



Government of West Bengal  
Office of the Principal  
Nil Ratan Sircar Medical College  
Kolkata – 700014; Phone: 033-2286-0033  
Website: [www.nrsmc.edu.in](http://www.nrsmc.edu.in); e-mail: [principalnrsmc@gmail.com](mailto:principalnrsmc@gmail.com)

Memo No. NMC/STORE/ 5844

Dated: 01/09/2021

**Re-E-TENDER NOTICE (NIT No: 31 / 21-22) FOR PURCHASE AND INSTALLATION OF  
EQUIPMENTS FOR DIFFERENT DEPARTMENT OF  
NIL RATAN SIRCAR MEDICAL COLLEGE, KOLKATA - 700014.  
(Through Pre-qualification)  
(Submission of Bid through NIC e- tender portal)**

The Principal, Nil Ratan Sircar Medical College, Kolkata – 700014, is going for e-Tender on behalf of the Health & Family Welfare Department, Government of West Bengal for obtaining the rate of equipment as per list from bonafide Manufacturer/Direct Importer/Authorized Distributors. Necessary earnest money to be submitted for participation in the Tender is appended in the table below. Exemption of EMD is applicable to agencies having valid, item specific certificate issued by appropriate authority of Govt. of West Bengal.

1)

Serial No	Name of equipment	Department	Quantity	Earnest Money
1	Digital Orthopantomograph Machine	Dentistry	1 pc	Rs. 50000.00

2)

Serial No	Name of equipment	Department	Quantity	Earnest Money
1	Pediatric & Adult Rigid Bronchoscope & Esophagoscope set with different optical forceps for foreign body removal	ENT	01 pc	Rs. 50000.00

3)

Serial No	Name of equipment	Department	Quantity	Earnest Money
1	Intra Vascular Ultrasound with Integrated Fractional Flow Reserve (FFR) System	Cardiology	01 pc	Rs. 50000.00

4)

Serial No	Name of equipment	Department	Quantity	Earnest Money
1	Micro Reciprocating Saw with Electric Motor Control Unit	Plastic Surgery	01 pc	Rs. 30000.00

5)

Serial No	Name of equipment	Department	Quantity	Earnest Money
1	Loupes	Renal Transplant Unit	02 pc	Rs. 10000.00

6)

Serial No	Name of equipment	Department	Quantity	Earnest Money
1	APC Cryo	Respiratory Medicine	01 pc	Rs. 30000.00

7)

Serial No	Name of equipment	Department	Quantity	Earnest Money
1	Alken metallic PCNL dilator set with Alken needle and rod	Urology	02 pc	Rs. 5000.00

All bidders must complete their technical demonstration of their quoted items within ten (10) days from the date of opening of technical bid to the concern Department.

**1. General Instructions:**

In the event of e-filing, intending bidder may download the tender documents free of cost from the website: <http://wbtenders.gov.in> directly with the help of Digital Signature Certificate or from the Health & Family Welfare Department's website [www.wbhealth.gov.in](http://www.wbhealth.gov.in).

**2. Submission of Bids:**

Both Technical Bid and Financial Bid are to be submitted concurrently duly digitally signed, in the website <http://wbtenders.gov.in>. All papers must be submitted in English language.

**3. Time Schedules:**

The time schedule for obtaining the bid documents, pre bid meetings, registration with the tendering authorities, the submission of bids and other documents etc. will be as per **the list provided in clause no 23** as given below. Bidder are instructed to wait for uploading any corrigendum arising during pre bid meeting, before submitting their bid online

**4. Eligibility for Quoting:**

**Only Manufacturers/direct Importers/Authorized Distributors are eligible for quoting.** The price is to be quoted in Indian Rupees including cost of insurance, packing, forwarding, freight charges, clearing charges and installation of the new instrument and exclusive of GST and other taxes which are to be quoted separately in the BOQ. Agency commission is not permissible.

**5. Submission of Tender:**

The tender is to be submitted in Two Bid System (Technical Bid or Bid A & Financial Bid or Bid B).

(A) **Technical Bid or Bid A:**

**“BID A”: PART I**

File containing Technical Bid only - single file with multiple scanned pages containing Statutory and My documents separately.

(a) **STATUTORY** Cover containing the following documents:

(SINGLE FILE MULTIPLE PAGE SCANNED)

Essential Requirements of the Tendering Firm for participation” shall contain all papers related to the essential requirements of the Renderer for participation in the tender viz.

Sl. No.		Page no
1	<b>Duly filled in CHECK LIST in the prescribed format. Page number of documents must be mentioned in the check list before uploading the same.</b>	
2	Application in the prescribed format given in Annexure I	
3	Authorization letter of signatory from Company in Annexure II	
4	Copy of agreement between the manufacturer and the Distributor in Annexure III	
5	No conviction certificate in the form of an Affidavit as per Annexure-IV	
6	A Proof of submission of applicable END	

(b) **NON STATUTORY/MY DOCUMENTS** Cover Containing the following documents:

Essential Requirements of the Tendering Firm for participation” shall contain all papers related to the essential requirements of the Renderer for participation in the tender viz.

Sl. No.	Category	Sub Category	Sub Category Description	Page No
A	Certificates	A1. Certificates	PAN Card of the authorized signatory	
			Professional Tax Registration certificate	
			PUC in respect of the manufacturing unit	
			GST Registration certificate	
B.	COMPANY DETAILS	B1. COMPANY DETAILS 1	Certificate of country of origin	
			Registration with Registrar of Companies	
			Trade License in the name of participating firm	
C.	CREDENTIAL	C1: CREDENTIAL 1	Manufacturing License with validity	
			Import License with validity (for importers)	
		C2 : CREDENTIAL 2	Manufacturer’s guarantee(in case of Distributors and Direct Importer, to be obtained from manufacturer)	
			A declaration in respect of existence of a fully equipped service centre in or around Kolkata in respect of the relevant item.	
			List of purchaser in Govt. Institutions of repute, for last two years	

D.	FINANCIAL INFO	PAYMENT CERTIFICATE 1	Income Tax Returns submitted for the last three years
		Audited P/L & BALANCE SHEET	P/L & Balance sheet of the last three years

### **BID A": PART II**

Technical specifications of Instrument (in PDF/Excel format. Must mention Make, Model, exact features of the offered item against each point given in the specification chart). **Improper filling &/or suppression of facts/false statement will lead to disqualification and penalty in the form of permanent black listing.**

### **(B) Financial Bid B**

**COVER "B":** Separate file containing financial document only.

(a) Financial Bid: BOQ in INR (in excel sheet)

The folder marked as "Financial Bid" shall contain ALL INCLUSIVE PRICE in INR only and should include base price along with the cost of allied works and services which are to be undertaken (like installation, commissioning of equipment or PC etc.), cost of insurance, packaging, forwarding, delivery charges, clearing charges of the new instrument to be purchased. **GST and any other applicable tax. should be quoted separately. Five years CAMC rate should also be quoted separately** in the template for Bill of Quantities (BOQ). However, the L1 will be determined on base price plus admissible taxes only.

