

BIDDING DOCUMENTS
CIVIL HOSPITAL KARACHI
HEALTH DEPARTMENT
GOVERNMENT OF SINDH

Contract NO:- PD-Trauma Centre-CHK/017 (Rev) 2013-14

Tender Documents for
Supplying, Installation, Testing, Commissioning & Maintenance
(during maintenance period) of
Ophthalmology Equipments
at
“Shaheed Mohtarma Benazir Bhutto Accident, Emergency &
Trauma Centre and Ancillary Services Complex at Civil
Hospital Karachi”

VOLUME-I

INSTRUCTIONS TO BIDDERS, SALIENT FEATURES /
TERMS & CONDITION OF THE TENDER,
ESSENTIAL REQUIREMENTS / EVALUATION
CRITERIA, FORM OF AGREEMENT, SCOPE OF
WORK AND SPECIFICATIONS

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INSTRUCTIONS TO BIDDERS

1. **Civil Hospital Karachi** invites sealed bids on single stage two envelope system as per Sindh Public Procurement Rules 2010 from Manufacturers/Importers/Sole Agents/Contractors for **“Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period) of Ophthalmology Equipments at Shaheed Mohatarma Benazir Bhutto, Accident, Emergency & Trauma Centre and Ancillary Services Complex at Civil Hospital Karachi”, (Contract No. PD-Trauma Centre-CHK/017 (Rev) (2013-14).**
2. Bidders are required to check that Tender Documents issued to them are complete in all respects as per Summary of contents related to Instructions to Bidders, Salient Features, Evaluation Criteria, Form of Tender, Form of Agreement, Specifications (Technical), Scope of Work, Drawings etc.
3. Bidders should examine carefully the Summary of Contents. They should visit and inspect the site at their own expense and responsibility and obtain all necessary information prior to submitting the Tender. Any detail/specification missing in the document should be obtained from the office of the Project Director before bidding. Once the Tender is submitted, it will be assumed that no further clarification was required.
4. The rates to be inserted in the Bill of Quantities shall be deemed to include all costs of whatsoever description and expenses necessary for the Supply, Installation, Testing, Commissioning and Maintenance of the Equipment/system together with all risks, taxes, liabilities and obligations, specific or implied, in the Tender Documents. Arithmetical errors, if any shall be corrected and Tender price amended accordingly.
5. No authorized alteration may be made in the Tender documents. If any such alteration is made, tender may be liable for rejection.
6. Any clarification, revision, addition or deletion, in the Tender documents may be made by the Project Director before the submission and opening of Tender in the form of Addendum. This will be made only by formal Addendum issued by the Project Director. Such Addendum will become part of the Contract documents. Each Addendum shall be signed by the Tenderer and returned with other Tender documents.
7. The entire Tender Documents, listed duly priced, signed & stamped on each page and completed must reach at designated place in due time and dates as defined in the salient features of the Tender.
8. The Contractors whose Tender is accepted, by the Procurement Committee, will be required to enter into a Contract agreement as defined in the Form of Agreement.
9. When it is decided by the bidder, not to submit a Tender, the documents must be returned within 7 days from the date of issue of the Tender to the office of the Project Director.
10. All manufactured and other items should be used in the work in accordance with the instructions, specifications in the Tender Document and also in accordance with generally accepted norms of good workmanship.

11. The Tender documents referred to above constitute a part of this Tender and comprise of the following documents:
 - a) Instructions to bidders.
 - b) Salient Features / Terms & Condition of the Tender Questionnaire / Proforma – Evaluation Criteria.
 - c) Form of Agreement.
 - d) Scope of work / Bill of Quantities / Specification (Technical).
 - e) The Addendum (if any).
 - f) The Drawings (if any).

12. The Contractors are required to submit the site Organization chart, methodology & work schedule alongwith Tender documents.

