OFFICE OF THE SUPERINTENDENT
MAHARAJA KRISHNA CHANDRA GAJAPATI MEDICAL COLLEGE HOSPITAL
BERHMAPUR-760004, GANJAM, ODISHA
Tel.0680-2292624,FAX.:0680-2292752// E.mail: supdtmkcg@gmail.com , supdtmkcg-bam@gov.in

No. 16905 MCH/CS/XIX/2023 Date: 20/11/23

TENDER CALL NOTICE

The Superintendent, MKCG Medical College Hospital Berhampur- 760004, Dist. Ganjam, Odisha Invites sealed tenders in the prescribed Proforma from the Registered and reputed Manufacturers, Authorized suppliers, Dealers, Stockiest and Wholesaler for **"Supply of Instruments & Equipments for Odisha Blood Bank Centre, MKCG MCH, Berhampur"**. The tenderer should submit the tender in two Bids (i) Technical Bid and (ii) Price Bid. ***The Technical bid*** shall contain (1) Tender Cost (2) List of bided items (3) valid PAN CARD, (4) Valid GSTN Certificate as per the Govt. rule, (5) Valid USFDA/ CE/ ISI/ ISO/ GMP Certificate, (6)Valid manufacturing License and Authorization Certificate in prescribed format & (7) E-mail ID & Contact No. ***The Price bid*** should be submitted as per Proforma enclosed. The intending tenderers should submit their tenders separately in two sealed covers duly superscribed as **Technical Bid for "Supply of Instruments & Equipments for Odisha Blood Bank Centre, MKCG MCH, Berhampur" & Price Bid for "Supply of Instruments & Equipments for Odisha Blood Bank Centre, MKCG MCH, Berhampur"** putting in a single sealed cover.

The bidders may download the tender papers from websites: www.ganjam.nic.in/ www.mkcgmch.org and deposit the tender cost of Rs. 2360/- (Two thousand three hundred sixty including 18% GST) is non-refundable to be paid by way of E-Challan under the Head Of Account 0075-00-800-0097-02237-000 through Odisha Govt. Treasury Site. The last date of receipt of tenders through Regd. Post / Speed Post/ Courier is on or before 12.12.2023 at 05.00 PM and will be opened on 13.12.2023 at 12:00 noon. The date of opening may be differed/ postponed in case of unavoidable circumstances.

The Superintendent, M.K.C.G Medical College Hospital, Berhampur reserves right to accept /reject/ cancel any or all the tenders in full or part without assigning any reason thereof

20/11/23.

Superintendent
MKCG Medical College Hospital
Berhampur

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Terms and conditions:

1. Sealed tenders in prescribed proforma should be superscribed as **"Tender for Supply of Instruments & Equipments for Odisha Blood Bank Centre, MKCG MCH, Berhampur"** are to be submitted in the Office of the undersigned **on or before 12.12.2023 at 05.00 P.M.by Regd. Post / Speed Post/Courier** only and the technical bids will be opened on **13.12.2023 at 12:00** noon in presence of the tenderers or their authorized representatives in the office chamber of the undersigned. If any tenderer or its authorized representative fails to turn up at the time of opening of the tender, the process will continue as usual.
2. It is a **two bid** tender process i.e. one is **Technical bid** and the second one is **Price bid** to be submitted in separate sealed envelopes properly superscribed as **Technical Bid / Price Bid(Price bid should contain hard copy and soft copy in pendrive).**
3. Bidders are to submit both the above sealed envelopes in another envelope superscribed as: **"Tender for Supply of Instruments & Equipments for Odisha Blood Bank Centre, MKCG MCH, Berhampur" & also mention their Ph. No. and E-mail ID on the envelope with tender Name, Address, Mobile & E-mail Id.**
4. The tenderer are to be submit the tender document fees in Technical Bid.
5. Tender(s) received after due date and time will not be considered under any circumstance.
6. All the tenderers should produce samples of the bid items before the Sample Test Committee if required.
7. After evaluation of the technical bids, check list & samples by the Committee, the price bids of the technically qualified bids only will be opened by the Committee on the

scheduled date [to be notified to the technically qualified tenderers in due time by the Superintendent] in presence of the technically qualified tenderers or their authorized representatives. If any tenderer or its authorized representative fails to turn up at the time of opening of the tender, the process will continue as usual.

8. The tenderer should supply the **Instruments & Equipments for Odisha Blood Bank Centre, MKCG MCH, Berhampur** as per specification enclosed in **Annexure-I.**
9. The requirements are subject to OSMC Ltd. BBSR supply.
10. Tenderers who have been blacklisted either by the tender inviting authority or by any state Govt. or Central Govt. organization are not eligible to participate in the tender.
11. The tenderer should submit the Original copies of Authorization Letter of manufacturers/ Principal firms as per Annexure-II, otherwise tender for the item will not be considered.
12. The office of the undersigned will confirm the authorization letter from the manufacturer or principal firms if its required.
13. The price quoted by the tenderers should not be more than the Open market Price/Gem price.
14. The tenderer should furnish the self attested copies of the following documents along with the technical bid document:
    a. Affidavit in a Rs. 10/- stamp paper duly attested by a Notary to the effect that, they are (tender & manufacturer) not Black-listed by any State Government or Central Government Organization as per **Annexure-III**
    b. Annual Turnover
    c. Income tax return of last 3 years
    d. Valid ID proof,
    e. Valid GSTN clearance certificate from competent authority as per Govt. rule,
    f. Valid PAN Card,
    g. Valid manufacturing License/Authorization Certificate as per **Annexure-II.**
    h. Bank details.

i. Certificate to the effect that price quoted is not more than the Open Market Price/ GEM Price.

15. If any information or documents furnished by the tenderer found to be misleading / incorrect at any stage the said tender will be out rightly rejected.
16. The price quoted should be final and shall not be subject to any escalation during the validity of the tender.
17. However the committee is not bound to accept the lowest rate considering the technical aspects/quality of the Product.
18. The tender will be valid for one year from the date of approval.
19. The items that are to be supplied must have warranty period of at least one year from the date of supply.
20. The rates so quoted should be on door delivery at Main Medical Store of M.K.C.G Medical College Hospital, Berhampur, Odisha. No extra charges for transportation is admissible.
21. No advance payment towards the cost of items will be made to the supplier as per Govt. Provision.
22. Payment shall be made on receipt of the stock entry certificate on the body of the bill/invoice from the store and on availability of funds / allotment.
23. The tenderer should adhere to the terms & conditions and submit the bids in the given prescribed proforma failing which the tender paper will be rejected.
24. The tender documents should be clearly written/ typed without any corrections, interpolation and over-writings etc and each page of the tender bid are bear the page number ,date, signature of the tenderer that will be mandatory otherwise the bid will be rejected.
25. If the manufacturing firms are directly submitting the tender, they should not authorize any other agent to quote for the same products simultaneously.
26. The tenderer has to supply the items at least within 20 (twenty) days from the issue of Purchase Order (P.O) positively.

