ವೈದ್ಯಕೀಯ ಶಿಕ್ಷಣ ನಿರ್ದೇಶನಾಲಯ
Directorate of Medical Education
ಆನಂದರಾವ್ ವೃತ್ತ, ಬೆಂಗಳೂರು-9
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ಸಂಖ್ಯೆ: ಎಂಇ/ಟೆಂಡರ್/08/2021-22

ದಿನಾಂಕ: 23-04-2021

"ನೋಟೀಸ್"

ಕೋವಿಡ್ 19 ಎರಡನೇ ಅಲೆ (ನೋವೆಲ್ ಕೊರೋನಾ ವೈರಸ್) ಸಾಂಕ್ರಾಮಿಕ ರೋಗಿಗಳಿಗೆ ನೀಡಬಹುದಾದ ವೈದ್ಯಕೀಯ ನಿರ್ವಹಣೆಗೆ (ಮೆಡಿಕಲ್ ಮ್ಯಾನೇಜ್‌ಮೆಂಟ್) ಅಗತ್ಯವಿರುವ ಈ ನೋಟೀಸ್‌ನೊಂದಿಗೆ ಲಗತ್ತಿಸಿರುವ ವೈದ್ಯಕೀಯ ಉಪಕರಣಗಳನ್ನು / ಪರಿಕರಗಳನ್ನು ಕೆಟಿಪಿಪಿ ಕಾಯ್ದೆಯ 4ಎ ಅಡಿಯಲಿ ಖರೀದಿಸಲು ತೀರ್ಮಾನಿಸಲಾಗಿದೆ ಹಾಗಾಗಿ ಸದರಿ ಉಪಕರಣಗಳನ್ನು / ಪರಿಕರಗಳನ್ನು ದಾಸ್ತಾನು ಹೊಂದಿರುವ ಮತ್ತು ಸರಬರಾಜು ಆದೇಶ ಪಡೆದ ಕೂಡಲೇ ಸರಬರಾಜು ಮಾಡಲು ಸಾಧ್ಯವಾಗುವಂತಹ ಸರಬರಾಜುದಾರರು ದಿನಾಂಕ: 26-04-2021ರ 11.00 AM ಒಳಗಾಗಿ ಇ-ಮೇಲ್ (dmekarnataka@yahoo.com) ಮುಖಾಂತರ ಉತ್ಪಾದಕರ ಪರವಾನೆಗೆ (ಉತ್ಪಾದಕರು ಭಾಗವಹಿಸಿದ್ದಲ್ಲಿ), ಅಧೀಕೃತ ಮಾರಟಗಾರರ ಪತ್ರ (ಉತ್ಪಾದಕರ ಪರವಾಗಿ ಭಾಗವಹಿಸಿದ್ದಲ್ಲಿ), ದರಪಟ್ಟಿ, ಉಪಕರಣದ ತಾಂತ್ರಿಕ ವಿವರ (ಉತ್ಪಾದಕರು ಹೆಸರು ಮತ್ತು ಮಾದರಿಯ ವಿವರ ಒಳಗೊಂಡಿರತಕ್ಕದ್ದು), ಸದ್ಯದ ದಾಸ್ತಾನು ವಿವರ, ಸರಬರಾಜು ಆದೇಶ ಪಡೆದ ನಂತರ ಒಂದು ವಾರದೊಳಗೆ ಸರಬರಾಜು ಮಾಡಲು ಸಿದ್ಧವಿರುವ ಬಗ್ಗೆ ಮುಚ್ಚಳಿಕೆ ಪತ್ರ, ವ್ಯಾರಂಟಿ ವಿವರ ಮತ್ತು ಭಾರತದಲ್ಲಿ ಉತ್ಪಾದಕರ ಕಛೇರಿ ನೊಂದಣಿ ಪ್ರಮಾಣ ಪತ್ರ ಹಾಗೂ After sales service ನೀಡುವವರ ವಿವರಗಳನ್ನು ಸಲ್ಲಿಸತಕ್ಕದ್ದು.

Director of Medical Education
Ananda Rao Circle, Bangalore
ನಿರ್ದೇಶಕರು, ವೈದ್ಯಕೀಯ ಶಿಕ್ಷಣ.