GST quoted will be directly remitted to Government account as per existing norms of Finance Department.

The tenderers are required to submit the hard copies of Cover A (Transaction document of EMD , General Documents and Technical Specifications) as per schedule described in the time line vide clause 23, preferably by **speed post/ courier**, to the office of the Principal, NRS Medical College, Kolkata. Submission of hard copy of Cover A to the office of the Principal, Nil Ratan Sircar Medical College, Kolkata, is for reference only while examining the technical bid on line and will not be treated as substitute for on line submission. **Submission of hard copy of Bid B is totally prohibited.**

### **6. Evaluation of Tender:**

During tender evaluation process, "Bid A" will be opened first. Those tenderers who would qualify the Statutory & Non-Statutory requirements on the basis of technical and commercial documents will be identified and "Bid B" i.e. financial bid of only those qualified bidders will be opened. Verification of hard copies of the audited balance sheet and Profit & Loss Accounts of the Tenderers for the last three years will be made if deemed necessary before opening the Financial Bid (Bid B) of the technically qualified bidders. If found suitable on the basis of above pre-qualification, the tenderer quoting the lowest rate, will be considered as successful.

### **7. Earnest Money:**

The earnest money of the tenderer is liable to be forfeited if the tenderer withdraws his tender as a whole or for any particular item or items at any stage after opening of the tender or fails/refuses to enter into written agreement for any or all of the items of his accepted bid within the time specified when requested to do so or fails to furnish Performance Bank Guarantee within the stipulated time.

**EMD should be deposited online in the Pooling Account of Government of West Bengal maintained at ICICI Bank, RN Mukherjee Road Branch in the manner as prescribed in Government Order no. 3975-F(Y) dated 28/07/2016. (Order copy is available at the site-www.wbfin.nic.in) Hard copy of Bid A should reach the office on or before the stipulated date as mentioned in clause 23.**

**8. Rate:**

The price is to be quoted in INR only including cost of insurance, entry tax, packaging, forwarding, delivery charges, clearing charges and installation of the new instrument. The basic rate should be furnished inclusive of Transportation Cost, Insurance, Testing Charges, Incidental Charges etc. but excluding GST and any other applicable taxes etc. which should be quoted separately in the template for Bill of Quantities (BOQ).

**9. Order & Supply:**

The tendering authority has the liberty to ask for **performance demonstration** of any item during any stage of the tender process, before placing order for supply. In case of dissatisfaction, the authority will have the right to disapprove the offer of L1 bidder and go for the next bidder. Orders for supply of the approved products will be placed with the successful tenderers after execution of agreements and such supply shall have to be made in such installments as may be fixed or spread over the period to be specified in the supply orders to be made in pursuance of the agreements. The equipment is to be transported in such packaging so as to avoid damage to primary package of manufacturer. The successful tenderer will have to supply within the specified time schedule that had been assured at the time of selection as supplier.

**The tendering authority will be at liberty to enhance the quantity of the item tendered up to 40% of the original required quantity. Bidder will have to consider the same while bidding as supply of the enhanced quantity will be mandatory as the original one.**

**10. Withdrawal /Cancellation & Purchase Policy of Tendering Authority:**

The tendering authority reserves the right to withdraw any item from the tender at any stage. The selection of such item, if already made in favour of any tenderer, shall be treated as cancelled. The tendering authority reserves the right to reject or accept any tender or part thereof at any stage or to split any tender without assigning any reason. Withdrawal of tender or any revision after submission of tender by the tenderer will not be allowed.

Purchase will, however be made following the existing purchase policy of the Govt. of West Bengal and its amendment(s) made from time to time. The purchase policy of the State Government as provided in the West Bengal Financial Rules, the policy of price preference in particular incorporated under Notification No. 10500-F dated 19.11.04, 5400-F(Y) Dated 25/06/2012 and subsequent relevant orders should be observed in considering the tenders.

**11. Important Instruction with regard to Submission of Tender:**

The rate should be quoted in Indian Rupees for a particular brand or model (model no. of the offered item only must be mentioned in the appropriate column of the 'Tender Form'. Alternative offer will not be accepted). The tender shall be cancelled for the quotation of item without its brand name, model, model no. etc. Detail information regarding the manufacturer and the item quoted in the 'Tender Form' should be furnished.

**12. Spare Parts:**

The Bidder will undertake that supplies of necessary maintenance equipment and spare parts will be made available for all items/equipment and the complete system for at least five years on a continuing basis. However, this does not relieve the supplier of any warranty obligations under the contract.

**13. Guarantee / Warranty Period:**

i) The machine/Instrument should be covered by free on-site comprehensive Warranty for one year after successful installation. The tenderers must quote for 5 (Five) years' comprehensive on-site AMC of entire system (including all spares & labour) after the date of completion of free warranty period. The CAMC charges for 5 years to be quoted in the BOQ, will however be determined on extant Govt. rules in this regard.

ii.) All faults appearing and their rectification shall be periodically advised to the institute, the period being not more than two weeks.

iii.) Any lacuna or lacunae noticed in the functioning of the installation as a result of any design or other feature shall be rectified by the supplier free of cost within 72 hours of call log.

#### **14. After Sales Services and Maintenance Contract:**

After sales service must be provided by the supplier, during and after warranty period of the equipment. Selected vendor will remain liable to attract penalty for violation of machine downtime as per agreement. The selected vendor or his authorized servicemen has to attend the machine within 72 hours of Call Log. It is desirable to have a fully equipped service centre in or around Kolkata.

