

**ANNEX-B-b**  
**SPECIFICATION OF MEDICAL EQUIPMENT**  
**DELIVERY LOCATION AT SANDEMAN PROVINCIAL HOSPITAL AT QUETTA.**

ORTHOPAEDIC DEPARTMENT

**ANESTHESIA DEPARTMENT**

QTY

**(1) Anaesthesia Workstation**

**2**

The machine will equip to monitor the vital sign parameters and aesthetic agents during operation.

1 3-gases O<sub>2</sub>/N<sub>2</sub>O/AIR.

2 Provision of communication port for sharing and transfer of data.

3 Unit shall comprise of the following components:

Electronically control, mixing and monitoring of aesthetic gases (O<sub>2</sub>, AIR, 4 and N<sub>2</sub>O) both by digits as

well as virtual tubes.

5 Built-in illumination system.

6 Non-interchangeable pipeline inlets

- 7 Pipeline & cylinder gauges for O<sub>2</sub>, N<sub>2</sub>O and AIR
- 8 Central gas/ electronically driven unit.
- 9 Pin index cylinder yokes for Oxygen & N<sub>2</sub>O (One each), as backup.
- 10 Gas outlet and O<sub>2</sub> flush control
- 11 1 auxiliary O<sub>2</sub> outlet (preferably electronics).
- 12 Two Lockable castors
- 13 Stainless steel/fiber work surface
- 14 Absorber bag support arm
- 15 Integrated heated breathing system.  
Three gas electronic digital flow meters for precise control and monitoring
- 16 of gases.
- 17 Drawer unit 5-6" high.

18 Power outlet with 3 socket outlets to connect the auxiliary equipment.

CO2 absorber 800 – 1,500 gm or better with changeable during the  
19 surgery.

20 Breathing tube (adult and paed).

21 Mounts and Y-piece.

22 Scavenging system passive / active type.

23 Suction system.

## A

### VENTILATO

24 Anaesthesia Ventilator with minimum 15" Color Touch screen Screen.

The ventilator shall be capable of ventilating Neonates /paediatric patients/Adult Patients)

26 The ventilator shall have following features as a minimum requirement:

27 Volume Mode

28 Manual, spontaneous

29 Pressure Mode (PCV)

30 Pressure Support (PS)

31 Pressure Control (PC)

32 Pressure Controlled and pressure support Modes

33 Synchronized volume controlled ventilation (SIMV) with PS

34 PS with apnea back up

Breathing Mode Selection (Standby / Volume / Spontaneous and  
35 Pressure)

36 Built in Oxygen Monitor

37 Inverse I:E ratio Capability

38 Gas Specific Input Connectors (Air or Oxygen ISO or ANSI Standards)

39 Tidal Volume from 5ml to 2000ml.

40 Rate or Frequency 4 to 60 bpm

41 PEEP 3 to 30 cm of H<sub>2</sub>O.

42 Inspiratory Pressure Limit

43 Pressure and Volume (Spirometry) Loops / Curve.

44 Oxygen / Electronically Driven

45 Power Supply 220 VAC , 50 Hz

46 Battery Backup (90 Minutes or more)

47 Low / High FiO<sub>2</sub> Alarm

48 Incorrect Rate or Ratio alarm

49 Mains Failure alarm

50 Low battery alarm.

51 Oxygen Sensor: Paramagnetic

52 Hypoxic Device.

The ventilator shall be supplied with complete drive hose and power  
53 cable.

## MONITORING :

54 Modular Vital sign monitor.

Size of minimum 17" touch screen or more for display of vital sign  
55 parameters of neonates, infants and adults.

56 Measurement of ECG

57 NIBP with re-usable single hose cuff for neonates, child and small adults

SpO2 (Massimo Technology / Equivalent motion tolerant technology) with  
58 re-usable cable and

59 sensors for neonates, infant, adult and small adults sizes (Qty 2 each).

60 HR

61 Temperature with nasal probe

62 Respiration

63 Four Channel IBP

Aesthetic Agent monitoring (with monitor or with in the anaesthesia  
64 machine)

65 EtCO2 main / side stream (Complete with all sensors probes, reusable).

66 Provision of communication port for sharing and transfer of data.

67 220V, 50 Hz operated.

68 Battery backup of at least 60 minutes

Note: Vaporizer & Monitors must be Supplied by the same manufacturer and must be compatible with the machine and ventilator.

**ACCESSORI** Electronic Cassette Type Vaporizer of Isoflurane, Temperature and flow  
**ES:** compensated

Electronic Cassette Type Vaporizer of Sevoflurane, Temperature and flow  
compensated

Country of Manufacture: USA/Europe/UK/Japan

Certification: FDA&CE



## (2) C-PAP Unit (Neonatal)

2

- 1 Monitor Display to display the digital data.
- 2 Airway pressure range to be user settable
- 3 Controls to be easy to operate, numbers and displays to be clearly visible.
- 4 Display of CPAP Pressure,
- 5 Alarms Level,
- 6 O2 concentration and Spontaneous breathing frequency.
- 7 Alarms to alert user to" not in connection,
- 8 Overpressure,
- 9 Supply pressure of O2 and Air,
- 10 O2 concentration,

11 Upper and lower CPAP Pressure.

12 CPAP range: 4–10 mbar

13 FiO<sub>2</sub> : 21-100%

14 Provision of overpressure safety valve

15 Humidifier with patient circuit (reuse able).

16 External Air compressor to produce air for making air/ oxygen mixture.

17 Noise level less than 50dB

18 Trolley with lockable wheels

19 Internal battery backup of two hours with complete system functionality.

20 220V, 50Hz

**ACCESSORIES for Adult/ Paediatric and Infant Use:**

1 Continuous flow with breathing circuits

2 Continues flow breathing kits

3 Flow Masks

**Country of Manufacturer: USA/EU/UK/Japan**

**Certification: FDA/CE/MHLW**

### **(3) Paeds ICU Beds**

**10**

- 1 Motorized Hospital Bed suitable for use in intensive Care Unit
- 2 Paeds Intensive care Bed with removable head and foot panels
- 3 Height adjustment with hand held control and Nurse control panel
- 4 Trendelenburg / anti Trendelenburg position
- 5 Back raise
- 6 Knee raise
- 7 Radiolucent backrest
- 8 To facilitate use of the C arm / x-ray with cassette holder for imaging
- 9 Castors with bumpers
- 10 Central Locking system

- 11 Mattress with internal hinge and standard nylon proof cover
- 12 Safe working load 20-150 KG
- 13 Accessories :
- 14 Collapsible Side Rails Pair
- 15 I.V Rod
- 16 Bedside Cabinet
- 17 Over Bed Table

**Country of Manufacturer: USA/Europe/UK/Japan**

**Certification: FDA/CE/MHLW**

**(4) Laryngoscope**

**2**

- 
- 1 Macintosh type.
  - 2 Blade set of 4 or 5.
  - 3 Blade Sizes 1, 2, 3, 4 /5.
  - 4 SS/ corrosion free Blades.
  - 5 Dry Battery handle.
  - 6 Blades of stainless steel with integral light carrier.
  - 7 Fiber optic light carrier.
  - 8 Xenon illumination of light source.
  - 9 Complete with batteries and carrying case.
  - 10 Single-piece,
  - 11 stainless steel blade ensures integrity and minimizes corrosion

12 Complete set with four blades and casing and spare bulb (03)

**Certification: FDA/CE/MHLW**

**(5) Laryngoscope Set Paeds**

**2**

- 1 Macintosh type.
- 2 Blade Sizes 0,1, 2.
- 3 SS/ corrosion free Blades.
- 4 Dry Battery handle.
- 5 Blades of stainless steel with integral light carrier.
- 6 Fiber optic light carrier.
- 7 Xenon illumination of light source.

