

Requirement and Specifications

Category 1

SN.	REQUIREMENT	QUANTITY
1	Handheld slit lamp	1

Category 2

SN.	REQUIREMENT	QUANTITY
1	Video Laryngoscope	2

Category 3

SN.	REQUIREMENT	QUANTITY
1	Color doppler ultrasound system	1



Technical specification (Category 1)

Technical Specifications mentioned below are of minimum parameter, products offered must meet these or exceed all requirements herein.

1. Hand Held Slit Lamp

Purpose of Equipment:

The Portable Slit lamp is a lightweight, single hand operated slit lamp. Functions as a desktop slit lamp but should be ideal for pediatrics, adult, carry-out or mobile hospital.



Figure:01

TECHNICAL SPECIFICATION

Microscope	
Total magnifications	10x & 16x
Objective Lens Working Distance	10x(100mm)/16x(80mm)
Eyepiece Dioptric Adjustment Range	+/- 7D or better
Slit Angle	+/- 60°
Illumination	
Slit width	0-11 mm or better
Slit length	0-11 mm or better
Filters	Heat absorbing, cobalt blue, green, Red free.
The illumination must be white.	
Light source	LED- High luminance
Luminance	1000 Lux

Charger & Battery Requirement

- 1) Li-ion battery 7.4 V/68Ah or suitable battery for the equipment.
- 2) Operation time: 2 hours or more (full charge at max luminosity)
- 3) Input voltage: AC 100-240v 50 -60 Hz
- 4) Output voltage: DC 12V/500mAh or suitable voltage for the equipment battery.

Standard Accessories

- 1) Carrying case-1pc.
- 2) Battery - 1pc (or) more
- 3) Battery charger- 1
- 4) Forehead support – 1 pc

DOCUMENTATION

- Detailed service manual and operation manual should be provided by the supplier or manufacturer.
- Original catalogue with detailed literature should be provided.

Note: The above given figure:01 is only for product identification.

Technical specification (Category 2)

Technical Specifications mentioned below are of minimum parameter, products offered must meet these or exceed all requirements herein.

1. Video Laryngoscope

Purpose of Equipment:

Video laryngoscopes are an excellent solution for difficult airways. Compared to direct laryngoscopy, video laryngoscopy offers improved glottic visualization, requires less force, and offers a better chance of success.



Figure:01

GENERAL SPECIFICATION

- Fiber optic Laryngoscope with LCD (Or better) Display.
- Monitor should be attached to the handle.
- Should have Anti-Fog & anti-shatter capability.
- Should have provision to insert all sizes of endotracheal tube.
- Should have a provision to introduce all sizes of suction catheters.
- The main body of the handle should incorporate an excellent grip.

- Reusable blades to be surgical grade stainless steel and autoclavable Supplied in protective case.
- Should be light weight.
- The unit must have a minimum warranty of 2 years.

TECHNICAL SPECIFICATION

Monitor	
Display Type	3 Inch LCD
Minimum Resolution Ratio	640X480(RGB)
Viewing angle	>60°
Display up &down rotation angle	0° to 270°
Power consumption	<2W
Camera	
Illuminance	>150 lux
Minimum Resolution ratio	1280X720px
Image &Video features	
Image/video function	Required
Output	USB output for storage of Video/Image
Storage	Micro SD card/8GB
Video/photo play back	Required
Energy Source	
Battery Type	Rechargeable Li-ion battery
Minimum capacity	1350mAh
Backup time	140minutes
Charging Time	Less than 150 minutes

ACCESSORIES

1. Reusable Miller blades of size 0,1
2. Reusable Macintosh blades of all sizes.
3. Carrying case.
4. Spare lamp if required.

DOCUMENTATION

- Detailed service manual and operation manual should be provided by the supplier or manufacturer.
- Original catalogue with detailed literature should be provided.

Note: The above given figure:01 is only for product identification.

Technical specification (Category 3)

Technical Specifications mentioned below are of minimum parameter, products offered must meet these or exceed all requirements herein.

1. Color Doppler Ultrasound System

TECHNICAL SPECIFICATION

- It should be robust state of art, fully digital high end latest Color Doppler Ultrasound System with an advanced architecture, capable of precision beam forming, capable of performing imaging applications in Abdominal, OB/GYN, Fetal Heart, Musculoskeletal, Small parts, Urology, Breast, Cardiac, Liver, Pediatric studies etc.
- System should have latest Beam forming technology to ensure no compromise between Temporal and Spatial resolution.
- System processing channels must be more than 6,500,000.
- The system should perform 5000 frames/sec. or more Also, system should support transducers of frequency range from 1-20Mhz.
- High-definition acoustic zoom for enlarging sections of 2D and color flow images with more acoustic information for greater clarity and detail while maintaining an optimal frame rate.
- System should have 256 gray shades.
- System should have 4 universal active probe ports.
- System with Digital TGC control is preferred.
- System should have Dynamic range 320 dB or more.
- System should have intuitive user interface to complete exams with fewer keystrokes.
- System can have personalized setup tool to customize user and patient protocol.
- System should incorporate facility for high resolution 2D, M-mode, PW, Color Flow Imaging, Color Power Angio imaging, Power Pulse Inversion Harmonics, Directional Color Power Angio imaging modes, Elastography and Comprehensive 4D Packages.
- The system shall have combined or multi-imaging mode capability.
- **The system shall also support the following:**
Panoramic real time Compound Imaging, Full Spectrum Imaging, Tissue Harmonic Imaging, Trapezoidal Imaging, Quad Imaging, Dual Imaging in Horizontal Split, 2D/C Live Imaging, Automatic PW Doppler Adjustment and Auto 2D Adjustment.
- System should have feature to Volume shade imaging for skin tones and shading to improve visualization of 3D/4D with variable light source time.

