AMENDMENT No – III Dated 13/11/2015

Sub.: Procurement of Medical Equipment for Kalpana Chawala Government Medical College, Karnal.

Ref: Tender Enquiry No.: HSCC/KCGMC/Medical Equipment/2015/02 dt. 06.10.2015

This is in continuation to Amendment No. I & II wherein the Bid submission date extended from 16.11.2015 to 19.11.2015 for Equipments under Sr. No. 1 to 9, 11 to 13, 15 to 20, 24, 26 to 29 & 31 to 50.

Sl. No.	Description	Revised Schedule
i.	Closing date & time for receipt of tender	19.11.2015 at 02:30 P.M.
ii.	Time and date of Opening of Techno – Commercial Tenders	19.11.2015 at 03:00 P.M.

***The revised specification for Item No. 5, 6, 7, 8, 9, 11, 12, 16, 48 & 49 are attached herewith*. The amendment based on the queries/requests which have been received from the prospective bidders for the Items under Sr. No. 2 to 4, 17, 18, 20, 24, 26 to 28, 32 & 35 to 45 will be issued shortly. Please be informed that there is no change in Specifications for items under Sr. No. 1, 5, 13,15,29, 31, 33, 34, 46, 47 & 50.**

All other terms and conditions of the tender enquiry document shall remain unchanged. Bidders are also advised to be guided by the EMD clause mentioned in the Tender Document & submit in the form of DD/ BG/Bankers Cheque & also to check whether the EMD (in case of EMD is in the form of Bank Guarantee) being submitted are valid for 165 days from the revised date of opening. Additional Sheet has been inserted in Price Schedule for submitting optional / essential etc items, if any, in the Tender Document.

Prospective bidders are advised to regularly visit HSCC website/ CPPP website for corrigendum /amendments etc. if any, as these will be notified on these portals only. No separate advertisement will published in the news papers in this regard.

CGM, HSCC India Limited
For and on behalf of DGMER, Panchkula

5) **Operation Theatre Table for Minor OT - No Changes in Specification**

6) **Operation Theatre Table for Major OT**

		Amended Specifications
Should have following features:		
1. Should be compatible with all makes of C-Arms allowing 100% radiological access of the patient,		No Change
2. It should be 5 section hydraulic operation table with split leg section.		**It should be 5 section hydraulic (Oil Free/Oil leakage proof-Spill free) operation table with split leg section**
3. The table should work on mains power supply. Additionally it is also capable of working on high storage capacity batteries with atleast 1hr. back up strength.		No Change
4. It should have standby back-up on failure of hand control or microprocessor, an override control panel, for adjustments of height up/down, Trendelenburg/reverse trendelenburg, lateral tilts.		No Change
5. The following adjustments must be electro-hydraulically operated via corded hand- control:		No Change
a. Height down : 600-750mm		
b. Height up : 900-1050mm		
c. Trendelenburg : 30-35degree		
d. Reverse Trendelenburg : 25-30degree		
e. Lateral tilt (left) : 20-25°		
f. Lateral tilt (right) : 20-25°		
g. Zero position		
h. Battery status to be available on table body/hand remote through color LED.		
6. Should have Split Leg sections +10° to -90° and swiveling. Head and leg section detachable.		No Change
7. Should be possible to position Head +45° to -45° and Back section up-down : +80° to -40°.		No Change
8. The table should be provided with special foam mattress of atleast 50 mm thickness.		**No Change**
9. Should be with a strong solid base with no obstruction to the feet.		No Change
10. It should be provided with four swivel castors with Hydraulic locking and breaking device.		No Change
11. The base, column cover is made up of ABS/stainless steel which is resistant to impact, breakage and resistance to corrosion.		No Change