8 Complete with batteries and carrying case.

9 Single-piece,

10 stainless steel blade ensures integrity and minimizes corrosion.

**n:**

**FDA/CE/M**

## (6) Laryngoscope Neonatal

2

- 1 Miller type.
- 2 Blade Sizes Infant/Neonate
- 3 SS/ corrosion free Blades.
- 4 Dry Battery handle.
- 5 Blades of stainless steel with integral light carrier.
- 6 Fiber optic light carrier.
- 7 Xenon illumination of light source.
- 8 Complete with batteries and carrying case.
- 9 Single-piece,
- 10 stainless steel blade ensures integrity and minimizes corrosion.

n:  
FDA/CE/M

**(7) SERVO CONTROLLED INCUBATOR**

**10**

1 Triple wall canopy system

2 Servo Control System.

Intensive Care Incubator comprises Microprocessor controlled unit with 5  
3 inch LCD display set/measure

temperature & baby skin temperature.

Temperature regulation upto 38 C with uniform heat distribution over the  
4 bed surface

Sensor attached to child's skin continuously measures child skin  
5 temperature

6 Bed surface 700 mm x 460 mm (approx.)

## 7 2 Drawer / Cabinet

The radiolucent plastic panel of the incubator to accommodate X-ray  
8 cassettes from outside.

Highly thermostable acrylic glass or similar material hood fitted with a  
9 large hinged flap in front.

10 Four spring operated elbow / hand ports.

11 Replaceable bacteria filters

12 Built in control for Humidification to regulate incubator air up to 60%

13 Alarm signals safety

14 The visual and audible battery powered alarm for power failure

15 Visual & audible alarm for temperature excess (39 C)

Audible & Visual alarm warns in case of fan failure and sensor/probe  
16 failure.

Test buttons to check the individual alarms signals at any time or  
17 automatic system.

18 Less than or equal to 45dBA Noise level

**Accessories**

**:**            **Unit complete with**

1 Air temperature sensor

2 Skin temperature Sensor

3 I.V. Pole

4 Guard Rail

5 Restraint straps

6 Pulse Oximeter separate / built in.

7 Oxygen flowmeter 0-15 litter/min. for incubator

8 Humidity Meter

Connection of Oxygen to drive flow meter both form oxygen cylinder

9 & manifold of central gas pipeline system

**Country of Manufacturer: USA/Europe/UK/Japan**

**Certification: FDA/CE**

## **(8) NEONATAL MONITOR**

**10**

Configured/Modular Bedside monitor for display of vital signs monitoring

- Measuring all physiological parameters of Paeds, Neonates
- Mounted on original wall mounted stands
- Monitors should be connected with central station wirelessly / wired

### **OPERATING FEATURES & CHARACTERISTICS**

- Electro-surgical interference suppression/ protection
- Defibrillator protection
- Freeze and cascade facility
- waveforms traces speeds 25/50mm/sec
- Screen size min 15" or more with touch screen colored

- Minimum 8 waveforms or more

### **STANDARD PARAMETERS**

- ECG, NIBP, SpO<sub>2</sub>, 2-Temp, Respiration, Trends, Arrhythmia Analysis, 4 IBP, ETCO<sub>2</sub>.

ECG: (Cable Alligator Type)

- Numeric heart rate
- Waveform: Six wave form minimum, real time freeze ECG trace
- 3 and 6 lead monitoring
- Measuring range: 15 to 250bpm
- 5 and 10 lead each ECG cable with electrodes
- Ability to detect Adult & Pediatric Heart rate range, QRS widths and amplitudes

NONINVASIVE BLOOD PRESSURE (NIBP): (Paeds, Neonates Cuff )

- Method: Oscillometric principle
- Numeric: Systolic, Diastolic and Mean Pressures
- Ability to measure Adult & Paediatric B.P
- Rising Cuff / continuous pressure display
- Selectable auto inflate interval settings

#### TEMPERATURE (Rectal, Skin Probes)

- Numeric. Temperature selectable in 'C / 'F
- Channels: 2 channels or more
- Ability to measure Adult & Paediatric & Neonate temperature range

#### PULSE OXIMETRY: (Paeds, Neonates Probes )

- Numeric: 0-100% Oxygen saturation measuring range

- Massimo Technology/ Other patent technology with motion tolerance
- Waveform: Plethysmograph pulse with Sensor for Paediatrics & Neonates Patients

### **RESPIRATION:**

- Sweep speed: 6.25, 12.5mm/sec.
- Breathe rate display and Settable Apnea Alarm.

### **ARRTHIEMIA ANALYSIS**

- Arrhythmia analysis and ST analysis with minimum 10 Arrhythmia detection

### **TRENDS:**

- Trends for at least 48-96 hours with graphical and tabular representation for all

### **Parameters**

## **INVASIVE BLOOD PRESSURE MODULE**

- 4 Channel IBP Monitoring
- Numeric: Systolic, Diastolic and Mean Pressure
- Variable scale: Selectable
- 5 IBP Complete kits

## **CAPNOGRAPHY (ETCO<sub>2</sub>)**

- For measuring of End Tidal CO<sub>2</sub>

## **ALARMS:**

- Selectable automatic Adult and Paediatric and Neonates Mode alarm limits High and low (settable) on all parameters
- Visual and Audible indication of alarms

## **BACKUP SUPPORT**

- Built-in Rechargeable Battery with back up of at least 1-2 hours in case of AC power failure for full parameters.

- Wall mount or trolley original from manufacturer.

- The system must be complete with all sensors, probe, cable or any other accessories required for measuring all the above selectable parameters for adults, Paediatric and Neonatal applications. All the accessories must be supplied by

the same manufacturer

### **Accessories:**

### **Wall Mount**

### **RECORDER**

- 2 Channel Recorder for printing of ECG Waveforms

### **APHY**

### **(ETCO2)**

- For measuring of End Tidal CO2

- Capability of Main / side stream measurements for intubated and non intubated
- Airway & nasal adapter 50 each adult, paedes and neonates

**Manufactu  
rer:  
n:  
FDA/CE/M**

## (9) ICU Ventilator

2

### **VENTILATI**

#### **ON:**

Microprocessor controlled powerful ventilation system mounted on  
1 trolley.

