

Specifications for ENT MicroDebrider, Mastoid Micro motor and Stapes Drill with Suction Machine

- Should be a versatile powered system, having ENT - Mastoid, Stapes & FESS applications
- Should have in built user friendly interactive menu and illustrative help guide
- Should have large touch screen monitor
- The various parameters should be able to adjust either from touch screen panel or from the multifunction foot switch
- Should be able to connect multiple hand pieces at a time like
 1. Otology (Micro / Mastoid - drills (Up to 60000 / 75000 RPM)
 2. FESS Debrider 1000 to 5000 / 7500 RPM in oscillation and 1000 to 12,000 / 30000 RPM in forward mode)
 3. Stapes drills (1000 to 16000 RPM)
- Console should recognize the various hand pieces and automatically adjust the settings accordingly
- Should have inbuilt pumps each for Irrigation (5CC / Min to 100CC / Max) and Cooling / Endo Scrub.
- Should have multifunction ergonomically designed foot control with light emission for easy identification
- Should be able to control Speed / Mode, Forward / Reverse toggle, Active hand piece change from the Foot control itself
- Should have in built Lens cleaning system (optional)
- Should have provision to integrate Intra-Operative Nerve Integrity Monitor with the Otology drill (optional)
- Should have the provision to mount the console on various sizes of IV pole
- Should have the option to work without foot peddle in emergency
- Should have two pumps
- Should be able to operate different kinds of Hand pieces and high speed Drills.
- There should be provision to operate the system with an emergency switch in-case of foot switch failure
- Should Provide User Manual & Power supply Cable.

MicroDebrider H/P with Consumables / Disposables Only

- The debrider Hand piece should be able to operate in forward at speeds up to 12000 / 30000 RPM and 7500 / 5000 RPM in oscillating mode.
- The debrider hand piece should be capable of accepting blades and burs for various surgical procedures of ENT, Head & Neck.
- Fingertip control to allow blade tips to rotate 360°.
- Should be able to adjust the irrigation levels of bur or blade with the touch of a button.
- Should be suitable for wide variety of procedures ranging from frontal sinusotomies to ultra -low speed oscillation for delicate airway cases.
- Debrider blades ranging from 0°, 40°, 60°, 90° & 120° Angulations for various ENT procedures.

Micro / Mastoid drill H/P with Consumables / Disposables Only

- Mastoid drill should be able to operate 1000 to 60000 / 75000 rpm
- Otolaryngology Drill hand piece with straight & angled attachments for mastoid procedure with 6 / 7cm length.
- Micro / Otolaryngology drill bits / Burs
 - Cutting sizes – 0.5mm to 6mm – 2 each (Total of 14 Nos)
 - Diamond sizes – 0.6mm to 6mm – 1 each (Total of 7 Nos)
 - Should Provide Irrigation Tubing - 5 Nos.

/ Stapes Drill System H/P with Consumables / Disposables Only

- Skeeter hand piece should weigh 2 oz.
- Should have Variable speed, footswitch-controlled
- Should have Speeds up to 12,000 RPM
- Should have Self-powered or use with IPC console with optional adapter
- Should Provide Diamond burs assorted 0.6mm, 0.8mm, and 1mm - 2 no's each color-coded Oto-Flex bur

High End Suction Machine

1. Air flow rate of pump: 55 l/min
2. Maintenance free membrane pump
3. Regulated Vacuum with Max of: -98 kPa (-980 mbar / -735 mmHg)
4. Power consumption: approx. 100 W
5. Voltage: 230 V ~ 50-60 Hz:
6. Noise level: 46 dB (A) @ 1 m (acc. to ISO 7779)
7. Operating time: Continuous operation for 6 days approx. ...
8. Ambient conditions during operation:
 - Temperature: 10 to 32 °C
 - Humidity: 20...80 % without condensation:
9. Approximate dimensions (H x W x D): 940 x 500 x 390 mm
10. Weight: Around 30-35 kg
11. Mobile system mounted on anti static 4 lockable castors
12. Standard rail holder for mounting accessories
13. Provision for **one 3 liter & one 5 liter jars** with changeover lever. Should be supplied with additional canisters
14. Classification: degree of protection: type BF; protection category: IPX1; Protection class: I; CE or EN certified product.

Accessories

1	Direct Docking System (DDS) collection container: Autoclavable. with hose holder, plastic, 5 litres & 3 litres: 2 sets.
2	DDS collection lid complete set consisting of: <ul style="list-style-type: none"> ○ DDS jar lid with gasket ○ DDS jar handle ○ DDS splash protection ○ DDS hose adapter set. Ø 6 mm + Ø 10 mm DDS bacterial filter / over-suction stop
3	Foot switch installation set.
4	Foot regulator set:
5	Deposit tray of stainless steel:
6	Hose support of stainless steel:
	Consumables
1	DDS disposable bacterial filter/over-suction stop- 100 nos per unit
2	Autoclavable, silicone suction hose, Ø 6 mm, L = 2 m, (136 °C) 5 nos per unit
3	Autoclavable, silicone suction hose, Ø 10 mm, L = 2 m, (136 °C) 5 nos per unit.