#### **15. Delivery, Installation and Commissioning**

i. Delivery of the goods at the purchaser's premises shall be completed by the Supplier in accordance with the terms specified by the purchaser.

ii. The installation, testing and commissioning of the proposed system shall be completed in accordance with the order.

iii. All items are to be delivered within six weeks from the date of placement of order.

iv. In case of distributor, the firm should be direct distributor of manufacturing unit. **Sub distributor authorization by distributor will not be accepted at all.**

#### **16. Penalty Clauses:**

PENALTY FOR FORMATION OF CARTEL OR FURNISHING OF FRAUDULENT/ MISLEADING DOCUMENTS: If during the tender process or at any stage during the validity of the tender period, it is found that a tenderer(s) has formed a cartel in what so ever form or name to fix up the rates or suppliers to the detriment of the fairness of the tender process, penal measures shall be initiated. Similar penal measures shall also be initiated against those tenderers who have submitted false/ misleading/ fraudulent documents or made incorrect declarations. The penal measure will be forfeiture of Earnest Money, forfeiture of Performance Bank Guarantee if enlisted as a supplier in addition to any other legal action against the firm.

#### **17. Appeal:**

Appeal against the decision of the Principal, Nil Ratan Sircar Medical College, Kolkata and then to impose such a penalty will lie with Tender Selection Committee. Review against the decision of the Tender Selection Committee (TSC) will lie with Health & F.W. Dept. of the Govt. of W.B. The Special Secretary/Secretary/Principal Secretary will be the appellate authority within the Department of Health & Family Welfare, Government of West Bengal. Before imposing any penalty as per clauses 20, 21 and 22 the concerned supplier may appeal to the authority citing the proper reasons for non- imposing the penalty as stated.

#### **18. Agreement:**

On a tender being accepted, intimation of acceptance will be forwarded to the tenderer by Principal, Nil Ratan Sircar Medical College, Kolkata. After communication of the same, the tenderer will have to execute agreement in the prescribed form with the Principal, Nil Ratan Sircar Medical College, Kolkata. In case any direct purchasing unit wishes to go for a separate agreement, the head of the purchasing unit must get written permission to that effect from his controlling authority. This present document

and the tender forms filled in by the tenderer or copies thereof in so far as they are not inconsistent with these terms & conditions will be incorporated as part of the agreement. Such agreement will be binding on the tenderer.

**19. Validity Period of Agreement:**

The contract period will be for a period 01 (one) years from the date of finalization of tender **which can be extended for a further period of 6 months if Tender Selection Committee feels necessary.**

**20. Performance Bank Guarantee:**

The performance bank guarantee will be mandatory for all suppliers and will not be waived in any case. The successful tenderers shall be required to furnish the 'Performance Bank Guarantee' from any Nationalized/Scheduled Bank acceptable to Govt. of West Bengal for One year @ 10% of quoted base rate per item for which the tenderer has been selected as supplier. The performance bank guarantee will have to be renewed after completion of Free Warranty period, for additional 5 (Five) years under the paid CAMC period before transfer of the CAMC amount to bidder's account. Mentioning of West Bengal Government Pooling Account for Performance Bank Guarantee No. 000605030134 IFS Code ICIC0000006 MICR 70229002 at ICICI Bank, RN Mukherjee Road Branch, Kolkata on the body of Performance Bank Guarantee is made mandatory vide Finance Department GO No. 2691-F(Y) dated 02/05/2017.

**21. Inspection:** Before submitting the tender, the intending tenderers should thoroughly get acquainted themselves with the proposed supply and installation by local inspection of site and take into consideration the site condition and other criterion for effecting smooth supply. No claim whatsoever will be entertained afterwards.

**22. Payment Terms:**

Payment will be made electronically by Govt. of West Bengal approved system after execution of due supply and successful installation as ordered, subject to :

- i. Submission of Performance Bank Guarantee in terms of Clause 20 and subject to penalty clause in terms of Clauses 16.
- ii. Supply of the materials as per specification as provided in the tender documents and the catalogue. Supply of the materials must be made within the stipulated period as specified in the work orders.
- iii. On being selected, the successful vendors will have to submit one application to the Principal, Nil Ratan Sircar Medical College, Kolkata stating the name of the payee/recipient, Bank account no with IFS code of the payee/recipient for making e-payment. Payment will only be released after satisfactory installation and verification of following items-
  1. Supplier's invoice in original
  2. Challan and installation certificate
  - 3 Any other thing of importance on the discretion of College Authorities

**23. Dates & Information:**

S. No	Items	Dates
1	Date of uploading of N.I.T. Documents (online) from this end.	06.09.2021, 5.00 P.M.
2	Documents download start date (Online)	06.09.2021, 5.00 P.M.
3	Date of hoisting of documents at Departmental Website ( <a href="http://www.wbhealth.gov.in">www.wbhealth.gov.in</a> )	06.09.2021, 5.00 P.M.
4	Date of Pre Bid Meeting and workshop with the intending bidders at the office of the Principal of NRS Medical College	08.09.2021, at 1.00 P.M
5	Bid Submission starting (On line)	09.09.2021, 4.00 P.M. onwards
6	Bid Submission closing (On line)	01.10.2021 at 4 P.M.
7	Bid opening technical bid(online) (Bid A )	04.10.2021 at 11.00 A.M.
8	Date of uploading list for Technically Qualified Bidder (online)(Bid A)	05.10.2021, 10 A.M. onwards.
9	Date & for opening of Financial Proposal (Bid B) (Online)	To be declared later
10	Date of uploading of list of bidders along with the approved rate	To be declared later.

Principal, Nil Ratan Sircar Medical College, Kolkata, reserves the right to change the above schedule in case of any exigencies after putting up a notice in the departmental website and Notice Board of N R S Medical College, Kolkata.

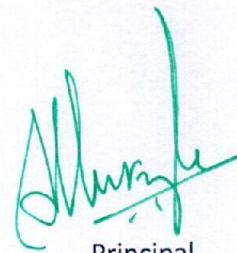


**24. Validity of Tender:**

- i. The tender will remain valid up to 1 (one) year from the date of finalization of tender **which can be extended for a period of 6 months**. Any objection raised by any bidder in this respect will not be entertained. No informal tenderer will be entertained in the bid further.
- ii. During the scrutiny, if it comes to the notice of tender inviting authority that the credential or any other paper found incorrect/ manufactured/ fabricated, that bidder would not be allowed to participate in the tender and that application will be out rightly rejected without any prejudice.
- iii. Prospective bidders must take training from authorized agencies before submission of their bids.
- iv. The Tender Selection Committee reserves the right to cancel the N.I.T. due to unavoidable circumstances and no claim in this respect will be entertained.