12. The maximum permissible patient carrying weight to be min. 150 Kg or above.		**The permissible patient carrying weight to be <u>250</u> Kg or above all over the Table Area.**
13. Must have table top Kidney elevator / thoracic elevation system.		No Change
14. Table top atleast 50-55 cm wide and 190 -200 cm long.		No Change
15. The following of same make (CE marked) accessories are to be supplied alongwith each table		No Change
a. Arm board with pad and clamp : 2nos		
b. Anesthesia screen with clamp : 1no.		
c. Lithotomy Padded Leg Holders (ball socket type)-1pair		
d. Side Lateral supports- with rectangular curved pads-1pair		
e. Shoulder support with rectangular pads--1pair		
f. X-ray cassette holder for tray		
g. IV Pole with bracket - 1 no.		
h. Patient restraint strap - 1 no.		
Essential Optional accessories, The Bidder must quote the following essential accessories indicating individual price for each of the following essential optional accessories:		No Change
i. Uro-Pan with tube and filter - 1 no.		
ii. Pressure management GEL pads for Head and heels		
iii. Head and Body positioner for Prone and Supine position should be offered		
17. Having US-FDA or European CE certification according directive EEC93/42		**No Change**
18. Meeting IECEN60601-2-46 safety regulations applicable to surgical tables apart from meeting general safety electrical regulation EN60601-1.		No Change
19. All technical specifications accepted in the compliance statement must be supported by printed literature from the firm.		No Change
20. Manufacturer should be ISO 9001 : 13485 and European CE certified for quality standards.		No Change
<u>The following essential items must be quoted:</u>		
1. All additional essential attachments for Orthopedics Operating Table - 2 complete sets for making it fully functional as Orthopedics Operation Table.		**No Changes**
2. All additional essential attachments for Urology Operating Table - 1 complete set for making it fully functional as Urology Operation Table.		No Change
3. All additional essential attachments for ENT Operating Table - 1 complete set for making it fully functional as ENT Operation Table.		No Change

4. All additional essential attachments for Endoscopy Procedure Operating Table - 1 complete set for making it fully functional as Endoscopy Procedure Operation Table.		No Change
5. All additional essential attachments for General Surgery Operating Table - 3 complete set for making it fully functional as General Surgery Operating Table out of which one no. shall be used for Dental Surgery.		No Change

7) **Operation Theatre Ceiling light (LED) for Minor OT**

LED Double Dome O.T. Celling Light

		Amended Specifications
The light should comprise of 2 domes, should have a facility of brightness adjustment, should provide shadow free and homogeneous light from both domes, both domes should be ready to mount Full HD camera in future.		**The light should comprise of 2 domes, should have a facility of brightness adjustment, should provide shadow less and homogeneous light from both domes, both domes should be ready to mount Full HD or SD camera in future.**
Technical Specification:		
· Should be white LED based microprocessor control technology and should provide the best shadow compensation with shadow free homogeneous field of light.		No Change
· Both dome should have diameter between 65-70cm		**Both dome should have diameter between 65-70cm or better.**
· Intensity at 1-meter distance not less than 1,20,000 lux or more for each dome.		No Change
· Variable Color Temperature for both domes: 5000 K or better		**Variable Color Temperature for both domes: at least 3500, 4000, 4500, 5000 K or better.**
· Having on off switch and light intensity control		No Change
· Circular dome type for homogenous luminous field with shadow free lighting.		**Homogenous luminous field with shadow less lighting.**
· The contrast between the lighted area and the surrounding should not cause stress to the surgeon's eye.		No Change
· Depth of illumination for both domes should be at least 150cm.		**Depth of illumination for all domes should be at least 90cm or better.**

· Illuminated field diameter should be at least 20-28 cms or better in each dome		**No Change**
· Increase in temperature near head should be specified and should not be more than 2 degree C.		No Change
· Color rendering index (CRI) should be 95 or better.		No Change
· Height adjustment more than 1 meter.		No Change
· LED life span of each dome should be 30000 or more Hrs.		No Change
· Light field adjustment by sterilisable handle as well as with touch screen control pad mounted on light suspension.		**Light field adjustment by sterilisable handle as well as with touch screen/Keypad control pad mounted on light suspension.**
· Touch screen control panels on the light suspension for adjustment of light intensity, color select, room ambiance light of combination of green and white, illuminated area and for switching on and off, focusing etc		**Touch screen / keypad control panels on the light suspension for adjustment of light intensity, color select, room ambiance of white light illuminated area and for switching on and off, focusing etc**
· The circular light head should be so constructed as to provide optimum conditions for laminar flow.		**The light head should be so constructed as to provide optimum conditions for laminar flow.**
· It should have provision for room ambiance light and the same should be integrated in the suspension.		
· Should be USFDA/ European CE approved.		**Should be USFDA/ European CE approved.**