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5. TECHNICAL SPECIFICATIONS FOR COBLATION SYSTEM

1. Controlled ablation of tissues based on low temperature B1-polar radiofrequency technology in electrolytic solution like normal saline. The system should not have any need for the secondary patient grounding pad
2. Operating temperature must be in range between 40 to 70 degrees
3. The generator should have integrated saline pump for continuous irrigation of the surgical site
4. Output should voltage driven and not power driven
5. The output voltage setting should be controlled by regulation on the generator setting from 1-9.
6. The generator should have facility of foot switch for convenience & ease of use.
7. System should have facility to adjust Coblation & Coagulation with different settings.
8. The generator should be able to take at least 6 to 8 different wands for different minimally invasive procedures of FNT
9. The RF generator should be able to take multiple ranges of probes for Tonsillectomy, turbinate reduction, adenoids, soft palate, Laryngeal, Head & Neck related applications
10. The Coblation probe should have multiple electrodes technology that will allow a uniform production of plasma
11. Probes should have integrated cable
12. Electrodes should be made of tungsten for enhanced probe life.
13. Probes should have a malleable shaft.
14. Suction probes should have integrated IV tubing.
15. Probes should have dual function of Coblation & Shrinkage.
16. Probes should have gravity defying saline delivery system to ensure saline reaches tip irrespective of probes orientation.
17. Probe for Laryngeal application should have at least 6 inches of working length & dip diameter less than 4 mm.
18. The system should ensure bloodless & safe minimal invasive procedures for patients

1 SUCTION WANDS

Bur	specification	Quantity
Diamond bur	Length - 70mm. Dia - 2.3mm	5
Diamond bur	Length - 70mm. Dia - 3.1mm	5
Diamond bur	Length - 70mm. Dia - 4mm	5
Cutting bur	Length - 70mm. Dia - 2.3mm	5
Cutting bur	Length - 70mm. Dia - 3.5mm	5
Cutting bur	Length - 70mm. Dia - 6mm	5
Skull base drill bits	Length - 15cm	20

Technical Specifications for 4K Ultra ENT Imaging System – 2sets

Ultra High Definition ENT Imaging system will consist of the following items:

All items should be Medical Grade. It should provide 4 times more information than Conventional Full HD imaging system.
The complete Optical Chain should be 4K for Optimized Imaging.

- 1) Full 4K video image processor
- 2) Powerful 300W Xenon light source
- 3) 4K camera head
- 4) 55" 4K – UHD (3840 pixel) medical grade monitor
- 5) Ultra HD Sino scopes
- 6) Light Guide Cable
- 7) Trolley to accommodate all equipment
- 8) HD Recording Device

1) Full 4K High Definition Video Image processor: (Should have following specifications)

- A full 4K high definition processor should have native resolution of 4096x2160 pixels. System Should also provide 3840 x 2160 or 1920 x 1080 should also be selectable. (Should provide both 4K output and HD output)
- It should have Touch panel operation for easy control.
- Rich Color pick up: System should provide color gamut of ITU-BT2020 and should also Provide option of ITU-BT709
- Should have AE (Automatic Exposure) – Iris function.
- Should provide at least 10 individual User preset.
- The System settings, Color Tone, color Mode, contrast, enhancement etc. should be held in memory even after video system processor is switched OFF.
- Should have compatibility for selecting 3G-SDI or HD-SDI signal output (transmission method).

2) Powerful 300W Xenon Light Source: (Should have following specifications)

- A Powerful 300 Watt Xenon Lamp with emergency lamp facility
- Automatically adjusts light intensity to achieve ideal illumination
- Built-in special filter for early cancer detection
- Backlit front panel indicators.
- Optical image enhancement to view the capillary vessels and fine patterns in the superficial Layer mucosa for early detection and recurrence of lesions.
- Automatic switching to emergency lamp

3) Full 4K Camera head : (Should have following specifications)

- The Camera Head should incorporate Optical fiber transmission providing 4K resolution through thin cable.
- Should have Xmor-R CMOS sensor providing high sensitivity and Less noise for clear image
- Should provide One-touch Auto Focus Function
- Should provide Electronic Zoom Function (button controlled) – x2.0 electronic zooming in 6 steps (x1.0, x1.2, x1.4, x1.6, x1.8, x2.0)
- Should be immersible in disinfectant solution and sterilization through ETO & Sterrad.
- Should have Focal Length $f=23.5$ mm

4) 4K Medical Grade Monitor: (Should have following specifications)

- 4K Medical grade 31 inch UHD LCD/LED backlit monitor with ultra -high definition resolution 4096x2160. Monitor

- should have 17:9 aspect Ratio.
- should provide wide color gamut – BT2020
- should have multi-image display format – Rotation image, Side-by-side, Picture-in-picture and Picture-out-picture and flip Pattern to rotate the image.
- Should have various input/output terminals, including 3G/HD/SD SDI, DVI-D,
- BNC(x5) and HDMI.
- Monitor should have Opti-contrast Panel providing higher contrast image and less color blurring.
- Monitor should preferably run on AC (without DC adapter) 100V – 240V, 50/60Hz.

