

## ITEM NO 7

### Vigileo Monitor Specification

- It should be able to give continuous Cardiac Output using any arterial line.
  - The Disposable Sensor should be able to give Continuous arterial pressure waveform when connected, on other bedside monitors with IBP modules.
  - No calibration should be required for getting CO started.
  - It should give Cardiac output update at least every 20 Seconds. With Provision for 5min Average.
  - Should be able to give Stroke Volume Variation and Stroke Volume
  - It should also give Continuous ScvO2.
  - It should be pole mountable, must have display capacity of at least 4trend lines and 4 numerical displays, optional physiology and physio-relationship screen, goal positioning screen.
  - It should have the ability to analyze patient's response to specific interventions as fluid challenge, various interventions. All these interventions should be time stamped and stored for retrospective analysis.
  - It should be able to give Continuous Systemic Vascular Resistance (on patient with a CVC line and pressure transducer); Stroke volume and Stroke Volume Variation too on continuous basis.
  - It must save data for at least 72 hours.
  - Must have screen shot and data download facility through any USB stick.
  - It should have a touch screen with active area of 10.4 inch.
  - It should be "future ready" to be able to give Transpulmonary Thermodilution measures (optional), parameters related to blood flow, organ function and fluid volume like Extra Vascular Lung Water Index (EVLWI), Global Ejection Fraction (GEF), Global End Diastolic Volume (GEDV), with some existing/forthcoming sensors.
  - One year comprehensive warranty and should provide technical support
  - Demonstration mandatory.
  - Operating manual should be supplied.
  - Must have FDA certificate.
- Disposables compatible with Equipment:-

No.	Description
1	Arterial Sensor based on APCO technique
2	Oximetry CVC Catheter 20 cm compatible with OM2E Optical Module of Equipment
3	Oximetry CVC Catheter 16 cm compatible with OM2E Optical Module of Equipment
4	Paediatric Oximetry Catheter
5	Trans-Pulmonary Sensor(VV) Femoral Artery Catheter, CVP Integrated Dome with Pressure and Temperature Manifold together in Single Pack
6	CVP transducer Compatible with Equipment with Two Blood Sampling sites with needless cannula with any syringe



**ITEM NO 8**

**Spec for Fibre-optic Bronchoscope for Adult and Paediatric with Camera System**

S.no	TECHNICAL SPECIFICATION
1	Flexible Fiber Optic Bronchoscope Adult size: 54x5.0 Broncho-Fiberscope for Adults Instrument Channel: 2.2-2.4 mm Direction of view: 0° Angle of view: 110° or more Working length: 54-60 cm O.D.: 5.2-5.5 mm Following accessories are included: Case, Biopsy Forceps, 1.7-1.8 mm, length 120 cm or more Grasping Forceps, 1.7-1.8 mm, 120 cm or more, Pressure Compensation Cap, Leakage Tester, Cleaning Brush, Mouth Piece, Rubber Lip Valve, dis-posable, package of 20, Cleaning Adapter for valve housing Suction Valve, dis-posable, package of 20
2	Flexible Fiber Optic Bronchoscope Pediatric, size: 54x 3.7 Pediatric Broncho-Fiberscope Instrument channel: 1.4-1.5 mm Direction of view: 0° Angle of view: 90° or more. Working length: 54-60 cm Diameter: 3.6-3.7 mm Following accessories are included: Case, Biopsy Forceps, 1 mm, length 110 cm or more, 1 Grasping Forceps, 1 mm, length 110 cm or more, Pressure Compensation Cap, Leakage Tester, Cleaning Brus, Mouth Piece, Rubber Lip Valve, dis-posable, package of 20, Cleaning Adapter for valve housing, Suction Valve, dis-posable, package of 20
3	Fiber Optic Light Cable Fiber Optic Light cable 3.5mm, length: 230cm

**SPECIFICATIONS OF ENDOVISION IMAGING SYSTEM**

<p><b>. Full High Definition Three Chip Camera System with Camera head:</b></p> <ol style="list-style-type: none"><li>1. Camera control unit with 3 chip HD camera head having HD CCD chip of same aspect ratio of 16:9</li><li>2. Pure Digital signal with high definition video(1920*1080 P ) with aspect ratio 16:9 with DVI-D, RGB, S-VHS video output.</li><li>3. Integrated Flexible Scope filter</li><li>4. Progressive scan technology</li><li>5. <i>Brightness Control</i></li></ol>	<p><b>01</b></p>
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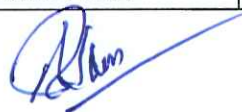




<p>6. Aperture Control</p> <p>7. Automatic digital Image Enhancer</p> <p>8. Should have integrated optical zoom lens 14-30mm, to increase and decrease the size of image which should remain in focusing zone, without readjusting the focus.</p> <p>9. Should have Integrated Gain, shutter, Enhancement, white balance with brightness control.</p> <p>10. Should have peripheral control on CCU for</p> <p>11. Should have USB/Image Capture Module interface for direct storage of still &amp; video sequences and to print the still images.</p> <p>12. The camera head should have integrated zoom and focus lens/rings to make it fully soakable.</p> <p>13. Should be IEC 601-1, CE according to MDD.</p>	
<p><b>Xenon Light Source:</b></p> <p>Xenon light source of 300 Watts</p> <p>Should be able to produce color temperature of 6000 K</p> <p>Should have continuous automatic and manual adjustment of light output.</p> <p>Should have standby mode and automatic recovery of last setting of intensity of light.</p> <p>Should have built in antifog pump.</p> <p>Should be able to display lamp life in digital form and should give visual indication for replacement of xenon lamp in case of lamp life of 500 Hrs is over.</p> <p>Should be certified IEC 601-1 and CE according to MDD.</p>	01
<p><b>Xenon spare lamp of 300 Watts suitable for Xenon light source</b></p>	02
<p><b>High Resolution HDVideo medical grade Monitor:</b></p> <p>26"High Definition Medical grade Monitor, resolution 1920 X 1200 with DVI, RGB, input,</p> <p>option for wall mounting and desktop in same unit. Should have same aspect ratio of 16:9 or 16:10 of the endoscopic HD camera system.</p> <p>Fast response time:(5-12ms)</p> <p>Number of colors:16.8 million</p>	01



<p>Luminance: 400cd / m2. Contrast ratio: 1000:1</p> <p>Vertical/Horizontal Viewing Angle:178 degree</p>	
<p><b>Fiber Optic Light Cable:</b></p> <p>Fiber Optic light cable of actual bundle size: 4.5-4.8mm, length : 250cm.</p>	<p><b>02</b></p>
<p><b>Video Trolley:</b></p> <p>Suitable video trolley to be supplied for mounting equipments having minimum four self in addition to with one drawer, with antistatic wheel casters, front lockable, high grade of electrical insulation and earth protection. 5Ampere socket, 10Nos, inbuilt with trolley to connect all electronic devices. CO2 bottle stand should be integrated with trolley. Potential equalization connection to be provided at least 8 points.</p>	<p><b>01</b></p>
<p><b>Environmental factors</b></p> <ol style="list-style-type: none"> <li>1. Shall meet IEC-60601-1-2 :2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility or should comply with 89/366/EEC; EMC-directive.</li> <li>2. The unit shall be capable of operating continuously in ambient temperature of 20-30 deg C and relative humidity of 15-90%</li> <li>3. The unit shall be capable of being stored continuously in ambient temperature of 0-50deg C and relative humidity of 15-90%</li> </ol> <p><b>Power Supply</b></p> <ol style="list-style-type: none"> <li>1. Power input to be 220-240VAC, 50Hz fitted with Indian plug</li> <li>2. UPS of suitable rating with voltage regulation and spike protection for 60 minutes back up.</li> </ol> <p><b>Standards, Safety and Training</b></p> <ol style="list-style-type: none"> <li>1. Should be FDA, CE, UL or BIS approved product</li> <li>2. Manufacturer should have ISO certification for quality standards.</li> <li>3. Comprehensive training for lab staff and support services till familiarity with the system.</li> <li>4. Shall be certified to be meeting safety standard IEC 60601-2-18 part 2 Particular requirements for the safety of endoscopic equipment.</li> </ol> <p><b>Documentation</b></p> <ol style="list-style-type: none"> <li>1. User/Technical/Maintenance manuals to be supplied in English.</li> <li>2. List of important spare parts and accessories with their part number and</li> </ol>	<p><b>CERTIFICATE</b></p>





costing.

3. Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/para number of original catalogue/data sheet. Any point ,if not substantiated with authenticated

catalogue/manual, will not be considered.

4. Certificate of calibration and inspection.

5. List of Equipments available for providing calibration and routine Preventive Maintenance Support. as per manufacturer documentation in service/technical manual

6. Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.

7. The manufacturer should have their own service centre and local engineer and should be verified by competent authority regarding these facilities.

8. ALL THE ITEMS SHOULD BE FROM A SINGLE COMPANY



## ITEM NO 9

### INTUBATING FIBROSCOPE ADULT & PAEDIATRICS

#### Specification Adult Intubation Fibroscope :

##### **Specification for intubation Fibroscope OD 5.2mm**

Fiberscope for difficult intubation having OD ranging between 5mm and 5.5mm in order to be compatible for minimum ETT size 6 and above. With working length strictly not less than 65cm. up / down tip deflection should be same ranging between 135-150 degree. Scope should have length calculation marks preferably 5 cm each. Should have light source connection for LED operated light as well as via light cable for electricity operated light source. Total length should be ranging between 90cm- 100cm. it should have inbuilt suction port which can be attached to already available suction machine and should have a instrument port ranging between 2.5 - 3mm to use flexible forceps or for oxygenation. Scope should have very good image quality and can be attached through camera for visualizing on monitor. Scope should have 110 degree angle of view and 0 degree direction of view.

Scope should contain the following accessories :

6. ETT holder
7. cleaning brush
8. Suction adapters
9. leakage tester
10. bite block

#### Specification Pediatric Intubation Fibroscope :

Fibrescope containing separate light bundle for light and image to be used for intubation with OD 2.8mm and deflection of tip should 140 degree up as well as down, with integrated fibreoptic light transmission it should have the instrumentation channel of 1.2mm, with total length of scope between 95cm to 100cm and working length should be 65cm. Should be waterproof and fully immersible for cleaning and disinfection. It should take minimum of 3.5 size ETT. Angle of view should be 88 degree and direction 0 degree .

To be provided with following accessories:

Adaptor to hold the Endotracheal tube while intubation





Case for flexible scope

Tester for checking the leakage

Pressure compensation cap

Disposable suction caps 20

**Specification Pediatric Intubation Fibroscope :**

Specification for intubation fibre scope OD 3.7mm

Fiberscope for difficult intubation having OD ranging between 3.6mm and 3.9mm in order to be compatible for minimum ETT size 4.5 till 7 with working length strictly not less than 65cm. up/down tip deflection should be same ranging 135-150 degree. Scope should have length calculation marks preferably 5cm each. Should have 90 degree angle of view with 0 degree light source connection for LED operated light as well as via light cable for electricity operated light source. Total length should be ranging between 90cm-100cm. it should have inbuilt suction port which can be attached to already available suction machine and should have a instrument port of 1.5mm to use flexible forceps or for oxygenation. Scope should have very good image quality and can be attached through camera for visualizing on monitor.