27. The tenderer is not allowed to violate any terms & conditions (Regarding Payment, change of Brand, Hike of Price during tender validation period, supply period etc.)
28. The Superintendent, MKCG MCH, Berhampur reserves the right to accept /reject/ cancel any or all the tenders in full or part without assigning any reason thereof.
29. Legal disputes, if any are subject to jurisdiction in the courts of law situated at Berhampur, Ganjam, Odisha.
30. The bidder should submit the EMD Rs. 1,00,000 (F.D./ NSC) from any of the nationalized bank pledged in favor of the Superintendent, MKCG MCH, Berhampur. The E.M.D will be returned to unsuccessful bidders after finalization of Tender process.
31. The selected bidder should submit the Performance security @ 10% of the supplied items in shape of (F.D./ NSC) pledged in favor of Superintendent, MKCG MCH, Berhampur and the said should remain valid for the period of sixty days beyond the date of completion all contractual obligation of the supplier including warranty obligations.

Superintendent,
MKCG Medical College Hospital,
Berhampur

FRONT PAGE OF TECHNICAL BID

INFORMATION ABOUT THE BIDDER

(To be attached in Cover "A" - Technical Bid)

Sl. No.	Particulars	Details	Document Page Sl. No.
1	Name of the Bidder		
2	Address of the Bidder		
3	E-mail ID of the Bidder		
4	Mobile No. [with Whatsapp] of the Bidder		
5	Details of Bank Account: [Attach cancelled cheque / 1st page of pass book] Name of Account Holder: Name of Bank with Branch: Account Type: Account No.: IFS Code:		
6	Bided item List		
7	Notarized affidavit in Rs 10/- Non-judicial stamp paper for not being blacklisted.		
8	Valid Authorization Letter from the Manufacturer or firm / Manufacturing License	No. _____ date: _____	
9	Valid GSTN Certificate	No. _____	
10	PAN details		
11	Aadhar No of the Tenderer / authorized representative		
12	Valid ISI/CE/BIS/ISO Certificate	No. _____ date: _____	
13	Cost of Bid Document [Rs. 2360/- including 18% GST]	No. _____ date: _____ (Online)	
14	Certificate to the effect that price quoted is not more than the Open Market Price/ GEM Price.		
15	Cost of EMD Rs. 1,00,000 pledged in favor of the Superintendent, MKCG MCH, Berhampur		

N.B.: Self attested copies of the relevant documents are to be attached with this document.

Date:
Place:

Authorized Signatory
(Signature and seal of the Authorized Signatory)

(1) PROFORMA FOR TECHNICAL BID

Sl. No	Sl No. as per Tender List	Name of the Product	Specification	Mfd. Name, Brand, etc.	Documents to be attached – Authorization Certificate ISI/CE/BIS/ISO Certificate, Up to Date GST clearance Certificate, 3 year Income Tax Return, Annual Turnover, etc.
1	2	3	4	5	6

Date:
Place:

Authorized Signatory
(Signature and seal of the Authorized Signatory)

(2) PROFORMA FOR PRICE BID

Sl. No	Sl No. as per Tender List	Name of the Product	Specification	Mfd. Name, Brand etc.	Basic Rate including packing forwarding i.e. F.O.R Destination (Per piece/ Unit)	GST as applicable	Any other Taxes Charges Duties levis if any,	Total (6+7+8)
1	2	3	4	5	6	7	8	9

Date:
Place:

Authorized Signatory
(Signature and seal of the Authorized Signatory)

Annexure-II

To be Submitted in Technical Bid
Authorization Letter

No._____ date_____

To

The Superintendent,
MKCG Medical College Hospital,
Berhampur

Sub: Authorization Letter

Ref: Tender Call Notice No..... Dt. .....

Dear Sir,

We .....are the original manufacturers of the Blood Bank Instruments & Equipments having the registered office at..... (full address with mobile number, email ID & website), having factories at..... and ....., do hereby authorize M/s._____(name & address of bidder) as _____to submit bids.

We conform that M/s_____ (name of the bidder) is authorized to submit a tender and enter into a contract with for the above goods manufactured by as.

No company or firm or individual other than M/s_____ are authorized to bid the specific Tender.

Yours faithfully

(Name)
For and on behalf of M/s_____
(Name of the Manufacturers)

Note: This letter should be on the original letterhead of the manufacturer and should be duly signed by a person having the power of attorney to legally bind the manufacturer.

Annexure-III

To be Submitted in Technical Bid
Declaration Form
Affidavit before Executive Magistrate/Notary Public in 10 Rupees Stamp Paper

I/We_____ having may / our _____ office at _____declare that I/we have carefully read all the terms & Conditions of the tender of the_____ Odisha for the supply of Instruments & Equipments the approved rate will remain valid for a period of one year from the date of approval. I will abide with all the terms & Conditions set forth in the Tender Reference No._____

I/We do here by declare I/We have not been de-recognized/ Black listed by any state Govt./ Union territory/ Govt. of India/ Any Govt. Organizations / Govt. Health Institution/ State Medical Corporation for supply of Not of Standard Quality items/ non-Supply.

I/We agree that the Tender inviting Authority Can forfeit the EMD and Blacklist Me/as for a period of 3 (Three) years if any information furnished by us proved to be false at the time of inspection/verification and not complying with the tender Terms & Conditions.

Signature of the Bidder:
Date:
Name & Address of the Firm:

Seal;

List of Minor Instrument & Equipment 23-24				
Sl.no.	Name of the Instrument	Specification/ size/ brand	Quantity	Remarks
1	Semi Automated Analyzer for Grouping & Cross Matching (CAT)	Annx-1	2	
2	Automated Coagulation Analyzer	Annx-2	1	
3	Serological Water Bath	Annx-3	1	
4	Binocular Microscope	Annx-4	2	
5	Bacteriological Incubator	Annx-5	3	
6	Ph Meter	Annx-6	1	
7	Micropipette 10-100ul	Annx-7	4	
8	Fixed Volume Single Chanel Micropipette 50 ul	Annx-7	4	
9	Fixed Volume Single Chanel Micropipette 100 ul	Annx-7	4	
10	Fixed Volume Single Chanel Micropipette 100-1000 ul	Annx-7	4	
11	Fixed Volume Single Chanel Micropipette 20-200 ul	Annx-7	4	
12	Multi Chanel Micropipette 20-200Ul	Annx-7	2	
13	Multi Chanel Micropipette 50-300 ul	Annx-7	2	
14	Blood Bank Refrigerator Large size	Annx-8	2	
15	Blood Collection Monitor	Annx-9	2	
16	Blood Donor Couch	Annx-10	2	
17	Deep Freeze-40	Annx-11	1	
18	Pottable Tube Sealer	Annx-12	4	
19	Tube Stripper	Annx-13	4	
20	Double Pan Weighing Balance	Annx-14	1	
21	RH View Box	Annx-15	2	
22	Plasma Thawing Bath	Annx-16	1	
23	Platelet Agitator-cum Incubator	Annx-17	1	
24	Sterile Connecting Device	Annx-18	1	
25	Plasma Expresser	Annx-19	2	
26	Laminar Air Flow Bench	Annx-20	1	
27	Vein Finder		1	
28	Haemoglobino Meter		3	
29	Plasma Haemoglobino Meter		1	

Annx - (1)

1.GEL CARD/ GLASS BEAD BASEDCENTRIFUGE WITH INCUBATOR

Product & Manufacturer Quality Standards:

I. The quoted model should be either "USFDA approved (Device listed with registration under valid FEI number / having 510K/ having CFG)" **OR**"EU-CE approved as per Annex-III of IVD 98/79/EC Directive or latest" **OR** "BIS certified conforming to the standard BIS specification/ guideline specifically for "Gel card Centrifuge machine with Gel card incubator".