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SL.NO	Equipment Name
1	ICU Cot
2	Monitors
3	Ventilators
4	Dialysis Machines
5	Syringe Pump
6	Infusion Pump
7	Defibrillator with AED
8	Portable X Ray
9	14" x 17 " Digital X Ray Cassette & Image Plate for Screening of COVID 19- Patients. Computed Radiography System of FUJI FILM make.
10	8" x 10" Digital X Ray Cassette & Image Plate for Screening of COVID 19- Patients. Computed Radiography System of FUJI FILM make.

Director of Medical Education
Ananda Rao Circle, Bangalore

Director, Medical Education

Specifications for a modern ICU Critical Care Ventilator

- Principle – Time cycled, volume constant,pressure-controlled ventilator suitable for use with High pressure oxygen.

- Use and application –
  - The ventilator should be suitable for use in Adult and Paediatric patients in all critical care areas with selection between adult and pediatric modes.
  - The ventilator should have both invasive and non invasive ventilation modes. Non invasive ventilation should be possible in all modes from control to spontaneous.

- Design – Modern design

  - The ventilators should be an upgradeable design with software and / or hardware upgradeability for new/future functions.

- Power – The ventilator should run on both mains and battery as below :
  - Mains Power – 230 V 50 Hz with onscreen battery power indication
  - Battery – Internal battery with minimum 45minutes to one hour battery backup with onscreen battery power indication.
  - The batteries – internalbattery -should also power the air source.

- Air Source - Integrated internal air source. External air source also may be offered as below:
  - For delivering continuous flow upto 180 lpm in all control modes
  - For delivering continuous flow upto 250 lpm in spontaneous breathing mode with pressure support
  - If internal, the air source should be powered by the internal battery for at least 45 minutes.
  - The air source should have integrated dust filters which should be easily removable and washable
  - Bacteria filters for delivering medical grade air should be integrated in the turbine
  - The air source should have a mean time between failure / life of 8 years with no restriction on the number of hours of operationduring these 8 years. The same should be provide by company

- Graphical Interface – All commands and settings should be through an integrated 12 inchcolour touchscreen. The 12 inch display should show :
  - At least 3 curvefrom pressure, flow, volume.
  - The curves should be filled curves for easy viewing at a distance.
  - Any loops from PV, FV, PF should be displayed in any combination such as:
    - waveforms + loops
    - single loop on screen
    - waveform + loops + trends

- It should be possible to freeze the loops and calculate inflection points witha cursor
- It should be also possible to keep a reference point for loops
- Integrated Graphical trend for 24 hours should be available for monitored parameters
- Integrated Tabular trend also should be available
- There should be a day/ night mode for easy viewing at night.
- The numerical readings should be freely configurable as per user wish in ANY order

- Valve response time –
  - The ventilator should have extremely sensitive valve with response time ≤ 5 msec for ensuring quick delivery of gases during spontaneous breathing (proof of same to be shown in technical data sheet)

- Nebuliser
  - The ventilator should have a simple pneumatic nebuliser which should be inspiration synchronised and volume compensated. This should be supplied as standard scope of supply.

- Oxygen Cell
  - The ventilator should have low operating costs with a permanent/ non consumable O2 sensor for FiO2 monitoring. Same should be offered as standard.
  - In case consumable/ electrochemical O2 cells are offered by a vendor, same should be provided free of charge for operational lifetime of equipmentfor 8 years.

- Flow sensor :
  - The flow sensor should be of heated wire type for higher accuracy.
  - It should calibrate within 5 seconds and without necessity to disconnect from patient.
  - It should be easily replaceable without disassembling the machine or disassembling the expiratory valve
  - At least 5No.s flow sensor should be supplied along with ventilator.