2 LCD/TFT color touch screen 12" Minimum.

3 Patient Range: Neonate - Paediatrics

Breathing classification: Pressure control, Volume control Pressure control  
4 with set volume Breath

### **VENTILATI**

#### **5 ON:**

6 Volume control with assist

7 Pressure control with assist

8 CPAP

9 SIMV+ Pressure support

10 Non-invasive ventilation

11 Bi-level /APRV/BI-PAP Ventilation

**CONTROL:**

1 Set & measured parameters simultaneously.

MEASUREMENT RANGE/ SPECIFICATION:

1 Inspiratory tidal volume: (5ml to 350ml Neonatal Mode).

2 Respiratory frequency: 5 to 120bpm

3 SIMV breath frequency: 1 to 50 bmp

4 Inspiratory pressure: 10 to 80 cmH<sub>2</sub>O

5 Inspiratory flow: 80 L/Min or cmH<sub>2</sub>O.

6 I : E ratio : 1:4 / 4:1

7 PEEP: 3 to 30cm H<sub>2</sub>O

8 FiO<sub>2</sub>/ O<sub>2</sub> delivery: 21 to 100% (Through non consumable Technology)

**parameters  
for set and**

1 Total breath rate.

2 Oxygen concentration FIO<sub>2</sub>

3 Expired minute volume

4 Peak expiratory flow

5 I : E ratio

6 Peak Pressure

7 Mean pressure

8 Lung Mechanics with pressure and volume loops.

- 9 Others control and functions:
- 10 Back up ventilation
- 11 Pause time INSP
- 12 Microprocessor gas delivery system
- 13 Breath circuit Compliance Compensation
- 14 Expiratory hold/ Inspiratory hold
- 15 Pressure / Volume and flow trigger sensitivity
- 16 Trigger sensitivity indication
- 17 Trend Data
- 18 The waveform should be displayed on ventilator's screen.

## **ALARMS:**

- 1 Apnea
- 2 AC power failure
- 3 High and low Expired minute volume
- 4 High and low peak air way pressure
- 5 High and low breath rate
- 6 FiO<sub>2</sub> variation
- 7 Low and high base line pressure
- 8 Gas supply source failure
- 9 Low battery

## **NEBULIZER:**

1 Built in nebulizer of the patient during ventilation

2 Supply requirements: Electric 220 V 50 Hz

3 BATTERY BACKUP:

4 With internal battery backup of one hour.

5 COMPRESSED AIR SUPPLY:

6 The ventilator should be driven on external compressor for powerful  
ventilation

7 and should have the capability to connect with central medical pipeline  
system

8 of the hospital.

## **HUMIDIFIER:**

1 Automatic compensation (Servo) controlled heated humidifier with  
temperature monitoring at air way and Humidification chamber with alarm

2 for

3 low/ high limits with water trap in the patient circuit.

Note: The warranty of equipment will be including batteries, oxygen  
4 sensor, all kind

5 of sensors and flow sensor.

**Accessories**

: Air Compressor

Capnography module to monitor carbon dioxide of the patient.

**Country of Manufacturer: USA, Europe, UK, Japan.**

**Quality Certificate: Compliance of minimum two quality certificates from**

**FDA & CE-MDD/MDR is required.**

**(10) Electrosurgical Unit**

2

Microprocessor based electrosurgical unit for normal and under water  
1 cutting usages.

2 Automatic self-test function.

3 Operation in radio frequency range.

4 Controls for cutting, coagulation, spray and blends.

5 Monopolar cutting power of 300 watts.

6 Bipolar cutting power of 80 watts.

7 Mono polar coagulation power of 100 Watts.

8 Bipolar coagulation power of 50 Watts.

9 Spray coagulation mode.

10 Different gradations of blending of cutting and coagulation power.

Digital display of all controls and set values of cutting and coagulation  
11 power.

12 Audio and visual alarms.

13 220V, 50 Hz.

### **Accessories**

:

1 Monopolar handle with cord.

2 Bipolar forceps with cord.

3 Trolley having anti-static lockable wheels.

4 Attachment for monopolar coagulation.

5 Knife electrode.

6 Surgical electrode, ball-shaped.

7 Wire loop electrode.

8 Needle electrode.

9 Ball electrode.

10 Bipolar coagulation forceps.

11 Reusable silicon patient plate.

12 Double paddle foot switch, explosion proof.

13 Trolley with lockable antistatic castors.

**Manufactu**

**re:**

**n:**

**FDA/CE/M**



## WASTE MANAGEMENT

### (11) Hospital Waste Incinerator

1

	Parameters	Value
1	Volume Chambers	8.22 m <sup>3</sup>
2	Size	2.9m x 1.9m x 1.9m
	Loading	
3	Method	Front
	Load	
4	Capacity	300 kg
	Refractory	
5	Thickness	191mm - 226mm
	Retention	
6	Time	2 Seconds
	Fuel	
7	Options	Diesel, LPG, Natural Gas, Bio Fuel, Dual Fuel

8	Complies with EU	Yes
9	CE Certified	Yes

**DEPARTME  
NT**

**(12) ENT Surgical Set**

**4**

**A SMR SET**

**QTY  
: 4**

1	CONTAINER 11" X 13"	1
2	KILLIAN NASAL SPECULUM 50MM	1
3	KILLIAN NASAL SPECULUM 75MM	1

4 KILLIAN NASAL SPECULUM 90MM	1
5 HARTMANN NASAL SPECULUM	1
THUDICHUN NASAL SPECULUM SET OF	
6 5Pcs	1
LUC'S NASAL TURB FORCEPS Hrt	
7 SHAPED MED.	1
LUC'S NASAL TURB FORCEPS Hrt	
8 SHAPED 6MM	1
LUC'S NASAL TURB FORCEPS Hrt	
9 SHAPED 7.5MM	1
LUC'S NASAL TURB FORCEPS Hrt	
10 SHAPED 9MM	1
11 BARD PARKER KNIFE NO 3	1
12 FREER PERIOTUM ELEVATOR	1
13 TURBINECTOMY SCISSORS	1
14 TILLY'S HANKLE FORCEPS	1

15 LUC'S NON CUTTING FORCEPS	1
16 LUC'S CUTTING FORCEPS	1
17 NEEDLE HOLDER 7"	1
18 JOSEPH RASP	1
19 MALTZ RASP	1
20 KILLIAN SEPTUM GOUGE	1
21 HAMMER 220 GM	1
22 NURSING SCISSORS 5 1/2"	1
23 JANSON MEDELTON SEPTUM FORCEPS	1
WATSON WILLIAM ETHMOIDAL	
24 FORCEPS	1
DURATIP CURVED DISSECTING SCISSORS	
25 7" TC METZENBAUM	1

26 NASAL SUCTION TIPS	1
27 AUFRIEHT RETRACTOR	1
28 FOMEN OSTEOTOME RIGHT	1
29 FOMEN OSTEOTOME LEFT	1
30 COTTLE CHISEL 9MM	1
31 ASH FORCEPS	1
32 WALSHAM FORCEPS	1
33 SEPTUM MORSELIZER FORCEPS	1
34 TROCAR AND CANNULA	1
35 MYLE'S ANTRUM PERFORATOR	1
36 BALLENGER SWIVEL KNIFE	1