SALIENT FEATURES / TERMS & CONDITION OF THE TENDER

1.	Name of Work & Address	:	Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period) of Ophthalmology Equipments at "Shaheed Mohatarma Benazir Bhutto, Accident, Emergency & Trauma Centre and Ancillary Services Complex at Civil Hospital Karachi" (Contract No. PD-Trauma Centre-CHK/017 (Rev) (2013-14).
2.	Type of Contract	:	Pakistan Rupees – Item rate Contract with no escalation and inclusive of custom clearance etc. in case imported
3.	Time & Date of issue of Tenders	:	From the date of appearance in Newspapers.
4.	Place of Issuance of Tender	:	Office of the Project Director, OPD-Block Civil Hospital Karachi.
5.	Date of pre-bid meeting	:	In case requested by bidders or informed by Project Director.
6.	Method of opening of Tender	:	It will be Single Stage Two Envelope system as per SPPRA-Rules 2010.
7.	Date & Time of Submission of Tenders	:	As published in newspapers
8.	Date & Time of Opening of Tenders / Technical Proposals	:	As published in newspapers
9.	Date of Opening of Financial Proposals	:	As informed by Project Director to all participants
10.	Venue of submission & opening of Tenders	:	Board Room situated at Second Floor of the Administration Block of Civil Hospital Karachi.
11.	Validity of Tenders	:	90 days from the date of opening of Tenders.
12.	Amount of Earnest Money/Bid Security	:	2% of the Contract value in shape of pay-order / Call Deposit from schedule Bank to be submitted alongwith Financial Proposal.
13.	Performance Guarantee	:	Will be provided by the Contractors equivalent to 10% of the contract value from Insurance Company of repute.
14.	Time of Completion.	:	Three Months (The progress of work shall however be duly coordinated with Civil & other works at site).
15.	Date of start.	:	One week from the date of Work-Order / Supply Order.
16.	Certificate of completion.	:	Will be issued by Project Director after the work is finally completed in all respect and date of maintenance will commence from that date.
17.	Contract Agreement.	:	The Contract shall enter & execute a formal Agreement as per the "Form" annexed with such modification as may be necessary, by the Project Director.
18.	Stamp Paper requirement for Agreement.	:	- Rs. 0.30% of the Contract Value or as prescribed by Government Laws.

19.	Terms of Payment to Contractors.	
(i)	Payment to Contractors on opening of L.C (Letter of Credit) by Contractor.	: In case items are imported, L.C (Letter of Credit) will be opened by Contractors whom work is awarded, in the name of Medical Superintendent – Civil Hospital Karachi as Consignee and Contractors will be paid 80% of the amount of quoted cost of work against the Insurance Guarantee from Insurance Company as stated in para 13 and on the production of L.C papers to the Project Director.
(ii)	Release of Insurance Guarantee	: On arrival of equipments at site after clearance from Custom Authorities and its physical inspection by Project Director.
(iii)	Payment of balance amount of 20% to the Contractor.	: Progressively after installation is underway.
20.	Release of Earnest Money/Bid Security of 2%	: To un-successful bidders, after work is awarded. Earnest Money will be released to successful bidder after work is awarded but after 5% Security Deposit is deposited as per item – 21.
21.	Security Deposit	: 5% Security Deposit in the shape of two pay orders (2.5% each) will be submitted by Contractor with Project Director which will be released as per item 23. Bank Guarantee of equal amount will also be acceptable.
22.	MAINTENANCE AND DEFECT LIABILITY PERIOD.	: 18 MONTHS AFTER COMPLETION OFF THE WORK AND COMPLETION CERTIFICATE ISSUED BY PROJECT DIRECTOR AFTER HIS STAISFACTION.
23.	Release of Security Deposit of 5%	: After completion of maintenance or Defect Liability period of 18 months as under:- 1. After satisfactory completion of maintenance period of Six Months – 2.5% 2. After satisfactory completion of maintenance period of after 18 months – 2.5%
24.	Liquidated Damages due to late completion of work.	: 0.1% of the Contract Value per calendar day, subject to maximum of 10% of the Contract Price at the time of award of work.
25.	VARIATION IN CONTRACT PRICE.	: NO VARIATION IN PRICE SHALL BE ALLOWED ON ANY GROUND INCLUDING CURRENCY FLUCTUATION/VARIATION OR WHATSOEVER.
26.	Discrepancy.	: If there is any discrepancy between Salient Features of Tender/Bidding Documents and respective contents mentioned elsewhere, Salient Features / Terms & Conditions and Additional Terms & Conditions of Tender will govern.
27.	Taxes.	: All taxes will be deducted as per prevalent laws of country.
28.	Approved makes.	: As mentioned in items individually.

29.	SPECIAL NOTE REGARDING EQUIPMENTS	:	TECHNICAL OFFERS / COMMERCIAL OFFERS FAILING TO DEMONSTRATE BELOW DETAILS WOULD BE REJECTED: a. QUOTED SYSTEM MUST BE OF ADVANCED & LATEST VERSION. b. QUOTATION MUST COVER COMPLETE EQUIPMENT. c. QUOTATION MUST COVER COMPLETE RANGE OF DISPOSABLES / KITS d. QUOTATION MUST PROVIDE ALL TECHNICAL DETAILS UP TO THE SATISFACTION OF THE END USER. e. IT SHOULD BE CE / FDA APPROVED.
30.	Inspection of Imported equipment manufacturing site by the client.	:	After the award of work Supplier shall take two person to the manufacturing site and bear all expenses of visit in case the cost of Supply Order is 50 million or above.
31.	Maintenance.	:	<ul style="list-style-type: none"> Maintenance cost for all "Ophthalmology Equipments" for Eighteen months from date of completion shall be undertaken by the Contractor (Maintenance includes all Parts & Labour, etc. with sufficient staff, during maintenance period).
32.	Default in Preventive Maintenance, Breakdown and Emergency Calls.	:	<ul style="list-style-type: none"> In case of default by the Contractor with respect to maintenance, break down and emergency calls, the same will be carried out within 24 hours by Department and the cost so incurred will be deducted from the Retention Money.
33.	COST TO BE QUOTED IN BOQ.	:	<ul style="list-style-type: none"> The Contractors shall quote Both DDP and C&F price of the Equipments including custom clearance etc. and delivering of Equipment at site with Installation & Commissioning cost. It should also include cost during maintenance period including the parts and maintenance staff.
34	Tax Exemption.	:	<ul style="list-style-type: none"> As this is a Hospital project, it is exempted from duty & taxes. But incase the exemption is not applicable, Department shall pay duties and taxes to Custom and relevant authorities.