II. The manufacturer of the quoted product should have EN ISO 13485 certificate issued from a notified body **OR** ICMED 13485 (with or without plus) certificate issued from certification bodies accredited by NABCB **OR** ISO 13485 certificate issued from certification bodies accredited by NABCB / Nationally Recognized Accreditation Board under IAF MLA.

III. The quoted model should confirm to "IEC 60601" OR "IEC 61010" OR "IS/ ISO / IEC 80601 (Part 2)" OR "IS 13450 (Part 1)". Should mandatory conform to IEC 61010- 2-20 for the Particular requirements for laboratory centrifuge.

IV. The quoted medical device must be registered under CDSCO and submit the license to manufacture for sale or for distribution of the medical device. If not registered, the acknowledgment copy of the online application for the said registration must be uploaded in the bid.

Purpose of Equipment:

a) Immunohematologic Gel /Glass bead based 'Column Agglutination Technology' (CAT) card/ cassettes centrifuge to perform manual centrifugation step for Blood Grouping, Weak D typing,Cross Matching, antibody screening or identification or phenotyping by coombs and enzyme phase by gel/ glass bead basedcolumn agglutination technique to detect both IgG & IgM antibodies.

b) Must be designed specifically for blood bank use. Commercial or modified commercial centrifuges having other purpose are not acceptable

Technical specification:

A. General Features:

1. Should be a closed system compatible with company provided Gel cards/ Glass Bead cassettes
2. Should allow selection of economically viable solutions for blood grouping, Coombs tests (DAT) & cross matching, antibody screening ,Rh+Kphenol typing , antibody identification, PNH Clone, IgG Sub types etc.
3. The company should offer complete panel of ready to use liquid red cell reagents for antibody screening & identification, including the Anti-D prophylaxis panel for Rh negatives

B. Centrifuge&Incubator :

1. System should be semi automatedtable top analyzer.
2. It can be a combined system of incubator and centrifuge together or separate system for centrifuge and incubator.
3. Centrifuge should have slots for minimum 10 gel card / glass bead cassettes at a time.
4. Should have Microprocessor controlled programming with Touch key pad or touch screen with Digital user interface screen (LCD display) provided for control and visualization of RPM or RCF, time and other functions in real time.
5. Should have appropriate alarm provided for Imbalance & end of cycle.
6. Should be light weight yet robust design.

7. Should be table toptype with ergonomic designed Aerodynamic compact construction with vibration free performance; Noise level should be less than 60dB.
8. Should have single Hand Rotor removal facility for easy cleaning.
9. Swing out suspensions for Gel card slots/glass bead cassettes
10. Lid of the centrifuge should be transparent and should have auto-locking during spinning.
11. System should open automatically door lock assembly after end of the process.
12. The technology should not have any washing step and should avoid non specificresults.
13. Incubator should fit all types of gel cards with 37C temperature & suitable time setting.
14. Should be able to Incubate minimum 20 cassettes / cards
15. Should have display of remaining incubation time and temperature.
16. Should have Pre-set temperature 37°C ±1°C
17. Should have appropriate Alarm for High-low temperature, End of cycle
18. Incubation time can be adjustable from 0 to 60 min.
19. Should be Bench or table top model having Light weight yet robust design.

C. **Consumables:**

1) The company must offer complete panel of ready to use liquid red cellreagents for Reverse grouping, panel for antibody screening & identification (Homozygous for Rh & Kell system) ,including the Anti-prophylaxis panel for Rh negatives.
2) The rates of following Consumables of the same OEM should be provided by bidder for 100 tests per month in Format-A of the separate price format.
    a) AHG poly specific Card/ cassettes
    b) Low ionic strength Solution
    c) Forward + Reverse Grouping card/ cassettes
    d) Rare antigen typing (C, c, E, e, Cw, Kell, Fya, Fyb, Jka, Jkb, Lea,Leb, Lua, Lub, M, N, S, s) with either using anti-sera prefilled card or using appropriate anti-sera in appropriate cassettes.
    e) Mono-specific AHG card/cassettes
    f) Quality Control (Q.C System) for the gel cards/ cassettes and reagents

D. Electrical characteristics:

a. Centrifuge and incubator or the combined system should work with Input voltage: 220 to 240V, 50/60 Hz AC, Single phase and should be provided with Indian plug.
b. Should have an integrated or external voltage stabilizer of suitable rating.

Annx-(2)

2. Semi Automated Coagulation Analyzer

Sl. No.	Technical Specification
1	It should be a four channel coagulation semi -automated analyzer
2	The channels has 640 nm for clotting tests to remove HIL (Hemolysis, Icteric, Lipemic) interference, 575 nm for chromogenic tests such as ATIII and 800 nm for D Dimer to remover interference in latex particles
3	Principle for clotting is scattered light detection method at 640 nm with clotting curve bearing generated, displayed and printed if required
4	It has 20 cuvette incubation positions
5	It should have 12 reagent position of which 7 numbers are at 37°C and 5 numbers at room temperature
6	Two reagent positions has magnetic stirrer function
7	It has a internal graphic thermal printer
8	It has a large touch screen of display of calibration, QC data, sample data, programming, setting and running test
9	It has 2USB point, one RS232, one LAN and one power point
10	It is able to upgrade software with the help of USB pen drive
11	The calibration has facility to input 6 multipoint calibration data, MNPT and ISI values
12	It reports in seconds, INR, g/L, ratio, FEU & %
13	The setting has an option of sample ID in sequential or custom mode
14	It accepts 14 digit sample alphanumeric ID which can continue in sequential mode
15	It performs all clotting test (PT, APTT, FIB, TT, Factors, LA, Protein S),Chromogenic (Protein C, Anti Thrombin III) immunoturbidimetry test (DDimer)
16	The system has 12 QC options per test with L-J facility, display, print and disable/delete points
17	500 nos. single reaction cuvettes are supplied as standard accessory.
18	Standard accessories includes USB pen drive, Indian power cord, paper rolls, dust cover, reagent holder, stylus, magnetic beads for stirring, small reagent cups
19	The system accept RFID data for cuvettes loading
20	The test sequence is prompted by software such as, the sample/reagent name to add next in each channel, have sensors in channel for detecting sample and reagent addition and automatically do incubation, measuring and reset the channel for next test on removing the tube after result is displayed and printed
21	The Test measurement is started by Channel start , instead of Pipette Start, which detects reagent dispensing inside the cuvette.