37 TILLY'S NASAL DRESSING FORCEPS

1

<b>B</b>	<b>TONSILLEC TOMY SET</b>	<b>QTY : 4</b>
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- |    |                                   |   |
|----|-----------------------------------|---|
| 1  | BOX 11" X 13"                     | 1 |
|    | METZENBAUM SCISSORS CURVED        |   |
| 2  | 180MM                             | 1 |
| 3  | MAYO TOWEL CLIPS 140MM            | 1 |
|    | RAMPLEY SPONGE HOLDING FORCEPS    |   |
| 4  | 10"                               | 1 |
| 5  | JENNING MOUTH GAG                 | 1 |
| 6  | YANKEUR SUCTION TIP               | 1 |
|    | DANIS BROWN TONSIL HOLDING        |   |
| 7  | FORCEPS                           | 1 |
|    | GWYNE EVAN'S TONSIL DISSECTOR 6 X |   |
| 8  | 200                               | 1 |
|    | BIRKETT TONSIL FORCEPS STRAIGHT   |   |
| 9  | 180MM                             | 1 |
|    | BIRKETT TONSIL FORCEPS CURVED     |   |
| 10 | 180MM                             | 1 |

HURD TONSIL DISSECTOR WITH PILLAR	
11 RETRACTOR	1
EVE TONSILLAR SNARE SLIDE ACTION	
12 280MM	1
WILSON TONSIL SCISSORS 64MM,	
13 200MM	1
NEGUS TONSILLAR ARTERY FORCEPS	
14 CURVED 180MM	1
15 NEGUS ARTERY FORCEPS	1
16 TONSILLAR NEEDLE HOLDER 18CM	1
17 TONSILLAR NEEDLE	1
NEGUS PUSH FOR KNOT TYING	
18 DOUGHTY TONGUE PLATE	1
BECKMANN ADENOID CURRETTE 14 X	
19 215MM	1
SAINT CLARE THOMSON ADENOID	
20 CURRETTE 12MM	1
SAINT CLARE THOMSON ADENOID	
21 CURRETTE 14MM	1

	SAINT CLARE THOMSON ADENOID	
22	CURRETTE 16MM	1
	DAVIS BOYLE MOUTH GAG FRAME	
23	CHILD	1
	DAVIS BOYLE MOUTH GAG FRAME	
24	ADULT	1
25	DOUGHTY TONGUE PLATE 64MM	1
26	DOUGHTY TONGUE PLATE 76MM	1
27	DOUGHTY TONGUE PLATE 89MM	1
28	DOUGHTY TONGUE PLATE 102MM	1
	DOUGHTY LUER TRACHEOSTOMY TUBE	
29	NICKLE TONGUE 114MM	1
	DRAFFIN BIPOD (SUSPENSARY ROD)	
30	48CM (PAIR)	1
	MAGUARAN PLATE FOR DRAFFIN BIPOD	
31	400MM	1

	<b>CTOMY</b>	<b>QTY</b>
<b>C</b>	<b>SET</b>	<b>: 4</b>

1 CONTAINER 11" X 13"	1
2 HARTMANN EAR SPECULUM 2MM	1
3 HARTMANN EAR SPECULUM 3MM	1
4 HARTMANN EAR SPECULUM 4MM	1
5 HARTMANN EAR SPECULUM 5MM	1
6 HARTMANN EAR SPECULUM 6MM	1
7 HARTMANN EAR SPECULUM 8MM	1
8 HARTMANN EAR SPECULUM 9MM	1
9 SCALPEL HANDLE NO 4	1
MOLLISON RETRACTOR 4 X 4 SHARP	
10 PRONGS 165MM	1
MOLLISON RETRACTOR 2 X 2 SHARP	
11 PRONGS 135MM	1

WULLSTEIN RETRACTOR 3 X 3 BLUNT	
12 PRONGS 130MM	1
HALSTEAD MOSQUITO ARTERY	
13 FORCEPS 125MM CVD	1
ADSON DELICATE TISSUE FORCEPS 1 X 2	
14 TEETH 120MM	1
ADSON DELICATE TISSUE FORCEPS	
15 PLAIN 120MM	1
SURGICAL SCISSORS SH/BL STRAIGHT 5	
16 X 130MM	1
METZENBAUM SCISSORS CURVED 5 X	
17 145MM	1
18 YANKEUR SUCTION TUBE	1
19 LEMPART SUCTION TUBE 9Fr 3 X 200	1
20 BELLUCI SUCTION SET OF 3	1
ROBIN ANCHORING FORCEPS 13MM,	
21 140MM	1
22 BACKHAUS TOWEL CLIP 130MM	1

RAMPLY SPONGE HOLDING FORCEPS	
23 240MM	1
24 CARTRIDGE DENTAL SYRINGE	1
KILNER SKIN RETRACTOR SHARP	
25 150MM	1
GILLIES DISSECTING FORCEPS 1 X 2	
26 TOOTH 152MM	1
27 ADSON DRESSING FORCEPS 127MM	1
MCINDOE DISSECTING FORCEPS	
28 150MM	1
29 JOBSON HORN PROBE	1
30 FREER DOUBLE ENDED ELEVATOR	1
31 LEPART ROUGINE NARROW 155MM	1
32 LEPART ROUGINE BROAD 170MM	1
33 TILLEY AURAL FORCEPS 140MM	1

34 PARTSCH CHISEL 3MM, 170MM	1
35 PARTSCH CHISEL 4MM, 170MM	1
FICKLING ORAL ANGLED FORCEPS	
36 178MM	1
CLAMP FICKLING ANGULAR SIDE	
37 178MM	1
RUSKIN BONE RONGEUR CURVED	
38 190MM	1
39 ADSON SUCTION CANNULA 3MM	1
40 ADSON FREER SUCTION TUBE 180MM	1
41 MALLET FICKLING 192GMS	1

**(13) COLOR DOPPLER ULTRASOUND**

**1**

Color Doppler with Fully Digital Beam former having 2D / M-Mode and Doppler Facilities, (PW, HPRF, & Color Flow Imaging) with High Resolution Imaging Doppler Signal Quality; having

**1 DICOM Compatibility.**

1) B-MODE Specification:

a) Viewing Depth: 30 cm Minimum (Both in B & W and Color).

b) Frame Rate: 500 f/sec or more.

c) Built-in cine loop with ability to vary reverse and slow motion of display; Internal

ONLY

d) Real time and Freeze Image Magnification at least 10X or more with panning for Real,

Freeze and Memorized Images.

## **2 M-MODE SPECIFICATION:**

a) Magnification: X2 or more.

b) Sweep Speed: Slow, Medium and Fast.

c) Color Display of M-Mode.

## **3) D-MODE SPECIFICATION:**

a) Pulse-Wave Doppler Measurable Velocity Range.

b) HPRF Doppler.

## **3 CONTINUOUS-WAVE DOPPLER:**

a) Measurable Velocity Range: Steerable.

b) Must have Doppler Beam Steering and Bi-Directional Stereo-Audio.

c) Colorized Spectrum Display.

d) Automatic Baseline and Velocity Range Control

e) Live Measurements for Doppler Spectrum

#### **4 COLOR DOPPLER MODE SPECIFICATIONS:**

- Both CW and PW Doppler must be Continuous Steerable in the Color Blood Flow Image

Mode in Real Time.