**25. NO- CONVICTION CERTIFICATE:**

No conviction certificate in the form of An Affidavit is to be submitted in the prescribed Pro-forma as Annexure-IV attached herewith from Notary Public/ Judicial Magistrate/Executive Magistrate.



Principal  
NRS Medical College  
Kolkata-14

**CHECK LIST (MUST BE PROPERLY FILLED)**

**NOTE: For Non applicability for some documents please mention "NA" in the check list. Must be mention page number in the check list.**

S. No	Item	PI put tick or NA	Page No.
1	Application submitted in Annexure I		
2	Annexure II (Authorization letter of signatory from the Company)		
3	Annexure III (Copy of agreement between the Manufacturer and the Direct Importer/Distributor)		
4	No conviction certificate in the form of an Affidavit as per Annexure-IV.		
5	Income Tax Returns submitted for the last three Assessment years		
6	GST Registration certificate(not provisional)		
7	PAN Card of the organization and authorized signatory.		
8	Manufacturer's guarantee (in case of Distributors and Direct Importer, to be obtained from manufacturer)		
9	Audited P/L & Balance sheet of last three years		
10	Technical specifications of Instrument (in PDF/Excel format. Must mention Make, Model, exact features of the offered item against each point given in the specification chart).		
11	Trade License in the name of participating firm		
12	PUC in respect of the manufacturing unit(if applicable)		
13	Certificate of country of origin		
14	Registration with Registrar of Companies		
15	Valid Manufacturing License(if applicable)		
16+	Import License with validity (for importers)		
17	List of purchaser in Govt. Institutions of repute, for last two years		
18	A declaration in respect of existence of a fully equipped service centre in or around Kolkata in respect of the relevant item.		
19	A Proof of submission of applicable END		

**ANNEXURE-I**

**APPLICATION FORMAT**

(To be furnished in the Company's official letter pad with full address and contact no etc)  
To The Principal, Nil Ratan Sircar Medical College, Kolkata-700014.

Sub: Tender No.-----Dt.------(Name of the Item -1)-----2)-----  
-----3)-----4)-----

----) for purchase and installation of equipment for department of ....., Nil Ratan Sircar Medical College, Kolkata-700014.

Ref:-

Sir,

Having examined the pre-qualification & other documents published in the N.I.T, I /we hereby submit all the necessary information and relevant documents for evaluation:

1. That the application is made by me / us on behalf of.....

In the capacity of.....duly authorized to submit the offer. The authorization letter from the Company is attached in Annexure II.

2. We accept the terms and conditions as laid down in the NIT mentioned above and declare that we shall abide by it for throughout the tender period and its extensions, if any.

3. We are offering rate for the following item /items and assured supply to the Health & Family Welfare Department, Government of West Bengal as per Table-1 (Instrument Specification)

4. a. We propose that the order and bill should be raised in our name.

For liasoing, we have appointed M/S ..... having its office at ..... (Address, contact no and e mail address) as C&F agent /Liasoner /Contact person/..... Others (strike out whichever is not applicable) as per clause ..... of the NIT

b. The agreement between ourselves and the distributor/C&F/Liasoner & other documents as prescribed is attached in annexure III

5. In the event of being selected, supply will be made within the stipulated period excepting the condition which is beyond our control.

6. We understand that:

(a) Tender Selection Committee/ H&FW Dept can amend the scope & value of the contract bid under this project.

(b) Tender Selection Committee/ H&FW Dept reserves the right to reject any application without assigning any reason.

Date :-

Signature of applicant including title  
and capacity in which application is made.

Contact details -

Mobile:

E mail ID:

**Annexure II**

Authorization letter in favour of the applicant (other than Managing Director/ Proprietor) –  
from the competent authority.

FORMAT

(To be furnished in the Company's official letter pad with full address and contact no, E mail  
Address etc)

(TO WHOM IT MAY CONCERN)

This is to certify that Mr./Mrs. ....(Name),  
an employee of this Organisation as ..... (Official  
Designation) is hereby authorized to submit tender online , Vide NIT  
No....., Dated..... on behalf of the Organisation.

Signature of the  
competent authority with Seal

.....

(Signature of the Authorized Person)

Signature of Mr./Mrs. ....  
.....is hereby attested.

## **Annexure- III**

- a. Copy of agreement between the Manufacturer and the Direct Importer/Distributor in Annexure -III

## ANNEXURE-IV

Draft Affidavit Proforma  
(Notarized on Rs. 100 Stamp Duty)

I, Sri/Smt. ....  
The Managing Director/Proprietor (etc.) of the Firm.  
, ..... (Name of the firm)  
At (address).....  
P.O... ..  
P.S.....Dist.....  
do hereby solemnly affirm and declare as follows:

- a. That I am not under conviction of any offence making myself liable to be disqualified to supply of Surgical Equipments/Instruments etc. to any Govt. or Govt. undertaking Organization /Institution in the State of West Bengal or other State or States.
- b. My Firm has not been blacklisted at present as a whole or for any item/ items as quoted in this tender by any Govt. or Govt. undertaking Organization /Institution in the State of West Bengal or other State or States in India.
- c. That no case is pending against me or against my Firm in any criminal court of law in connection with the supply of Surgical/hospital equipment/Instruments to the Govt. or Govt. undertaking Organization / Institution in the State of West Bengal or other State or States ( If any case is pending, pl state the details ).
- d. *That, I declare that the item or items quoted by me confirms the specification given in the NIT document or higher standard relating to the specification is provided.*
- e. The duly authenticated Technical Data Sheet is uploaded conforming to the prescribed standard.
- f. That, I also declare that if any information subsequently found incorrect or false will it automatically render the tender submitted by me cancelled and make me liable for penal/legal action as per law of the country.
- g. That I do further affirm that the statements made by me in this tender are true to the best of my knowledge and belief and all the documents attached are genuine & correct.