Annx-③

3. Serological Water Bath

WATER BATH : SEROLOGICAL with St.steel Lid - ISI Mark

Temperature range from Ambient to 80° C + or -0.5° C - controlled

By digital top controller-cum-indicator & provided with stirrer with steel shaft & blade with speed controller

Inner Chamber

L x W x D	Capacity
330 x300x150mm for 4 racks	15Ltr

Annx - (4)

4. Binocular Microscope

Specifications	Valid Cause
Binocular microscope with **infinity plan** optical system with **Plan 4x, Plan 10x, Plan 40x(spring loaded) and 100x (oil , spring-loaded)**	Infinity plan system ensures the flatness of the image. Same focussing will be done at the centre and periphery.
Should have WF10x paired eyepieces with F.N. 20	Functional no. 20 means diameter of the eyepiece will be 20 mm, WF means wide field.
Co-axial coarse & fine controls with a focus adjustment and fine adjustment knobs, Coarse Focus range 20 mm. Fine focus range 0.2 mm, controls should be from both sides.	Co-axial coarse & fine means coarse and fine tune knobs are co-axial and after rotation of 20 mm of coarse knob user can focus any slide and to maintain focussing between two objectives minimum rotation of fine is required 0.2 mm.
Centerable abbe condenser with aperture iris diaphragm (N.A. 1.25) focusable with rack & pinion through 20 mm and a continuously variable iris diaphragm.	It is a standard specs for all microscopes.
Illumination of the microscopes should be 3 W LED, of minimum life time 30,000 hrs.	It can be checked to see the maximum brightness of the LED .
mechanical stage (125mm x 145mm)(+/- 5 mm) with traverse area of 50 mm x 76 mm (+/-5mm) with dual side holder	Dual slide holder is a additional feature for clip up two slides.
revolving inward nosepiece based on precision ball-bearing mechanism with positive click stop.	Instead of facing towards user nose piece is inward. So it ensures any unwanted damage of objectives.
Inclination of binocular head should be 30 deg and seidentopf.	30 deg inclination gives user more comfort for viewing and seidentopf is another feature by which user can easily adjust his/her IPD.
Microscopes' base should be hexagonal design to get more stability of microscope on the table.	For getting more stability of the microscope's base.

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Microscope should have lock and key facility so that user can lock the microscope with the table.	
Demonstration is the criteria for technical selection of the microscope.	

Annx -(5)

5. Bacteriological Incubator

INCUBATOR BACTERIOLOGICAL (MEMMERT TYPE)-DIGITAL BEARING
ISI MARK IS:3118

Temperature range upto 80°C Controlled by digital Temp.Controller Cum indicator .provided with air cirulating Fan Door gasket made of silicon moulded instead of Asbesos.

Temperature Control :

Temperature is controlled by imported capillary type thermostat from ambient to 80°C ±0.5 °C Temperature control Knob is graduated in centigrtade degree after actually observing the temperature in steady state. An L-Shaped prismatic. Glass Thermometer is fitted on top of all incubator for reading the chamber temperature.

Ventilation :

Air ventilators are provided on both sides at top to ventilate gas or fumes if any.

Control Panel:

The equipment is provided with a panel having a thermostat control knob, ON/OFF switch and two pilot lamps

Power Requirement :

Supplied with cord and plug suitable to operate on 220V single phase, 50Hz., AC supply.

Size of Inner Chamber

W x H x D	Cap.	No. of Shelves	Load
(a) 300 x 300 x 300mm	27 Liter	2	1.5 KW
(b) 355 x 355 x 355mm	45 Liter	2	1.5 KW
(c) 455 x 455 x 455mm	92 Liter	2	2.0 KW
(d) 455 x 605 x 455mm	125 Liter	3	2.2 KW

Shalai

6. PH Meter

PH Range

PH

Range	: 0 to 14 pH
Resolution	: 0.01 pH
Stability	: 0.01 pH per hour
Relative Accuracy	: ±0.02 pH ±1 Digit
Slope	: 85% to 115%
Standard Buffers	: 7.000, 4.004 or 9.183
Buffer Deviation	: ±0.5 pH
Other working buffers	:

mV

Range	: 0 to ±1999 mV
Resolution	: 1mV
Accuracy	: ±1 mV ±1 Digit

Temperature

Compensation	: Auto / Manual
Range	: 0 to 99.9° C
Resolution	: 0.1° C
Accuracy	: ±0.5° C ±1 Digit
Display	: 7digits,7segment LED

Annunciation	:	With auto-polarity and decimal point. Mode annunciation by LED.
Data Storage	:	
Printer port	:	Epson compatible 80 column Dot Matrix
Power	:	230 V AC ±10%, 50Hz.
Dimensions	:	250(W) X 205(D) X 75(H) mm
Weight	:	1.25 kg (Approx)
Accessories	:	i) pH Electrode (Combined) ii) Temperature Probe (PT-100 Sensor iii) Electrode Stand & Clamp
Optional Accessories	:	i) Redox Electrode (Pt. Electrode) ii) Calomel Electrode

7.MICROPIPETTE SET FOR BLOOD BANK

A. Product & Manufacturer Quality Standards:

I. The quoted model should be either "USFDA approved (Device listed with registration under valid FEI number / having CFG)" **OR** "European CE certified and CE marked" **OR** "BIS certified conforming to the standard BIS specification/ guideline specifically for 'Micro Pipette'."

II. The manufacturer of the quoted product should have EN ISO 13485 certificate issued from a notified body **OR** ICMED 13485 (with or without plus) certificate issued from certification bodies accredited by NABCB **OR** ISO 13485 certificate issued from certification bodies accredited by NABCB / Nationally Recognized Accreditation Board under IAF MLA.

III. The quoted medical device must be registered under CDSCO and submit the license to manufacture for sale or for distribution of the medical device. If not registered, the acknowledgment copy of the online application for the said registration must be uploaded in the bid.

IV. The quoted model should comply with QC & calibration according to ISO 8655 from a testing laboratory which should be ISO/IEC 17025 certified for testing and calibration.

B. Application:

Micropipettesareusedto measureand deliveraccuratevolumes ofliquid in any analytical measurement. It should be autoclavable with high precision, robust and reliable, corrosion resistant piston and sealing material to allow smooth pipetting.

C. Technical Specification:

1. Should be ergonomically designed with light & smooth plunger action by tension free spring mechanism.
2. Should have rugged construction suitable for multi-user environment.
3. Effortless single hand operation, fixation of adjustable volume setting, volume lock, pipetting and tip ejection, all operations with the same hand.
4. Should have soft feel handle grip having both left & right hand operation.
5. Should have locking mechanism to prevent accidental volume change during pipetting.
6. **PipetteTip Cone:**
   a) Pipette tip cone should be compatible to universal tip type suitable for any make of micro tips.
   b) Pipette tip cone should be removable for easy cleaning, maintenance and autoclaving.
   c) The tip cone should have leak free operation, smooth and light loading operation with choice of using variety of tips.

7. Should be fully autoclavable at temperature of 121 deg C and should be UV resistant.
8. Should have larger and clear 3 digit display giving smaller increment for wider selection of volume.
9. **Air displacement type:** Variable volume pipette (manual) having the followings;

Sl.	Type	Range	Increment	Presicion / Accuracy
a.	8 channel	5 to 50 µL	In between 0.1 to 0.5 µL	Within ±3% at 5 µL and ±1% at 50 µL
b.	1 channel	5 to 50 µL	0.1 µL	Within ±3% at 5 µL and ±1% at 50 µL
c.	1 channel	10 to 100 µL	0.1 µL	Within ±3% at 10 µL and ±1% at 100 µL
d.	1 channel	100 to 1000 µL	1µL	Within ±3% at 100 µL and ±1% at 1000 µL

(NOTE:Provide relevantliterature forconfirmationof error values. Bidswithouttheconfirmatorydocuments will berejected)

10. Should have in house repair and calibration facility.
11. Each pipette must have an individual identification number engraved and also have an individual labeling area.

D. **Accessories:** SuitableTips forall pipettes, Tip boxes. RotatableholderwithLargerubberfeetprotectionfromliquids spilled on bench top to hold and store at least 6 pipettesin upright position.

E. **Warranty:** Should provide 1 year comprehensive warranty excluding the consumables with provision of onsite as well as factory calibration.