- 2D Image with Color, CW and PW Doppler.

- Windows based System for easy usage with Programmable Control Panel Keys.

- Tissue Harmonic Imaging with 4THI or more Frequency.

- Power Doppler.

- Triplex Mode for Simultaneous Display of Color B/M and D-Mode Displays.

- 200 db system dynamic range or more.

## **5 MEASUREMENT PACKAGE:**

To provide Comprehensive Software Package for Measurement of Distance, Circumference,

Area, Time Depth, ANGLE, Velocity, Frequency, Heart Rate, Volumes, Nuchal Thickness/

Measurement Software to be Provided as a Standard.

## **6 SYSTEM COMPLETE WITH FOLLOWING FACILITIES AND ACCESSORIES:**

Minimum 19-Inches LCD / LED Color Monitor, with Resolution 1280 x 1024/WXGA++

Pixels minimum.

- Foot-Switch.

- 3 Active Transducer Connector for Tran thoracic Probes DVD / CD Drive for Image

Storage to be Built-in to the System.

- 500 GB or more Hard Disk Drive to be Built-in to the System.
- Built-in DICOM Compatibility. (3.0 with all components)
- Touch Command Screen Control at least 8-inches LCD / TFT.
- Full DICOM (Upgradable)

#### 7 UPGRADEABILITY :

- System Software must be Upgradable.

#### 8 STANDARD PROBES :

- 2 – 6 MHz Multi-Frequency Convex Probe for B/M/CDI/PW.
- 5-9 MHz Multi-Frequency Linear Probe for vascular studies.
- 4-9 MHz Multi-Frequency Micro-Convex Probe for Peads.

- TVS/ENDOCAVITORY Color PROBE

NOTE:

All Probes must be supplied by same Manufacturer.

+ 1Mhz deviation from the quoted frequencies of probes would be considered as minor

deviation.

9 STANDARD RECORDING DEVICES:

- Thermal Paper Printer 256 Grey Scale (Sony/Mitsubishi) with fifty Rolls of Paper (Black & White). WITH HD

10 Tissue Harmonic imaging without contrast with 4 harmonic frequencies.

Pure Wave / Pulse Inversion / Differential Tissue Harmonic

11 Imaging/CPI/HD-THI or

similar.

Auto Image Optimization / Quick Scan Imaging for Automatic STC / GAIN

12 and Doppler

Spectrum Adjustment with Optimal Image Quality by using One Touch Operation.

B-Flow / Dynamic Flow Imaging / E-Flow/ X-Flow or Similar- for low flow  
13 vessels imaging.

14 Trapezoid Imaging / Virtual Convex Imaging with Linear Probe.

Compound / Aplipure/X-View Imaging for THI/both Frequency  
15 Compounding and

Spatial Compounding or similar in B/W and Color Mode.

16 Panoramic / SIESCAPE / Logic view or Similar Imaging with Measurements.

17 Voltage : 220V – 240V, 50 – 60 HZ

Accessories:

1- UPS: on line with sine waves 2 KVA with thirty minutes back up time/  
battery for the system.

**(IMPORTED)**

**Manufactu  
rer:**

**n:**  
**FDA/CE/M**

**(14) Endoscope for Gastroenterology Dpt**

**1**

**A DEFINITIO  
N VIDEO**

Full High Definition Video Gastroscope with CCD / CMOS and advanced technological features

Field of view:	140° or better
Direction of view	0° (Forward Viewing)
Depth of field	2 - 100 mm or better
Distal end diameter	9 mm or less
Insertion tube diameter	9 mm or less
Channel inner diameter	2.8 mm or more

Working Length: 1030mm or more  
Angulations: Up 210°, Down 90°, Right 100°, Left 100° or better

With advanced technological features:

Observation facility for greater contrast of blood vessels and mucosa  
Texture and Color Enhancement Imaging

Red Dichromatic Imaging

Full HD/ HDTV/ 1920 x 1080 resolution Water proof design

Water Jet Function Dual Focus

## **B**

### **HIGH DEFINITION VIDEO COLONOSCOPE**

High Definition Video Colonoscope (Slim) with CCD / CMOS and advanced technological features

Field of view Normal focus 170° Near focus 160°

Direction of view: Forward viewing



Scope Guide probe compatible Close Focus

C

## **WATER PUMP**

Flushing pump compatible with all scopes

endoscopes, allowing gastric and colonic mucosa to be washed during procedures

while precise microprocessor controls prevent over pressurization of endoscopes

Able to rapidly fill organs with fluid, allowing endoscopic ultrasound procedures to be performed

can be controlled via a remote control or a foot switch, allowing the user to choose the method that suits the procedure best

Standby Mode:

mode allows safe exchange of water channel tubes without operating the main switch.

20-Second Cutoff Timer:

is not accidentally overfilled with fluid or insufflated when the water container is empty.

Reverse Pumping:

of times, reducing pressure in the tubes and allowing more accurate flow control.

User-Friendly Features:

A bright LED display allow easy operation of the pump even a darkened room, and flat-panel touch buttons enable efficient cleaning

D

**HD/ Q-IMAGE DUODENO VIDEO SCOPE**

Video Duodenoscope with CCD / CMOS and advanced technological

features Field of view: 100°

Direction of view 5°-10° or better(Backward Viewing) Depth of field: 5 - 60 mm or better

mm or less Working length: 1200 mm or more Channel inner diameter: 4.2 mm

facility for greater contrast of blood vessels and mucosa Texture and Color Enhancement Imaging

Red Dichromatic Imaging)

Ergonomically design grip which enhances scope manoeuvrability Scope ID function to facilitate endoscopy suite management Water proof design

Dual wire locking mechanism Detachable cap

Single Use Distal end cover for Duodeno Videoscope

E

**ULTRA HIGH DEFINITION VIDEO SYSTEM CENTRE (4K) WITH LED LIGHT SOURCE**

Ultra High Definition/ 4K Video Processor System with latest Artificial Intelligence (AI) / Computer Aided Diagnosis (CAD) features

Digital Outputs: 12G-SDI, 3G-SDI, HD-SDI and SD-SDI or equivalent

Touch screen display

Analog Outputs: VBS/ Composite / Y/C or Equivalent Ultra HD Image Quality

Iris Mode: Avg, Peak, Auto

Color Adjustment, Structure emphasis, Tone enhancement Electronic Zoom 3-mode

Contrast: 2-Steps HIGH and LOW

Freeze screen display and pre-freeze function

functions through endoscope switches Image storage facility in TIFF, JPEG formats

**Keyboard for data handling**

Capable for visual enhancement and differentiation of vessels and Capillaries

(TXI, RDI, BAI-MAC/ NBI and AFI)

Backward compatibility with previous versions of video scopes from the same manufacturer

Complete with cables and connections

User settings The function settings for up to 20 users can be stored

### **Image size selection**

The size of the endoscopic image can be selected from 2 modes. (Except SDTV)

Electric zoom Switch between mode 1, mode 2, and mode 3.

