to the Bidder without undue delay. Multiple Demands may be made by \*\* Name\*\* under this Guarantee but our aggregate liability will be restricted up to the Guaranteed Amount.

We hereby agree that any part of the Contract may be amended, renewed, extended, modified, compromised, released or discharged by mutual agreement between \*\* Name\*\* and the Bidder without in any way impairing or affecting our liabilities hereunder without notice to us and without the necessity for any additional endorsement, consent or guarantee by us.

This Guarantee for its validity period shall not be affected in any manner by any change in our constitution or of the Bidder 's constitution or of their successors and assignees and this

Guarantee shall be legally valid, enforceable and binding on each of their successors and permitted assignees.

All references to any contract or other instruments are by way of reference only and shall not affect our obligations to make payment under the terms of this Guarantee.

\*\* Name\*\* may not assign / transfer or cause or permit to be assigned or transferred any of its rights, title, interests and benefits of this Guarantee without our prior written consent, which consent shall not be unreasonably withheld or delayed.

If one or more of the provisions of this Guarantee are held or found to be invalid, illegal, or unenforceable for any reason whatsoever, in any respect, any such invalidity, illegality, or unenforceability of any provision shall not affect the validity of the remaining provisions of this Guarantee.

We hereby declare and confirm that under our constitution and applicable laws and regulations, we have the necessary power and authority, and all necessary authorizations, approvals and consents thereunder to enter into, execute, deliver and perform the obligations we have undertaken under this Guarantee, which obligations are valid and legally binding on and enforceable against us under the applicable laws and under the laws of the jurisdiction where this Guarantee is issued. Further, that the signatory (ies) to this Guarantee is/are our duly authorized officer(s) to execute this Guarantee.

\*\*Signed by authorized signatory\*\*

## **APPENDIX-3: CONFLICT OF INTEREST UNDERTAKING FORMAT**

### **CONFLICT OF INTEREST UNDERTAKING**

To,

OFFICER COMMANDING,  
Armed Forces Medical Stores Laboratory (AFMSL),  
Inspectorate of Electronics & Instruments (IE&I),  
Chaklala Garrison, Rawalpindi

**SUBJECT: CONFLICT OF INTEREST**

Reference to the contract/work order/supply order no.-----  
titled----- Dated-----, which we have entered into/received from the  
Armed Forces Medical Stores Laboratory (AFMSL).

We hereby conform that we (including our company, firm, associates, subsidiaries, and related parties) have not entered any contract (including employment contract), transaction, or any other business/other relationship, with any person (including the current employee, ex-employee or any relative/associate of the employee or ex-employee) or organization, in conflict of our contractual obligation under the said contract.

We also confirm that we shall not enter any of above-mentioned contract transaction or relationship in future unless we obtain written permission from Officer Commanding, Armed Forces Medical Stores Laboratory (AFMSL).

**AUTHORIZED REPRESENTATIVE  
NAME OF THE COMPANY**

*Note: This must be printed on Company Letter Head*

## **APPENDIX-4: UNDERTAKING FOR BLACKLISTING FORMAT**

### **UNDERTAKING FOR BLACKLISTING**

I/we, the undersigned solemnly conform and declare that we, M/s \_\_\_\_\_, is not blacklisted/de-registered/debarred by any Federal or Provincial Government Department/ Organizations/ Autonomous Bodies/ Institutions/ and any other public sector body anywhere in Pakistan.

Furthermore, M/s \_\_\_\_\_ is not in litigation with any of its customer public sector departments/organizations/autonomous bodies/ institutions and any other public sector local bodies anywhere in Pakistan.

**AUTHORIZED REPRESENTATIVE  
NAME OF THE COMPANY**

**Note:** *This will be printed on stamp paper worth Rs. 100*

## **APPENDIX-5:**

### **DECLARATIONS**

The Bidder must submit under taking as the “DECLARATIONS” and include the following statements

- m. We confirm that we have carefully examined the information provided in the Terms of Reference (TOR) and hereby offer to undertake and provide the supply strictly in accordance with the requirements, specifications, and conditions set forth therein.
- n. We declare that our Technical and Financial Proposals have been prepared independently, without any consultation, communication, agreement, or understanding with any other bidder or party, directly or indirectly, for the purpose of restricting or distorting competition.
- o. We certify that all hard copies and documents submitted as part of the Technical Proposal are true, complete, accurate, and valid to the best of our knowledge and belief.
- p. We confirm that we possess, and shall make available, all necessary human resources, technical expertise, equipment, and financial capacity required for the successful execution of the contract, if awarded.
- q. We acknowledge and agree that at any stage, during or after the procurement process, if any document or information submitted by us is found to be forged, fake, tampered with, misleading, or illegal, our bid shall be declared non-responsive and we shall be rendered ineligible. Furthermore, disciplinary action, including blacklisting, shall be initiated against us in accordance with PPRA Rules, without any right to claim or compensation.
- r. We unequivocally undertake that subcontracting, subletting, or assignment of any part of the services, supplies, or obligations under this contract to any third party is strictly prohibited. We further confirm that no such subcontracting shall be carried out at any stage of contract execution.
- s. During the evaluation of the bids, the Procuring Agency may, at its discretion, ask the Bidder for a clarification of its bid as provided in PPRA rule. The request for clarification and the response shall be in writing, and no change in the prices or substance of bids like an indication or re-indication of make/model/brand, etc. shall be sought, offered, or permitted.
- t. I confirm that I have the authority of [name of Service Provider’s company] to submit a proposal and to clarify any details on its behalf.

**AUTHORIZED REPRESENTATIVE  
NAME OF THE COMPANY**

*Note: This must be printed on Company Letter Head*