NOTE:-

- As the building is under construction and finishing is underway, the Contractors responsible for "Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period) of Ophthalmology Equipments" will also make good all the damages done to the building while Installing Ophthalmology Equipments at no extra-cost. So the Contractors should take into account all such expenditures while quoting the bid.
- Latest Model, State of the Art, with full functional and clinical application including startup, testing, commissioning etc.
- Comprehensive Warranty for 18 months (during maintenance period) (All emergency calls, break down, preventive maintenance as recommended by manufacturer) be provided by Contractor.

4. The quantities shown against each items are just approximate and payment will be made for the items actually required at site and as per availability funds in the light of decision of the Procurement Committee.

ADDITIONAL TERMS & CONDITIONS

Note: No tender will be accepted after closing of the Tender box, whatsoever reason may be.

1. In **Technical Bid**, the bidder must provide original data sheet, technical brochure, all other relevant documents, alongwith copy of Pay Order / Bank Draft without showing the amount figure otherwise, the bid will be ignored. The technical evaluation will be done on the basis of criteria given in tender document.
2. A Column is given against the specification of each item, the vendor has to fill up with YES / NO or put value as desired in the column. These specifications must be highlighted in the brochure.
3. In **Financial Bid**, the vendor should mention financial offer alongwith Pay Order / Bank Draft 2% value of quoted items in favor of Project Director.
4. **In case of purchase on C&F Basis, the bidder will invest money to open Letter of Credit within couple of week after receiving the supply order and will bear all the charges in this regard. The required certificate will be issued by this office that the impost has been made for this hospital, so as to avail the facility of exemption of duties / taxes, as per Government Rules / Policy according to the SPPRA-2010.**
5. **In case of supply order placed on DDP Basis the bidder should be supplied the quoted item within time as specified in Tender Document i.e. three months.**
6. The disclosure of firm's price at the time of opening of **Technical bid** will result in the rejection of the bid.
7. No tender will be entertained without earnest money. The earnest money will be forfeited to Government Treasury, in case of non-submission of security money within seven (7) days of receipt of the offer letter.
8. **Only Manufacturer and / or Sole Agent (if importer) can quote items.**
9. First scrutiny of **Technical Bids** will be performed by the Procurement Committee. Financial Bids of only those firms will be opened who are qualified technically.
10. Certificate from the Sole Agent / Manufacturer has fully equipped Workshop Trained Personnel / Engineers and Equipment should be provided with technical bid and it can be physically verified by the technical committee of Civil Hospital Karachi.
11. The warranty period will commence from the date of receiving of all the Equipment by the Project Director / Officer of Civil Hospital Karachi.
12. Firm must provide complete details of their financial standing, listing of similar items supplied in Pakistan, bio-data of engineers with training certificates / test, details of local stock of spare parts for similar furniture and details of office with number of personals.
13. The vendor has to quote only one rate for each item as per tender specifications. Hand written tenders or any over writing, cutting, should be signed.
14. **Vendors should quote the items they intend to supply.**
15. Offer will be evaluated, all the required item basis, and the item should be supplied by the vendor as approved by the Technical Committee of Civil Hospital Karachi. If any particular item is not approved of the successful vendor then he will bound to supply the item, according to the approved sample.
16. The bidder shall submit with the bid, an **UNDERTAKING** on Non-Judicial stamp paper of Rs. 50/- duly attested by Oath Commissioner, stating that the medical

equipment will be supplied brand new, free from defects as per the approved sample and will bind himself for availability of spares for a period of 10 years from the date of supply. In case of winding up of his business, the supplier shall be bound to make an alternate arrangement of spares and maintenance of medical equipment. In case of default, depreciated cost of medical equipment will be recoverable from vendor.