- Suction / Oxygen enrichment –
  - 100% O2 enrichment for 3 minutes with automatic time countdown
  - Disconnection detection

- Modes of Ventilation -The ventilator should have the following ventilation modes as standard with quick touchscreen based operation / change from one mode to another:
  - Volume Control – Control, Assist Control, SIMV with/ without Pressure support

- CPAP with/without Pressure Support
- PC-BIPAP – Biphasic with/without Pressure Support with spontaneous breathing at two pressure levels. Should be one pressure mode from intubation to extubation
- Apnoea backup ventilation mode with adjustable tidal volume and rate
- Non Invasive Ventilation
  - Should be possible to be used in all modes – from control to spontaneous.
- Inspiration Hold

- Should be upgradable to Autoflow or Dual mode and Pressure control-Assist control.

Should have BTPS compensated settings for:

Tidal Volume in Volume modes	50 ml to 2000 ml.
Inspiratory Pressure	1–99 cmH2O
CPAP/PEEP /Intermittent PEEP	0 – 50 cmH2O
Inspiratory Rate	2– 80 bpm
Inspiratory Time	0.2 – 10 sec
Flow acceleration	5 – 200 mbar (to deliver continuous peak flow upto 180 lpm)
Flow Trigger	1 – 15 lpm
Pressure support	0 – 50 cmH2O above PEEP
Inspiratory hold	0 – 15 sec
Sigh (Pressure oriented)	0 – 35 cmH2O, every 3 minutes for 2 cycles
FiO2	21 - 100%
Apnoea alarm timing	15 – 60 seconds
Automatic altitude compensation	700 – 1060 hPa/ mbar/ CmH2O/
Sigh pressure	0 – 20 CmH2O above PEEP
Inspiration termination Criteria	5 – 75% of Peak Inspiratory Flow

Should have BTPS compensated real time monitoring of:

- Pressure - Peak, Plateau, Mean, CPAP/PEEP
- Tidal Volume - Set (Inspired) , Monitored (expired), spontaneous
- Minute Volume - Total, spontaneous, leak
- Peak Flow, Plateau time
- Frequency/ Rate - Set (Inspiratory), Spontaneous, total, I:E Ratio
- FiO2 measured
- Lung Mechanics - Resistance, Compliance, Rapid Shallow Breathing Index (RSB)

- Should have three level (Advice- Caution – Warning) ISO alarm management with different audio visual color coded alarms, including corrective help messages on the screen for :-

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  - In case consumable/ electrochemical O2 cells are offered by a vendor, same should be provided free of charge for operational lifetime of equipmentfor 8 years.

- Flow sensor :
  - The flow sensor should be of heated wire type for higher accuracy.
  - It should calibrate within 5 seconds and without necessity to disconnect from patient.
  - It should be easily replaceable without disassembling the machine or disassembling the expiratory valve
  - At least 5No.s flow sensor should be supplied along with ventilator.

- Suction / Oxygen enrichment –
  - 100% O2 enrichment for 3 minutes with automatic time countdown
  - Disconnection detection

- Modes of Ventilation -The ventilator should have the following ventilation modes as standard with quick touchscreen based operation / change from one mode to another:
  - Volume Control – Control, Assist Control, SIMV with/ without Pressure support

- High/low Pressure
- High/low Minute Volume
- High Rate
- High Tidal Volume
- Apnoea / apnoea alarm time
- High/low O2 % (automatic settings)
- Oxygen line failure
- Technical error (with error code)
- Incorrect / abnormal settings – with warning message

Scope of supply should include

- Basic Unit(220 - 240 V)with integrated 12 inch touch screenand integrated internal battery to power internal turbine/ air source
- Modular corrosion free Trolley
  - should be imported , of same make as the quoted brand and no local substitute will be accepted/ should be offered.
- Heated Flow sensor - 5no.s
- Reusable autoclavable expiratory valve - 2 No.s(1 on machine and 1 on standby)
- O2 cell – should be non consumable and life long
- Oxygen connecting Hose – 1 no's
- Nebuliser – pneumatic , inspiration synchronised-1 no's
- Disposable Adult breathing circuit-25 no's
- Disposable HME filter-50 no's
- Reusable NIV mask-Medium size-1 no's
- Hinged arm Support for patient circuit – should be imported , of same make as the quoted brand and no local substitute will be accepted/ should be offered
- Test Lung – preferable from same vendor
- Instruction Manual

- Quality Standards and Support requirements
  - The offered unit should have CE and FDA certificate
  - The unit should comply with relevant IEC Certification, Environmental conditions, Electromagnetic compatibility ICE/EN 60601-1-2
  - Indian subsidiary/ dealer should have nationwide network, support offices and must be also ISO 9001 certified.