5) Ultra HD Telescope: (Should have following specifications)

- 4mm - 0 degree, 30 degree 45 degree & 70 degree Each , FOV : 115 degree, Working Length: 176 mm
- Telescopes should incorporate - ED Glass Lenses for High resolution Imaging & less Chromatic aberration.
- Completely distortion free.
- Homogenous Light distribution in the peripheral region.
- Eyepiece type connection – for uniform compatibility.
- Large field of view and depth of focus.
- Fully Autoclavable type.

6) HD Telescope : Should have following specifications :

- 2.7 mm Telescope – 0Deg , 30Deg and 70 Deg each & 10 mm Telescope – 70 deg and 90 Deg Each
- Completely distortion free
- HD Optics for better contrast & color reproduction
- Large field of view and depth of focus
- Detachable Eyepiece type
- Autoclavable type

7) Light Guide Cable, Must be Autoclavable: (Should have following specifications)

- High Resistance protection tube.
- Reduced diameter with high fiber density.
- Small bending radius for comfortable use.
- 3 Meter in length.
- Should be ROHS compliant.

8) Trolley to accommodate all equipment

9) HD Recording Device: Should have following specifications:

- A high definition video recorder system with real time recording facility for videos & still images
- Should have internal hard disk drive of 300GB or more and should have facility of recording on Blu Ray Disc / DVD Disc or USB memory stick if required by user.
- The recorder should have Following inputs of HD-SDI, Composite video & S-video inputs for recording from various sources.
- The recorder should have one output each for HD-SDI, Composite video & S-video for routing the image if required
- Should also have an facility for one channel audio recording in real time with Endoscopy image
- The recording should be MPEG 4 AVC / H.264 format with a maximum native resolution of 1920x1080 pixels depending on the input selected.

Telescopes

1. 0 degree telescope
2. 30 degrees telescope
3. 45 degrees telescope
4. 70 degree telescope

All this scopes should be CE certified.

Cautery Machine:

Should have Microprocessor control-based Electro Surgical Generator with different level of Endo cut modes

- 400 Watts (390 kHz)
- Should have 12 or more modes of cutting with blend modes (mixture of cut and coagulation)
- Should have 4 or more modes of coagulation 4 or more modes of bipolar including polar, Micro, Macro and Bipolar cut.
- Should have 4 or more modes of Ecut with blend modes (mixture of cut and coagulation)
- Should be able to do Monopolar and Bipolar underwater cutting
- Should have Three independent display to shows cut, coagulation and bipolar power levels
- Should have Automatic recognition of patient plate(single/ split) • Should have Patient plate contact level monitoring
- Should have Monopolar and Bipolar REMOTE function to adjust power levels using control accessories from the sterile field
- EZCut system should automatically assist initial cut power levels.
- Should have High cut function to provide a high efficiency cut with enhanced performance in low and high impedance tissues
- Should be Compatible with Argon Plasma Coagulator
- Weight less than 5kgs
- CE certified
- Should be supplied with 1. Two pedal light weight foot pedal for Monopolar Cut/Coagulation
2.Single pedal light weight Foot pedal for Bipolar 3. Reusable end cable for endcut procedure.

SPECIFICATION

PAPR - Positive Air Pressure Respirator

(Loose fitting powered helmet and hood unit)

PAPR specification

Material of construction	: Aluminum or composite ABS
Air flow	: 6 - 9 CFM
Weight of face piece	: 600 g
Weight of PAPR filter unit	: 1900 g
Battery life	: 8-10 hours
Warranty	: 2 Years
Filter	: HEPA H14 Filtration type 99.95 %
Pre filter	: 5 micron composite
Seal	: Silicon
Charger unit	: 1.5 Amp current 12.6 V DC 220V input
DB	: PAPR blower unit 55 db
Sizes	: Small / Medium / Large
Available	Headpiece PAPR filter
Air PPE Cooling adaptor	Supplied with unit
Antifogging Air flow pattern	

ENT INSTRUMENTS

SI No	Details
1	Blakesley forceps
2	Through cut forceps – straight & upturned
3	Ball probe
4	Suction tips – various sizes
5	Giraffe forceps
6	Kerrisons punch
7	J curette
8	Freer's mucoperichondrial elevator
9	Ostrums back biting forceps
10	Huiewiezer forceps
11	Suction elevator
12	High powered suction- 0.5kW
13	Nasal speculam Hartman/nasal speculam killian
14	Sickle twin elevator
15	Sickle knife
16	Antrum curette
17	Suction Tube Curved (Set of 5 sizes)
18	Suction Tube Lampert/Ferguson (Set of 5 sizes)
19	Blakesley Straight /45/90
20	Nasal Scissor
21	Blackbitting antrum punch
22	Antrum Grasping Upward/Downward
23	Nasal Through Cutting STR /45
24	Nasal Tilley's Forcep
25	Luc Nasal forcep
26	Kerrison Punch Upward/Downward Upturned
27	Giraffe forcep Horizontal/vertical
28	Ball Probe D/E
29	Suction Cautery
30	Suction Elevator

For above mentioned items prices should be quoted individually