Note:

1) **Bidder has to supply the micro-pipette set as mentioned above in the technical specification from the same OEM/Brand only. Provision of micro-pipettes from different OEMs/Brands shall lead to rejection of the bid.**
2) **Refurbished micro-pipettes shall not be allowed.**

8. BLOOD BANK REFRIGERATOR (LARGE SIZED)

A) Technical Specification:

1. Should have capacity to accommodate minimum 500 numbers of blood bags of 350 ml size. The minimum external dimensions (including castor wheels) of the refrigerator should be "Width (W): 700 mm or more" x "Depth (D): 900 mm or more" x "Height (H): 1850 mm or more".
2. Should be capable to operate in ambient temperature from 10 to 40 degree Celsius.
3. Should maintain internal temperature from +2 to +6 degree Celsius consistently with accuracy up to 0.5 degree Celsius and should have digital display of temperature.
4. **Display:** Should have wide LCD / LED display with resolution of 0.5 degree Celsius or better for simple operation and easy reading of the chamber temperature. Should Have Battery Back Up and Security Lock for the Display.
5. **Hold over Time :** A full load of blood packs at +4 degree Celsius (+1 degree Celsius) takes at least 30 minutes to rise to above +6 degree Celsius. Internal temperature hold over time in case of power failure should be at least 90 minutes.
6. **Cooling Down Time :** A full load of blood packs at +25degree Celsius takes a maximum of 13 hrs for all the packs to reach below +6degree Celsius,
7. Should haveCFC free PU foam insulation of minimum 75 mm thickness or Water blown CFC freePU foam insulation of minimum 50 mm thickness for maintaining required holdover time.
8. Must utilize non-CFC, commonly available GREEN Hydrocarbon (green gas)refrigerant.
9. The material of inner chamber should be made of corrosion free Stainless Steel (SS 304 grade) to facilitate easy cleaning.
10. The material of outer chamber should be made of powder/epoxy coated CRCA/HDGI sheet of maximum 20G or lower.
11. Should have triple pane glass door fitted in door-frame with key lock and Self-closing with 90° stop.
12. Should have minimum FIVE (05) numbers of perforated stainless steel slide out traysalong with perforated rectangular containers made of stainless steel or Phase change material (PCM) of adequate numbers to accommodateminimum 90 blood bags per traywhich allows the blood bags to be placed upright with sufficient airspace avoiding being closely placed with each other.
13. Must have an internal evaporator fan for uniform temperature maintenance inside the chamber which should automatically switch off when the door is opened and vice versa.
14. Should have flicker free CFL/LED lamp for uniform lighting and better visibility of samples inside the cabinet.
15. Should have hotline around the mouth of cabinet to prevent moisture condensation. The refrigerator should have frost-free facility without elevating the chamber temperature.
16. Should have automatic defrost Technology for maximum uniformity to avoid Temperature fluctuation during Defrost cycle.

17. Should have facility for Chart change and Chart set options in the control panel which should be positioned at the eye level of a normal adult for better visibility and monitoring. Should have micro-controller based Temperature Recorder and audio-visual alarms.
18. The refrigeration system should have audible and visual alarm for high and low temperature, door open, battery low, power failure and sensor failure as a standard feature. Should also give indications if the refrigeration system is working on mains or battery, when the heater is ON. Should have an alarm silence button.
19. PC/ Data logging interface: USB / RS-232 / LAN
20. Must have ink-less pressure sensitive circular chart recorder to record data for minimum 7-days. The accuracy of the chart recorder should be +/- 1 degree Celsius. **The manufacturer must ensure the supply of chart paper till functioning of the machine.**
21. Should include 2 lockable front caster wheels & 2 non-lockable casters in the rear for portability.
22. Should have hermetic sealed compressor.
23. The refrigerator should have THREE (03) years warranty and the compressor should have FIVE (05) years warranty.
24. **Power Supply:**
    a) Power input should be 220-240VAC, 50Hz fitted with Indian plug.
    b) Resettable over-current breaker shall be fitted in the input power line for protection.
    c) Should have internal or external voltage servo stabilizer/CVT of suitable rating to prevent voltage fluctuations and provide a steady voltage supply.

9. BLOOD COLLECTION MONITOR

Technical Specification:

1. Volume Setting: Pre-selection of volume to be collected. Must have a weighing range of 50-500 ml
2. Must automatically tare to zero the weight of the blood bag before collection. Tarring range: 0 to minimum 500 gm.
3. Should have Automatic storage and recall of set volume and measure the volume with accuracy of within ±2% of the preset volume. Provision to change preset volume should be available.
4. Should have indications and alarms for commencement & end of collection, time taken for collection, blood flow rate with audio alarm when blood flow is higher than 180ml/min & lower than 20ml/min., Main power failure.
5. Should have a wide LED/ LCD screen for clear display of programmed volume, collected volume, flow rate, power on main or battery, battery low, battery full, collection enhancement, manual clamping and pause function.
6. Should have Pause facility to pause during collection.
7. Must have continuous display of collected volume, flow and time during collection.
8. Shall provide repetitive notification every minute after the completion of blood collection including gentle mixing to avoid coagulation till the bag is lifted.
9. Should have easily detachable tray for cleaning and disinfection which are compatible with all bag systems.
10. Tray should oscillate providing continuous agitation of blood bags at an oscillating range in between 12 to 16 rpm during collection
11. Should have automatic clamping of blood bags at termination of the preset collection volume. Should automatically release the blood bag when lifted. Should have option for manual clamp for usage in case of emergency.
12. Should have memory for past donation volumes.
13. Should operate on mains as well as rechargeable battery. On battery it should operate for a minimum of 8 hours or minimum 60 continuous blood collections.
14. **Additional Accessories:**
    a. Standard Calibration Weight set: 1 set comprising of 5gm, 10gm, 25gm, 50gm,100gm, 200gm (2 nos. each)
    b. Equipment carrying case: 1 number
    c. Floor Stand: 1 number
    d. Battery charger with at least 3 meter cord: 1 number
15. **Power Supply:** Power input should be 220-240VAC, 50Hz fitted with Indian plug
16. **Warranty:** Should have 3yrs. of manufacturer warrantyexcluding consumable parts.

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10. BLOOD DONOR COUCH

Technical Specification:

1. Should have maximum load bearing/ lifting capacity of 150 Kg or more.
2. Must have variable positioning for either arm with comfortably wide armrests which are swing out swivel-able as well as height adjustable facility for moving up & down.
3. Seat, back rest and leg rest size should be designed for maximum donor comfort. It should have step less electric remote controlled height adjustment.
4. Should have an adjustable head rest.