Scope should contain the following accessories :

1. ETT holder
2. cleaning brush
3. Suction adapters
4. leakage tester
5. bite block



**ITEM NO 10**

**Technical Specification for the Instruments required  
for Rigid Bronchoscope Set for Adult**

The Technical Specification should be as follows:

Description	Qty.
Straight Forward Telescope 0°, diameter 4.5 mm, length 50 cm, autoclavable. Fiber optic light transmission incorporated,	ONE
Bronchoscope Tube Universal, without distal fiber optic light carrier, for use with proximally insertable prismatic light deflector and plugs length 43 cm, size 8.5	ONE
Bronchoscope Tube Universal, without distal fiber optic light carrier, for use with proximally insertable prismatic light deflector and plugs length 43 cm, size 7.5	ONE
Bronchoscope Tube Universal, without distal fiber light carrier, for use with proximally insertable prismatic light deflector and plugs length 43 cm, size 6.5	ONE
Prismatic Light Deflector with connection for fiber optic light cable.	ONE
Glass Window Plug	ONE
Rubber Telescope Guide	ONE
Adaptor with sliding glass window plug, sealing cap, notched lens and keyhole opening, movable, for use with Full Lumen Tracheoscopes and Bronchoscopes	ONE
Injection Cannula for positive pressure assisted ventilation system, O.D. 3.5 mm for use with bronchoscopes and tracheoscopes with LUER-lock female fitting	ONE
Tube Guide, for Bronchoscope	ONE
Adaptor from bronchoscope to any type of pediatric respiration equipment.	ONE
Plug for Ventilation Attachment of Bronchoscopes	ONE
Bronchoscopic Forceps, circular cup, biopsy, malleable, double action jaws, diameter: 2.5 mm, working length 50 cm	ONE





Bronchoscopic Forceps, universal biopsy and grasping, double action jaws, diameter: 2.5 mm, working length 50 cm	ONE
Bronchoscopic and Esophagosopic Forceps, universal biopsy and grasping, double action jaws, diameter: 2.0 mm, working length 35 cm	ONE
Bronchoscopic and Esophagosopic Forceps, alligator, grasping, double action jaws, diameter 2.0 mm, working length 35 cm	ONE
Bronchoscopic Forceps, alligator, grasping, double action jaws, diameter: 2.0 mm, working length 45 cm	ONE
Bronchoscopic Forceps, universal, biopsy and grasping, double action jaws, diameter: 2.0 mm, working length 45 cm	ONE
Rigid Suction Tube, working length 35 cm	ONE
Suction Tube for Bronchoscopy, O.D. 2,5 mm working length 50 cm	ONE

**Technical Specification**  
**for the Instruments required for Pediatric Bronchoscope**

**The Technical Specification should be as follows:**

Straight Forward Tele- scope 0°, diameter 2.9 mm, working length 36 cm, auto- clavable. Fiber optic light transmission incorporated.	ONE
Bronchoscope, length 30 cm, size 6	ONE
Bronchoscope, length 30 cm, size 4.5	ONE
Bronchoscope, length 30 cm, size 3.5	ONE
Bronchoscope, length 26 cm, size 3	ONE
Optical Alligator Forceps for Pediatric Broncho-Esophagoscopes, for use with telescope forced controlled handle for removal of hard foreign bodies	ONE
Optical Forceps for Pediatric Broncho-Esophagoscopes, with bean jaws, for use with telescope forced controlled handle for removal of peanuts and soft foreign bodies	ONE
Optical Forceps, for use with telescope for biopsy.	ONE
Optical Pediatric Scissors, for use with telescope and Broncho-Esophagoscopes, length 30, 26 and 20 cm, sizes 6 - 3.5	ONE
Optical Forceps for use with telescope	ONE



Universal, biopsy and grasping.	
Rubber Telescope Guide for use with telescopes or optical forceps	ONE
Adaptor with sliding glass window plug, sealing cap, notched lens and keyhole opening, moveable.	ONE
Guiding Piece, short, for suction catheter for children and suckling bronchoscope	ONE
Adaptor from bronchoscope to any type of pediatric respiration equipment.	ONE
Plug for Ventilation Attachment of Bronchoscopes	ONE
Injection Cannula for positive pressure assisted ventilation system, O.D. 2.7 mm, for use with bronchoscopes and tracheoscopes with LUR-lock female fitting	ONE

### **Technical Specification for the Instruments required for Neonate Bronchoscope**

**The Technical Specification should be as follows:**

Bronchoscope, length 18,5 cm, size 2.5	ONE
Straight Forward Telescopes 0 °, diameter 1.9/ 2.1 mm, length 18 cm, auto-clavable, fiber optic light transmission incorporated,	ONE
Telescope Bridge	ONE
Injection Cannula	ONE
Adaptor from bronchoscope to any type of pediatric respiration equipment.	ONE
Plug for Ventilation Attachment of Bronchoscopes	ONE
Injection Cannula for positive pressure assisted ventilation system, O.D. 2.7 mm, for use with bronchoscopes and tracheoscopes, with LUR-lock female fitting	ONE
Bronchoscope Forceps alligator, single action jaws, semi-flexible diameter 1 mm	ONE
Suction Catheter, 7 Fr., with adaptor	ONE
Suction Catheter, 6 Fr., with adaptor	ONE
Suction Catheter, 5 Fr., with adaptor, for use with bronchoscope tube size 6.5	ONE
Irrigator and Aspirator,	ONE
Atomizer with bulb. Length: 40 cm	ONE





## ITEM NO 11

### **SPECIFICATION FOR AUTOMATED BLOOD GAS ANALYZER WITH ELECTROLYTES**

Specification for Automated Blood Analyzer with Electrolytes :

- The analyzer should be able to measure Blood gas (pH,  $pO_2$ ,  $pCO_2$ ) and electrolytes ( $Na^+$ ,  $K^+$ ,  $Ca^{++}$ ,  $Cl^-$ )
- Sampling : By automated probe aspiration through syringe & capillary.
- The instrument should be operated with multiple test cartridge / cassettes.
- The cartridge / cassettes should have variable pack sizes from minimum of 25 tests to 300 tests.
- Analyzer should have minimum on board test capacity of 25 test to maximum 300 tests.
- The cartridge / cassettes should have a minimum of 60 days on –board stability.
- The system should be small and portable and easy to carry.
- Should be operational on power and on battery.
- Analyzer should have automated entry and logging of consumables.
- Analyzer should have a start –up time should be 8 ~ 10 minutes.
- Analyzer should have large touch screen facility and optional for key board operation.
- Analyzer should not use any Gas bottle / tanks / cylinders/ for calibration.
- Analyzer should not use any conventional electrodes / conventional individual sensors/ Foil pack reagents for Measurement of parameters.
- Analyzer should have onboard printer.
- Analyzer should have data back up facility option with USB ports.
- Analyzer should be able to measure all parameters with 60 ~ 75 microL.
- Sample measurement time : max 60 seconds and sample to sample cycle time max 120 seconds.
- Analyzer should have integrated barcode reader to support sample identification .
- The analyzer should perform samples like : whole blood and other fluids.
- Analyzer should have on screen display of Levy – Jennings plot.
- Analyzer should detect air-in sample.



## ITEM NO 12

### Advanced Airway Clearing System Tender Specification

Features/Application	Specification	
<b>Air Pulse Generator</b>		
Weight	17 lb (8 kg)	
Height	9.5" (24.1 cm)	
Width	13" (33 cm)	
Depth	9.5" (24.1 cm)	
Carry Handle	Integrated folding carry handle	
User controls	Push button controls	
Remote user controls	Wired remote control can pause or restart the air pulse generator	
User interface	Control panel with backlit screen	Shows software revision, total hours used, modes, system settings and system messages
Therapy interruption	Therapy incomplete reminder message displayed on screen when therapy interrupted	
User instruction language	User instructions available in the following languages on screen: English English/US Spanish English/German English/French English/International Spanish English/Dutch English/Swedish English/Italian English/InternationalPortuguese	
Voltage	Multi voltage 100-230 volts 50—60 hz	
Air Hoses	2 air hoses facilitate uniform air distribution throughout the garment	
Electrical lead	Electrical lead with country specific plug electrical connection available	
<b>Therapy Settings</b>		
Oscillation frequency range	5-20 hz adjustable by increments of 1	
Pressure range	1-10 adjustable by increments of 1	
Timer settings	1-60 minutes adjustable in increments of 1 minute	
Soft Start	Gentle start, builds up to selected frequency and pressure within 20	



	seconds	
<b>Custom options and settings:</b>		
Normal mode	Frequency and pressure delivered at one selected setting for the duration of the therapy session unless manually adjusted	
Programme mode	Programme A and B modes, allow programming of up to 8 programmable points each with it's own combination of frequency, pressure and time. Settings automatically change as selected during the therapy session.	
Cough Pause	Programmable Cough Pause allows the frequency and duration of the pause to be customised for the patient. Message appears on screen reminding the patient to cough Garment deflates to allow patient to cough easily and re-inflates automatically when cough pause ended.	
Ramp Mode	Eases the patient from a lower to a higher setting during a limited part of the therapy session, helping acclimatise the patient to the therapy. Ramp mode can be altered for each patient	
Custom default settings	Allows the facility to set the default settings for the modes of operation. These settings will be the initial settings for all users.	
<b>Wheeled Stand</b>		
Casters	4 locking casters	
Storage	Wire Storage basket for easy cleaning	
Gas assisted Height Adjustment	Wheeled stand adjustable height range of 29"-39" (73.6cm – 99.1cm) Stand weight = 32lb (14.5kg) Foot pedal activated height adjustment	
<b>Garment</b>		
Garment options	Choice of 5 garment styles but Disposable wrap and/or disposable full garment recommended for hospital use	





Disposable wrap	6 sizes covering 19 inch (48cm) to 75 inch (191cm) chest size Xs, S, M, L, XL, XXL	
Disposable full garments	6 sizes covering 23 inch (58cm) to 52inch (132cm) chest size Child M, Child L, Adult XS, Adult S, Adult M, Adult L Garment deflate when therapy is paused	
Colour coded Garment	Each size garment colour coded for easy size recognition	
	Garment material - Polyurethane-coated nylon	
	Latex free	
<b>Hoses</b>		
	Disposable hoses with universal connectors	
Regulatory Spec	IEC 60601-1(ed.3) CAN/CSA C22.2 No. 601.1 ISO13485 Directive 93/42/EEC - Class IIa	
Warranty	2 years	
Service	Annual routine preventative maintenance required	



## ITEM NO 13

### BODY COMPOSITION MONITOR

#### Salient Features :

- It can circulate the entire body composition precisely.
- It can calculate the fat, lean mass tissue and exact dry weight.
- It is the first device that measures the individual overhydration, if any, which is clinically very significant.
- It improves management of hypertension and fluid status.
- It provides a basis for nutritional assessment.
- It determines "V" for dialysis dose prescription.
- It measures non-invasively, fast and easy.

