Arthroscopy System

1. 3-Chip, 4K Endoscopic Camera System.
2. 300W or more LED Light Source with 2 Fiber Optic Cables.
3. Medical Grade 31.5” 4K OLED Monitor
4. Endocart
5. Recording System
6. Shaver System
7. 4K Arthroscope
8. Arthroscopy Fluid Management Pump

Technical Specifications:-

1. 3-Chip, 4K Endoscopic Camera System -Qty 1 Set

The system should be high definition, with progressive scan, 3-chip-endoscopic video camera with minimum resolution of 3840 x 2160p to guarantee genuine 4K.

The system should consist of **one Camera control unit/ console and two camera head heads.**

* 1. It should have Pure digital signal with high definition video of 3840 x 2160p or more (min) native resolution and progressive scan technology both on camera head and console
	2. Should have 9 dedicated Surgical Specialty Settings.
	3. CMOS camera technology
	4. Should have optical Zoom.
	5. It should be LCD Touch Screen based.
	6. The system should have Digital Zoom to enhance the quality of Image size & cross specialty standardization of the camera system, regardless of the telescope used.
	7. The camera head should be able to capture images and record video sequences using them.
	8. System Should have facility to offer various visualization modes for surgery and diagnosis by shifting the color spectrum light for recognition of finest tissue structures and their differentiation.
	9. Ultra High Definition Video Image processor should have excellent image quality with progressive scan with 50 or 60Hz, which offers higher picture quality & eliminates virtually all motion artifacts.
	10. Picture in Picture of visualization modes.
	11. Lens : Integrated Zoom Lens f = 15-24mm
	12. Color Gamut 4K/UHD
	13. Control Button : 3 or more (at least 2 of them freely programmable)
	14. Input : Keyboard / Touch Screen input for character generator

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* TECHNICAL SPECS
	1. Imaging System:-1/2.8″ Progressive Scan CMOS, Ultra-High Definition
	2. Scanning System:-Horizontal: 135.00 kHz, Vertical: 60.00 Hz
	3. Video Outputs:- Two HDMI 2.0 outputs, Formats: 1080p (HDTV), 4K UHD (3840 x 2160)
	4. Mounting:-Endoscope eyepiece used with C-mount coupler,C-mount camera head used with C- mount scopes, (C-mount coupler/scope thread: 1-32″ UN 2A)
	5. Auto Shutter Range:-1/60 – 1/22,478 second
	6. Input Electrical Ratings:-100–240V~ 50/60Hz 1.2A
	7. Camera Head Cable: 10 ft (3.05 m) sealed cable
	8. Classification: - Class I Equipment, Continuous Operation, Type BF Applied Part, Ingress Protection, IPX7—Protected against the effects of temporary immersion in water (Camera Heads)
1. LED Light Source with Fiber Optic Cable
2. Should be a separate console – Qty 1
3. Light outlets: 1
4. It should have Standby mode which will reduce light output to a minimum, preventing the light cable from generating excessive heat.
5. It should have Electronic Scope Sensing Technology (ESST), a special safety feature that helps prevent accidental burns caused by a light cable that is not connected to the scope.
6. Universal Jaw Assembly to adapt any make of Fiber Optic Cable.
7. It should have Electrical configuration.
	1. Primary: 100 - 240 VAC, 50/60 Hz, 300W or more
	2. Fuses (2): 5.0A 250V
8. Should be supplied with Fiber optic cable of 5 mm to 5.5 mm diameter. Qty-2
9. 31.5” Medical Grade 4K OLED Monitor
10. The monitor should be minimum 31” – 41” diagonally.
11. The resolution of the monitor should be 3840 x 2160.
12. The Aspect Ratio of the monitor should be 16:09
13. Panel Type should be IPS – In-Plane Switching which leverages liquid crystals aligned in parallel to produce rich colors.
14. Surface should be anti-fingerprint and anti-reflection.
15. There should be protection glass on the surface.
16. The monitor should be DICOM Compliant.
17. Monitor should have HW Calibration.
18. Monitor should have media profile of HDR10, open High Dynamic Range video standard.
19. The monitor should have these input terminals - HDMI x1, DisplayPort x1, DVI x1, 3G-SDI x 1.
20. The monitor should have these output terminals - DisplayPort x1, DVI x1, 3G-SDI x 1.
21. The monitor should have both Picture by Picture (PBP) and Picture in Picture (PIP) modes.
22. Weight of monitor (without stand) should be in range of 10-15 Kg.
23. Monitor should have Mirror Mode & Rotation Mode
24. Monitor should have Failover Input Switch

Monitor should be USFDA/CE approved.