Specifications for 100 mA High Frequency Portable /Mobile X Ray Unit

High frequency, microprocessor controlled, High Frequency Mobile X Ray unit having following features:

Compact, lightweight, easily transportable mobile X Ray unit suitable for bedside x-rays, trauma, Intensive care units, Operation theatre and Radiology department.

The unit should be fully counterbalanced and can be positioned to suit different bed heights. The unit should have facility of vertical swing and horizontal rotation of the tube head to ensure X Ray of any anatomy even within limited space.

The unit must have an effective braking system for parking and transport.

The tube stand must be fully counterbalanced with rotation in all directions.

The unit must have intelligent graphical LCD display with at least 60 user-configurable anatomy presets for ease of operation to the operator.

The exposure release switch should be detachable with a cord of sufficient length (at least 3 m)

The unit should have integrated cassette box of size 542 mm (W) x 420 mm(H)

The Generator:

a. Microprocessor controlled high frequency / inverter type of high frequency 200 KHz or more for constant output. Generator with higher switching Frequency of will be preferred.
b. It should have power rating of 4 kW or more
c. It should have a digital display of mAs and kV.
d. KV range : 40 kv to 100kV or more
e. mA range: 10 mA to 100 mA or more
   mAS selection: 0.1 to 250 mAS or more

X-Ray Tube and Collimator:

a. Stationary / Rotating anode having focal spot size 1.8 mm or less.
b. The X-Ray tube should be Toshiba or BEL or CEI make
c. Light Beam diaphragm / Double layer Collimator with auto cut off switch. The light intensity must be at least 160 lux at 1 mtr distance from focal spot.
d. Collimator rotation - 90° to +90° must be possible

The unit should operate on single phase power supply and should have plugin facility to any standard wall outlet with automatic adaptation to line voltage 200 to 240 volts, 15 Amp plug.

The Leakage radiation level at 1 meter from the focus should be less than 50 mR. Products having minimal leakage radiation level will be preferred. (Please attach relevant test report)

The weight of complete unit should be less than 100 kg

Manufacturer / supplier should have ISO 13485 certification

The product offered must have European CE certification.

Should be an AERB approved product.

User/Technical/Maintenance manuals to be supplied in English.

Specifications for Advanced Multiparameter

1. Should be suitable for adult, paediatric and neonatal patients monitoring.
2. Should monitor ECG, Respiration, NIBP, SpO2, Dual Temperature, Three IBP, Mainstream Etco2.
3. Should have ST analysis, Arrhythmia detection, pacer spike detection, Drug Dose Calculation and OxyCRG as standard in every monitor
4. Should have integrated 12" or above TFT-LCD colour touch screen display with minimum 8 channels of waveforms.
5. Defib and ESU protection should be present
6. Should have monitoring, surgery and diagnostic mode of monitoring
7. Should have Advance Arrhythmia monitoring for Asystole, Vfib/Vtac, VT>2, Couplet, Bigeminy, Trigeminy, R on T, PVC, Tachy, Brady, Missed Beats, IRR, PNC, Vbrady.
8. Monitor access should be with Touch screen, rotary knob and fast access key for quick function.
9. 150 hrs of trend and 60 events with waveform as standard in all monitors
10. Should have 48 hours full disclosure.
11. Color or position of waveforms or parameters should be able to be adjusted based on users preferences. Big font on screen format should be present.
12. Nurse call, VGA output port should be standard in every monitor.
13. Monitor should have USB port for software upgrade
14. Should have inbuilt three channel recorder as standard in every monitor
15. Should have 350 min or more (typically) of battery backup as standard in every monitor
16. Should be European CE complying to European Directive 93/42/EEC for both Monitor and software to control physiologic monitoring systems.
17. Wired and wireless networking should be standard to connect to Central station.