#### Technical data

Key parameters	Unit
Overhydration (OH) (pre-/postdialytic)	[L]
Lean tissue index (LTI)	[kg/m <sup>2</sup> ]
Fat tissue index (FTI)	[kg/m <sup>2</sup> ]
Total body water (TBW) (Urea distribution volume V)	[L]
Extracellular water (ECW)	[L]
Intracellular water (ICW)	[L]
ECW / ICW	-
Lean tissue mass	[kg] and [%]
Fat mass	[kg]
Adipose tissue mass	[kg] and [%]
Body Cell Mass	[kg]

#### Technical specification:

Measurement time	approx. 2 min
Data output	LC-Display; integrated SmartCard writer
Measuring frequency range	50 discrete frequencies in the range from 5 – 1000 kHz
Battery	Lithium-Ion battery, capacity 5 hours
AC adapter	100 – 240 V AC; 50 – 60 Hz
Operating conditions	0° – 35°C, 30 – 70% humidity
Dimensions	16.9 x 11.2 x 27.2 cm (W x H x D), 2 kg (weight)
Languages	English, German
Medical product class	Ila



**SPECIFICATIONS OF ENDOVISION IMAGING SYSTEM**

<p><b>. Full High Definition Three Chip Camera System with Camera head:</b></p> <ol style="list-style-type: none"> <li>1. Camera control unit with 3 chip HD camera head having HD CCD chip of same aspect ratio of 16:9</li> <li>2. Pure Digital signal with high definition video(1920*1080 P ) with aspect ratio 16:9 with DVI-D, RGB, S-VHS video output.</li> <li>3. Integrated Flexible Scope filter</li> <li>4. Progressive scan technology</li> <li>5. Brightness Control</li> <li>6. Aperture Control</li> <li>7. Automatic digital Image Enhancer</li> <li>8. Should have integrated optical zoom lens 14-30mm, to increase and decrease the size of image which should remain in focusing zone, without readjusting the focus.</li> <li>9. Should have Integrated Gain, shutter, Enhancement, white balance with brightness control.</li> <li>10. Should have peripheral control on CCU for</li> <li>11. Should have USB/Image Capture Module interface for direct storage of still &amp; video sequences and to print the still images.</li> <li>12. The camera head should have integrated zoom and focus lens/rings to make it fully soakable.</li> <li>13. Should be IEC 601-1, CE according to MDD.</li> </ol>	<b>01</b>
<p><b>Xenon Light Source:</b>  Xenon light source of 300 Watts  Should be able to produce color temperature of 6000 K  Should have continuous automatic and manual adjustment of light output.  Should have standby mode and automatic recovery of last setting of intensity of light.  Should have built in antifog pump.  Should be able to display lamp life in digital form and should give visual indication for replacement of xenon lamp in case of lamp life of 500 Hrs is over.  Should be certified IEC 601-1 and CE according to MDD.</p>	<b>01</b>
<p><b>Xenon spare lamp of 300 Watts suitable for Xenon light source</b></p>	<b>02</b>
<p><b>High Resolution HDVideo medical grade Monitor:</b>  26" High Definition Medical grade Monitor, resolution 1920 X 1200 with DVI, RGB, input,  option for wall mounting and desktop in same unit. Should have same aspect ratio of 16:9 or 16:10 of the endoscopic HD camera system.  Fast response time:(5-12ms)  Number of colors:16.8 million  Luminance: 400cd / m2. Contrast ratio: 1000:1  Vertical/Horizontal Viewing Angle:178 degree</p>	<b>01</b>
<p><b>Fiber Optic Light Cable:</b></p>	<b>02</b>





Fiber Optic light cable of actual bundle size: 4.5-4.8mm, length : 250cm.	
<p><b>Video Trolley:</b>  Suitable video trolley FROM THE SAME OEM to be supplied for mounting equipments having minimum four self in addition to with one drawer, with antistatic wheel casters, front lockable, high grade of electrical insulation and earth protection. 5Ampere socket, 10Nos, inbuilt with trolley to connect all electronic devices. CO2 bottle stand should be integrated with trolley. Potential equalization connection to be provided at least 8 points.</p>	01
<p><b>Environmental factors</b>  1. Shall meet IEC-60601-1-2 :2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility or should comply with 89/366/EEC; EMC-directive.  2. The unit shall be capable of operating continuously in ambient temperature of 20-30 deg C and relative humidity of 15-90%  3. The unit shall be capable of being stored continuously in ambient temperature of 0-50deg C and relative humidity of 15-90%</p> <p><b>Power Supply</b>  1. Power input to be 220-240VAC, 50Hz fitted with Indian plug  2. UPS of suitable rating with voltage regulation and spike protection for 60 minutes back up.</p> <p><b>Standards, Safety and Training</b>  1. Should be FDA, CE, UL or BIS approved product  2. Manufacturer should have ISO certification for quality standards.  3. Comprehensive training for lab staff and support services till familiarity with the system.  4. Shall be certified to be meeting safety standard IEC 60601-2-18 part 2 Particular requirements for the safety of endoscopic equipment.</p> <p><b>Documentation</b>  1. User/Technical/Maintenance manuals to be supplied in English.  2. List of important spare parts and accessories with their part number and costing.  3. Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/para number of original catalogue/data sheet. Any point ,if not substantiated with authenticated catalogue/manual, will not be considered.  4. Certificate of calibration and inspection.  5. List of Equipments available for providing calibration and routine Preventive Maintenance Support. as per manufacturer documentation in service/technical manual  6. Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.  7. The manufacturer should have their own service centre and local engineer and should be verified by competent authority regarding these facilities.</p>	CERTIFICATE



**ENDOSCOPIC THORACIC SURGERY INSTRUMENTS****A. TECHNICAL SPECIFICATION OF MEDIATINOSCOPY SET**

<u>SL.NO.</u>	<u>Description</u>	<u>Qty</u>
1	Video Mediastinoscope, with proximal lateral slit, length 15 cm, for use with DCI® Telescope	1
2	Forward-Oblique Telescope 30°, diameter 4 mm, length 14 cm, autoclavable, fiber optic light transmission incorporated, with 90° adaptation to the DCI® camera head, for use with Video Mediastinoscope and Distending DCI® Video Mediastinoscope	1
3	DCI-Adaptor, for connecting Endoscopes with a DIN-Ocular with DCI Camera Heads	1
4	DCI II 1-Chip DCI Camera with 2 freely programable Camera Head buttons, Color System PAL, focal length f = 16mm, for use with DCI Endoscopes	1
5	Fiber Optic Light Cable, 3.5 mm ø, length 320 cm, for use with Endovision DCI® Camera Heads	1
6	MediaFIT Biopsy Forceps, oval jaws, size 8 x 16 mm, sheath diameter 5 mm, length 21 cm, consisting of: Metal Handle, without ratchet, Outer Sheath ,Forceps Insert, for Biopsy Forceps	1
7	MediaFIT Biopsy Forceps, with oval jaws, size 6 x 12 mm, shaft diameter 5 mm, length 21 cm, consisting of: Metal Handle, without ratchet, Outer Sheath ,Forceps Insert, for Biopsy Forceps	1
8	Sponge and Dissecting Forceps, fenestrated, double action jaws, length 30 cm	1
9	Biopsy Forceps, with suction channel, oval jaws, size 6 x 12 mm, length 20 cm	1
10	Biopsy Forceps, oval jaws, size 8 x 16 mm, length 30 cm	1
11	Coagulation Suction Cannula, insulated, with connector pin for unipolar coagulation, angled handle, diameter 5 mm, length 30 cm	1
12	Biopsy Forceps, rotating, dismantling, insulated, with connector pin for unipolar coagulation, single action jaws, size 5 mm, length 25 cm consisting of: Plastic Handle, without ratchet, with larger contact area at the finger ring ,Metal Outer Sheath, insulated ,Forceps Insert	1





**B. TECHNICAL SPECIFICATION OF VIDEO ASSISTED THORACOSCOPY SET**

<u>SL.NO.</u>	<u>Description</u>	<u>Qty</u>
1	Telescope 45°, enlarged view, diameter 5 mm, length 29 cm, autoclavable, fiber optic light transmission, incorporated, color code: black	1
2	Trocar, with blunt tip, size 6 mm, length 6 cm, consisting of: Cannula, Trocar, only	1
3	Trocar, with blunt tip, flexible cannula, autoclavable, size 11 mm, working length 8.5 cm, color code: green consisting of: Cannula, Trocar only	3
4	Trocar, with blunt tip, flexible cannula, autoclavable, size 6 mm, working length 8.5 cm, color code: black, consisting of: Cannula, Trocar only	2
5	Parenchymal Forceps, dismantling, atraumatic, straight jaws, single action jaws, size 5 mm, length 28 cm, consisting of: Metal Y-Handle, with geometry, axial, with 4 locking positions, Outer Tube with Forceps Insert	1
6	Parenchymal Forceps, dismantling, atraumatic, double curved jaws, single action jaws, size 5 mm, length 28 cm, consisting of: Metal Y-Handle, with geometry, axial, with 4 locking positions, Outer Tube with Forceps Insert	1
7	Lung Foreceps, dismantling, atraumatic, grasping at distal end, single curved jaws, single action jaws, size 5 mm, length 28 cm, consisting of: Metal Y-Handle, with geometry, axial, with 4 locking positions, Outer Tube with Forceps Insert	1
8	Lung Foreceps, dismantling, atraumatic, curved jaws, fenestrated, single action jaws, size 5 mm, length 28 cm, consisting of: Metal Handle, with hemostat style ratchet, axial, with 4 locking positions, Outer Tube with Forceps Insert	1
9	Lung Nodule Forceps, dismantling, atraumatic, fenestrated, curved jaws, single action jaws, size 5 mm, length 28 cm, consisting of: Metal Handle, with hemostat style ratchet, axial, with 4 locking positions Outer Tube with Forceps Insert	1
10	Parenchymal Forceps, dismantling, parenchymal forceps, atraumatic, single curved jaws, single action jaws, size 5 mm, length 28 cm, consisting of: Metal Handle, with 4 locking positions, Outer Tube with Forceps Insert for special use with linear stapler	1
11	Dissecting Forceps, dismantling, with connector pin for unipolar coagulation, curved jaws, double action jaws, size 5 mm, length 28 cm, consisting of: Metal Y-Handle, insulated, axial, with 4 locking positions, Outer Sheath with Forceps Insert	1
12	Scissors, dismantling, with connector pin for unipolar coagulation, curved scissor blades, double action jaws, size 5 mm, length 28 cm, consisting of: Metal Y-Handle, insulated, axial, with 4 locking positions, Outer Sheath with Scissors Insert	1
13	Scissors, dismantling, with connector pin for unipolar coagulation, distally angled outer sheath, straight scissor blades, serrated, single action jaws, scissor blade opens vertical to angulation, size 5 mm, length 28 cm, consisting of: Metal Y-Handle, insulated, axial, with 4 locking positions, Outer Sheath with Scissors Insert	1
14	Biopsy Forceps, dismantling, insulated, with connector pin for unipolar coagulation, distally angled outer sheath, single action jaws, size 5 mm, length 28 cm, consisting of: Metal Y-Handle, insulated, axial, with 4 locking positions, Outer Sheath with Forceps Insert	1
15	Grasping Forceps, dismantling, atraumatic, straight jaws, single action jaws, size 5 mm, length 28 cm, consisting of: Metal Handle, with hemostat style ratchet, axial, with 4 locking positions, Outer Tube with Forceps Insert	1
16	Suction-Coagulation Cannula, with connector pin for unipolar coagulation, distally angled sheath, size 5 mm, length 28 cm, for use with handle3	1
17	Suction-Coagulation Cannula, with connector pin for bipolar coagulation, distally angled sheath, size 5 mm, length 28 cm, for use with handle	1
18	Handle with Trumpet Valve, for suction or irrigation, autoclavable, for use with coagulation suction tubes size 5 mm	1
19	Suction and Irrigation Tube, with lateral holes, distally angled sheath, size 5 mm, length 28 cm or use with Handles 30805, 37112 A and 37113 A	1
20	Suction and Irrigation Cannula, with lateral holes, distally angled sheath, size 10 mm, length 28 cm for use with handles	1
21	Two-way Stopcock, suitable for both irrigation and suction, for use with 5 mm Coagulation- and Dissection Electrodes with channel and Suction and Irrigation tubes, autoclavable	2
22	Coagulating and Dissecting Electrode, L-shaped, with connector pin for unipolar coagulation, distally angled sheath, size 5 mm, length 28 cm	1
23	Palpation Probe and Knot Tier, distally angled sheath, size 5 mm, length 28 cm	1
24	Dismantling KOH needle holder, ergonomic pistol grip with disengageable ratchet, ratchet release on the left side, straight jaws, with tungsten carbide insert ø 5 mm, length 33 cm consisting of: insert, outer tube, Handle	1