Deponent

## Specification of Digital Orthopantomograph Machine

Sl. No.	Product Description	Qty.
1.	<p>A three-in-one solution- Digital Panoramic, 3D &amp; Cephalometric Upgradeable Imaging.</p> <p><u>Embedded cameras: (Unique)</u></p> <ul style="list-style-type: none"> <li>• Patient positioning (laser beam free unit)</li> <li>• Patient Monitoring</li> </ul> <p><u>Embedded Touchscreen managing:</u></p> <ul style="list-style-type: none"> <li>• Patient positioning sequences</li> <li>• All acquisition steps (except X-ray shoot)</li> <li>• Image Quality Control (2D and 3D)</li> </ul> <p><u>Live positioning assistance: (Unique)</u> Provide guidance for Frankfort alignment &amp; displaying the FOV pattern superimposed on patient face to evaluate clinical relevance.</p> <p><u>Interactive positioning accessories: (Unique)</u> Automatically detecting if wrong accessory is used.</p> <p><u>One scan endo full mouth status:(Unique)</u></p> <ul style="list-style-type: none"> <li>• 10x10cm 75µm one scan</li> </ul> <p><u>Patient history records:(Unique)</u></p> <ul style="list-style-type: none"> <li>• Proposing to reuse previous unit parameters</li> </ul> <p><u>X-Ray Generator:</u></p> <ul style="list-style-type: none"> <li>• X-ray tube head: High-frequency 140 kHz, 60-90 kV, 2-15 mA</li> <li>• Input voltage: 230-240 V - 50/60 Hz or 100-110-130V - 50/60 Hz</li> <li>• Tube focal spot: 0.3 - 0.7 mm (IEC 60336 Standard)</li> <li>• Total filtration : &gt; 2.5 mm eq. Al</li> </ul> <p><u>Panoramic Modality:</u> Adult / Child panoramic, Lateral TMJ (2 and 4 views), Full &amp; segmented panoramic and Bitewing.</p> <ul style="list-style-type: none"> <li>• Programs - 12 anatomical settings</li> <li>• Adjustable focal trough</li> <li>• Full range of Sinus- Maxillary, Ethmoidal, Sphenoidal &amp; Frontal.</li> <li>• Magnification: x1.4</li> <li>• Gray scale: 14 bits (16384)</li> <li>• Sensor Technology: TFT</li> <li>• Sensor Matrix: 64 x 1536 pixels</li> </ul>	1 no.

Seen  
P. Kumar  
2/2/2024

Dr. P. Kumar  
BDS (Cal) MDS (Cal)  
Professor and Head of the Dept. of Dentistry  
NRS Medical College & Hospital Cal- 14  
Orthodontist / Dental Surgeon  
Ph: 2562-1835 (M) 9531272703

2.	<b>3D Modality- Select</b> <ul style="list-style-type: none"> <li>• Technology: Digital Volumetric Tomography (DVT)</li> <li>• Sensor technology: CMOS.</li> <li>• Gray scale: 16384 - 14 bits</li> <li>• Volume size (cm):4x4, 5x5, 6x6, 8x5, 5x8, 8x8, 10x5, 10x10, 12x5, 12x10, 16x12, 16x17.</li> <li>• Voxel size:75 to 400 µm</li> <li>• Isotropic shape: Isotropic (same in all three dimensions)</li> <li>• Reconstruction time: &gt; 4mints.(Depends on the PC)</li> <li>• Application: Implantology, Complex Impactions, TMJ Assessments, Other cases involving one dental arch, Endodontics &amp; TAD planning.</li> </ul>	1 no.
3.	<b>Dental Imaging Software</b> Single S/W to run the entire Dental product with Printing template. Compatible with all DICOM Printer and existing Hospital Network.	1 no.
4.	<b>3D Imaging Software.</b> With Implant Library.	1no.
5.	<b>Adapt Software</b> A 2D viewing Software with range of filters.	1no.
6.	<b>High End Workstation</b> <ul style="list-style-type: none"> <li>• Dell Precision Tower 3620 XCTO Base Work Station</li> <li>• 85% efficient 290W Classis version - 2</li> <li>• 7<sup>th</sup> Gen Intel Core i7- 7700K (Quad Core HT 4.5 Ghz Turbo).</li> <li>• NVIDIA Quadro P1000, 4GB Graphics Card (PWS 3620)</li> <li>• 8 MB, w/HD Graphics 630</li> <li>• 32GB (2X16GB) 2400MHz DDR4 RAM</li> <li>• 1TB 7200 RPM Serial ATA SATA HDD</li> <li>• 16x DVD+ / - RW Drive</li> <li>• Dell E2016H 19.5" Square TFT 2 monitors</li> <li>• Windows 10 Professional 64 bits with Windows 10 Pro DVD OS Recovery</li> </ul>	1no.
7.	<b>Cephalometry attachment with Auto-tracing.</b>	1 No.
8.	<b>Higher Editions FOV:</b> <ul style="list-style-type: none"> <li>• 12x10 cm</li> <li>• 16x10 cm</li> <li>• 16x17 cm</li> </ul>	1 No.
9	<b>MAR with live comparison:</b> <ul style="list-style-type: none"> <li>• Reducing Metal Artifact from 3D acquisition</li> <li>• Enabling user to dynamically compare standard and MAR volumes.</li> </ul>	1 NO
10	<b>Laser DICOM Printer</b> <ul style="list-style-type: none"> <li>• Photothermographic technology(dry laser)</li> </ul> 8x10 in, 10x12 in, 14x17 in film compatable	1 Set
11	<b>Colour Printer and UPS 5KV</b>	1 each

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Technical Specification for the Instruments required for Adult & Pediatric Rigid Broncho-Esophagoscopes for Foreign Body Removal with HD visualization system.

A. Paediatric & Neonatal Rigid Bronchoscope & Esophagoscope for Foreign Body Removal.

1. Bronchoscope, length 30 cm, size 6.
2. Bronchoscope, length 30 cm, size 5
3. Bronchoscope, length 30 cm, size 4.5.
4. Bronchoscope, length 30 cm, size 4
5. Bronchoscope, length 30 cm, size 3.5.
6. Bronchoscope, length 26 cm, size 4.
7. Bronchoscope, length 26 cm, size 3.5
8. Bronchoscope, length 26 cm, size 3
9. Bronchoscope, size 3.5, length 18.5 cm, for neonates
10. Esophagoscope, length 30 cm, size 6.
11. Esophagoscope, length 30 cm, size 5.
12. Esophagoscope, length 30 cm, size 4
13. Esophagoscope, length 18.5 cm, size 3.5
14. Compatible Telescopes for above mentioned Bronchoscope & Esophagoscope tubes, Straight Forward- telescope 0°, autoclavable. Fiber optic light transmission incorporated .
15. Compatible Optical Forceps, 2 x 2 teeth, for the controlled grasping of coins and flat foreign bodies, for use with telescope forced controlled handle. -Qty 01.
16. Compatible Optical Forceps, universal, for biopsy and foreign body removal, for use with telescope -Qty 01.
17. Compatible Optical Forceps, VANCOUVER Model, for grasping peanut fragments and soft foreign bodies, with spring action handle -Qty 01.
18. Compatible Optical Alligator Forceps for Paediatric Broncho esophagoscopes, for use with telescope forced controlled handle for removal of hard foreign bodies -Qty 01.
19. Compatible Optical Forceps for Pediatric Broncho-Esophagoscopes, with bean jaws, for use with telescope forced controlled handle for removal of peanuts and soft foreign bodies. -Qty 01