8) Pedestal lights - No Changes in Specification

9) **Electro-surgical unit**

Specification:-		**<u>Amended Specifications</u>**
· Should have adequate power output of 250 - 300 watts for Monopolar cutting		Should have adequate power output of 250 - 300 watts for Monopolar cutting - Preferably upto 400 W.
· Should have power output of minimum 120 watts or more for Monopolar Coagulation		No Change
· Should have power output of minimum 120 watts or more for Bipolar Coagulation		No Change
· Power and other features should be controlled through one touch key and LCD display for		No Change

specialty, program and individual user name/setting.		
· Should have 10 cutting modes		**Should have 3 cutting modes or better**
· Should have 5 coagulation modes, which are spray & 3 forced coagulation, Soft Coagulation) and 3 types of forced coagulation should have Mixed cutting, Non-cutting & cutting mode.		**No Change**
· Should have facility to be used with argon plasma unit.		**No Change**
· Should have facility by which user can save their mode/ setting for 75 plus different names/ individual settings.		**No Change**
· Should have auto start function for bipolar output.		No Change
· Unit should have International Safety Standard and should be USFDA or EN European standards certified product.		No Change
· Should be supplied with following accessories:		
Double pedal footswitch – 01 No.		No Change
Hand controlled monopolar handle with electrode and cable (Reusable) – 01 No.		No Change
Patient plate with cable (reusable) – 02 Nos.		No Change
Bipolar forceps with cable (reusable) – 02 Nos.		No Change
The complete unit should be of same make and manufacturer should have EN ISO certification to international standards.		No Change

11) **Pulse Oximeter**

a. Description of Function:		**Amended Specifications**
The Pulse Oximeter is a device that indirectly measures the amount of Oxygen in a Patient's body (as opposed to measuring Oxygen Saturation directly through Blood Sample) and changes in Blood Volume in the skin, producing a Photo-Plethysmograph.		No change
b. Operation Requirements:		
The System should be suitable for all types of Patient Range: Adult, Pediatric, Infant / Neonates.		No Change
c. Technical Specifications:		
The Display should be LCD with Backlight.		The Display should be LCD / LED with Backlight.

Parameters and waveform should display SpO2, Pulse Rate, System Status, Plethesmograph, Menus for user settings:		No Change
SpO2 Range: 70-100%.		No Change
Accuracy of SpO2: 3%		No Change
Pulse Rate Range should be 30 – 240 bpm.		No Change
Audiovisual Alarm: High / Low SpO2 and Pulse Rate, Sensor OFF, Sensor Failure, Low Battery.		No Change
Alarm overrides Facility.		No Change
Cable length should be minimum 1 meter.		No Change
RS 232C Interface for Data Communications.		RS 232C Interface or Multifunction port for Data Communications.
Integrated Printer.		Printer to be provided
Battery Back-up operating time 5 Hours.		Battery Back-up operating time 2 Hours or more.
d. System Configuration, Accessories, Spares & Consumables:		
System As specified below:-		
SpO2: Adult SpO2 sensor with cable – two in nos. per monitor and pediatric SpO2 sensors – One No. per Monitor, Neonatal Sensor – 01 per Monitor		No Change
e. Environmental Factor:		
Shall meet IEC-60601-1-2:2001 (or Equivalent BIS). General Requirements of Safety for Electromagnetic		No Change
Compatibility or should comply with 89/366/EEC; EMC-Directive.		No Change
The Unit shall be capable of being stored continuously in ambient temperature of 0-50OC and Relative		No Change
Humidity of 15 – 90 %.		No Change
f. Power Supply:		
Should work on 220 – 240 V AC as well as rechargeable batteries. Mains adaptor to be supplied.		No Change
Rechargeable battery operated system. Charger to be provided if integrated charger is not available.		No Change
g. Standard, Safety & Training:		
Should be FDA, CE, UL or BIS approved product.		Should be US FDA / European CE /UL / BIS approved product.
Manufacturer / supplier should have ISO certification for quality standards.		No Change
h. Documentation:		