### C. TECHNICAL SPECIFICATION OF LAPAROSCOPIC AORTIC SURGERY

<u>SL.NO.</u>	<u>Description</u>	<u>Qty</u>
1	Forward-Oblique Telescope 30° enlarged view, diameter 10 mm, length 31 cm, autoclavable, fiber optic light transmission incorporated, color code: red	1
2	Telescope 45°, enlarged view, diameter 10 mm, length 31 cm, autoclavable, fiber optic light transmission incorporated, Color code: black	1
3	Trocar only, with blunt tip, for use with trocars size 11 mm, length 10.5 cm	1
4	Trocar, size 11 mm, color code: green, consisting of: Trocar only, with blunt tip ,Cannula without valve, with HiCap-connection for insufflation, length 10.5 cm ,Multifunctional Valve, size 11 mm, Reducer 11/5 mm	1
5	Trocar, size 11 mm, color code: green, consisting of: Trocar only, with pyramidal tip, Cannula without valve, with insufflation stop- cock, length 10.5 cm, Multifunctional Valve	6
6	Trocar, size 13 mm, color code: black, consisting of: Trocar only, with blunt tip ,Cannula without valve, with insufflation stop- cock, length 11.5 cm, Multifunctional Valve, size 13 mm	1
7	Reduction Sleeve, 11/5 mm	2
8	Reducer 11/5 mm	6
9	Double Reducer 13/10 mm and 13/5 mm	1
10	Needle Holder, jaws with tungsten carbide insert, conical and taperes jaws, size 10 mm, length 33 cm, axial ring handle with hemostat style ratchet	1
11	Needle Holder, jaws with tungsten carbide inserts, conical and tapered jaws, size 5 mm, length 33 cm, axial ring handle with hemostat style ratchet	2
12	Vascular Clamp, straight jaws, length of jaws 7 cm, straight sheath, with axial ring handle, ratchet with safety locking device, size 10 mm, length 30 cm	2
13	Vascular Cross Clamp, length of jaws 5 cm, straight sheath, size 10 mm, length 30 cm, with axial ring handle, ratchet with security locking device	3
14	Potts Scissors, 45° angled, pointed, size 10 mm, length 36 cm, consisting of: Metal Outer tube, Metal Handle, without ratchet, Scissors Insert	2
15	Grasping Forceps, rotating, with connector pin for unipolar coagulation, size 5 mm, length 43 cm, atraumatic, fenestrated, single action jaws, consisting of: Plastic Handle, without ratchet, Outer Tube, insulated Forceps Insert	1
16	Scissors, rotating, with connector pin for unipolar coagulation, size 5 mm, length 36 cm, with serrated jaws, curved spoon blades, length of blades 17 mm, double action jaws, consisting of: Metal-Handle,insulated, without ratchet, Outer Tube, insulated Scissors Insert	2
17	Scissors, rotating, size 5 mm, length 43 cm, with serrated jaws, curved spoon blades, length of blades 17 mm, double action jaws, consisting of Plastic Handle, without ratchet Outer Tube, insulated Scissors Insert	1
18	Dissecting and Grasping Forceps, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock connector for cleaning, double action jaws, long, size 5 mm, length 36 cm, consisting of: Plastic Handle, without ratchet Metal Outer Sheath, insulated Forceps Insert	1
19	Grasping Forceps rotating, dismantling, insulated, with connector pin for unipolar coagulation, single action jaws, with especially fine serration, fenestrated, size 5 mm, length 36 cm consisting of: PlasticHandle, without ratchet OuterSheath, insulated Forceps Insert	3
20	Micro-Knife, pointed, distendable, length 31 cm, size 5 mm	
21	Holding System, autoclavable, with fastener: KSLock, consisting of: Socket to clamp on the operating table, for use with European and United States standard rails, also suited for rails from 25x10 up to 35x8 mm, with lateral clamping element for height adjustment of the articulated stand Articulated Stand, reinforced version, straight, with one mechanical central clamp for all five joint functions, heigth 30 cm, operating range 37 cm, with fastener: KSLock (female) Clamping Jaw, universal, clamping range 0 up to 18 mm, with fastener: KSLock (male)	1
22	Dismantling Fan Retractor, distendable, size 10 mm, length 36 cm.	1
23	Handle for suction and irrigation, Pistol handle grip, with clamping valve, Autoclavable, To be used with suction- and irrigation tubes size 5 and 10mm Consisting of: Pistol Handle Grip Mtp tubing set, sterile, for single use	1
24	Suction and Irrigation Cannula with lateral holes, size 5 mm, length 36 cm, for use with suction and irrigation handles	1
25	Suction and Irrigation Cannula, size 5 mm, length 36 cm, for use with suction and irrigation handles	1

**D. TECHNICAL SPECIFICATION OF ENDOSCOPIC VESSEL HARVESTING SET**

<b>SL.NO.</b>	<b>Description</b>	<b>Qty</b>
1	Endoscopic Artery Retractor, for harvesting of the arteria radialis, distal width 20 mm, working length 27.5 cm, with integrated U-shaped instrument guiding channel, with integrated channel for smoke evacuation, with integrated guide in the handle to be used with a Fiber Optic Light Cable, autoclavable, for use with Telescope , including Adaptor for cleaning	1
2	Forward oblique Telescope 45°, diameter 5 mm, length 29 cm, autoclavable, fiber optic light transmission incorporated, color code: black	1
3	Artery-Dissector, blunt, distal, angled to right, size 3 mm, working length 41 cm, autoclavable	1
4	Artery-Dissector, blunt, distal, angled to left, size 3 mm, working length 41 cm, autoclavable	1
5	Bipolar High Frequency Cord with 2 x 4 mm banana-plug, length 300 cm	1
6	Dissecting and Grasping Forceps, rotational, with connector pin for bipolar coagulation, size 5 mm, length 43 cm, Model, small jaws for, for fine dissecting and grasping, single-action jaws, consisting of: Ring Handle ,Outer Sheath, Forceps Insert	1
7	Endo-Loop Ligature, with knot, for bleeding stumps, with absorbable synthetic thread, sterile, package of 12, USP 0	1
8	Retractor, articulated, 3 x 3 prongs, semisharp, length 17 cm	1
9	Surgical Handle, Fig. 3, length 12.5 cm, for Blades	1
10	Blade No. 10, non-sterile, package of 100.	1
11	Atraumatic Tissue Forceps, length 16 cm	1
12	Dissecting scissor, blunt/blunt, delicate, delicate, length 18 cm	1





## **ITEM NO 16**

### **SURGICAL EQUIPMENT PENDANT**

The Surgical Equipment Pendant shall be a combination of a supply column, carried by 2 swivel arms of 800 mm length each, for holding the endoscopy equipment

The pendant shall not have any sharp edges or any construction that may be an obstacle for the surgical staff.

The 2 swivel arms, carrying the supply column, shall have the maximum degree of rotary motion in the horizontal plan and shall be able to withhold a weight of not less than 115 kg.

The supply column shall be equipped with 5 height adjustable shelves of W X D X H : minimum 770 mm X 500 mm X40 mm and a drawer. The shelves size shall be able to accommodate the requested endoscopy equipment.

The supply column shall have the following gas outlets:

2x Oxygen

2x Compressed Medical Air

1x Vacuum

1x CO2

Additionally, the supply column shall have 12 electrical sockets with face plate.

The pendant's ceiling fixture shall also be provided and shall take into account the distance between the true ceiling and the false ceiling.

The Equipment should be having MDD & CE Certification

### **ENDOSCOPIC EQUIPMENT**

The successful bidder shall provide the required Endoscopic Equipment for each operating room based on the assigned discipline. The Endoscopic Equipment shall be supplied from a qualified manufacturer and shall be fully integrated with the system. The Endoscopic Equipment shall be controlled through the Touch Screen. The Touch Screen shall display the identical image of the Operating Table's remote control and the same functionality of this control shall be displayed on the Touch Screen.

#### **3-CHIP FULL HD ENDOSCOPIC CAMERA**

It shall be a High-Definition digital camera that captures images on three 16:9 aspect ratio CCD chips in the camera head and transmits that High-Definition signal to the 16:9 aspect ratio monitors in a 1:1 representation without scaling or de-interlacing.