   Should have comfortable chair type with soft padding for cushioning and rexin cover. The soft upholstery should have a thickness of minimum 100mm.
5. Must be a three motored electrically operated donor couch for smooth shifting to any position between seating (upright body position), donation position (reclining) and vaso-vagal attack position (Donor's head needs to be lowered immediately and his legs lifted above his heart level so that blood can flow back to the brain and other vital organs) through a wired remote control. Must have a single switch/ button to quickly adjust to vaso-vagal position.
6. The remote control should also have three memory positions for easy adjustment at times of urgency.
7. Must have a noise free mode of operation.
8. Should have anti-skid Lockable castors for easy mobility.
9. Should have supporting bracket for materials required for blood collection such as Blood collection monitor, B.P. Apparatus, cotton, gauze, syringe etc.
10. Should have interfacing facility with blood collection monitor. Should have power supply from the blood donor couch to run blood collection monitor.
11. **Dimensions of the donor couch:**
    a. Length of back rest : minimum 900 mm
    b. Length of seat : minimum 550 mm
    c. Length of Leg rest : minimum 650 mm
    d. Seat width : minimum 600 mm
    e. Armrest length : minimum 600 mm
    f. Armrest width : minimum 150 mm
    g. Overall length (trendelenburg position) : minimum 2200 mm
    h. Overall width (both armrests fully open) : minimum 1800 mm
    i. Overall height of backrest (sitting position) : minimum 1100 mm
12. **Additional Accessories:**
    a. BCM cum accessories stand with telescopic IV pole along with paper holder: 1 set
    b. Trolley: 1 number
    c. Washable Dust Cover : 1 number
13. **Power Supply:**
    - Power input should be 220-240VAC, 50Hz fitted with Indian plug.
    - Resettable over-current breaker shall be fitted in the input power line for protection.
14. **Warranty:** Should have 3yrs. of manufacturer warranty excluding consumable parts.

11.DEEP FREEZER (Minus (-) 40 DEGREE CELSIUS)

Technical Specification:

1. The deep freezer should be Microprocessor controlled vertical floor stand model with single or double door.
2. Should have a Chamber temperature range between -20 ºC to -40ºC (at 22 to 30 degree Celsius ambient temperature)
3. It should have short cooling time of 4 to 5 hours at maximum ambient temperature of 33 degree Celsius.
4. Should have an inner chamber storage volume of minimum 300L with a total storage capacity of minimum 320 numbers of 250ml plasma bags.
5. **Display:** Should have wide LCD / LED display with resolution of 0.5 degree Celsius or better for simple operation and easy reading of the chamber temperature. Should Have Battery Back Up and Security Lock for the Display.
6. Should have stainless steelinterior doors with magnetic latches that ensure secure storage and less cold air loss during opening and closing of doors.
7. The door insulation should have CFC free PU foam insulation of minimum of 125 mm with rubber gasket sealing to ensure more temperature holding time and reduced power consumption.
8. Must utilize non-CFC, commonly available GREEN Hydrocarbon (green gas) refrigerant.
9. The material of inner chamber should be made of corrosion free Stainless Steel (SS 304 grade) of maximum 20G or lower to facilitate easy cleaning.
10. The material of outer chamber should be made of powder/epoxy coated CRCA/HDGI sheet of maximum 18G or lower.
11. Should have an ergonomically designed door handle with self pushing mechanism
12. Should have triple point rubber gasket sealing which reduces impact of ambient temperature and humidity in inner chamber
13. Should have minimum 03 adjustable stainless steel trays to place the bags.
14. Should have hotline around the mouth of cabinet to prevent moisture condensation. The freezer should have frost-free facility without elevating the chamber temperature.
15. Should have automatic defrost Technology for maximum uniformity to avoid Temperature fluctuation during Defrost cycle.
16. Should have facility for Chart change and Chart set options in the control panel which should be positioned for better visibility and monitoring. Should have micro-controller based Temperature Recorder and audio-visual alarms.
17. The freezer should have audible and visual alarm for “high and low temperature” and“door open” and have an alarm silence button. Should also give indications for battery low, power failure and sensor failure as a standard feature.
18. Must have ink-less pressure sensitive circular chart recorder to record data for minimum 7-days. The accuracy of the chart recorder should be +/- 1 degree Celsius. **The manufacturer must ensure the supply of chart paper till functioning of the machine.**

19. Should include 2 lockable front caster wheels and 2 non-lockable casters in the rear for portability.

20. Should be heavy duty refrigeration system, maintenance free, with hermetically sealed compressorhaving minimum noise & vibration. The compressor should automatically regulate according to the freezer load and should have pressure sensitive mechanism to protect the compressor in long run.

21. Must have a High capacity air cooled condenser

22. The refrigerator should have THREE (03) years warranty and the compressor should have FIVE (05) years warranty.

23. **Power Supply:**
    a) Power input should be 220-240VAC, 50Hz fitted with Indian plug.
    b) Resettable over-current breaker shall be fitted in the input power line for protection.
    c) Should have internal or external voltage servo stabilizer/CVT of suitable rating to prevent voltage fluctuations and provide a steady voltage supply.

24. **Warranty:** Should have 3yrs. of manufacturer warranty excluding consumable parts.

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12.Portable Tube sealer

Technical Specification:

1. Should be a heavy duty sealer where the sealing of the pilot PVC tube of the blood bag should be via radio frequency heating.
2. Should be compatible with the PVC tubes of various manufacturers of blood bag. Should be able to seal the PVC tubes of diameter up to at least 5 mm or more.
3. Should have facility for Automatic detection of the tube and should automatically trigger sealing by pressing of a lever with the help of optical sensor.
4. Should produce hermetic seal. Hence, there should not be any contamination & hemolysis as the radio frequency should heat only the tube and not the blood inside.
5. Should have separable rupture line to easily separate tube ends after sealing.
6. Should have minimum 1000 seals on fully charged battery.
7. Should have extended portable sealing hand unit along with co-axial cable length at least 2 meters which should ensure the application of RF only after the tube is completely squeezed so that the RF waves will not make contact with blood.
8. There should be no warm up time required for the equipment before sealing.
9. Must be provided with rechargeable Battery with more than 8 hours of back up. The battery should be fully charged in less than 4 hrs and should be protected from over charging.
10. Should provide uniform sealing irrespective of power supply variations. Hence, Switch mode power supply (SMPS) / power adapter should be provided.
11. Should have protection against electric shock.
12. **RF output frequency for sealing:** 40.68 MHz
13. **Sealing time:**less than 2 seconds
14. Should have indication for the sealing process on the hand unit as well as the main unit.
15. Should have the following Indications:
    a. Battery Power Level
    b. Charging
    c. Battery Low/ Battery Calibration
    d. Sealing indication on the Head for ready seal and power
16. The maximum weight of the followings should not be exceeding the values as mentioned
    a. The main base unit of the sealer: less than 2500 gms
    b. The extended sealing hand unit: less than 250 gms
17. **Power Source:** Should run on both Main power supply (230 ± 10 Volts / 50 Hz AC, fitted with appropriate Indian Plug) and Rechargeable Battery with more than 8 hours of back up.
18. Should be supplied with Suitable Battery Charger operable with 230 V± 10, 50 Hz AC.
19. **Warranty:** Should have 3yrs. of manufacturer warranty excluding consumable parts.

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13.Multifunction Hand Stripper

Technical Specification:

1. Should have adjustable roller to match with tube with variable diameter for stripping, sealing/ crimping and cutting of blood bag tube.
2. The body material should be stainless steel (bead blasted and passivated).
3. The handle should be made of Plastisol / PVC.
4. The roller must be made of Derlin / Nylon and should be safe for blood bag tube.
5. It should weigh not more than 250 grams.
6. **Warranty:** Should have 1 year of manufacturer warranty excluding consumable parts.