17. If it has been found that the information submitted by the bidder regarding his qualification and professional, technical, financial, legal or managerial competence as supplier / contractor is / was false and materially inaccurate or incomplete at any stage, then the bidder will be disqualified.
18. Suppliers / Contractors will be responsible for supply at consignee end, free of cost and also responsible for free installation work, if required.
19. Equipments will be handed over to the Project Director / officer of Civil Hospital Karachi.
20. Price escalation will not be allowed.
21. If vendor doesn't supply medical equipment in accordance with the supply order or fails to supply according to terms and conditions or in case of any other default, it will be disqualified and the earnest money will be forfeited.
22. If the supplier fails to give supply and install within the stipulated period, Liquidated charges will be imposed.
23. The decision once taken will be final and will not be challenged in any Court of Law.
24. A copy of Income Tax and GST Registration Certificate should be attached alongwith **Technical Bid.**
25. Conditional Tender(s) against the Government rules and non-compliance of instructions mentioned in Tender Form & Hand written tender(s) will not be entertained.
26. The vendor should submit a Data Sheet according to the Tender Specifications Format mentioned in the tender and highlight the tender specifications in their Technical Data Sheet. Additional Features can be mentioned separately.
27. In case the information supplied by bidder in Questionnaire / Proforma is incomplete or incorrect, the Tender will be liable to rejection.
28. The Medical Superintendent – Civil Hospital Karachi / Procurement Committee reserves the right to reject or accept any / all tender(s) as per SPPR-2010.
29. The offer will remain valid for 90 days.
30. **Criteria for Evaluation of Bid.**
 - a. Specifications compliance.
 - b. After sale service facility.
 - c. Authority letter from Manufacturer.
 - d. Guaranty of Availability of parts of the supply articles for 10 years.
 - e. Compliance of Terms & Conditions and Additional Terms & Condition of the Bid Form.

I / We agreed above mentioned terms & conditions:

Name of Contractor _____ Signature _____

(CNIC NO _____ (Copy must be attached).)

Full Address _____

Rubber Stamp _____

QUESTIONNAIRE / PROFORMA

(To be filled in by the vendor)

1. Name of institutions where the same items supplied with performance report
 - In Pakistan _____
 - In Karachi _____
2. Factory address _____
3. No. of Employees _____
4. **In case of manufacturer** **Yes** **No**
 - a. Registration with EOBI (Govt. of Pakistan) ---- ----
 - b. Registration with Social Security (Provincial Government) ---- ----
 - c. National Income Tax (Income Tax Department) ---- ----
 - d. Sales Tax Registration ---- ----

(Copies must be attached duly attested)
5. Spare parts Availability Guarantee (No. of years): _____
6. Medical Equipment life period (number of years) _____
7. On call service charges (After expiry of maintenance period):
 - Minimum: _____
 - Per day: _____
8. In case of in house maintenance by Civil Hospital Karachi are you willing to provide following during post warranty period **Yes** **No**
 - Back up engineer support whenever requested: ---- ----
 - Prompt supply of spares ---- ----
9. Are you Sole Agent of manufacturer (for importer): _____

(If Sole Agent, a copy of Income Tax / GST Registration should be attached)
Otherwise the offer will be ignored / rejected.
10. Year of Establishment of manufacturing unit _____
11. Warranty period (please provide following details):
 - Uptime Guarantee: _____ %
 - Response time to maintenance requested: _____ Hours
12. Briefly state facilities and benefits provided during warranty period:

Supplier's Name: _____

Authorized Signature: _____ Designation _____

_____ Rubber Stamp _____

Contact No. _____ Fax No. _____ Cell No. _____

E. mail address: _____

CRITERIA FOR TECHNICAL EVALUATION OF THE BID :-

Specifications with best quality / features of the quoted item.	Points 50	
Service backup facilities in KARACHI of the quoted item.	Points 30	
According to the Terms & Conditions mentioned in the Bid Form.	Points 20	

FORM OF AGREEMENT

1. THIS AGREEMENT made this _____ day of _____ Between Messrs. Project Director "Shaheed Mohatarma Benazir Bhutto, Accidents, Emergency & Trauma Centre and Ancillary Services Complex at Civil Hospital Karachi" being hereinafter called the "OWNER" which expression shall, wherever the context so permits, mean and include its successors in interest, executors, administrators, liquidators, nominees and assignees of the ONE PART, and Messrs. _____ hereinafter called the "CONTRACTOR", which expression shall, wherever the context so permits, mean and include its heirs, successors in interest, executors, administrators, liquidators, nominees and assignees of the OTHER PART.