The camera should have the following features:

- *It shall be compatible with the Management System and can thus be controlled from inside the sterile area via Touch Screen and from outside the sterile area via keyboard and mouse at the Nurse Station.*
- *It should convert the optical images into a digital signal at the camera head level.*
- *The camera's CCDs should have a 16:9 aspect ratio with an acquisition resolution of 1920 x 1080 progressive scanning.*
- *PARFOCAL optical zoom to guarantee that the best quality image will be captured by the three (3) CCDs at the camera head.*
- *All-digital circuitry for increased image accuracy, less noise in the image, and no image degradation from camera head to video output.*
- *Camera features and functions can be programmed for access via the camera head buttons.*
- *Digital image enhancement and fiberoptic endoscope filtering capabilities to increase the level of contrast and definition of the image.*
- *Eighteen options for exposure control, including automatic exposure system and seventeen manual exposure control settings.*
- *All camera functions can be controlled by a keyboard connected to the camera control unit.*

The camera should have the following technical specifications:

**- Camera Control Unit:**

Power supply voltage: 100-240 VAC  
Power frequency: 50-60 Hz  
Operating temperature: +10°C to +40°C  
AGC: +18dB  
Video output: 2x DVI-D signal (HD digital signal)  
1x RGB signal to 15pin-HD-D-Sub-sockets  
2x S-Video (Y/C signal) to S-Video  
1x Composite signal to BNC socket

**- Camera Head:**

Image sensor: 3x 1/3"  
Aspect ratio: 16:9  
Picture elements: 1920x1080p (2,073,600 pixels)  
Scan method: progressive  
Refresh rate: 50 Hz  
Internallens: Parfocal 2:1 Optical Zoom Lens, f=14-30mm



The camera should also comply with the following standards:

According to: IEC 60601-1, 60601-2-18, UL 2601.1 CSA 22.2 No. 601.1-M90:

- Type of protection against electrical shocks: Protection Class I.
- Degree of protection against electrical shocks: Applied part of type CF defibrillator proof

According to Medical Device Directive (MDD) the camera should belong to Class I and bear the CE mark in accordance with MDD 93/42/EEC

### **SUCTION/IRRIGATION UNIT**

It shall be a combination of suction/irrigation pump for use in gynaecological , Laparoscopic, and other endoscopic interventions. The adaptation to the correct mode of surgery intended should happen automatically when the correct type of tubing is used. The insertion of pressure lines into the unit should be simplified for ease of use. The unit should be equipped with electronic safety circuits that cut the suction/Irrigation operation if the unit departs consistently from the preset values.

The Suction/Irrigation unit should have the following features:

- *It is compatible with the Management System and can thus be controlled from inside the sterile area via Touch Screen and from outside the sterile area via keyboard and mouse available at the Nurse Station.*
- *Easy to use bundled controls for the control of all functionalities*
- *Touch controls and digital displays ensure safe and precise adjustment of the set values.*
- *Bargraph displays, easy to read and arranged clearly parallel to one another allow the user to monitor the current actual and set values of all unit parameters at any time.*
- *During power-up, all systems go through an automatic self-test and are only released after a positive result*
- *Safety functions that control any departure from operator settings*
- *Automatic recognition of type of procedure intended, when tubing is inserted*
- *Audible alarms in case of malfunction.*
- *Suction rate preselects are saved in memory*
- *Should have a suction mode that automatically maintains irrigation pressure and flow constant.*

The Suction/Irrigation unit should have the following technical specifications:

Power supply voltage: 100-240 VAC  
Power frequency: 50-60 Hz  
Operating conditions: +10°C to +40°C



Irrigation:



- *Pressure:*

- *HYS-Mode: 0-200 mmHg (26.6 kPa)*

- *LAP-Mode: 0-400 mmHg (53.2 kPa)*

- *Flow Rate:*

- *HYS-Mode: 0-500 m/min*

- *LAP-Mode: 0-1000 ml/min*

*Suction Under-pressure:*

- *HYS-Mode: 0-(-)0.5 bar (50 kPa)*

- *LAP-Mode: 0-(-)0.8 bar (80 kPa)*

*Pressure indicator*                      *Bargraph Display and Digital Display*

*Flow indicator*                         *Bargraph Display and Digital Display*

The Suction/Irrigation unit should also comply with the following standards:

*According to: IEC 60601-1, UL 60601.1, CAN/CSA 22.2 No. 601.1-M90:*

- *Type of protection against electrical shocks: Protection Class I.*
- *Degree of protection against electrical shocks: Applied part of type BF.*

*According to Medical Device Directive (MDD) Suction/Irrigation unit should belong to Class II b and bear the CE mark in accordance with MDD 93/42/EEC*

### **INSUFFLATOR UNIT**

It shall be an insufflation's device for universal application in Laparoscopic and Thoracoscopic examinations and operations. With accurate measurement and control of both the pressure and flow of gas it should enable the use of different operating modes, which can be tailored to specific situations such as the use of lasers or the performance of HF surgery. It should also be capable of high flow rate (30 L/min) to compensate for the considerable loss of gas during complex Laparoscopic surgery. A heating element should be provided to prevent potential cooling of the patient.

The CO<sub>2</sub> thermal-insufflator should have the following features:

- *It is compatible with the management system and can thus be controlled from inside the sterile area via Touch Screen and from outside the sterile area via keyboard and mouse available at the Nurse Workstation.*
- *Easy to use bundled controls for the control of all functionalities*





- *Touch controls and digital displays ensure safe and precise adjustment of the set values.*
- *Bargraph displays, easy to read and arranged clearly parallel to one another allow the user to monitor the current actual and set values of all unit parameters at any time.*
- *During power-up, all systems go through an automatic self-test and are only released after a positive result*
- *It can distinguish between two different supply modes: high pressure and low pressure.*

The CO<sub>2</sub> thermal-insuflator should have the following technical:

*Power supply voltage: 100-240 VAC*

*Power frequency: 50-60 Hz*

*Operating conditions: +10°C to +40°C*

*Gas supply:*

- *Pressure: Min. 5 bar, max. 160 bar.*
- *Type: CO<sub>2</sub> liquid, USP*
- *Fittings: American-standard types*

*Gas outlet:*

- *Pressure: 0-30 mmHg (0 -3990 Pa)*
- *Flow rate: 0-30 L/min*

*Pressure indicator Bar Display and Digital Display*

*Flow indicator Bar Display and Digital Display*

*Bottle pressure indicator Bar Display*

*Heat Output Max 25 VA*

*Heating temperature 37°C, +10%-15%*

The CO<sub>2</sub> thermal-insuflator should also comply the following:

*According to: IEC 60601-1, UL 60601.1, CAN/CSA 22.2 No. 601.1-M90:*

- *Type of protection against electrical shocks: Protection Class I.*
- *Degree of protection against electrical shocks: type BF*

*According to Medical Device Directive (MDD) CO<sub>2</sub> thermal-insuflator should belong to Class II b and bear the CE mark in accordance with MDD 93/42/EEC*

### **LIGHT SOURCE (300W)**

It shall be a Xenon Cold Light Fountain with a 300W Xenon lamp that has a colour temperature exceeding 6000 °K. The light source shall be suitable for virtually all endoscopic

interventions and producing excellent results especially for photographic and video documentation.

The light source should have the following features:

- *It is compatible with the Management System and can thus be controlled from inside the sterile area via Touch Screen and from outside the sterile area via keyboard and mouse available at the Nurse Station.*
- *Easy to use bundled controls for the control of all functionalities.*
- *Touch controls and digital displays ensure safe and precise adjustment of the set values.*
- *Full light intensity is reached as soon as the lamp is switched on.*
- *The brightness, continuously adjustable from 0-100%, is regulated via a microprocessor controlled optomechanical dimmer while the lamp current remains unchanged in order to avoid instabilities of the arc and to insure maximum lamp service life.*
- *The brightness can be regulated manually or automatically via the output signal of a video camera.*
- *An antifog air pump is available for endoscopes which have a special antifog channel to prevent the lens from misting up.*
- *Stand-by function is available to avoid switching the light source on/off frequently during short interruptions. This function would decrease wear of the Xenon lamp.*
- *Display of lamp service life.*

The light source should have the following technical specifications:

<i>Power supply voltage:</i>	<i>100-240 VAC</i>
<i>Power frequency:</i>	<i>50-60 Hz</i>
<i>Operating temperature:</i>	<i>+10°C to +40°C</i>
<i>Lamp wattage:</i>	<i>300 W</i>
<i>Lamp voltage:</i>	<i>13-16 VDC</i>

The light source should also comply with the following standards:

*According to: IEC 60601-1, 60601-2-18, UL 60601-1, CAN/CSA 22.2 No. 601.1-M90:*

- *Type of protection against electrical shocks: Protection Class I.*
- *Degree of protection against electrical shocks: Applied part of type CF*
- *Type of protection against moisture: drip water protection as per IPX 1*

*According to Medical Device Directive (MDD) the light source should belong to Class II a and bear the CE mark in accordance with MDD 93/42/EEC*

### **High End Diathermy**

**The unit should have the following features:**

- The unit should have a large LCD display to show the various settings.





- The unit should have an optical support quickstep control knob to achieve and make the settings of the unit quickly.
- It should have a memory of minimal 99 individual programmes for various types of surgeries and with preference for various surgeons.
- It should have a possibility to give names (procedures/surgeons name) to the individual programmes.
- Should have a special output for vessel sealing upto 7mm of vessel in both open surgery mode and endoscopic surgery mode.
- The vessel sealing clamp forceps should be 100 % reusable and both straight & curved of different lengths.
- Should have both monopolar and bipolar cut and coagulation outputs.
- The unit should have four individual outputs 2 for monopolar and 2 for bipolar.
- The unit should have 11 different monopolar cutting currents with different cutting qualities and capabilities.
- The Monopolar coagulation should be with Auto-Start and Auto-Stop.
- The Bipolar should have a special cutting current with simultaneous coagulation during the use of bipolar scissors.
- The following different current modes should be available:
  - MONOPOLAR CUT MODES (Minimum 8 types)
  - CARE CUT (FOR PRECISE CUTTING IN MICRO SURG.)
  - ARGON CUT MODE (SPECIAL CUTTING MODE FOR USE WITH ARGON BEAM GAS)
  - MONOPOLAR COAGULATION MODES (Minimum 15 type)
  - BIPOLAR CUTTING MODE (Minimum 3 types)
  - BIPOLAR COAGULATION (Minimum 6 types)
  - SEAL SAFE MODE
  - ENDO SEAL MODE

The following accessories should be supplied with the unit:

- FOOTSWITCH DOUBLE PEDAL
- TWIN PATIENT PLATE
- CLAMPS FOR OPEN SURGERY SEAL SAFE TECHNIQUE
- BIPOLAR SCISSORS FOR OPEN SURGERY
- BIPOLAR FORCEPS FOR OPEN SURGERY
- BIPOLAR ACCORIES
  - Footswitch with Reed Contact
  - Bipolar Cable
- MONOPOLAR DIATHERMY ACCESSORIES FOR OPEN SURGERY
- MONOPOLAR ARGON ACCESSORIES FOR OPEN / LAP SURGERY
- ARGON PROBES FOR FLEXIBLE ENDOSCOPE

Technical specifications of the Argon Plasma Coagulator

- The unit should be an Argon Gas delivery device fully controllable through the main unit only.
- Should have communications cable with the main unit.