User / Technical / Maintenance Manuals to be supplied in English.		No Change
Certificate of Calibration and inspection.		No Change
List of important & frequently used spare parts and accessories with their part number and costing to be provided separately.		No Change

12) **Anesthesia Equipment (Work Station)**

The Machine should have the following:		**Amended Specifications**
1. Should have pipelines attachment for oxygen, nitrous oxide and compressed air.		No Changes
2. Should have yoke assembly for oxygen and nitrous oxide with pin index system.		No Changes
3. Durable main switch to put the machine in the on or off position.		No Changes
4. Should have cascade double tube bobbin type flow meters for oxygen and nitrous oxide and single for air.		**No Changes**
5. Should have safety features like :		No Changes
a. Minimum oxygen flow of 50ml/min or more even when the machine is in on position.		No Changes
b. Should provide 25% or more of oxygen when an anaesthetic gaseous mixture is in used.		No Changes
c. Should be provided with mechanical/ Pneumatic hypoxic guard.		No Changes
d. Should have extra flow meters for oxygen only.		No Changes
6. Should have oxygen flush with a flow rate of more than 35L/min.		No Changes
7. Should be able to hold two seletatec vaporizers (Isoflurane, Sevoflurane & Desflurane) simultaneously.		**"Desflurane" stands deleted.**
Vapourizers should be maintenance free. Cost of vaporizers to be quoted separately. The anesthesia machine should provide desflurane compensation.		**"Desflurane" stands deleted.**
8. CO2 absorber system with the following features :-		No Changes
a. Single/Double canister		No Changes
b. Autoclavable		No Changes
c. Canister capacity of 1.2kg or more.		**No Changes**

d. It should be possible to bypass the canister if removed during clinical cases to change sodalime.		No Changes
9. APL valve assembly and Bag mount should be conveniently placed.		No Changes
10. Independent port for open circuit.		No Changes
11. Should be provided with two or more drawers.		No Changes
12. Machine should have a good quality handle and castors to move the machine with locking system.		No Changes
13. The ventilator of the machine should have the following features:-		No Changes
a. Should be electronically controlled.		No Changes
b. Should be suitable for both pediatric, adult and new born.		No Changes
c. It should have coloured screen with 10" display or better.		**No Changes**
d. Volume and pressure control mode of ventilations.		No Changes
e. Electronic peep		No Changes
f. Both SIMV with pressure support mode.		**To be deleted**
g. Tidal volume range from 20ml to 1200 ml or more.		**No changes**
h. Respiratory rate from 4 to 60 or more		No Changes
i. I:E ratio: 1: 4 to 4:1		**I:E ratio: 1: 4 to 2:1 or 4:1**
j. Display: Respiratory rate, peak airway pressure and PEEP		No Changes
k. There should be no collection of water in the breathing system.		No Changes
14. Should have independent oxygen sensor for FiO2 monitor and flow sensor for spirometry.		No Changes
15. The system should not require to change bellows for different category of Patients.		No Changes
16. Should be able to display atleast one waveforms at a time either of the following:		No Changes
a. Pressure Vs time		No Changes
b. Volume Vs time		No Changes
c. Pressure Vs volume		No Changes
16. Should have a battery backup of atleast 60 minutes.		No Changes
17. Demonstration of the product is must for all the firm.		No Changes
The Monitor should have the following:		