  
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20. Compatible Optical Forceps for Neonatal Broncho-Esophagoscopes, with bean jaws, for use with telescope forced controlled handle for removal of peanuts and soft foreign bodies. Qty 01.
21. Compatible Optical Forceps, for Neonatal Broncho-Esophagoscopes with 2 x 2 teeth, for the controlled grasping of coins and flat foreign bodies, for use with telescope forced controlled handle.-Qty 01.
22. Compatible Optical Alligator Forceps for Neonatal Broncho-Esophagoscopes, for use with telescope forced controlled handle for removal of hard foreign bodies -Qty 01.
23. Rubber Telescope Guide for use with Telescopes or optical forceps.-Qty 01.
24. Prismatic Light Deflector, Autoclavable, with Connection to fiber light cable Qty 01.
25. Glass window Plug. Qty 01.
26. Adaptor with sliding glass window plug, sealing cap, notched lens and keyhole opening, moveable-Qty 01.
27. Adaptor from bronchoscope to respirator Qty 01
28. Instrument guide, for suction catheter Qty 01
29. Injection Cannula for positive pressure assisted ventilation system, O.D. 3.5 mm and 2.7mm with LUER-lock - Qty 01
30. Coagulating Suction tube, insulated, with connector pin for unipolar coagulation, diameter 3mm ,Working length 35cm,with Unipolar HighFrequency Cord.Qty 01
31. Foreign Body Basket, with ring handle ,Working length 35 cm. Qty 01
32. Suction Catheter, 7Fr. With adaptor , Qty 1
33. Suction Tube, with rubber tip, straight,outer diameter 2 mm, working length35 cm-Qty 01.
34. Suction Tube, with rubber tip, curved,outer diameter 2 mm, working length35 cm-Qty 01.
35. Rigid Suction Tube, outer diameter 3mm, working length 35 cm-Qty 01.
36. Sponge Holder, spring handle, workinglength 35 cm-Qty 01.
37. Cotton Carrier, working length 35 cm-Qty 01.
38. Forceps, pointed, serrated, for coins and flat foreign bodies, double action jaws, sheath diameter 2 mm, working length 35 cm-Qty 01.

  
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39. Forceps, spoon shaped, oval, fenestrated, for biopsy and foreign body removal, double action jaws, sheath diameter 2 mm, working length 35 cm – Qty 01
40. Forceps, alligator, for hard foreign bodies, double action jaws, sheath diameter 1.5 mm, working length 35 cm –Qty 01.
41. Forceps, alligator, for hard foreignbodies, double action jaws, sheath diameter 2 mm, working length 35 cm–Qty 01.
42. Forceps, for peanuts and soft foreignbodies, double action jaws, sheath diameter 2 mm, working length 35 cm–Qty 01.

**B. Adult Esophagoscope for Foreign Body Removal.**

1. Esophagoscope, oval, size 10 x 14 mm, length 50 cm
2. Esophagoscope, oval, size 10 x 14 mm, length 40 cm
3. Esophagoscope, oval, size 8 x 12 mm, length 40 cm
4. Esophagoscope, oval, size 8 x 12 mm, length 50 cm
5. Compatible Telescope for above mentioned Esophagoscope tubes, Straight Forward- telescope 0°, diameter 5.5 mm, length 53cm, autoclavable. Fiber optic light transmission incorporated – Qty 01 .
6. Compatible Optical Forceps, for the controlled grasping of peanuts and soft foreignbodies, including cleaning adaptor.–Qty 01.
7. Compatible Optical Forceps, alligator, large jaws, for hard foreign bodies. –Qty 01.
8. Prismatic Light Deflector, Autoclavable, with Connection to fiber light cable Qty 01.
9. Fiber Optic Light Carrier for use with esophagoscopes, length 50cm, 40cm and 30cm–Qty 01 each.
10. Insertable Suction Tube, for use with esophagoscopes, outer diameter 2 mm, length 50 cm–Qty 01.
11. Insertable Suction Tube, for use with esophagoscopes, outer diameter 2 mm, length 30 cm–Qty 01.
12. Forceps, pointed, serrated, for coins and flat foreign bodies, with LUER-Lock irrigation connector for cleaning, double action jaws, sheath diameter 2.5 mm, working length 55 cm–Qty 01.

  
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13. Forceps, alligator, for hard foreignbodies, with LUER-Lock irrigation connector for cleaning, double action jaws, sheath diameter 2.5 mm, working length 55 cm–Qty 01.

**C.Specification for Full High Definition Endoscopic Camera with for surgery/video endoscopy**

Sl. No.	Technical Specification	Technical Specification quoted by bidder	Bidders deviation, if any
1	<b>Three Chip High definition Camera System</b>		
	<p>The system should have the maximum Resolution of 1920 X 1080 pixels, progressive scan and the consistent use of 16: 9 formats for Input &amp; Output.</p> <ul style="list-style-type: none"> <li>• The system should have facility of Optical &amp; Digital Zoom lens to enhance the quality of Image size &amp; cross specialty usage of the camera system, regardless of the telescope used.</li> <li>• Internal /External Medical grade recorder for Capturing FULL HD Videos and HD Stills with storage capability of 500GB or more.</li> <li>• System should have facility of controlling additional equipment's like light source, insufflators and recording device from the camera head.</li> <li>• System should have facility to offer various visualization modes for surgery and diagnosis by shifting the color spectrum like <b>BLUE &amp; GREEN</b> light for recognition of the finest tissue Structures and their differentiation.</li> <li>• Parallel live display of visualization modes besides white light mode (picture-in-picture).</li> <li>• Homogenous light mode for peripheries and posterior end available in the system.</li> <li>• Vascularity enhancement mode for better tissue differentiation should be available</li> <li>• Pointer and Grid Functions for teaching and conferences.</li> <li>• Modular design: Digital FULL HD camera module should be compatible for use with video flexible GI endoscopes. The system should also be upgradable to 3D technology.</li> <li>• Should be provided with Non-medical grade trolley</li> </ul>		