WHEREAS:

- a. The Owner had invited tenders from various contractors for **Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period) of Ophthalmology Equipments at Shaheed Mohatarma Benazir Bhutto, Accident, Emergency & Trauma Centre and Ancillary Services Complex at Civil Hospital Karachi (Contract No. PD-Trauma Centre-CHK/017 (Rev) (2013-14)** in accordance with the requirements, drawings, plans and instructions prepared by the owner, and contained in the tender documents issued by the Owners.
- b. In response to the invitation of the Owner, the Contractors have tendered their quotations and rates and have offered to carryout the supply, completion and maintenance of the aforesaid project and facilities in accordance with the requirements, conditions of contract, documents, standard quality, plans, drawings and instructions of the Owner.
- c. The Owner is willing and agreeable to accept the aforesaid quotation, rates and offer of the Contractor on the various terms and conditions specified herein and in the documents listed is Clause-1, below.

NOW THEREFORE, THIS AGREEMENT WITNESSETH and in consideration of the mutual covenant and condition set forth herein, the parties hereto, do hereby agree, undertake and declare as under:-

1. The Following documents, hereinafter called "Contract Documents" shall be deemed to form, read and construed as an integral part of this Agreement:-
 - a. Tender documents including Addendum.
 - b. Contractor's bid letter No. _____ dated _____.
 - c. Relevant Correspondence.
 - d. Letter of Award No. _____ dated _____.

Tender S. No.	Description of Items	Rate on C&F Basis	Quantity Ordered	Total value in figures
1.				

2. Notwithstanding anything contained to the contrary or in conflict with the provisions of this agreement in any of the documents mentioned in Clause – 1, above, the provisions of this agreement shall prevail and the documents mentioned above shall be deemed to have been amended to the extent of inconsistency found therein, by the provisions of this Agreement, In case of inconsistency between any of the documents

referred to herein, the later documents shall prevail and the tender documents shall be construed to have been amended to that extent.

3. In consideration of the Contractors supply, completing and maintaining the work, as described heretofore, in conformity in all respects with provisions of this contract to the entire satisfaction of the owner, and the Contractor acting, abiding and performing his duties and obligations strictly in accordance with the terms and conditions herein and documents of the contract mentioned hereinabove, the Owner shall pay to the Contractor amount as per contract documents listed above.
4. This contract shall not be transferable or assignable in whole or part of any of the parties hereto, provided that the Owner may assign his rights and obligations in whole or in part to any other Company which shall be entirely owned Company belonging to the same Group of the Companies as the Owner, In such an event such other Company shall be entitled to act as Owner under this contract.

IN WITNESS WHEREOF the parties hereto, acting through their respective representative, have caused this agreement to be signed, sealed and delivered in their respective names on the day and the year first mentioned hereinabove.

SIGNED, SEALED AND DELIVERED
In the name and for and on
Behalf of the Owner / PROJECT DIRECTOR

NAME: _____

DESIGNATION: _____

WITNESS:

1. NAME: _____

ADDRESS: _____

2. NAME: _____

ADDRESS: _____

SIGNED, SEALED AND DELIVERED
In the name and for and on
Behalf of the CONTRACTOR

NAME: _____

DESIGNATION: _____

WITNESS:

1. NAME: _____

ADDRESS: _____

2. NAME: _____

ADDRESS: _____

SUPPLY ITEMS / SCOPE OF WORK – SPECIFICATIONS (TECHNICAL)

Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period) of Ophthalmology Equipments at “Shaheed Mohatarma Benazair Bhutto, Accident, Emergency & Trauma Centre and Ancillary Services Complex at Civil Hospital Karachi”

S.No	Specification	Qty	Unit	Yes / No / Put desired value
(1)	(2)	(3)	(4)	(5)
1.	<p><u>PHACO-EMULSIFICATION SURGICAL SYSTEM</u></p> <p><u>U/S Power</u></p> <p><u>Ultrasound Modes (Fix / Linear) Range</u></p> <p>U/S continuous 0- 100 %</p> <p>U/S Pulse (0-100%) 5-100 pps (depending upon % Time On)</p> <p>U/S I /A U /S Epi mode 0% 100%)</p> <p>U/S Burst(0-100%) 5 to 500ms</p> <p>U/S Hand piece 4 Piezo electric crystal,20 gm light weight</p> <p>Frequency 40 KHz (38.0+/- 1.9KHz)</p> <p>Through Foot Switch / Free Flow(Irrigation mode Irrigation Continuous)</p> <p>Vacuum 0-650mmHg+(Fix/Linear)</p> <p>Fluidic System Enhanced Fluidics</p> <p>Low compliance membrane technology for improved Chamber stability, surge suppression & quick responses</p> <p>Aspiration(Aspiration flow rate) 5-60cc/min (Fix/Linear)</p> <p>Pump Advanced Peristaltic</p> <p>Irrigation Gravity, Valve controlled</p> <p>Irrigation/Aspiration modes</p> <p>I / A Cortex 0-650mmHg+, range available</p> <p>I / A Cap Vac 0-650mmHg+, range available</p> <p>I / A visco 0-650mmHg+, range available</p> <p>Anterior Vitrectomy Electrically driven</p> <p>Vitrectomy cutter 20-Gauge Guillotine(Auto clave able)</p> <p>Sub modes Cut I/A,I/A Cut</p> <p>Cut rates 10 to 1500 cuts / minutes</p> <p>Vaccum</p> <p>Coagulation 10 watt max,75ohm</p> <p>Power required 220-240V,50/60 Hz</p> <p>User's guide programed</p> <p>Graphic Interface</p> <p>Customised Foot</p> <p>Switch Programmable four switch with treadle</p> <p>Micro coaxial capability Enhances surgeon's capabilities</p>	02	Units	