14. DOUBLE PAN BALANCE FOR WEIGHING BLOOD & BLOOD COMPONENTS

Technical Specification:

1. Should have two weighing pans with bucket for keeping blood bags in each bucket.
2. Should have LED or LCD display to indicate weight difference & indication for lighter side.
3. Range of weight measurement should be 0-2500 grams or ml.
4. Weight difference to be displayed should be 0-2500 grams or ml.
5. Should have facility for gram to ml & vice versa for blood & blood product.
6. Should have facility for tarring of blood bags.
7. Should have 6 hours or more battery back-up when fully charged.
8. Should have Overload Protection.
9. Should have Printer and PC Connectivity.
10. Should have display for balanced & imbalanced weight in each side.
11. Accuracy: ±1grams.
12. Should provide 1 gram &2 gram balancing weights of 10 nos. of each.
13. Should have provision for auto- calibration as well as manual calibration by balancing weights.
14. Should have load cell weight sensor.
15. Power supply: 220V ±10%, 50Hz.
16. **Warranty:** Should have 1 year of manufacturer warranty excluding consumable parts.

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15.RH View Box

Technical Specification:

1. Should have a soft fluorescent, glare free bulb to provide excellent uniform slide illumination.
2. Should have a built-in temperature indicator that should easily and accurately monitor the viewing area and regulate the temperature to compensate for ambient temperature changes.
3. Temperature Display: 37°C ± 2°C (Degree Celsius) with Micro Processor Indicator.
4. The viewing area temperature should be easily adjustable to compensate for any ambient temperature of the housing supported in the frame.
5. The Rh slide should reach a temperature of 37°C to 39°C in two minutes, eliminating heating up time.
6. The View box should be able to gently rock using large knob on support cradle.
7. The RH view box should be sturdy, easy-to-clean and should be made of Mild Steel with Powder coating / epoxy painting.
8. **Power supply:**
   a. Should work with 220-240 V AC, 50Hz power supply having Indian plug.
   b. Should be supplied with over current circuit breaker to avoid high current surge.
9. **Warranty:** Should have 1 year of manufacturer warranty excluding consumable parts.

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16.Plasma Thawing Bath

Technical Specification:

1. Should have a deep thawing chamber with a stirrer for water circulation & gentle rocking with pumping mechanism and in-line heating system to ensure uniform thawing.
2. Should be a water bath based system operating at a preset temperature between 37 Degree Celsius to 56 Degree Celsius. Should also have microprocessor based controller to maintain a precise temperature of 37 Degree Celsius ±0.3 Degree Celsius.
3. Should have a filter near the water inlet inside the tank to prevent clogging and movement of dust into the pump.
4. **Type:** Top opening Table top model supplied with cover for the whole system.
5. **Internal Body Material:** Stainless Steel (Non Corrosive, Non Magnetic type)
6. **Thawing time:** less than 40 minutes for plasma bags stored at minus (−) 30 Degree Celsius on full load.
7. **Capacity:** minimum 10 numbers of Fresh Frozen Plasma/ cryoprecipitate / Aphaeresis or plasma bags of any size with rack holders.
8. **Temperature sensing method:** Sealed sensor dipped directly in the water.
9. **Tray :** Removable type Smooth Acrylic / Stainless Steel trays with Partitions for holding plasma bags for each individual compartment to ensure that ports of bags may be kept above water level during the procedure.
10. **Display:** Should have wide LCD / LED display with resolution of 0.1 degree Celsius or better for simple operation and easy reading of the chamber temperature.
11. Should have provision for programmable time setting for length of thawing where the digital timer should clearly display the programmed set time or remaining cycle in minutes and Error messages for all fault condition.
12. Should have a audio visual system with following alarms indicating:
    a. Timer end / Completion of thawing of the plasma bags
    b. High and low temperature
13. Should have a drainage system to drain the chamber easily through drain Line with shut off valve which can be connected to existing plumbing.
14. **Power Supply:**
    a. Power input should be 220-240VAC, 50Hz fitted with Indian plug.
    b. Resettable over-current breaker shall be fitted in the input power line for protection.
15. **Accessories:**
    a. Reusable wrap bag: 15 numbers
    b. Frozen plasma bag holder
    c. Compression rack holder
    d. Reference thermometer
16. **Warranty:** Should have 3yrs. of manufacturer warranty excluding consumable parts.

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17. Platelet Agitator cum Incubator

A. Platelet Incubator

1. **Capacity:** 48 platelet bags
2. **Refrigeration:** Should have thermoelectric cooling method.
3. **Lamp:** Should have CFL/ LED tube or bulb for visibility of the stored plasma bags.
4. **Compressor:** should be hermetically sealed.
5. **Temperature**
   i. Seven day inkless chart recorder with battery back-up for minimum of 2 hours for continuous operation during power failure. **The manufacturer must ensure the supply of chart paper till functioning of the machine.**
   ii. Should have chart change and set button
   iii. Temperature controller with sensor
6. **Refrigeration:** Non-CFC air cooled refrigeration
7. **Safety features: Should have** Audio-visual alarm for
   i. Temperature fluctuation (High and low)
   ii. Power failure and sensor failure
   iii. Battery on/low
8. Should have a provision to store the agitator.
9. Should have a single transparent outer door where glass should be fitted in the door-frame for clear visibility.
10. Should be able to maintain an inner temperature of 22 deg C with +/- 2 deg C variations. Should have a Set temperature of 22 deg C.
11. Single digital temperature sensor for both recording and controlling
12. Should have forced air circulation method for the uniformity of the temperature at all sides of the incubator.
13. Chamber mounted electrical outlet for agitator should be available.
14. Should have a wide LED / LCD display with 0.5 deg C or better display resolution.
15. Should have built in voltage stabilizer.
16. Should have chlorofluorocarbon (CFC) free polyurethane (PUF) insulation.
17. Must incorporate an inbuilt 12V rechargeable battery to ensure continuous operation.
18. Power supply: 220-240 volts at 50 Hz.
19. Facility to connect with central (temperature) monitoring system

B. Platelet Agitator:

1. **Construction:**
   i. **Inner chamber:** should be made of stainless steel sheet of 304 grade having 24 or lower SWG for better thickness.

ii. **Outer chamber:** should be made of Corrosion Resistant powder coated GI Sheet having 20 or lower SWG for better thickness

iii. **Capacity:** Should have minimum 8 numbers of SS-304 grade sliding stainless steel trays to store up to 48 platelet bags. Should be able to store random platelet packs or aphaeresis platelet packs or a mixture of both types.

iv. **Shelves:** should be made of non slip, corrosion resistant material, Coated with bacteria Resistant material, perforated to ensure air circulation and with sufficient clearance to minimize noise.

v. Transparent Door

vi. Gentle side to side agitation at the rate of 60 to 70 strokes per minute

vii. Heavy duty ball bearing gear motor for noise less and continuous operation for 24 hours a day throughout the year

viii. Motor with internal fan should be automatically switched off during the door open. After the door is closed, Motor with internal fan should also auto start and the agitation should start within 10 seconds.

2. **Safety features**
   i. Audio alarm for power failure and sensor failure
   ii. Auto stop for agitation when the door is opened
   iii. LED Indication for blown fuse
3. Push buttons switch with pause function for temporary stoppage of the motion.
4. Power supply: 220-240 volts at 50 Hz.
5. **Warranty:** Should have 3yrs. of manufacturer warranty excluding consumable parts.

Should be provided with automatic voltage stabilizer as per requirement of the equipment with input voltage range from 110-280V, 50Hz for constant voltage of 220V±10%. Should have protection from high-low voltage cut off, overload and short circuit protection. Should be supplied with 2 meter power cord fitted with plug of suitable rating.