PIP/POP Switch between PIP and POP.

Aspect ratio Switch between 16:9 and 4:3. (Except SDTV) Freeze Freeze the endoscopic image

Separate or built in advanced LED light Source For Video Scopes with the following main features: 5-LED lights or more

High intensity LED lights

Longer life with low-energy consumption

Special light observation modes (BLI, LCI, FICE / TXI, RDI, BAI-MAC/ NBI/ AFI)

Automatic & manual Brightness adjustment Memorization of set-values

Air pump – Hi, Low, Off

Water Tank must be supplied along-with the light source

Trolley Based Workstation.

Swivel arm for monitor.

Electrical wiring with sockets and isolation transformer Sliding Keyboard shelf / tray.

Placement provision of printer.

Imported (to be supplied by the same manufacturer)

E

**LED / LCD ULTRA HIGH DEFINITION COLOR MONITOR 32"**

32" or more Medical Grade same manufacturer for best quality ULTRA HD  
4K Resolution 3840 x 2160 or more

Contrast Ratio 1000:1 Luminance: 450cd/m2 Viewing angle 178/ 178  
degree No of color 1.07billion

Image enhancement AIME Flip pattern Rotation

4K input 12G-SDI x 2 Display Port X1, HDMI x 1 4K Output 12G-SDI x 2

Trolley Mounted

Multi Display Mode PIP & POP Aspect ratio of 16:9 or more.

F

**CO2 REGULATION/CO2 INSUFFLATOR**

Single-button control

... flow rates efficiently and without distractions, and saving gas wherever possible.

Connection to gas cylinder via dedicated cylinder hose

cylinders. This procedure is simple, fast and does not require any technical assistance.

#### Connection to hospital medical gas supply

unlimited supply of gas, and meaning you do not have to change gas bottles during complex endoscopic procedures.

#### Compact and lightweight

your existing endoscopy station without the need for an additional trolley. High flow rate allowing rapidly insufflate patients, especially during

Including Cylinder hose Gas Tube From same manufacturer

## **G SURGICAL UNIT WITH**

Fast Spark Monitor Technology High-Power Cut Support

Contact Quality Monitoring function Leakage-Protection Sensor

Cut Modes

Pure Cut: Continuous cutting mode with low coagulation effect Pulse Cut

Slow/Fast: Intermittent cutting mode which is commonly used for various

endoscopic procedures

Blend Cut: Continuous cutting mode with increased coagulation effect –  
ideal for dissection

### **Coagulation Modes**

Slow and  
deep

Spray Coag: Contact-free coagulation – optimal for POEM procedures

Forced Coag: Fast and effective coagulation

Power Coag: Fast and effective coagulation with increased dissection capability

Argon Plasma Modes

Forced Argon: Continuous argon plasma beam with steady power output for fast and

effective large area haemostasis and ablation

Pulsed Argon Slow/Fast: Pulsed argon plasma beam with intermittent power output

for a more controlled effect on tissue Comprising following accessories:

Wireless foot switch Including receiver and charger Imported System cart

Active cord for ET instruments, 8 mm

Connecting cable for disposable neutral electrode Split neutral electrode, disposable, 10 pcs Pressure reducer

Argon Plasma Probes (10)

**E**

**RECORDING SYSTEM 4K/3D**

the parameters for video compression specific to the characteristics of the video for an individual endoscope.

Mode supporting over-range for video processors

Mode enabling obscuring of noises at far points for 3D image (2D recording) and gastrointestinal endoscopes such as NBI.

Mode enabling replay of BT.2020 color for 4K image in BT.709 environment, etc.

GUI designs optimized to fit individual workflows and operation scenes

Start menu including operation items classified according to workflow

operations can be identified without hesitating during a procedure.

Appropriate operation feedback using the voice guidance function Voice

Voice notification that residual recording capacity is insufficient to prevent forgetting to exchange media

Operational tools optimal for operator/location

Operation using scope and foot switches from a sterile area

Infrared wireless remote controller enabling capture and start/stop of recording from a remote location

information is imported from the processor and associated with recorded images.

capacity of external media runs out, recording can be continued using the integrated hard disk.

Images can be exported in exFAT format and also recorded on large-capacity USB hard disk drives above 2TB.

Video exported on an USB hard disk can be loaded in both Windows and Mac environments.

Voice can be recorded in synchronization with video of patient procedures simply by connecting a microphone.

replay/confirmation of the voice volume before initiating a procedure.

Safety shutdown function

Preset function calling up settings defined by individual users

**F**

### **SUCTION PUMP FOR ENDOSCOPE**

Dedicated for Endoscopy featuring high vacuum high flow Vacuum: 95 Kpa, Max Air flow rate: 60 l/min

Impact resistant autoclavable jar

**G**

### **MAINTENANCE UNIT**

Maintenance unit with leakage tester for endoscopy

H

**ENDOSCOPIC WASHER & PRE-PROCESSOR (IMPORTED)**

Automatic High Pressure Washing & Cleaning capability Free standing type

Applicable scopes, Flexible endoscopes Number of reprocessed scopes 01/ 02 at a time Number of washing basin 01/02

Cleaning time setting, 1-10 minutes Disinfection time setting 5-60 minutes Display of Parameters

Compatible with quoted scopes

Complete with all accessories. Ready to use

**CABINET FOR SCOPE HANGING**

state-of-the-art Endoscope Storage and Drying Cabinets with full traceability for the safe storage of endoscopes.

Storage of up to 5 or 10 endoscopes Up to 31 days storage within 3 hours Secure mounting for endoscope control and light guide plug

**Imported**

## **BATTERY BACKUP UPS 3KVA**

Pure Sine Wave

I

## **THERAPEUTIC ACCESSORIES FOR:**

**UPPER GI**

FOR LOWER GI FOR ERCP

FOR EUS

J

## **HD ENDOSCOPIC ULTRA SOUND SYSTEM EUS)**

High Resolution Digital Color Ultrasound Scanner for endoscopic Examination and elastography with miniature probes for small ducts.

Operating modes 2D and 3D

Flow mode and combination, Power Doppler, Pulse wave Doppler and B-mode,

### **Image**

Full / Central screen

Full HD Display via HD-SDI and DVI ports Computing systems

Digital EUS system with alpha numeric keyboard and built in trackball

Compatible with EUS miniature probes Dual scanning Electronic and Mechanical LCD touch screen 6-inch or more

Freeze facility with key board or endoscope, foot switch

### **Electronic Scanning:**

Mode B mode, FLOW mode, PW mode

Scanning Radial scanning, curved linear array scanning Electronic scanning  
B mode

Transmission frequencies 5, 6, 7.5, 10, 12 MHz

Display range 2, 3, 4, 5, 6, 7, 8, 9, 12 cm Display processing Rotation  
Rotatable

Display area Radial scanning: Full circle, bottom sector, top sector, scroll

Curved linear array scanning: Fixed Direction Normal/Inverse

Cine memory Over 600 frames storable depending on the conditions  
Signal processing setting

Gain 20 steps, adjustable. Contrast 8 steps, adjustable.