1. It Should Optimizes\_ the visualization of the Advanced Imaging Modalities.
2. Should Have 4X the resolution of a 1080p image
3. 4K pixel density should offers a bright colorful viewing experience
4. On-screen display with customized surgeon profiles
5. Color Depth 8 bit
6. Max observation angle: 178 degree vertical horizontal

Native Resolution : 3840 (H) dots x 2160 (V) lines Display Colors : 1,073,741,824 colors

Pixel Pitch : 0.1704 mm x 0.1704 mm Response time : Rise time: 14 ms , Fall time : 5 ms

Viewing angle horizontal/vertical: 178° (Right/Left), 178° (Up/Down) Brightness : 800 cd/m2

Contrast : 1300 : 01 : 00

Input : 1 x DVI, 1 x HDMI, 1 x Display Port, 1 x 3G-SDI

Output : 1 x DVI ,1 x Display Port, 1 x 3G-SDI Connectivity : USB (1 upstream, 1 downstream)

1. **Mobile Video trolley**
* Same make
* With Lockable wheels
* Minimum 5 Shelves
* With Drawers
1. Recording System
2. It Should have Full HD 1920 x 1080 video recording
3. It should have 3.5" or more LCD monitor for Live View, Playback or GUI
4. It should come with auto sensing video connections and automatic video resolution detection to make set up quick and easy.
5. The front control panel should allow users to intuitively record videos and photos in crystal clear HD.
6. A built-in hard drive should be included for reliable recording, data back-up and users should also simultaneously record to USB memory and USB hard drives to archive, share and play back on other devices and locations.
7. Multiple HD & SD inputs/outputs (SDI, DVI-D, S-Video and Composite)
8. Simultaneous recording to multiple media (up to 2 External USB drives & 1 Internal HD)
9. Networking (FTP & CIFS) RJ45 10/100/1000 Ethernet
10. Compliance with Medical Standards
11. It should have Internal Hard Drive minimum 500GB
12. Shaver System/Radio Frequency System Qty 1 Set

# Control Console Unit

* + 1. The LCD touch screen shall display error codes, mode of operation, cutting speed and power levels.
		2. The system shall have footswitch for ease of operation for the surgeon.
		3. The system console shall be able to maintain brightness and contrast on the console.
		4. Motor output Maximum speed of 12000 r.p.m.
		5. Motor maximum oscillation 3000 rpm
		6. Auto identification of Shaver cutters and probe by console.
		7. Common Foot Switch operation for Console
		8. Toggle function on Footswitch for easy switchover programmable
		9. System should conform to IEC Requirements of Medical Safety
		10. Customizable interface software for making user preference files.
			1. Generator- Qty One
			2. Footswitch- Qty One (or two as applicable)

# Footswitch

* + 1. Toggle function footswitch for easy switch-over
		2. Water-tight
		3. Speed Control options
		4. Customizable Button Mapping – Programmable as per User needs
		5. Should control forward, reverse and Oscillation needs.

# Shaver hand piece: Quantity 2

* + 1. Should have hand controlled Option with colour coded buttons
		2. Should have the speed of max 12,000 rpm
		3. Should have the three mode forward, reverse and oscillating
		4. Should have the suction control in percentage
		5. Should be autoclavable
		6. Single handpiece for all shaver blade sizes

Compatible Accessories (Disposables):-

1. Aggressive Cutter size 4mm to 5mm for resection of Meniscus, Cartilage and Synovium Qty 30
2. Barrel Bur 6 fluted/12 fluted for Sub acromial decompression Qty 10
3. Round Bur 6 fluted/ 12 fluted Qty 10
4. Aggressive cutter 2.5mm to 3.5mm Qty 10
5. 4K Arthroscope
6. 4.0mm –30 degree with wide angle and speed lock mechanism Qty 2
7. 4.0mm –70 degree with wide angle and speed lock mechanism Qty 1
8. 2.7mm –30 degree with wide angle and speed lock mechanism Qty 1
9. Sapphire tip for prevention from scratches
10. Length :140-180mm
11. 3 layered tube design for sturdiness and better results
12. Compatible 5.8 mm operative cannula with 2 rotating stopcocks Qty 1
13. Compatible Pencil tip obturator Qty 1
14. Compatible Obturator and Cannula Qty 1 each
15. Arthroscopy Fluid management Pump Qty 01
16. Arthroscopy Pump to improve visualization for Arthroscopy procedures through fluid management
17. High flow rate of up to 2 liters / minute for procedural speed and efficiency.
18. Single Button Settings for various Arthroscopy procedures like Knee, Shoulder, Ankle, Hip
19. LCD Digital display with short-cut keys for all settings
20. Automatic instrument recognition system
21. Must have easy to use customizable footswitch. In addition to the Hand control features, the footswitch can also be used to control the drain, clear and vacuum functions.
22. Limited reuse inflow-outflow tubing
23. Pump Should have wash Function
24. Autoclavable Remote control for surgeon to operate from the sterile field.
25. Tubing (Inflow & out flow) Qty 20

# Please Note:

1. All the products should be from same manufacturer with exclusive marketing rights.
2. Should include warranty for 5 years. CMC for 5 years
3. Spares should be available in market for 15 years after supply of equipment.
4. Service centre for the products should be available in the country
5. The products should have been supplied in atleast 2 Government institutes of repute. Consumer satisfaction report should be attached.
6. Company should be able to provide stand by unit if the repair duration for any fault is more than 2 weeks.