... for better hospital asset management

Should have following parameters

ECG

- Monitor should have capability for display up to 7 Lead .
- ST Analysis
- Waveform Freeze option with review of 120 sec
- Range: 15 to 350bpm

RESPIRATION

- Through impedance pneumography method or EtCO2
- Should provide value for arterial oxygen saturation as well as plethysmographic pulse waveform

SPO2

Should have Spo2 technology.

NIBP

By oscillometric principle of measurement.
Should display Systolic, diastolic, mean pressure in large easy to read display
Range: 10 to 270mmHg

ıal Temperature – core & skin. Range: 0 to 50 Deg C

ree IBP – Should monitor simultaneous monitoring of three IBP should be sible. Range: -50 to 300mmHg

:O2 – Mainstream EtCO2. Should be supplied by sensor and adaptor. ge: 0 to 150mmHg

ıe of supply must include:

ısic unit with ECG, Resp, SpO2, Dual Temp, NIBP, Three IBP, inbuilt ttery – 1 no
ead ECG Trunk Cable – 1 no each per monitor
ead wire- 1 no each per monitor.
P Hose - 1no per monitor
lt NIBP cuff – 1 no each per monitor
d NIBP cuff—1 no each per monitor
sable Adult Spo2 sensor-1 no each per monitor
Temperature Probe-1 no each per monitor.
stream Etco2 sensor-1 no each per monitor.
stream Etco2 adaptor-1 no each per monitor.
ction for Use per monitor-1 no each per monitor.

SPECIFICATIONS OF DEFIBRILLATOR / MONITOR

Can deliver shock from 2 to 360 Joules using Bi-phasic technology

Has an active matrix colour LCD screen with facility for displaying at least two waveforms simultaneously & size atleast 5"

Has in-built AED Mode with escalating energy upto 360 Joules

Motion detection during ECG Analysis

Has facility for Automatic External Defibrillation (AED) and manual defibrillation based on latest Biphasic technology

Should have CPR Metronome to aid users in performing compressions and ventilations within the recommended 2015 AHA Guidelines

Should be upgradable to non-invasive pacing.

Should be upgradeable to EtCO2 functionality

3 or 5 Lead ECG monitoring and synchronized cardioversion. Capable of monitoring ECG while performing CPR.

0. Should have CPR Metronome to aid users in performing compressions and ventilations as per 2010 & 2015 AHA Guidelines, without any additional disposable cost.

1. Charge time to 200 Joules <7 seconds

12. Fully charged battery can give minimum 90 shocks of 200 Joules. Battery charge time is less than 2 hours

13. Works on 220V AC and built-in battery

14. Has in-built thermal printer of paper width 50 mm

15. Light weight, compact and portable

16. Must have USFDA & European CE Mark Approvals.

SYRINGE PUMP

1. Bolus Rate upto 1200ml/hr
2. Wide range of audio and visual alarms :
    - Battery Low, Battery Empty, Occlusion, Syringe Near Empty, Syringe Empty, Syringe Error, Not Infusing
3. Programmable infusion rate of 0.1 ml/hr to 1200 ml/hr and can be adjusted in increments of 0.1 ml/hr
4. Syringe range from 20-50/60 ml.
5. 3 occlusion pressure settings
    - Low (L): 300mmHg +/- 100mmHg
    - Medium (C): 500mmHg +/- 100mmHg
    - High (H): 800mmHg +/- 100mmHg
6. Factory Calibrated for international and local brands of syringes including Romsons Junior and Unolock (Dispovan)
7. On Pump Syringe loading guidelines
8. LED screen
9. Company Owned Service Centre in India
10. CE Marked & ISO Certified