	<p>Vacuum pressure sensor Non invasive optical vacuum pressure sensor for quick responses Designed to minimize surgical complications</p> <p>Phaco Tip options A full line of phaco tip design including Kelman,ABS,Flared & tapered Includes: U/S Hand piece – 3 U/S Hand piece Vitrector Foot switch Dust Cover</p> <p>Optional accessories I/A tip bent .3mm – 3 I/A hand piece I/A Hand piece body</p> <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period) Country of Origin: USA, EEC, Japan or Equivalent</p>			
2.	<p><u>VITRECTOMY WITH ARGON LASER</u></p> <ul style="list-style-type: none"> • Vitrectomy (Combine Procedure VR+Phaco System) with Green Laser 532nm <p><u>SPECIFICATIONS</u></p> <p>PERFORMANCE SPECIFICATIONS:</p> <p>PRESSURIZED INFUSION/IRRIGATION @SEA LEVEL:</p> <ul style="list-style-type: none"> • Range: 0 to 120 mmHg • Accuracy: $\pm(2\%$ of setpoint +5 mmHg) • Flow Rate: 0 to 20 cc/min. for infusion (20 Ga) • 0 to 60 cc/min. for irrigation • Setpoint Transient: 500 ms maximum <p>IOP CONTROLLED INFUSION:</p> <ul style="list-style-type: none"> • Setpoint Range: 0-120 mmHg • Repeatability1: ± 2 mmHg • Setpoint Response Time: <500 ms (20 Ga) • Transient Disturbance • Response Time: <500 ms3 • Flow Range: 0-20 cc/min • 1 BSS Dual chamber mode. • 2 BSS medium, 20 gauge high flow Cannula, steady state condition at rated flow range • 3 Transient condition from no flow state to 10cc/min <p>ASPIRATION/SUCTION @SEA LEVEL:</p> <ul style="list-style-type: none"> • Standard & Reduced • Pressure Range: 0-650 mmHg Vacuum • Minimal Pressure Range: 0-600 mmHg Vacuum • Pressure Accuracy: $\pm(2\%$ of Setpoint +5 mmHg) • Flow Range: 	01	Unit	

- Posterior Modalities: 0-20 cc/min
- Anterior Modalities: 0-60 cc/min
- Transient Response Time
- (Standard Pressure Range): From 0 to 400 mmHg @0 cc/min
- 1090% Rise Time:300msec max
- 9010% Fall Time: 300 msec max

VACUUM @ SEA LEVEL:

- Vitrectomy: 0 to 650 mmHg
- Fragmentation: 0 to 650 mmHg
- Extrusion: 0 to 650 mmHg
- Extraction: 0 to 650 mmHg
- Irrigation/Aspiration: 0 to 650 mmHg
- Phacoemulsification: 0 to 650 mmHg

LOW PRESSURE AIR SOURCE (LPAS) @SEA LEVEL:

- Pressure Range: 0 – 120 mmHg at rated flow
- Pressure Accuracy: $\pm 3\%$ of setpoint +3 mmHg
- Flow Rate: 1.2 slpm minimum at 120 mmHg

VITRECTOMY:

- Submodes: 3D, Momentary, PropVac, VitWet
- Cut Rate:
001 to 7,500 cpm

DIATHERMY:

- Frequency: 1.5 Mhz $\pm 10\%$.
- Proportional control.
- Waveshape: Sinusoidal
- Output power 10 Watts maximum at 100% setting
- with $75 \pm 10\%$ ohm non-inductive load
- Power range 0 100% of maximum output power

ILLUMINATION:

- Light Output through
20GA Fiber Probe: 0-200 hrs: 16 ± 6 lumens
at 115% set point 1
201400 hrs: 16 ± 6 lumens
at 115% set point 1
- Light Output through
23GA Fiber Probe: 0-200 hrs: 23 ± 13 lumens
at 115% set point 1
201400 hrs: 23 ± 13 lumens
at 115% set point 1
- Light Output through
25GA Fiber Probe: 0-200 hrs: 18 ± 8 lumens
at 115% set point 1
201400 hrs: 18 ± 8 lumens
at 115% set point 1
- Based on a representative nominal UFR fiber.