STC 21 steps for each of 7 distances, adjustable. Focus Auto Preset Near,  
far

Focus setting Focus location adjustable. Focus number adjustable.

Image adjustment Enhance ON/OFF Compound ON/OFF

Electronic scanning FLOW mode

Mode COLOR-FLOW mode, POWER-FLOW mode,

H-FLOW mode.

Doppler signal processing setting

Velocity range Maximum 22 steps, adjustable (r 0.6 – r119.3 cm/s)  
depending on the conditions.

Flow gain 32 steps, adjustable. Display processing

Display mode Selection of B mode image, superimposed display or dual-  
screen display is possible.

Electronic scanning PW mode (Pulsed Wave Doppler) Analysis FFT method

Detectable depth 0 – 120 mm

Maximum detectable velocity ANGLE ADJUST 0q =72.9167 cm/s ANGLE  
ADJUST 60q =145.8333 cm/s (5.0 MHZ)

PW mode signal processing setting Gain 61 steps, adjustable.

## Pulse repetition

frequency Max 20 steps, adjustable (1 – 10 kHz).

Sample length 0.5 – 5.0 mm: 0.5 mm step

5.0 – 15.0 mm: 1.0 mm step Angle adjust Applicable ( $\pm 60^\circ$ ). Wall filter 12 steps

Display processing Baseline shift Applicable Invert The PW waveform display upside down. Sweep speed 1, 1.5, 2, 3, 4, 5 s/screen

Display mode B + PW, COLOR + PW, POWER + PW, H-FLOW + PW

## Audio output

Volume Adjusts the volume of the Pulse Wave Doppler waveform.

Measurement Distance Possible to measure distance between two points.

Area/circumference Measures area/circumference enclosed by caliper tracing.

## PW Measurement

Velocity, Acceleration, Flow volume, Time average velocity, Ratio-time, Ratio-velocity, Average velocity, Auto trace is available.

### Estimation Volume

(only Mechanical scanning function) Calculates the volume. Electronic scanning B mode

Image adjustment THE: (Tissue Harmonic Echo) 3 Types, adjustable (OFF, THE-P, or THE-R).

ultrasound contrast agent using dedicated B mode images. CH-COLOR Mode for viewing the harmonic component from the ultrasound contrast

a color image on a Fundamental image.

Preset (CH agent type) 2 types, adjustable (Middle or low). Frequency selection 2 types, adjustable (CH-R or CH-P).

CH-EUS mode signal processing setting Gain 20 steps, adjustable.

Contrast 8 steps, adjustable (CH-B only).

STC 21 steps for each of 7 distances, adjustable. The settings is common for Fundamental image.

Fundamental image setting Gain 20 steps, adjustable. Contrast 8 steps, adjustable.

STC 21 steps for each of 7 distances, adjustable. The settings is common for contrast image.

Display mode Selection of the CH-B or CH-COLOR

single-screen image or dual-screen display of the fundamental and CH-B or CH-COLOR images.

Movie recording Image format AVI

saving type GENERAL (for normal movie data) or TIC (for TIC movie data)

Maximum recording time 3 minutes (per one file)

TIC Analysis Analysis target modes When the CH-B mode or THE mode is activated

in the B mode.

ROI setting Number & Shape Max. 5, Ellipse

Operation Copy, Rotate, Delete, Interpolation, Move, and modify the ROI size.

(Forward/Backward), Review Speed (5 steps for each direction), Move frame (Start Frame / End Frame)

Averaged Intensity, Fitting Curve Electronic scanning ELST mode  
(Elastography)

Signal processing setting

STRAIN ADJUST 5 steps, adjustable. Pressurization state guide

Time variation of tissue strain is shown in the graph. Strain graph setting  
Graph position 2 kinds, adjustable (upper or lower).

Reference line 5 steps, adjustable (width of the reference). Sweep speed  
8 kinds, adjustable (1, 1.5, 2, 3, 4, 6, 8, 10 s).

Sector 5 kinds, adjustable (OFF, 1, 2, 3, 4).

Gain 10 steps, adjustable for the Y-axis scale of strain graph.

Strain ratio measurement The amounts of the strain and their ratio in two  
areas.

Mechanical scanning function Mode B mode

Scanning Radial scanning

Usable frequencies C5, C7.5, C12, C20, 7.5, 12, 20 MHz

Display range 2, 3, 4, 6, 9, 12 cm Display processing Rotation Rotatable.

Display area Full circle, bottom sector, top sector, scroll Direction Normal/Inverse

Cine memory Maximum 160 frames cine review function Signal processing setting

Gain 20 steps, adjustable. Contrast 8 steps, adjustable.

STC 21 steps for each of 7 distances, adjustable.

3D display Provides 3D display by reconstructing multiple continuous 2D images acquired from 3D scanning.

horizontal helical display images and oblique display images simultaneously during 3D examinations with the screen divided into four.

## K

### **ULTRASONIC LINEAR GASTRO VIDEO SCOPE**

Field of View: 100° or better

Direction of View: Forward oblique 55° or more Distal End Diameter: 14.6 mm or less

Insertion tube: 12.8 mm or less Instrument Channel: 3.7 mm or more Working Length: 1250 mm or more

Display mode: B-Mode, Color Doppler / Color Flow. Scanning  
method: Curved linear Array

Frequency: Multi frequency 5-12 MHz or better Scanning

Range: 180° or more

Angulations: 130°, 90°, 90°, 90° or better Connecting Method:  
Balloon Method/direct contact Air water valve for air and water

Narrow band imaging or equivalent Superb imaging quality

Improved forceps elevator design Increased penetration depth

L

## **MOTORIZED SMALL INTESTINAL VIDEOSCOPE**

Small-Bowel Entero Scope for covering the entire small intestine, with the advanced technological features as below:

Direction of view:	Forward viewing
Field of view	140° or equivalent or better
Depth of field	3 - 100 mm or equivalent or better
Distal end diameter	9.2 mm or equivalent or better
Insertion tube diameter	9.2 mm or equivalent or better
Channel inner diameter	3.2 mm or equivalent or better
Working Length	2000 or equivalent or better
Total Length	2280 mm or equivalent or better
Angulations:	Up 180°, Down 180°

Right 160°, Left 160° or better

### **Motorized Spiral Enteroscopy**

---

control & automatic pressure control Great stability of position and smooth insertion capability

Observation facility for greater contrast of blood vessels and mucosa

Should allow access to reach deep into the small intestine by pleating the small bowel onto the Enteroscope using a spiral segment

Should have integrated motor on the scope that can be controlled by the user with the help of a footswitch

Should have High Definition Image Quality with Narrow Band Imaging capability

All components of the Spiral Enteroscopy System should be latex free

Should be equipped with water jet function

Balloon/rotation Control Unit:

Set Pressure of Balloon:  $\pm 5$ Kpa or more Overtube x 50

With Standard Set of Accessories

## M

### NON INVASIVE LIVER SCANNING SYSTEM WITH PROBES

Fibroscan Expert™.