**ITEM NO. 17**

**CENTRALISED EQUIPMENT CONTROL MANAGEMENT SYSTEM  
WITH RECORDING AND ARCHIVING SYSTEM**

- A. 19" TOUCH SCREEN (Spring arm mounted)** - The Touch Screen shall be a medical grade 19" flat screen with 1280x1024 (SXGA) resolution. It shall communicate with the Management System via an RS-232 cable.

The Touch Screen shall be mounted on a pendant (as specified in section 2) and shall be located within the sterile field for the doctor's control or his assistant.

All medical devices, Archiving system, and Communication systems shall be controlled from this touch screen.

- B. 19" TOUCH SCREEN (Located at the Nurse Station)** The Nurse Station, located outside the sterile field within each operating room, shall consist of:

- A worktop
- A 19" Touch Screen

The circulating nurse will be able to assist the surgeon or his assistant by controlling the same functions, as those of the sterile area Touch Screen,

The Touch Screen shall be a medical grade 19" flat screen with 1280x1024 (SXGA) resolution. It shall communicate with the Management System via an RS-232 cable.

- C. 26" FULL 3D HD FLAT MEDICAL GRADE LCD SCREEN (Desktop mounted)**

The surgical display screens should be medical grade 26" FULL HD (1080P) Medical Grade. The system should have facility to display in 3D and 2D modes. It should have the following inputs:

- HD-SDI for 2D signal in HD
- S-Video for 2D signal in standard resolution

The display screens should also have the following optical specifications:

LCD Panel 26 inch (16:9 aspect ratio)  
Screen Dimensions- 643mm (W) × 396 mm (H) × 87mm(D)  
Number of pixels 2,073,600 pixels (1,920 × 1,080)  
Viewing angle- Horizontal: 178 degrees, Vertical: 178 degrees (3D : TBD)  
Contrast Contrast 1000:1  
Luminance -350cd/m<sup>2</sup>  
Reaction Time – 6-8ms  
Display mode  
Dual display mode  
Triple display mode  
PIP and POP mode  
Mirror image mode

The display screens should comply the highest safety standards:

- Ø Fanless cooling prevents the introduction of contaminants into the sterile field.
- Ø Low voltage (24 VDC) external power supply maybe located 30m away from the screen, removing any electrical concern.



Ø *Front sealed, anti-glare overlay guarantees the highest level of defence against liquid ingress*

**D. 26" FULL 3D HD FLAT MEDICAL GRADE LCD SCREEN (Spring arm mounted)**

The surgical display screens should be medical grade 26" FULL HD ( 1080P) Medical Grade The system should have facility to display in 3D and 2D modes. It should have the following inputs:

- *HD-SDI for 2D signal in HD*
- *S-Video for 2D signal in standard resolution*

The display screens should also have the following optical specifications:

LCD Panel 26 inch (16:9 aspect ratio)  
Screen Dimensions- 643mm (W) × 396 mm (H) ×87mm(D)  
Number of pixels 2,073,600 pixels (1,920 × 1,080)  
Viewing angle- Horizontal: 178 degrees, Vertical: 178 degrees (3D : TBD)  
Contrast Contrast 1000:1  
Luminance -350cd/m2  
Reaction Time – 6-8ms  
Display mode  
Dual display mode  
Triple display mode  
PIP and POP mode  
Mirror image mode

The display screens should comply the highest safety standards:

- Ø *Fanless cooling prevents the introduction of contaminants into the sterile field.*
- Ø *Low voltage (24 VDC) external power supply maybe located 30m away from the screen, removing any electrical concern.*
- Ø *Front sealed, anti-glare overlay guarantees the highest level of defence against liquid ingress*

**E. FIBER OPTIC CABLE FOR THE FLAT SCREEN AND ENDOSCOPIC CAMERA**

The fiber optic cable connecting the Flat Screen and Endoscopic Camera to the system shall consist of:

- 6x color-coded strands transmitting the DVI-D signal

The fiber optic cable shall be flexible enough to sustain the spring arm's motion in the horizontal and vertical plane.

**F. 32" Medical Grade FLAT SCREEN (Wall mounted) (Wall mounted) At least 36"**

Large Screen shall be mounted on a selected wall within the OR. This screen shall provide a large viewing area especially when having teleconferencing.

At least 32" Large Screen should be mounted on a selected wall within the OR.

The surgical display screens should be medical grade 32" FULL HD Medical Grade The system should have facility to display in 3D and 2D modes. It should have the following inputs:

- Ø DVI-D for 3D signal
- Ø *HD-SDI for 2D signal in HD*
- Ø *S-Video for 2D signal in standard resolution*

The display screens should also have the following optical specifications:





LCD Panel 32 inch (16:9 aspect ratio)  
Screen Dimensions- 643mm (W) × 396 mm (H) ×87mm(D)  
Number of pixels 2,073,600 pixels (1,920 × 1,080)  
Viewing angle- Horizontal: 178 degrees, Vertical: 178 degrees (3D : TBD)  
Contrast Contrast 1000:1  
Luminance -350cd/m2 .  
Reaction Time – 6-8ms  
Display mode  
Dual display mode  
Triple display mode  
PIP and POP mode  
Mirror image mode  
The display screens should comply the highest safety standards:

- G. CENTRAL CONTROL UNIT** - The main purpose for the implementation of the Integrated OR is the ability to provide full control for the Surgeon or his assistant of the OR equipment, and environment via a Touch Screen. The system should be simple, user friendly, secure and upgradeable.

The successful bidder shall design, construct and complete a seamless Management System consisting of a medical grade Central Control Unit that provides full flexibility to the Surgeon or his assistant and to the OR nurse for the control of all functions, systems and devices available in the operating room via a SINGLE Touch Screen located within the sterile field and simultaneously from mouse and keyboard located in the Nurse Station, which positioned outside the sterile field.

The Central Control Unit shall be able to manage the medical and non-medical devices inside the operating room. Therefore it shall integrate the endoscopy equipment, Archiving and Communication Systems. In addition, it shall be able to control 32 different Endoscopic units and to store up to 100 individual presets (by doctor and procedure, or both) for the endoscopy equipment that can be accessed for quick set up for individual physicians. The system should also provide an overview display of up to 12 units simultaneously.

**Furthermore, the Central Control Unit shall be able to display on the Touch Screen an exact replica of the actual endoscopy devices' front panel. This is necessary for the ease of control and to ensure that any person familiar with the key functions of the medical devices will also be able to operate the device by using the Touch Screen.**

The Central Control Unit should also be able to display on the Touch Screen alert text messages, whenever a warning signal is emitted from a faulty device.





The Management System's functions shall include but not limited to:

- **The ability to integrate and to control the medical devices, Archiving and Communication systems from a SINGLE Touch Screen located inside the sterile field.**
- The ability to identify any errors or malfunctions of the connected device.
- The ability to call up any type of endoscopic equipment on the Touch Screen menu and be able to control all its functions simultaneously on the Touch Screen or directly from the machine itself.
- The ability to control all the motions of the operating table via the Touch Screen.
- The ability to display an identical image of the actual device panel on the Touch Screen.
- The ability to switch on or off the room lights.
- The ability to switch on or off the room's green light (Endoscopy Procedures)
- The ability to route any image source to any destination via the Touch Screen.
- The ability to broadcast real time images from any source from the OR to the conference room & doctor's room or any location of choice inside or outside the hospital through a videoconferencing system. Control of images shall be done via the Touch Screen.
- The ability to connect to a telephone system within the sterile field and control it via the Touch Screen.

#### H. Full HD IMAGE/VIDEO RECORDING AND DATA ARCHIVING SYSTEM

- User friendly software designed specifically for medical purposes
- Captures still Full HD (1080P) images, & Full HD (1080P) video sequences (from 3 sources), and audio files
- Resolution of both still images & videos should be 1920x1080 p
- Writes multi-session and multi-patient CDs/DVDs
- Controllable via Touch Screen, camera head buttons, footswitch mouse and keyboard
- Fully controllable from inside and outside the sterile field
- Supports network storage on file servers
- Supports FTP storage
- USB support for storage on USB drives
- Customizable print-outs for the documented information
- Prints to any connected printer (local or network)
- HIPAA compliant
- Buffer system to insure reliability
- Medical grade unit with CE mark
- Chipset: Intel® 855GME + Intel® 6300ESB Embedded Chipset
- Processor: Intel® Pentium® M 735
- Graphic: Intel® Extreme Graphics 2 Controller onboard
- Grabber-card: DVI-D, SDI, S- Video, Composite;
- Audio: AC97/DD5.1 onboard
- RAM: 2GB
- Harddisk: 500 GB SATA 3.5"
- Drive: Multiform Slim line DVD RW
- PCI Slots: 3 x PCI
- LAN: 3 x 10/100/1000 Mbps onboard
- I/O Ports: 2 x PS/2, 2 x Serial, 3 x RJ45 (LAN), 4 x USB 2.0 (1 x Front), 3 x Audio (Line In, Line Out and Microphone), VGA;
- DICOM and HL7 interface



The DICOM 3 interface shall be installed to the system in order to allow the surgeon to view all the DICOM 3 images stored in the PACS system on a digital light box within the operating rooms. Furthermore, all intra operative images recorded can be sent via the DICOM 3 interface to the PACS system for further processing.

The HL7 interface system shall be connected to the Image and Data Archiving system to allow the patients demographics to be downloaded directly to the patients data file.

### **AUDIO VISUAL COMMUNICATION**

**A. AV RACK BASED LOCAL COMMUNICATION CENTER** The Local Communication Center installed inside the OR shall be rack-based and shall house the following Control /Video/Audio equipment:

- Control equipment
  - 1x RS232 control module 16x Relays control modules
  
- Video equipment
  - Video Matrix
    - 8x 8 DVI-D matrix
  
  - Fiber optic-to-DVI-D transmitters and receivers for the transmission of the HD DVI-D signal over long distances:
    - 4x Fiber optic-to-DVI-D transmitters to transmit the HD DVI-D signal in optical format to the Communication Center, the Surgical Displays and the Large Screen.
    - 4x Fiber optic-to-DVI-D receivers to convert the HD DVI-D signal from optical format back to its original electrical format.
  
- Audio equipment
  - Audio Mixer with 3 inputs and one output
  
  - Audio Matrix switcher capable of integrating up to:
    - 8x Audio Sources such as the Wireless Microphone.
    - 8x Audio Destinations such as the OR's Active Speaker.
  - Additional Audio Distributor and Audio Mixer.
  - Fiber optic converters for optical isolation of any ingoing/outgoing audio/video signal to/from the OR
  - Medical Isolation Transformer for isolating the AC input power supplying the Communication Center.