FRAGMENTATION:

- Submodes: Linear, Fixed, Momentary
- Tip Stroke @ 100%: 3.1 ± 0.5 mils at 100% power
- Resonant Frequency: 39.0 ± 1.9 KHz
- Pulse Rate Range: 0 – 100 pps

SCISSORS:

- Submodes: Proportional, Multi-Cut
- Proportional Pressure: 0-50 psi @sea level
- Multi Cut Rate: single cut to 450 cpm

PROPORTIONAL AND CONTINUOUS REFLUX @SEA LEVEL:

- Pressure Range: 0 to 120 mmHg
- Pressure Accuracy: $\pm(2\%$ of Setpoint +5 mmHg)

MICRO REFLUX:

- Pressure Range: 100 ± 50 mmHg
- Volume: 15 ± 10 μ L
- 1 measured with unoccluded 20 Ga *UltraVit*TM probe and aspiration tubing

VISCOUS FLUID CONTROL:

- Submodes: Inject, Extract
- Injection Pressure: 0 to 551.6 KPascal (0 to 80 psi)
0 to 482.7 KPascal
@ Reduced (0 to 70 psi)
- Extract Vacuum
at Sea Level: 0 to 650 mmHg

AUTO-GAS FILLING (AGF):

- Maximum Gas Pressure: 10 psig
- Fill Purity: 99.7% gas concentration
- following 3 purges & 1 fill

PHACOEMULSIFICATION:

- Submodes: Burst, Pulsed, Continuous
- Tip Stroke @ 100%: 3.5 ± 0.5 mils
- Resonant Frequency: 34khz – 42Khz $\pm 10\%$.
- Pulse Rate Range: 0-100 pulses per second
- Burst Length: 2.5 sec – user adjustable
- Burst Pulse durations: 5 ms to 500 ms

ANTERIOR VITRECTOMY:

- Submodes: Wet, Dry
- Cut Rate: 0 to probe maximum

GREEN LASER 532NM

- Class: IV
- Power: 30 mW to 2 W (maximum)
- Wavelength: 532 nm

	<ul style="list-style-type: none"> • Aiming beam: • Class: II • Power: less than 1 mW • Wavelength: 635 nm \pm 5 nm <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)</p> <p>Country of Origin: USA, EEC, Japan or Equivalent</p>			
3.	<p><u>INDIRECT OPHTHALMOSCOPE AND 20 D</u></p> <p>FEATURES:</p> <ul style="list-style-type: none"> • Synchronized adjustment of convergence and parallax for high quality stereoscopic fundus image through any pupil size. • Multi-coated illumination system new Xenon Halogen technology bulb. • Separate fine-tuning of the illumination beam \pm 4°. • 3 integrated spot size, 3 integrated filters. <p>SPECIFICATION</p> <ul style="list-style-type: none"> • Illumination: 6V, 10W halogen lamp • Aperture size: Large spot, medium spot, small spot, diffuse spot. • Filter : Red-free, cobalt blue and yellow filters. • PD range : 46 – 74mm <p>ACCESSORIES</p> <ul style="list-style-type: none"> • 1 scleral depressor large, 1 scleral depressor small, 1 teaching mirror, 1 spare lamp, hard case. <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)</p> <p>Country of Origin: USA, EEC, Japan or Equivalent</p>	02	Units	
4.	<p><u>OPHTHALMIC CRYOSURGICAL UNIT</u></p> <p>FEATURES:</p> <ul style="list-style-type: none"> • Simple & automatic System for Cryo Surgery • Wide Graphic Display • User Friendly Control Software • Probe Temperature Control • Count Down Function • High precision temperature reading • System efficiency test • Suitable for Reinal, Endovitreal, Glaucoma & Cataract Surgery <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Gas type N2O or CO2 Medical Grade in non Syphon cylinder • Working Pressure 50/60 bar (725-870 psi) • Maximum pressure 70 bar (1015psi) 	01	Unit	