INFUSION PUMP

1. Should have flow accuracy of ±5%
2. Should have infusion rate range from 1 ml/h to 1200 ml/h
3. Power: AC with battery back-up of at least 5 and a half hours at 25ml/hr with on screen battery indicator
4. Should have a LCD display with backlight and Flow Rate, Infusions set brand, Volume, Total infused Volume and Battery Indicator displayed on the screen
5. Should have an on-screen graphical display of delivery pressure
6. Should be pre-calibrated for use with 2 brands of infusion sets with option to calibrate additional brands
7. Should have infusion program setting where 2 different flowrates can be pre-programmed for the same infusion
8. History log report of 1500 latest records that can be viewed on the pump and downloaded to the PC
9. Should have volume infused display from 1 ml to 9999 ml
10. Should have priming/bolus rate of 1000 ml/h
11. Should have 3 occlusion alarm thresholds – High, Medium and Low
12. Should have adjustable KVO rate from 1 ml/h to 5 ml/h
13. Should have an RS232 interface
14. Should be CE/IEC approved
15. Should be light weight (≤2 kg)
16. Should have the following audible and visual alarms –
    i. Occlusion
    ii. Air in line
    iii. Battery low
    iv. Battery depleted
    v. Infusion near complete
    vi. Infusion complete

Electrical ICU Cots

- Five Functions: back-rest, Knee-rest trendelenburg height adjustment and CPR
- Bed head and tail are made of high quality plastic to ensure stability and aesthestic design
- 4 ABS up and down guard rail to satisfy different care need and it can be hidden if not needed
- Centralized brake system
- ABS Left Right push switch to load and unload freely and safely
- Should be supplied with heavy duty 32 mm Diameter Telescopic IV Poles
- Special medical Treatment Actuator to ensure safety while overweight
- Product should be CE Certified

Haemodialysis Machine (36 pieces)

Technical Specifications

* As per GeM Category Specification

Specification	Specification Name	Values	Bid Requirement (Allowed Values)
GENERAL FEATURES	Product name	Haemodialysis or Dialysis machine	*
	Clinical purpose	Purification of blood of a person by removing excess water and waste products from the blood using artificial kidney with the help of a dialysis machine out side the patient's body whose kidneys are dysfunctional, damaged or missing	*
	Patient category	Pediatrics and adults	*
CONSTRUCTION, OPERATION AND FUNCTIONAL FEATURES	**Material of the body**	Polypropylene (PP)	Polypropylene (PP), Aluminium and FRP
	The Machine should be of latest technology with microprocessor controlled	Yes	*
	Machine should have Acetate & Bicarbonate dialysis facility	Yes	*

Machine should have two bacterial filters (Pyrogen filters) one at water inlet and one before water going to dialyzer	Yes	*
Machine should have Sequential/Isolation Ultra filtration facility	Yes	*
It should have Arterial , Venous & Transmembrane pressure monitoring facility	Yes	*
Arterial Pressure Monitoring	-300 mm Hg to +300 mm Hg	-300 mm Hg to +300 mm Hg
Venous Pressure Monitoring	-60 mm Hg to +500 mm Hg	*
Transmembrane Pressure Monitoring	-60 mm Hg to +500 mm Hg	*
Treatment parameters should be displayed by trend curve and digital both in a user friendly manner	Yes	*
Arterial Blood pump flow rate (ml/min)	15 to 600	10 to 600, 15 to 600, 20 to 500, 20 to 600, 50 to 500
Blood tubing pump segment should be operator changeable for use of different type of blood tubing sets	Yes	*
Blood Tubing Pump segment range 4mm to 10mm approx	Yes	*
Variable dialysate flow (ml/mt)	300 to 800	200 to 800, 300 to 800, 300 to 700, 100 to 800
Dialysate Temperature (degree C)	34 to 39	32 to 39, 34 to 39
Machine should have Single Needle dialysis facility	With single blood pump	With single blood pump
Machine should have volumetric Ultrafiltration system	Yes	*
Machine should have inbuilt on-line Dialysate fluid filter system for ultrapure Dialysate delivery	Yes	Yes
Machine should have In-line Bicarbonate mixing and solution preparation facility with sterile dry powder cartridge during dialysis	Yes	*
Machine should have Air	Yes	*