1. A configurable patient monitor		No Changes
2. Should have atleast 15”TFT colour display with up to 10 waveforms at a time.		**No Changse**
3. Should be touch screen		No Changes
4. Should be able to measure the following parameters:		No Changes
a. 3/5 lead ECG with electro-cautery & defibrillator filter with ST Segment & arrhythmia detection with analysis,		No Changes
b. Respiration , SpO2, temperature		No Changes
c. NIBP, 2 IBP , EtCO2		No Changes
d. Multi –Gas analysis display of MAC Value		No Changes
e. Upgradable to cardiac output (thermo-dilution) monitoring.		No Changes
5. Should be able to calculate and display FiO2.		No Changes
6. Separate indicator lights for technical and physiological alarms.		No Changes
7. Maximum BEEP tone should be loud enough to be audible from atleast a distance of 12 feet.		No Changes
8. Should have graded audio and visual alarms for the following parameters:		No Changes
a) Blood pressure : High and Low		**No Changes**
b) SpO2 : High and Low		No Changes
c) Heart rate : High and Low		No Changes
d) Respiration : High and Low		No Changes
e) FiO2 : High and Low		**Should be able to calculate and Display FiO_2 either on Monitor or Anesthesia Machine.**
11. Trends – Upto 24 Hours or more, trend analysis, upto 24 hours full disclosure.		No Changes
12. Battery Back- up – Li-ion Battery of 1 hour or more.		No Changes
1. The machine should be internationally reputed company and should be USFDA / European CE approved.		No Changes
2. Bidder must ensure regular supply of Sodalime		**To be now read as "Bidder must supply 4 Boxes of 4.5 Kg of Sodalime with each machines at the time of delivery".**
The machine should be supplied with the following accessories:		
a. ECG Cable – 2 nos		No Changes
b. Reusable SpO2 Sensors: 2 each for Adult, Pediatric & Neonatal.		No Changes
c. NIBP Cuff: 2 each for Adult, Pediatric & Neonatal.		No Changes

d. IBP Transducers: Disposable 10 nos.		No Changes
e. IBP Cable: 2 nos		No Changes
f. ETCO2 Sample Line: 10 nos		No Changes
g. Reusable autoclavable Breathing circuit: 2 nos each for Adult & pediatric		No Changes
All the components like machine, monitor and vaporizers should be from the same original manufacturer.		**No Changes**

16a)	**Monitors for pulse rate, Heart Rate - 12 Nos**		**<u>Amended Specifications</u>**
	1. Should be suitable for adult, pediatrics neonatal patients monitoring.		No Changes
	2. The monitor should have ECG, Respiration, NIBP, SpO2, Dual Temperature, Dual IBP, EtCO2 as standard. The monitor should be upgradeable to Cardiac Output.		No Changes
	3. Should have ST analysis, Arrhythmia detection, pacer spike detection, Drug Dose Calculation and Oxy-CRG as standard in every monitor		No Changes
	4. Should have integrated 15" or above TFT-LCD colour touch screen display (resolution min 1024x768) with minimum 10 channels of waveforms.		**No Changes**
	5. Defib and ESU protection should be present		No Changes
	6. Should have monitoring, surgery and diagnostic mode of monitoring		No Changes
	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.		No Changes
	8. Monitor access should be with Touch screen, rotary knob and fast access key for quick function.		**No Changes**
	9. 120 hrs of trend and 60 events with waveform as standard in all monitors		**72 hrs or better of trend and 60 events with waveform as standard in all monitors.**
	10. 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.		No Changes