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18. Sterile Connecting device

Technical Specification:

1. Should able to accommodate & weld all types of blood bag PVC tubes used.
2. **Tubing sizes:** 3.9 to 4.5 mm (Outer diameter) and 2.9 to 3.1 mm (Inner diameter)
3. **Mechanism and heat transfer:** Two straight tubes and using a disposable wafer.
4. **Sterility:** Wafer heated up to 300 degree Celsius to maintain sterility during cutting and welding.
5. **Welding time:** less than 30 seconds
6. Should have seamless wielding.
7. Should able to join wet-wet, dry-wet, dry-dry tubes.
8. Welding should not cause any alteration in physical or chemical properties of the tube and should not cause hemolysis of blood.
9. Should have indication ongoing welding process &audio visual alarm for any functional irregularities.
10. The welding accessories should be available with the supplier throughout the functioning of the machine.
11. The welding wafers of 100 nos. should be supplied with the machine free of cost for trial.
12. **Accessories:** AC power cable, Bag supports, Cassette of Wafer, Replacement Air Filter
13. **Warranty:** Should have 3yrs. of manufacturer warranty excluding consumable parts.

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19.PLASMA EXPRESSER

Technical Specification:

1. Should be semi-automated Plasma expresser with facility for manual operation.
2. It must have Infra-red (IR) Sensor.
3. Should have motor activated clamping.
4. Should have suction holders for firm base grip with sturdy Compression plate on the top which should be made of transparent acrylic.
5. Metal used should be non corrosive and can be cleaned with antiseptics.
6. Front panel should be spring loaded to have uniform pressure on container / blood bag causing transfer of fluid.
7. Should have non corrosive metal plate with antiseptic coating.
8. Should have Audio visual indication of process completion.
9. Should have automatic control & locking system for fast and automatic clamping reducing the manual error and preventing RBC contamination.

Power supply:

- Should work with 220-240 V AC, 50Hz power supply having Indian plug.
- Should be supplied with over current circuit breaker to avoid high current surge.

Warranty: Should have 1 year of manufacturer warranty excluding consumable parts.

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20.Laminar Air - Flow Bench (Horizontal)

Specifications	Requirement
1. **Working principle**	The Laminar Airflow UV Chamber when switched on, the blowerunit should create a suction pressure through the primary filter (orPre-filter), which removes dust particles of above 10-micron sizeinthefirststage.Subsequently,thefilteredair passedtotheHEPA filters, where theparticles orsubstancesof 0.3 micronsize and above are removed. Finally, the ultra-clean filtered airsuppliedtotheworkingchamberasauniformairflowtoperform precisionanalysisactivities
2. **Cabinet (Material of construction)**	Thesystem shouldhave **a.** LaminarAirFlowCabinetshouldhavefullyenclosedbenchdesigned. **b.** TheLaminarflowbenchshouldhaveStainlessSteelSS304tablewith MS coated tabular. **c.** The frameandbody should be made of CRCA sheet metal construction with powder coated finish. **d.** LaminatedUnitshouldalsohavestandbycontrolsystemwith lockandkey.
3. **Unit**	Theunit should have **a.** ShouldhaveLCDdisplaytoshowmeasuredparameterslike exhaustair flow, flow velocity, cabinet temperature, UV/FL elapsed hour timer (Non resettable), UV/FL lamp on/off, HEPA filter life span (Non resettable). **b.** Unit should haveDifferential pressureindicator.
4. **Cleanlinesslevel**	Thesystem shouldhaveCLASS100(ISO5forparticlesizes 0.5µ<3530particles/M³ofairatbothatRest&OperationConditionasperISO14644–1
5. **Workingarea**	Minimum4ft (W)x2 ft(D)x3ft (H)
6. **Work table**	**a.** ItshouldhaveSS304gradeStainlessSteelwithfinish4polishsurfaceFrontdoor **b.** 5mmthickclearAcrylicSheet- Verticalsliding
7. **Floorstanding Base stand**	Havelevelingfeetorlockingcastersormotorizedheightadjustment.
8. **Directionofflow**	Horizontalairflow
9. **AirflowSpeed**	FilterfaceVelocityshould have 100 Feet/Minute ±20 (0.45to 0.65 m/s)
10. **Blower Assembly**	Itshouldhaveonesetblowersystemwhichconsistsofdynamically&statically balancedaluminiumcentrifugalimpellerdrivenby1/4HP,singlephase,1200 to1400RPMmotor,enclosedin an PU coated GI casing suitably suspended in a pair springs&connectedto the filterchamberthrough flexiblecanvas duct. The Blower motor should be dynamically balanced, with low noise & vibration. The Motor shall confirm to ISI or any international standards.
11. **HEPAFilters**	Thefiltersshouldhave **a. Size:** 30"x18"x3" **b. Type:** Separator less type, Mini-Pleats HEPA **c. Media:**Ultracleanglassfiberpaper **d. Initial Pressure:** 16 mm WG **e. Grade:** H13 rating **f. Filter class:** H14 according to EN 1822:2009

	g. **Retention:** 0.3 Micron Efficiency: 99.997% or better **(TESTReport from NABL accrediated lab should be submitted)**
12. Pre-Filters	a. **Size:** 600 x 300 x 65 mm b. **Media:** Synthetic, non-woven polyester c. **Casing:** Epoxy painted GI frame d. **Retention:** 10 Micron & above e. **Efficiency:** 90% f. **Initial Pressure:** 6 mm WG g. **Grade:** F7 rating
13. Particle Retention	0.3 Micron
14. Visual & audio alarm	For low exhaust flow, exhaust fan malfunctioning.
15. Noise level	< 60 dBA±5
16. Power Supply	a. Power supply should be 220-230 V, 50 Hz. b. All components should be UL listed or CE marked c. Should be supplied with suitable voltage corrector/stabilizer.
17. Illumination	Externally mounted illuminating lamp with separate switch to illuminate the work area.
18. Light	a. High intensity, low wattage >800 lux b. It should be 15 Watts, ,1½ Feet length– 1 No. each
19. UV lamp	Pre-mounted germicidalUV lamp (30 W) with separate switch with UV light hours run indicator.
20. Other accessories	a. Two gas outlets in the working area, one on each side wall Leveling Screws & Castor Wheels b. PAO (Poly Alpha Olefin) test port Easily changeable pre-filters c. Fitted with UV Germicidal lamp for sterilization. d. Pre-installed pressure gauge for Measurement of HEPA Filters Choking system. e. Ensure noiseless operation and anti-vibration construction provides efficient working environment. f. Audible or highly visual alarm for filter replacement warning
21. Electrical sockets or Pass Through Ports	a. Side mounted switches for minimum three (15/5 amp) electrical sockets for ancillary equipment operation or b. Convenient rear-wall pass through ports for safe routing of instrument cords, cables and leads for 15/5 amps multiple c. socket with switches on the wall.
22. Standards Compliance	Performance specifications and construction must meet or exceed OSHA, ANSI and relevant international standards to assure operator safety
23. Certification required for sign off	a. Test Certificate for Mini-Pleat HEPA Filters b. Calibration Certificate for Pressure Gauge c. Calibration Certificate for Air Velocity Anemometer
24. Spares	a. Spare compatible UV lamp: 2 Nos b. A spare HEPA filter for chamber: 1 No
25. Warranty	Should have 3yrs. of manufacturer warranty excluding consumable parts.