Non-Invasive quantitative liver stiffness, Spleen stiffness fibrosis measurement and

Quantification of fatty liver disease. Diagnostic and Management device.  
Vibration Controlled Transient Elastography (VCTE) System.

LSM\*by VCTE™ Liver Fibrosis

LSM by VCTE™ is unique, patented and validated for liver fibrosis assessment.

- It is the standard for non-invasive evaluation of liver stiffness.
  - 2000 peer-reviewed publications support the use of LSM by VCTE™.
- CCAP™\*\*Liver Steatosis

CCAP™ is unique, patented and validated for liver steatosis assessment.

- 330 international and peer-reviewed articles support the use of CAP™.2,3 SSM \*by VCTE™

Portal hypertension

assessment and can be used for risk stratification of patients with advanced CLD.

- It is a new marker for non-invasive evaluation of spleen stiffness.
- 50 peer-reviewed publications support the use of SSM by VCTE™ System

#### Quality Assurance Components

Reproducible 50-Hz/100-Hz(spleen) Shear Wave Actuator. 3 cubic-centimetre Cylindrical Explored Volume.

Automatic Skin-to-Liver-Capsule Distance Advice.

TM-mode Ultrasound display to localize Liver parenchyma. A-mode Ultrasound display to confirm strength of signal.

Liver Targeting Tool to affirm proper location of probe tip. Automatic “Invalid Measurement” analysis feature.

#### System Hardware Components

Integrated Application-Specific Console and Touch Screen 19” touch screen. Pre-installed Data Acquisition Software.

Pre-configured Data storage/database to optimize data management.

Ergonomic design allows operation from a seated position.

Range (IQR) calculated and displayed for LS. IQR/Median Ratio updated after each measurement.

## **System Output**

Individual patient report outputted to PDF format. Individual patient report outputted to XLS format.

Raw data stored in proprietary FIBX format. Connectivity

Ethernet Connector RJ 45. 3 USB 3.0 Ports.

HDMI Port

Guidance Probe Connector HDMI out put

1 auxiliary output (footswitch compatible) Ground Connector

M- PROBE (Standard Probe) INCLUDED IN ABOVE PRICE

Model: M+

The M probe is designed for the general population Ultrasound frequency is

3.5 MHz

Penetration through tissues over 25 to 65 mm depth. GUIDANCE PROBE

Designed on B mode localization for spleen stiffness measurement

Spleen shear wave frequency 100 Hz

Frequencies standard and Deep 1 presets: 3.0 MHz Deep 2 presets: 2.0 MHz

SMART EXAM CAP™ (Controlled Attenuation Parameters.) INCLUDED IN ABOVE PRICE

For Quantification of Steatosis in Fatty liver diseases

New computation method for ultrasonic acquired stiffness measurement.

Continuous CAP™ decreases variability by 42%

(compared to standard (100 mm capsule distance) SMART EXAM enhancing the spectrum of non-invasive methods for the examination and follow up of patients with liver disease

Metrological Data

Liver stiffness range with VCTE™ 1.5 kPa (Min) – 75.0 kPa (Max) Liver shear wave frequency 50 Hz

CAP™ RANGE 100 dB/m (Min) – 400 dB/m (Max)

Spleen stiffness range with VCTE™ 6 kPa (Min) – 100 kPa (Max) Spleen shear wave frequency 100 Hz

XL- PROBE (for Obese Patients) INCLUDED IN ABOVE PRICE Model: XL+

A more sensitive ultrasound sensor has been designed to enhance deeper signal. Ultrasound frequency 2.5 MHz for deeper signal.

validated: 2,000 plus peer-reviewed publications. Guideline's recommendation (EASL, AASLD, APASL, WHO)

Country of Origin: France Manufacturer: Echosens WARRANTY: one year.

## **N**

### **ESOPHEGEAL, ANORECTAL MANOMETRY & PH STUDIES APPARATUS**

A single hardware platform that has the capability for multiple diagnostic testing modules,

including:

High Resolution Impedance Manometry (HRiM) High Resolution Anorectal Manometry (HRAM)

A single hardware platform capable of supporting multiple technology configurations, including:

the user through the study leading to reduced study complexity and optimized data consistency

Application specific system cart, including:

Hydraulic movement allowing the user to stand when performing a study or in a seated

position to analyze the study; Integrated power isolation transformer; Large lockable storage drawer;

Printer shelf;

24" medical grade touch screen monitor Solid-State Catheter

Configurations:

### High Resolution Impedance Manometry (HRiM):

- 12 FR, with at least 32 true circumferential pressure sensors spaced at 1cm

intervals and 16 impedance channels spaced at 2 cm intervals; High Resolution Anorectal Manometry (HRAM)

- 12 FR with at least 23 Directional Pressure sensors, including 5 rings with 4 sensors positioned posterior, left, anterior, and right;

All solid state catheters should be protected against submersion in approved cleaning and disinfection.

Biofeedback, Pudendal Nerve Latency Testing, antro- duodenal manometry.

System must have a computer using Windows OS and Analysis Software

1. For HRiM Analysis, bolus transit should be able to be displayed either as a separate image or as an overlay with the manometric findings
2. The Analysis software should include the capability to automatically analyze manometric data using the Chicago Classifications or Conventional Manometric Analysis functions
3. Software must support real-time SyncVIEW using Wire Frame

## **Multi-Dimensional Display**

advanced wire frame multidimensional display technology included as an integral element of both the acquisition and

analysis software.

4. The report should contain a data table including all Chicago Classification analysis metrics,

including IRP, DCI, CFV, Distal Latency and Peristaltic Breaks.

5. The report should contain a data table including Conventional Manometry findings.

6. The report should provide LES Profile Data as well as Bolus Transit metrics (Impedance catheter only)

7. The Acquisition Software should provide the capability of viewing using either HREPT (High

Resolution Esophageal Pressure Topography), standard waveforms, SyncVIEW using Wire Frame Multi-Dimensional Display Technology

guide the user through the study leading to reduced study complexity and optimized data consistency

9. Analysis Software should be loadable on an unlimited number of PCs at no additional charge. No user license should be required.

10. Should provide free software updates for the life of the product restarting the recording, which should be automatically saved on the computer  
the position of the catheter, respiration, cough/squeeze, catheter pull-through, etc.

### **Operation requirement**

1. Ambient Temperature: 10 to 40 degrees C; Altitude: -400 to 2200 meters MSL

2. Power Specs: 100-230V; 50-60Hz Training

i. Cyber-coaching from a Registered Nurse experienced in motility

ii. Online training program with downloadable teaching modules

### **Comprehensive Warranty**

1. One years comprehensive hardware warranty.

2. Spare parts and required consumables should be available for a period of at least 5-years from the date of purchase

use Warranty including repair of original catheter when warranted claim is validated

4. The equipment should follow international standards and safety requirement. Should be US FDA approved

#### Technical Support

1. The manufacturer should provide 24/7/365 Technical Support
2. The manufacturer should have on-line diagnostic capabilities for the system and software, free of charge to the end user

**Note:**

**Biomedical  
Equipment  
Manufactu  
re:**