	11. Nurse call, VGA output port should be standard in every monitor.		Should now be read as "**VGA/DVI-D output port should be standard in every monitor".**
	12. Monitor should have USB port for software upgrade & should have web browsing facility.		No Changes
	13. Should have inbuilt three channel recorder as standard in every monitor		**No Changes**
	14. Should have 2hrs (typically) of battery backup as standard in every monitor		**No Changes**
	15. Should be European CE/ US FDA for both Monitor and software to control physiologic monitoring systems.		**No Changes**
	16. Should have facility to connect to Central Station. Should be upgradeable to facility of Web browsing and demonstration is must.		No Changes
	17. Should have Mainstream / Microstream Capnography (EtCO2) as standard.		**Should have Mainstream / Microstream / Sidestream Capnography (EtCO2) as standard.**
	18. Upgradeable to AGM with automatic Agent identification with MAC value.		**No Changes**
	Should have following parameters:		
	ECG		
	- Monitor should have capability for display upto 7 Lead.		No Changes
	- ST Analysis		No Changes
	- Waveform Freeze option with review of 120 sec		**No Changes**
	- Range: 15 to 350 bpm		**No Changes**
	RESPIRATION		
	- Through impedance pneumography method or EtCO2		No Changes
	SpO2		
	- Should provide value for arterial oxygen saturation as well as plethysmographic pulse waveform		No Changes
	NIBP		No Changes
	- By oscillometric principle of measurement.		No Changes
	- Should display Systolic, diastolic, mean pressure in large easy to read display		No Changes
	- Range: 10 to 270 mmHg		No Changes
	Dual Temperature –Core & skin. Range: 0 to 50 Deg C		**No Changes**
	Dual IBP – Should include Starter kit and simultaneous monitoring of dual temp and dual IBP should be possible.		No Changes

	Range: -50 to 300 mmHg		No Changes
	Scope of supply must include:		
	- Basic unit with ECG, Resp, SpO2, Dual Temp, NIBP, Dual IBP, inbuilt battery, Inbuilt three channel recorder –1 no		**Basic unit with ECG, Resp, SpO2, Dual Temp, NIBP, Dual IBP, inbuilt battery/ UPS, Inbuilt three channel recorder –1 no.**
	- 5 lead ECG Cable – 1 no each per monitor		No Changes
	- ECG disposable electrodes – 30 nos per monitor		No Changes
	- SpO2 finger sensor– 1 no per monitor		No Changes
	- Skin temperature probe – 1 no per monitor		No Changes
	- NIBP Hose - 1no per monitor		No Changes
	- Adult& Paediatric cuff – 1no each per monitor		No Changes
	- EtCO2 Accessories		No Changes
	- Should be supplied with intermediate IBP cable– 2no per monitor		No Changes
	- Disposable transducers – 10nos		No Changes
	- Paper rolls- 4no per monitor		No Changes
	- Wall mount		No Changes
	- Instruction for Use per monitor		No Changes
16b)	**Central Nurses Monitors for the above Monitor - 2 Nos**		
	One Central Nurses Monitor for 6 Bed side Monitor		Now to be read as follows:
			One Central Nurses Monitor should be for atleast 6 Bed side Monitor.
			Central Nurses Monitor should be 19" or more with colour Display & preferably Touch Screen.
			Web Brousing facility for remote viewing through Internet.

48) Defibrillator with recorder and Monitor

Tendered Specifications		**Amended Specifications**
1. The defibrillator should be least, lightweight, small size with bright colored display.		**No Changes**
2. The defibrillator should be Biphasic waveform with 3 wave form display with screen size minimum 6 inches diagonal.		**The defibrillator should be Biphasic waveform with 3 wave form display with screen size minimum 6 inches diagonal or better.**
3. It should display of both selected and delivered energy.		No Changes
4. It should have ability to energy selection from Paddles as well as unit.		**To be deleted**
5. In manual mode the unit should provide energy selection at (1-10, 15, 20, 30, 50,70,85,100,150,200) joules.		Should be changed to "In manual mode the unit should provide energy selection at (1-10, 20, 30, 50, 70, 100, 150, 200) joules" or better..
6. It should have ability to measure chest compression rate and depth in real time with both visual & audible feedback and optional CPR index on screen.		**To be deleted**
7. The unit should have transcutaneous external pacing with 40 milli-second pulse width.		**To be deleted**
8. The unit should do self test daily with facility to give print out of defibrillator testing report and also have code ready indicator on unit.		No Changes
9. It should have ability to filter out CPR artifacts and allowing person to see organized rhythms without interrupting chest compression.		**To be deleted**
10. The defibrillator should have facility to monitor following parameters.		
a. SpO_2		No Changes
b. $EtCO_2$		**No Changes**
c. NIBP		**No Changes**
d. ECG		No Changes
11. Should have optional capability of internal defibrillation if and when required.		No Changes
12. The Unit should be U.S.F.D.A approved		**The Unit should be European CE / US-FDA approved**
In addition to standard accessories following items have to be supplied with unit:		