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	<p><b><u>Technical Specifications:</u></b></p> <p>Image sensor: 3X1/3" CCD-Chip.</p> <p>Pixels 1920 x 1080</p> <p>AGC: Microprocessor controlled</p> <p>Lens: Integrated Zoom Lens f = 15-31 mm (2x optical zoom)</p> <p>Minimum light sensitivity: 1.17 Lux (f = 1.4 mm).</p> <p>Control buttons: 3 (2 of them freely programmable).</p> <p>Video output: 2 x DVI-D output, 1 x 3G-SDI output, 3 x camera input for communication with compatible camera modules, LAN connection, 4 x USB connection (2 x front, 2 x back).</p> <p>Input: Keyboard input for character generator.</p> <p>Power Supply:- 100-240 VAC 50/60 Hz</p> <p>Certified to : IEC 601-1, 601-2-18, CSA 22.2 No. 601, UL 2601 and CE according to MDD, protection class1/CF</p>		
2	<b>High Definition Medical Grade Monitor</b>		
	<p>The monitor should have:</p> <p>HDTV display in original 16: 9 format. 1080 p/ 50 &amp; 1080 p/60 displays possible. LED crystal display. Max. Resolution of 1920X1080. Screen diagonal – 27 inches</p>		

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	<p>Desk top with pedestal. Should have the facility of PIP mode.</p> <p>Accessories External 24VDC Power Supply, Mains Cord, Pedestal. Certified to : EN 60601-1, protection class IPX 1</p>		
<b>4</b>	<b>LED Light Source with Fiber optic cable</b>		
	<ul style="list-style-type: none"> <li>• Color Temperatures 6400K</li> <li>• Light Outlets – 1</li> <li>• Lamp life should be 30000 working hours</li> <li>• Light Intensity Adjustment :- Continuously adjustable manually and automatically by cameras video output signal.                             <ul style="list-style-type: none"> <li>• Light source should be a separate unit.</li> </ul> </li> <li>• Should be supplied with Diameter 3.5mm, Length 230cm.</li> <li>• Certified To :- IEC 601-1 &amp; UL 544 CE According to MDD , protection class 1/CF</li> </ul>		

B.

ALL ABOVE EQUIPMENTS SHOULD BE FROM THE SAME MANUFACTURER WITH USFDA & CE CERTIFICATION.

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## Technical Specification Intra Vascular Ultrasound With Integrated FFR System

- IVUS offer direct, accurate, real-time, tomographically –oriented 360 degree images not just of the vessel lumen, but of the vessel wall itself and any lesions it might contain. This enables clinicians to quantitatively characterize atherosclerotic plaque morphology, assess the extent of vascular remodelling or distortion, and also to calculate cross, section area available for blood flow.

Therefore it helps in the assessment of plaque morphology, total plaque volume, and degree of vascular remodelling or distortion and also to calculate cross, sectional luminal area.

- Latest Generation Intra Vascular Ultrasound System .
- Monitor-SVGA LCD Monitor-Minimum 19".
- Sterile field control option.
- Compatibility with 9 MHz ( for intra Cardiac), 15 MHz (for peripheral) and 40 MHz (for coronary) Catheters.
- Compatibility with Coronary, Peripheral and intra cardiac catheters.
- Automated lumen and vessel measurement with trace to aid in diagnosis and planning.
- Dynamic review .
- Long view and cross sectional imaging.
- Signal Rotating Transducer driven by a flexible driver cable.
- High storage capacity with removable hard disk and minimum of 25 cases storage.
- Archiving options: CD ROM, 16X DVD, Removable Hard Disk and Network.
- Maximum number of area measurements per cross section image for better imaging.
- Maximum number of distance measurements per cross section images for better imaging.
- Minimum 30 GB hard disk with an option of removable storage.
- DICOM storage & image formatting.
- Digital Frame Grabber.
- Data Entry: Touch Screen.
- Multiple image screen format.
- Automatic & manual measurement.
- Approval-International standards agency US FDA or Equivalent.
- Clinical support for training of staff.
- Technical back up for maintenance of machine

### ➤ FFR (Fractional Flow Reserve) Measurement System (Console) Specification for Integrated System.

- 1 Console to determine FFR with <sup>Bluetooth wireless</sup> sensor based ~~wire~~ able to assess Arterial Pressure through Cath Lab transducer system.
- 2 Should communicate with PC.
- 3 Should be compatible with printer.
- 4 Should be able to assess distal Pressure through device.
- 5 Display both real time pressure and mean pressure values.
- 6 Should give Graphical presentation of pressure waves.
- 7 Screen window should display real time FFR in both numerical and graphical form.
- 8 Should be able to measure pressure in a range of - 30 to 300 mm Hg
- 9 Should be operator friendly, guide steps to follow for procedure.
- 10 Should have a frequency response of 0-25Hz
- 11 Allows different beat settings in accordance with the cath lab system.
- 12 Should have memory to save and record the data


*[Signature]*


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➤ Specification for FFR Guide Wire:

1. Should be .014" guide wire
2. Should have Optical technology
3. Should preferably have hydrophilic coating at distal part and PTFE coating at proximal part.
4. Should have tip with dual coil technology
5. Should have shorter sensor housing less than 1.70 mm .
6. Should have a radio opaque tip.
7. Should have European CE & USFDA Approved (certificate to be provided).
8. Fast Plug and play procedure
9. Longer working length
10. Better Torque and pushability
11. Choice of Straight or Pre-shaped J-tip.
12. Compatible with Rapid exchange or over the wire Catheters.
13. In case of separate system for FFR, the option to be wall mounted, table mounted or desktop as per the need should be there

  
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**Specification for Micro Reciprocating saw with Electric Motor Control Unit**

a) **Electric Motor Control Unit**

**Qty-1**

It should have:

- a. Should have touch screen display control for incorporating multifunction into systems
- b. Should have interactive icons represents system components and functions
- c. Outputs should represent in digital figures, Supply 220- 240V only 50-60Hz
- d. Should be able to identify different hand pieces with display on console
- e. Should have function of controlling brightness, contrast and alarm volumes on the console
- f. Can operate 2 hand pieces sequentially with one footswitch
- g. Should be programmable as per surgeon preference

b) **Footswitch :**

**Qty-1:**

It should have:

- a. Should have fully programmable footswitch as user need
- b. User should be able to control following functions via footswitch
  - a. Forward, Reverse, Oscillation
  - b. Switch over to high/ low speed, Increase or decrease speed

**Specification for micro saw – should run from the same electric motor control unit mentioned above**

A) **Micro Reciprocating Saw:**

**Qty-1**

Should run from the same Motor Control Unit meant for the ENT Drill Should cut in a Perpendicular Line, Should have Maximum speed of 14000 cpm, Dimension: Length 165-170mm, Diameter 18-20mm, Mass 0.19-0.21Kg, Excursion 3mm, Titanium Body ensuring light weight, Should run from the same motor control unit meant for ENT Drill, & at times can run sequentially.