- System should have fully digital real time Multi recording with live voice annotation recording in DVD.
- System should have scan depth of 2 to 40 cm or more. Please specify through data sheet.
- System should have facility for real time or frozen, pan or point zoom.
- System should have cine loop review minimum 64,000 frames and Loop Review for 98,000 Lines. Please specify through data sheet.
- System should have panoramic extended field of view.
- System should have Fetoscopy view technology that displays detailed volume rendering, enabling users to easily identify subtle anatomical structures with change in position of light source. Anatomies look realistic when viewed in color.
- System should have a function for non-invasive assessment of the stiffness of tissue/lesions in various applications.
- System should have function to visualize microcirculatory blood flow.
- System should have a function to auto measure fetal growth parameters while executing exam including 2D NT
- System shall be able to upgrade for automatic tool to derive 9 planes of fetal heart with color from one volume sweep. Documentary proof to provide with datasheet.
- System should have automatic tool for deriving 9 planes for Fetal Central Nervous System.
- System Should have Auto measurement for Fetal Biometry (BPD, HC, AC & FL)
- System should have Advanced Image Processing algorithm to analyze between targets and artifacts so as to sharpen target anatomy, reduce the sparkle & artifacts to improve image quality.
- It should have extensive software and automatic and user programmable calculation package for gray scale, color Doppler, 3D and 4D applications.
- System should be capable to do Contrast Enhanced Ultrasonography.
- Should have Facility to Side-by-side comparison of previous ultrasound and other modality exams during live scanning.
- System should have at least 23" or more flat panel Monitor (preferably LED), should be able to view in all angles and all light conditions.
- System should have more than 12" wide tilting touch screen control which allows to rotate and zoom while reviewing the 3D image.
- Console height should be adjustable for user's comfort.
- System must contain inbuilt gel warmer & can have storage shelf.
- DICOM output facility without additional Hardware or software.
- System should have central lock for all four wheels.

- System should have built in Image Management Software, for off line application when patient has gone after examination, such as Image Manipulation, Multi Planner reformatting, surface & volume rendering etc. It should have SSD hard disk memory of 512 GB or more with built in CD/DVD read write.
- The device should store images in DICOM, JPG, MPEG, BMP and AVI formats for maximum flexibility.
- System should be able to display hemodynamic color flow (Alpha blending).
- System should have feature to detect very low intensity vascularization.
- System should have BIRADS based breast lesion classification tool.
- System should have TIRADS based thyroid lesion classification tool.
- System shall be equipped to perform elasticity imaging using latest available technology in a variety of application (liver, breast, prostate) and on a variety of transducers (convex, linear and endo-cavitary) accompanied by necessary quantification package software.

Note: The genuine product Data Sheet should be provided to validate the technical specification.

System should be provided with following transducer	
1	Single Crystal Convex Abdominal probe with Band width of 1MHz to 6MHz or more (Single Crystal Probe will be required for higher frame rate and deep penetration, also capable of doing Shear wave Elastography).
2	Single Crystal Linear probe for breast and MSK 3-14 MHz with automated quantification for easier identification of breast Neoplasm.
3	Dedicated Trans-Rectal/Trans vaginal Probe with Band width of 2MHz to 11MHz with more than 180 Degree Angle.
4	Single Crystal Convex Volume (4D) Probe, minimum frequency should be 1 MHz to ensure deep penetration. (Single Crystal Technology Probe will be required for higher frame rate and deep penetration)

Note: All standard and optional probe configuration should be specified in details.

POWER SUPPLY

- Power input to be 220 - 240 VAC, 50 Hz fitted with UK plug

STANDARD ACCESSORIES

1. Online UPS of 1KV for at least 30mins backup.

2. A good quality thermal printer.
3. Appropriate probe cleansing solution adequate for at least 6 months.
4. Heavy duty covers for cables of probes to safeguard against rodent damage

SAFETY, STANDARD, WARRANTY AND TRAINING

- Should be US FDA or CE approved product.
- Manufacturer should have ISO certification for quality, standards.
- On site comprehensive training for concern staff and application support services till customer satisfaction with the system.
- Type of protection against electric shocks -- Class I Degree of protection against electric shocks for ultrasound probes Type "BF" For ECG electrodes Type "CF"
- The system must have minimum warranty of 3 year since date of installation.

DOCUMENTATION

- Original catalogue with detailed literature should be provided.
- User manuals & Service manual should be supplied.

MAINTENANCE &SERVICEABILITY

- Remote Service Network Connectivity.
- Online phone Support.
- Clinical application support.

Note: Any configured software upgradation during the warranty period should be done by the vendor / Supplier / manufacturer at free of cost in due time.