**Audio/Video routing** shall be possible via the 19" Touch Screen (same Touch Screen that controls Medical and non-medical devices) located inside the sterile field and via Medical Grade Touch Screen available at the Nurse Station:





**Video routing** shall make efficient use of the provided video matrix system to route any video source to any video destination in its optimal signal quality.

For instance, the digital DVI-D video matrix is intended to switch the HD digital signal from the HD Endoscopic camera to any of the Flat Screens without conversion to any lower level signal. The other video matrices will ensure the connection and routing of a variety of video sources such as the Overhead Camera, Room Camera, etc...

The OR shall integrate at least the following Video Sources and Destinations:

Sources	Destinations
Endoscopic Camera	2x 26" Flat Screens
Surgical Camera	Large Screen
Room Camera	Touch Screen's video preview
Connection to one SD auxiliary Video Source	Archiving System

The OR shall integrate at least the following Audio Sources and Destinations:

Sources	Destinations
Wireless Microphone	Loudspeaker
Archiving System	Archiving System
Telephone	Telephone

The OR Communication Center shall also include the required software and hardware components for integrating the following telemedicine features:

- Patient safety checklist
- Patch Panels.
- Telephone module.
- 2-way Audio/Video connection with Conference Room

**Patch Panels** All relevant flush mounted video patch panels for integration of the various Video Sources shall be installed.

**B. ROOM CAMERA**

A Room Camera shall be installed on a selected wall in the OR. The Room Camera shall have the following technical specifications:

VideoSignal

PAL



<i>Effective Pixels</i>	768 (H), 492 (V), 752 (H) X 585 (V)
<i>Horizontal Resolution</i>	460 TV lines 450 TV lines
<i>Vertical Resolution</i>	350 TV lines 400 TV lines
<i>Lens</i>	×12 Power Zoom, f=5.4 to 64.8 mm, F1.8 to F2.7
<i>Angle of View (H)</i>	4.3 to 48.8 degrees
<i>Minimum Illumination</i>	7 lx (F1.8)
<i>Illumination Range</i>	7 to 100,000 lx
<i>Auto Exposure</i>	Auto Iris, AGC
<i>Shutter Speed</i>	1/60 to 1/10,000
<i>Gain</i>	Auto/Manual
<i>White Balance</i>	ATW / One Push Hold, Indoor Preset, Outdoor Preset
<i>S / N Ratio</i>	>48 dB
<i>Pan / Tilt</i>	Horizontal ±100° (Max speed 80° sec), Vertical ±25° (Max speed 50° / sec)
<i>Video Output</i>	RCA pin jack
<i>S Video Output</i>	4 pin mini DIN
<i>Audio Output</i>	RCA pin jack
<i>Control Terminal</i>	RS-232C, 8-pin mini DIN, 9600 bps, Data 8 bit, Stop 1 bit.

The Room Camera's position, zoom, and tilt shall be controllable via Touch Screen located inside the sterile field and from the Nurse Station outside the sterile field.

**C. BI-AMPLIFIED ACTIVE LOUDSPEAKER**

A bi-amplified active Loudspeaker, dedicated for videoconferencing and audio playback, shall be installed on a selected wall in the OR.

The Loudspeaker's volume shall be adjustable via the Touch Screen from the inside sterile field and/or via mouse and keyboard at the Nurse Station outside the sterile field.

The Loudspeaker shall have the following technical specifications:

<i>Input Signal</i>	Analog	
<i>Maximum short time sine wave</i>		≥ 100 dB SPL

*acoustic output at 1 m on axis in  
half space, averaged from 100 Hz  
to 3 kHz*

*Maximum peak acoustic output  
per pair with music material*  $\geq 108$  dB SPL @ 1m

*Drivers*

*Bass* 5"

*Treble* 3/4" metal dome

*Crossover frequencies* 3 kHz

*Free Field Frequency Response* 58 Hz - 20 kHz ( $\pm 2$  dB)

*Amplifier power*

*Bass* 40 W

*Treble* 40 W

#### **D. WIRELESS HEADMIC**

The Integrated Communication System shall be provided with a Wireless Headmic to enable the user to initiate telephone calls, videoconference sessions, recording audio comments on the archiving system, etc...

The Wireless Headmic shall be based a high-quality state-of-the-art RF transmission with a high level of operational reliability and ease of use.

The Headmic Transmitter and Receiver shall permit wireless transmission based on the use of:

- further optimized PLL synthesizer and microprocessor technology,
- the HDXnoise reduction system,
- the pilot tone squelch control,
- the true diversity technology (rack-mount receiver only),  
and the scan function for scanning the channel banks for free channels.

#### **E. TELEPHONE MODULE**

An analogue Telephone module shall be connected to the system and shall allow the surgeon or his assistant to affect telephone calls from the Touch Screen or the Nurse Station.

The system should also supply the ability to store telephone numbers for quick dialling via the Touch Screen located in the sterile field or via the Nurse Station outside the sterile field.





#### **F. 1-WAY VIDEO 2-WAY AUDIO STREAMER**

The Audio/Video Streamer shall provide independent streaming channels offering real time image and sound that can be accessed from any networked station provided with authorisation key.

Therefore, an Audio/Video Encoder shall be installed in the Communication Center. The Encoder shall be capable of accepting S-video and Audio signals and shall streams these signals over the hospital's LAN in MPEG4 compressed Data. Furthermore, the encoder shall be capable of 2-way audio communication between the OR and the remote location.

A dedicated high speed ( 100 Mbps or above ) multicast LAN should be available in the hospital for purpose of streaming

Furthermore, the Streamer shall be provided with an intuitive user interface that offers the user the capability to watch, from any networked station, the desired Video Source (i.e. HD Endoscopic Camera, Room Camera, etc...) from the selected OR. In addition, the user should be able to control the Room Camera's position, zoom, and tilt.

#### **G. AUDITORIUM**

The System should enable bi-directional Video Conferencing between the OR & the Conference room, The controls of all these bi-directional Audio – Video should also be enabled from the Central Touch Control Panel in the OR

#### **OPTIONALLY**

Tele-Conference facility for transmitting outside the hospital using ISDN/ INTERNET should also be provided and the same should be also controllable from the Central Touch Control Panel in the OR

**ALL THE ITEMS IN INTEGRATION SCOPE LIKE PATCH PANELS, TRANSMITTERS, RECIEVERS, ETC SHOULD BE FROM THE INTEGRATION COMPANY AND SHOULD BE MENTIONED IN THEIR CATALOGUE.**



## ACT MACHINE

- Should measure changes in impedance to movement of a vibrating probe in the developing clot.
- Microprocessor controlled electro-mechanical visco-elastic coagulation monitor for determination of coagulation real time haemostasis and end-points in whole blood, citrated whole blood and plasma samples.
- Technology for detecting initial fibrin and monitoring the clot formation process
- POC instrument. Compact instrument for mobility.
- Automated Process, without the use of pipettes to run samples.
- Single Channel machine for General Haemostasis and Platelet Function.
- Should be able to do ACT testing for anticoagulant Management.
- Should be able to manage high level heparin concentrations.
- Should be able to work effectively on extremely hemodiluted blood, anticoagulated blood or blood with very low fibrinogen levels.
- Should be compatible with Glass-Bead activators, Kaolin activators, Celite activators, Aprotinin insensitive activators, Custom activators.
- Able to perform following functions-
  - ACT, Clot Formation Rate and Platelet Function.
  - Assess overall Hemostasis Performance.
  - Manage Anticoagulation.
  - Differentiate between Surgical & Hemostatic Bleeders.
  - Fibrin Formation.
  - Identify Hypercoagulable Patients.
  - Hyper fibrinolysis.
- Should be able to store unlimited patient results which can be easily retrieved as and when required.
- Machine should provide heparin monitoring and blood product management in one test.
- Should be available with data management or data collection software automated results.
- Should be able to give real time analysis of the test both qualitatively & quantitatively.
- Should Connect to PC or Mac computers via USB port.
  - Remote Data Collection Software.
  - Should be able to provide results in presence of heparin or antifibrinolytic contamination.
  - Time for initial results: 1.5 to 3 mins.
  - Time for platelet function tests: 7 to 15mins.
- Table top model, easy to install. No heavy mounting for installing the machine.
- Latest technology—
  - Reputed company with CE approval.
  - Option for up gradation.
  - Separate results target separate therapies.

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19/08/14



## Specifications for Defibrillator

- 1) The machine should have facility for ECG Monitoring, Defibrillation, external pacing & recorder.
- 2) The Defibrillator should strictly biphasic technology, having energy selection of up to 270 Joules.
- 3) It must be capable of monitoring ECG through ECG cables and both from Multi function electrodes and paddles.
- 4) The monitor must be 2 channel colour monitor with ECG as the first trace and an option of choosing EtCO<sub>2</sub> or SpO<sub>2</sub> as the second trace.
- 5) The machine should be able to defibrillate Adult, Paediatric patients.
- 6) The machine should have ECG waveform display on bright colour display along with other virtual numeric information.
- 7) The machine should have fast charging of 200J in 3 seconds
- 8) The machine should be compact, portable with built in rechargeable battery, weight of the total machine should not be more than 6.5Kgs.
- 9) The machine should have in built recorder of for printing ECG trace & stored information.
- 10) The machine should have capability for providing internal defibrillation shocks.
- 11) The machine should be upgradeable to vital sign parameter such as Mainstream EtCO<sub>2</sub>, SpO<sub>2</sub>.
- 12) The machine should have user selectable alarm settings.
- 13) After defibrillation, the ECG waveform must recover within 3 seconds for immediately checking the result of defibrillation.
- 14) The machine must have AED option with voice prompt.
- 15) The machine should work on mains as well as on rechargeable battery.
- 16) The machine should have fast battery charging of less than 3 hours for full charge.
- 17) It should have Data Card for patient data storage.
- 18) The machine should be supplied with all standard accessories.



# **Flexible Bronchoscope Adult & Pediatric with Monitor**

## **Specification of NON-OPTICAL FIBER FLEXIBLE INTUBATION VIDEO Scope (Adult & Pead. Size) with Monitor**

- Flexible Intubation Scope without optical fibre for digitally transferring the image to the screen attached to the device itself. There should be no optical Fibre bundles. The image can be displayed directly on small TFT monitor to the screen
- Facility to record video and still image
- Apparatus should be on rechargeable battery system
- It should have Tip deflection of around UP/DOWN: 150/130; angel of view 85 or more; Working length: at least 60cm; Working Channel diameter; at least 2.2 mm and Distal Tip outer Diameter: 5.5 mm for adult and Tip deflection of around UP/DOWN: 130/130; angel of view 85 or more; Working Channel diameter; at least 1.2 mm and Distal Tip outer Diameter: 4.3 mm for a paediatric.