bubble detector facility with level adjustment facility for Venous Chamber		
Machine should have Optical Sensor to check the presence of blood/saline in the extracorporeal blood circuit system	Yes	*
Should have Na, Bicarbonate and UF profiling	Yes	*
Should have drain facility	Yes	*
Machine should have Heparin Infusion Pump with rate 0 to 10ml/min and Bolus infusion up to 5ml/min approx	Yes	*
Heparin infusion pump delivery range (ml/min)	0 to 10	0 to 10, 0 to 20
Heparin infusion pump bolus infusion range (ml/min)	0 to 5	0 to 5, 0.5 to 5, 0.1 to 9.9
Machine should have blood leak sensor	Yes	*
[illegible] will be activated for blood loss rate not greater than 0 point 5ml/min at maximum dialysate flow of 800ml/min	Yes	*
Machine should be able to accept different concentrate formulation, different dialyzers and blood tubing set	Yes	*
Ultrafiltration rate (Lts/Hr)	4	*
Machine should have variable conductivity setting between 13 to 15(minimum range)	Yes	*
Machine should have facility for priming and rinsing of dialyzer and blood lines	Yes	*
Machine should have automatic priming/reinfusion facility	Yes	*
Machine should have Hot Rinsing and Hot Chemical Disinfection facility (Temp above 80 deg Celsius) with recirculation system	Yes	*

	it should have various Chemo Thermal cleansing and disinfection programs	Yes	*
	Machine should have Ultrafiltration and Sodium Profiling facility	Yes	*
	Built-in heat exchanger	Yes	*
	Machine should have built-in automatic pulse rate and blood pressure(NIBP) monitoring unit	Yes	Yes, No
	Built-in online NIBP recording facility	Yes	Yes
	Online clearance kt/V facility	Yes	*
	Machine should be up gradable to future software development and can be linked for Data Management System	Yes	Yes
	All important data should be preset so that machine can be used anytime without feeding data every time	Yes	*
	Should have automatic self test facility	Yes	*
	Automatic diagnosis of malfunctioning with on line ability to show the faults with trouble	Yes	*
	Audio visual alarms on limit violation of conductivity,blood leak, air leak, transmembrane pressure alarms,, Dialysis temperature alarm,dialysis can empty alarm, end of disinfection alarm,bypass alarm and blood pump stop alarm, alarm for reverse Ultrafiltration etc	Yes	*
STANDARD ACCESSORIES	**Bacterial filters (Sets)**	2	2, 4
ELECTRICAL FEATURES	Should have auto ON/OFF Facility	Yes	*
	LED indicator on front panel for status of machine	Yes	*
	Power supply (with Indian plug)	220+/-10% V, 50Hz, AC Single phase	*
	Machine should have Automatic battery backup for complete	Yes	*

	Extracorporeal blood system during power failure		
	UPS of suitable rating with voltage regulation and spike protection for 60 minutes back up	Yes	*
USER INTERFACE	Colour TFT display operated by touch buttons or touch screen	Yes	*
	Colour panel display size (inch)	10	10.0 - 15.0 Or higher
	Data protection while power goes off	Yes	*
	Memory for storage of records	Yes	*
	USB and Ethernet for file sharing	Yes	Yes
PACKING MODE	The product is packed individually in a box with all its accessories in such a way that there will be no transit damage	Yes	*
CERTIFICATIONS & REPORTS	Availability of test report/quality assurance report from parent manufacturer	YES	*
	Product certification	EU-CE	*
	Certificate No	-	*
	Certificate Date	-	*
	Certificate issuing authority	-	*
	Four digit number of notified body If product is EU-CE certified	-	*
	Certification, performance and safety standards specific to the device	IEC 60601-2-16	*
	Submission of all the certifications and test reports to the buyer along with supplies on demand	Yes	*
INSTALLATION & TRAINING	Supplier to perform installation, safety and operation checks before handover	Yes	*
	Training of users in operation and basic maintenance shall be provided	Yes	*
WARRANTY & MAINTENANCE	Onsite comprehensive warranty from the date of installation and commissioning (in years)	5	*

	User technical and maintenance manual detailing complete maintaining schedule with routine maintenance should be provided	Yes	*
	Contact details of manufacturer, supplier and local service agent to be provided	Yes	*

* Specifications highlighted in bold are the Golden Parameters.

* Bidders may note that In respect of non-golden Parameters, the specifications 'Values' chosen by Buyer will generally be preferred over 'Bid requirement (allowed Values) by the Buyer.