a) Li-Ion smart battery -1 nos		No Changes
b) NIBP pediatric cuff with hose -1 nos		No Changes
c) Reusable airway adapter to be used with ETCO2 mainstream sensor & cable- 1 nos		**Reusable airway adapter to be used with ETCO2 mainstream / microstream sensor & cable- 1 nos**
d) Multi Function Defibrillator/Pacing padz – 100 nos		**No Changes**
e) Reusable CPR feedback sensor/ or similar product reused at least on 90 patients – 2 nos		**To be deleted**
f) Additional Requirement		**Should be provided with 3 Channel Recorder.**

49) Mechanical Ventilator

Tendered Specifications		**Amended Specifications**
• Microprocessor Controlled Intensive Care ventilator capable of Ventilating from Pediatric and Adult patients and with capability to display waveforms.		No Changes
• Ventilator should be Rugged, Compact and Mounted on its Own Trolley. **Trolley should be manufactured by the original manufacturer and should be imported.**		No Changes
• Should have an Built in 5.5" screen To Visualize Set and Monitored parameters		No Changes
• Should have a Built-in Air source capable of Delivering Up to 150LPM with a **1 hour** Battery backup for the Whole ventilator Unit.		**No Changes**
• Should have a Built-in High pressure Inlet for Oxygen Source & the NIV should work in combination with all modes mentioned for ventillation.		No Changes
• Should have the Modes A/C, SIMV, SIMV with PS, and Controlled Mode in Volume Ventilation and **Pressure Controlled Mode and CPAP with PS**		No Changes
• Should have additional Dual Mode **like** AVAPS/ **PRVC / Autoflow**		No Changes
• Should have the Following settings for VCV and PCV as Applicable:		No Changes
a. Tidal Volume 50-2000ml		
b. IPAP 0-50 CmH2O		
c. EPAP/PEEP 4-25 CmH2O		
d. Inspiratory Time 0.3- 5.0 secs		
e. Rate 1-60 BPM		
f. CPAP 0-30 CmH2O		
g. PSV 0-30 CmH2O		

h. Inspiratory Hold: 0.1 to 2.0 Secs (VCV)		
i. Rise Time Setting: 1 to 6 Relative setting		
j. Ramp Time Off, 5-45 Mins		
k. Flow Trigger 1-9 LPM		
l. FiO2 Setting 21-100%		
• Should have Monitoring of the Following Parameters in all Modes Tidal Volume, Minute Volume, Leak Rate, Respiratory rate, Peak Inspiratory Flow, PIP, MAP. **%** Pt Trigger, I:E		No Changes
• Should Have User settable alarms for the Following High/Low Tidal Volume, High/ Low Minute Volume, High/Low Rate, Apnea, Circuit Disconnect Etc.		No Changes
• Battery should be extendable to an additional 3 Hours (Optional).		**No Changes**
• Should have the following Compliances IEC 60601-1, 60601-1-2, 60601-2-12.		No Changes
• Should be European CE **and US FDA** approved product.		**Should be European CE or US FDA approved product.**
• One set each auto cleavable silicon patient tubes for adult & pediatric should be supplied with the system. Should also be supplied with 50 disposable Adult and 25 disposable Paediatric circuits and 100 HME Filters.		No Changes
• Should have Two nos Autoclavable & Reusable Expiration Cassette /valves for complete dis-infection capability. Company should also quote an additional 20 Expiration Cassette /valves for Highly infectious patient .		No Changes