### **Accessories**

1. Flexible Intubation Scope of 5mm diameter
2. Flexible Intubation Scope of 3.8mm diameter

*R. Khan*  
19/8/14



## VIGILEO MONITOR

	Specification
1	Advanced high end patient monitor having integrated non-invasive, invasive measurements & features suitable for Neonate, Pediatrics & Adult patients.
2	Monitor must have bright, highly visible minimum 15" or more Colour TFT display with full touch screen facility.
3	Monitor must have the facility to display 14 or more waveform along with related numerical parameters on single screen.
4	Monitors should have facility to monitor ECG, SpO <sub>2</sub> , NIBP, Respiration, dual temp, CO(6 PARA)
5	Should have Arrhythmia detection including life threatening arrhythmias such as ASYSTOLE, VF, VT, EXT, TACHY, EXT BRADY, VPC RUN, V BRADY, SV TACHY, TACHYCARDIA, BRADYCARDIA, PAUSE, COUPLET, EARLY VPC, MULTIFORM, V RHYTHM, BIGEMINY, TRIGEMINY, FREQ VPC, VPC, IRREGULAR RR, PROLONGED RR as standard feature.
6	Should have event recall minimum up to 24 hours trend, graphical and tabular trends, including short trends drug dose calculations, alarm logs, Hemodynamics calculations & OxyCRG.
7	The monitor should have facility for enlarge numeric display for distance viewing with multiple layout of screen.
8	Monitors should have ST segment calculations with all latest arrhythmia detection & review facility.
10	Monitor should have facility to detect sudden critical blood circulation change occurs between periodic NIBP measurements.
11	Monitor should have facility to eliminate false arrhythmia alarms.
12	Should have full disclosure facility as standard. Monitor must have the time linked review function. Monitor must show the waveforms for the time when the arrhythmia occurred in case of arrhythmia recall.
13	Main stream EtCO <sub>2</sub> measurement for both intubated and non-intubated patient with one sensor will be preferred.
14	Monitor should have detachable unit which can transfer the patient monitoring parameters, information like Patient information, Alarm Setting, Trend Graph, full disclosure for while in transfer from one monitor to other without losing acquired data.
15	Should have internal rechargeable battery capability for at least one hours or more operation along with battery charge indicator.
16	Monitor should have event review facility including NIBP.
17	Monitor should have audio/visible alarm with lamp glowing in different colours & should be visible from distance.
18	All monitors must be ready for Central monitoring station connection & interbed facility as standard feature.
21	Independent slave display connection at any point of time, second display always shows the monitoring screen while the main display can show any other parameter monitoring screen.
23	Monitor should be European CE Certified & US FDA.
24	Warranty : 2 years
25	Monitors should be supplied with following:
26	5/6 Leads ECG cable 1. No
27	Adult and paed Spo <sub>2</sub> probe - 1 No. each
i.	NIBP cuff for Adult & Pediatrics 1 no each
ii.	Temp Probe - 2 no
iii.	Temp probe -2 ( skin & endocavity one each)

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19/08/14

# Fully Loaded High End Digital Color Doppler

## Specification

The System should have High end Range, Latest, Fully Loaded Digital Beam former, Pure Harmonic **Detection incorporating Wide Band Super High Density (W-SHD) probes for excellent and superior image quality.**

The System should have Integrated Data Management Subsystem (I-DMS) provides enhanced Data & Image Storage capability absolutely suitable for Whole Body and Advance **Cardiology**, Radiology Application.

- ❖ Compound Pulse Wave Generator
- ❖ 1024 Processing Channels
- ❖ **900 Frame Rates per sec.**
- ❖ Spectral Doppler
- ❖ 12 bit Digital Front end
- ❖ Quint/Quad frequency
- ❖ Pixel focusing
- ❖ Multi beam processing for high frame rate
- ❖ Data acquisition and Storage  
Raw Data Storage of Image, Line data Image data management Tool, Patient data Storage, FD.MOD/CDRW DICOM Connectivity.
- ❖ Color Frame Rate Up Function.
- ❖ Feature for Online adjustment of Image quality parameters.
- ❖ IP Select-8 Steps programmable.
- ❖ Measurement and Application package Cardiac, Abdomen, Kidney, Obese Abdomen, Obstetrics, Thyroid, Advance Gynecology, Urology, Peripheral, Vascular & Musculoskeletal, Small Parts, Intraoperative and Laparoscopic Application.
- ❖ Special Beam Signal processing technology (Dynamic Vaporization)
- ❖ 6 time write zoom and read zoom 16 time.
- ❖ Color Flow, Power Flow, Directional Power Flow facility
- ❖ User assignable study function
- ❖ Angle gain





- ❖ Pure HD quad frequency Harmonic Imaging
- ❖ Assigning alphanumeric keys & Functional keys
- ❖ Assignable hot key function
- ❖ 15 User programmable presets
- ❖ Doppler Post Processing like base line shift after freezing
- ❖ Free Angular M Mode (FAM )
- ❖ Multi Cursor
- ❖ Color Inkjet Printer connectivity.
- ❖ **10.4" Touch Panel Switch**

**15" High Quality and High Resolution LCD Monitor can be swivel Horizontally and till Vertically**

<b>Probe</b>	<b>1.9 to 3.8Mhz Multi-frequency Harmonic Adult Cardiac Probe</b>	<b>One</b>
<b>Probe</b>	<b>2-6 MHz High - Frequency - 4 selectable fundamental frequency, 4 selectable THI frequency &amp; 3 CDI frequency (Super High Density) Tissue Harmonic Convex Probe</b>	<b>One</b>
<b>Documentation</b>	<b>Image Management Software (IMS) with Computer, Color Printer, Photo Paper and other Accessories.</b>	<b>One Full Set</b>
<b>UPS</b>	<b>Online UPS</b>	<b>One</b>
<b>Servo</b>	<b>Medical Grade Online Servo</b>	<b>One</b>
<b>Turnkey Job</b>	<b>Interior with Partition (as per Color Doppler Examination Room protocol), Painting, Denting, Ceiling, Total Electrical work, Plumbing (if Site condition permit)</b>	<b>Complete Turnkey Job</b>
<b>FULLY LOADED HIGH END SYSTEM WITH TWO PROBES AND ALL ATTACHMENTS, ACCESSORIES, MEDICAL GRADE ONLINE SERVO AND UPS + SITE PREPARATION (A COMPLETE TURNKEY WORK)+ TOTAL ACCESSORIES.</b>		



# Oscilation Saw

## Sagital Saw Hand piece:

- Should have two speed controls with standard and fast mode. Free speed of 10000 -
- 12000 cycles per minute.
- Saw Noise level should not more then 89db
- Weight of hand piece with battery should be not more then 3.5 lbs
- Blade mount should be adjustable to different angles with 360 degree rotation
- Should have tool less mounting of accessories
- Should have Dc brush less motor
- Should be autoclavable
- Should have safe mode
- 

## Sternum Saw Hand piece:

- Should have Safe Mode
- Should have minimum 14000 CPM
- Weight of hand piece with battery should be not more then 3.5 lbs
- Should have DC brush less motor for low maintenance
- Should have Pistol grip Hand piece
- Should have tool less mounting of accessories for all blades or attachments
- Saw noise level should not more then 93db
- Should be autoclavable.
- With different blades it should have maximum speed of 14000CPM
- Should have option of Sternum Guard

## Battery Charger:

- 220-240 volts charger and should have the feature to count the charging cycle for a
- particular battery,
- Should have capability to identify the worn out battery
- Should have to charge four batteries at a time
- Should have an indicator to provide battery status for charging.
- Should be able to check over autoclaved battery cycles (Number of Time and Total time)
- Should have reconditioning futures for battery
- Should be able to charge different batteries with same charger

## Battery Kit:

- Ni Mh batteries with low internal impedance to deliver higher current than other battery
- types,
- Ni Mh cells with capacity to produce more torque and non autoclavable with life of 300
- approximate charging cycles,
- Should have a run time of minimum 21 minutes
- Should include Autoclavable outer housing
- Shield to protect battery from the housing
- 180 degree opening of battery housing for easy insertion of battery
- Should have option for autoclavable batteries

## Sterilization Case:

- Should be accommodate all hand piece, attachment and accessories for autoclave

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**TECHNICAL SPECIFICATION OF ELECTRONIC SURGICAL UNIT WITH INTEGRATED  
VESSEL SEALING SYSTEM AND ARGON PLASMA COAGULATOR.**

**The unit should have the following features:**

- The unit should have a large LCD display to show the various settings.
- The unit should have an optical support quickstep control knob to achieve and make the settings of the unit quickly.
- It should have a memory of minimal 99 individual programmes for various types of surgeries and with preference for various surgeons.
- It should have a possibility to give names (procedures/surgeons name) to the individual programmes.
- Should have a special output for vessel sealing upto 7mm of vessel in both open surgery mode and endoscopic surgery mode.
- The vessel sealing clamp forceps should be 100 % reusable and both straight & curved of different lengths.
- Should have both monopolar and bipolar cut and coagulation outputs.
- The unit should have four individual outputs 2 for monopolar and 2 for bipolar.
- The unit should have 11 different monopolar cutting currents with different cutting qualities and capabilities.
- The Monopolar coagulation should be with Auto-Start and Auto-Stop.
- The Bipolar should have a special cutting current with simultaneous coagulation during the use of bipolar scissors.
- The following different current modes should be available:
  - **MONOPOLAR CUT MODES (Minimum 8 types)**
  - **CARE CUT (FOR PRECISE CUTTING IN MICRO SURGERY)**
  - **ARGON CUT MODE (SPECIAL CUTTING MODE FOR USE WITH ARGON BEAM GAS)**
  - **MONOPOLAR COAGULATION MODES (Minimum 15 types)**
  - **BIPOLAR CUTTING MODE (Minimum 3 types)**
  - **BIPOLAR COAGULATION (Minimum 6 types)**
  - **SEAL SAFE MODE**
  - **ENDO SEAL MODE**

**The following accessories should be supplied with the unit:**

- **FOOTSWITCH DOUBLE PEDAL**
- **TWIN PATIENT PLATE**
- **CLAMPS FOR OPEN SURGERY SEAL SAFE TECHNIQUE**
- **BIPOLAR SCISSORS FOR OPEN SURGERY**
- **BIPOLAR FORCEPS FOR OPEN SURGERY**
- **BIPOLAR ACCORIES**
  - Footswitch with Reed Contact
  - Bipolar Cable
- **MONOPOLAR DIATHERMY ACCESSORIES FOR OPEN SURGERY**
- **MONOPOLAR ARGON ACCESSORIES FOR OPEN / LAP SURGERY**
- **ARGON PROBES FOR FLEXIBLE ENDOSCOPE**

**Technical specifications of the Argon Plasma Coagulator**

- The unit should be an Argon Gas delivery device fully controllable through the main unit only.
- Should have communications cable with the main unit.

Unit should be compatible with Communication Computer system for remote controlled operation of the various features along with other equipment. so as to function as an integral part of the digitally controlled Operating Room under the command of the operating Surgeon.