B) **Connecting Cord**

**Qty-1**

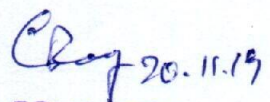
C) **Cutting Accessories :**

**Should have blades for saw:**

Reciprocating Blade – Cutting edge – 14.5 mm, thickness - .38mm – 4 Nos

Reciprocating Blade – Cutting edge – 22.5 mm, thickness - .38mm – 4 Nos

**The core Operating system like , Motor Control Unit, Foot Switch, Micro Saws, should be from single manufacturer for system compatibility & should be warranted for a period of one year. The system should be USFDA & CE certified.**

  
**DR. COLLI ROY**  
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## LOUPES

- The Loupe should be Lightweight ( within 35 gms. to 55 gms.).
- Should have German Optics and craftsmanship.
- Should have Custom magnification options.
- Available prescription lenses.
- Should be of Low-profile for easy use with a headlight system.
- Should have magnification of 2.5X,3.0X & 4X.

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**Technical Specifications for Pulmonary, Wrist Unit APC, Cryo.**

1. The unit must be suitable to perform endobronchial and transbronchial lung biopsies, recanalization & devitalization.
2. The accessories & consumables should be of same offered Original Equipment Manufacturer.
3. The Cryo System should be, US-FDA & European Certificate marked in accordance with the medical devices directive (93/42/EEC), EN 60601 - 1 type CF & Class I Equipment and Electromagnetic Compatibility Certificate & ISO Certificate.
4. The offered Cryo System should have a monochrome display and activation should be controlled via footswitch .
5. The unit must achieve the minimum freezing temperature within 5 seconds with reproducible freeze performance from the first time the probe is used through the last.
6. The unit should have a plug and play operation which sets the appropriate parameters for every probe.
7. The unit should have the provision to provide all the probe related information on the display i.e length, item number, etc.
8. The unit should be mounted on an original mobile cart with wire basket & CO<sub>2</sub> Cylinder compatible with CO<sub>2</sub> gas as coolant provided with connection pipe for gas exhaust.
9. The unit should be able to show the gas pressure of the connected CO2 cylinder
10. The offered Cryo System should be flow controlled for operating gas pressure between 45 – 65 bar.
11. The unit should have feature to count the reprocessing cycle of the instrument.
12. The Offered System should have Effect settings up to 2 depending on the type of instruments.
13. The unit should be able to store upto 10 configurable programs.
14. The offered System should work on Frequency of 50/60Hz with a line current of 0.4-0.8 Amp.
15. The offered System should of dimension of 410x130x370mm & of weight 6.7 kg.
16. The offered Cryo System should be supplied along with reusable flexible Probe , size of 2.4mm diameter x length 900 mm, 1.9mm diameter x length 900mm, 1.9mm diameter x length 1150 mm
17. The probes should be recommended for low temperature sterilization i.e autoclavable max tempt upto 134degrees .
18. The unit should be compatible with integrated RF Electro Surgical Unit for electrosurgical Cut & Coag modes for optimum effect of HF surgery & Argon plasma coagulation unit for haemostasis & devitalization of tissues with non-contact technology for coagulation.
- 19 The Argon Plasma Coagulation system (APC) should be compatible with Electro Surgical unit.
- 20 APC unit should be plug & play with digital instrument recognition.
- 21 All settings should be controlled by the ESU.
- 22 It should have Adjustable Argon flow rate from 0.1 litre/min to 8 litre/min in steps of 0.1 lit/min with automatic regulation of selected flow rate.
- 23 It should have automatic monitoring of flow rate and Argon supply with Argon 4.8 type gas ( 99.998% pure)
- 24 Initial pressure should be 5+(-)2 bar . Max final pressure should be 2+(-) 0.4 bar
- 25 Flushing duration should be of 3 seconds.
- 26 Argon unit should be compatible of accommodating 01 additional socket if required.
- 27 Should give visual display of Argon gas bottle content and should give Acoustic alarm when bottle content reaches a minimum.
- 28 It should have facility to connect with central gas supply.
- 29 It should have facility for activation of unit by foot pedal of the Electro surgical unit.
- 30 It should have the following modes- Precise APC, Pulsed APC and Forced APC.
- 31 It should have 3 types of disposable probes- Axial beam, Side fire beam and circumferential probes with filter integrated optimized for different procedures

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- 32 The APC should be supplied with one argon cylinder of 3 L (Indian make) along with pressure reducer sensor
- 33 Modular Electrosurgery unit with monopolar and bipolar outputs.
- 34 Max cutting power should be 200 watts at 500 ohm
- 35 Max coagulation power should be upto 200 watts with frequency 350 kHz
- 36 Safety system should be NESSY
- 37 Should have facility to store user settings.
- 38 Should have TFT display.
- 39 It should have facilities for assignment of the footswitch, the display makes it possible to assign both the pedal of footswitch or even just one footswitch pedal to the output socket of choice
- 40 Should have various cutting and coagulation modes in Monopolar and Bipolar.
- 41 Unit should meet IEC-60601-2-2 (or equivalent standards) for General Requirements of Safety for Electromagnetic Compatibility.
- 42 Power consumption in standby mode should be max 40 watts.
- 43 Power frequency should be 50 / 60 Hz with max line current at 8 A.
- 44 100% washable double pedal Footswitch ( IP-X8 certification to be produced)
- 45 Both Argon plasma unit & electrosurgical unit should be USFDA & CE certified.
- 46 The equipment should have the following safety features:
  - \*The unit should monitor the neutral/patient electrode with alarm for improper contact to prevent burns.
  - \*It should automatically monitor output error in equipment.
  - \*The unit should have facility for trouble shooting and block power output in case of any fault

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**Alken metallic PCNL dilator set with Alken needle and rod**

Technical Specification

1. Metallic Guide Rod
2. Serial coaxial metal dilator full set (9FR-27FR) consisting of seven dilators.
3. Alken cannula with needle
4. One Step dilator 12FR and 15FR

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