	<p>COMPLETE WITH THE FOLLOWING:</p> <ul style="list-style-type: none"> • CRYO SYSTEM COMPLETE WITH TUBE, FILTER, CARTRIDGE , FOOTSWITCH • N₂O CYLINDER ADAPTER • CRYO PROBE FOR RETINA • CRYO PROBE FOR GLAUCOMA <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period) Country of Origin: USA, EEC, Japan or Equivalent</p>			
5.	<p><u>ELECTRIC STEAM AUTOCLAVE</u></p> <ul style="list-style-type: none"> • Fully Automatic High Speed Flash Autoclave • for Class "S" sterilization of flat instruments & • Instruments with medium size cavity e.g. Phaco Handpieces • Italy make <p>Features:</p> <ul style="list-style-type: none"> • Powerful vacuum pump which at the beginning of the cycle, expels any air pockets still present inside the chamber and, at the end of the sterilization phase, guarantees perfect drying of the materials treated. • Constant monitoring of pressure, temperature and time. All the functions are automatic. Electromagnetic block device on the door. Stainless steel chamber, uniformly heated by a band heating element. • Twin tank for clean and used / contaminated water: • 5 sterilization cycles: 121°C and 134°C for unwrapped and wrapped instruments, and a "flash" cycle for rapid sterilization. <p><u>SPECIFICATIONS:</u></p> <ul style="list-style-type: none"> • Dimensions LxHxP: 450 x 385 x 540 • Diameter: 243 mm • Depth: 320 mm • Wattage: 2 Kw • Rack for four trays <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period) Country of Origin: USA, EEC, Japan or Equivalent</p>	02	Unit	
6.	<p><u>AUTOREFRACTOR / KERATOMETER</u></p> <p>AUTO REF-KERATOMETER</p> <ul style="list-style-type: none"> • TFT COLOR LCD DISPLAY • PERIPHERAL KERATOMETRY, CLBC, PUPIL SIZE, REFRACTION MAP • BUILT-IN PRINTER • ONE TOUCH LOCK • PUPIL AND IRIS SIZE MEASUREMENT 	01	Unit	

	<ul style="list-style-type: none"> • CLBC (BASE CURVATURE) • RETRO ILLUMINATION MODE • GRAPHICAL DISPLAY OF REFRACTON MAP • PERIPHERAL KERATOMETRY MEASUREMENT • REILABLE KERATOMETRY DATA USING 2 MIRE RINGS AND 2 LED <p><u>MEASUREMENT MODE:</u></p> <ul style="list-style-type: none"> • K/R Mod : Continuous Keratometry&Refractometry • REF Mod :Refractometry • KER Mode :Keratometry • CLBC Mode : Contact Lens Base Curve Measurement • KERP Mode : Peripheral Keratometry <p><u>REFRACTOMETRY</u></p> <ul style="list-style-type: none"> • Vertex Distance (VD) : 0.0, 12.0, 13.5, 15.0 • Sphere (SPH) : -25.00~+22.00(When VD=12mm)(Increments:0.12and0.25D) • Cylinder(CYL) : 0.00~10.00D(Increments:0.12 and 0.25D) • CLBC Mode : 1 ~ 180°(Increments : 1°) • Cylinder Form : -, +, ± • Pupil Distance : 10 ~ 85mm • Minimum Pupil Diameter :∅ 2.0mm <p><u>KERATOMETRY</u></p> <ul style="list-style-type: none"> • Radius of Curvature : 5 – 10.2mm(Increments : 0.01mm)33.00~67.50D • Corneal Power : (when corneal equivalent refractive index is 1.3375) ○ : (Increments : 0.05/0.12 /0/25D) • Aixs : 1 ~ 180°(Increments : 1°) • Pupil, IrisDiameter : 2.0~14.0mm(Increments :0.1mm) • Memory of Date : 10 measurements for each eye <p><u>OTHERS</u></p> <ul style="list-style-type: none"> • Internal Printer : Thermal Line Printer • Power Saving : Automatic switch off(5min) • Display : 6.5 inch Color TFT LCD <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)</p> <p>Country of Origin: Korea, Japan or Equivalent</p>			
7.	<p><u>A/B SCAN - OPHTHALMIC ULTRASOUND FOR A-SCAN BIOMETRY & B-SCAN</u></p> <p>Technical Specification:</p> <p>B-MODE:</p> <ul style="list-style-type: none"> • Gain adjustable: from 20 to 110dB • Gain before (T.G.C): adjustable from 0 to 30dB • Dynamic range: adjustable from 25 to 90 dB • Unlimited image storage 	01	Unit	

- Post-Processing measuring tools: Calipers, areas, angles, markers, comments.

PROBE:

- Frequency: 10 MHz
- Angle of exploration: 50°
- Depth of exploration: 60 mm – 0.24"
- Focus: 24 to 26 m – 0.09" to 0.1"
- Axial resolution: 200 μ m
- Lateral resolution: 600 μ m

BIOMETRY:

PROBE:

- Frequency: 11 MHz
- Diameter of tip: 6 mm (0.23")
- Method: Contact, immersion
- **Electronic resolution: 0.03 mm (0.002")**
- Depth: 50 mm (2.36")
- Points on X: 1536
- Levels on Y: 256
- **Axial Length Measurements:**
- Types of measurement: Anterior chamber, lens, vitreous, total length, automatic calculation of the standard deviation, and average, results analysis
- Number of measurements: 10
- Precision: ± 0.03 mm (± 0.002 ")
- Velocity: adjustable for each segment
- Frozen image: auto, auto + save, manual (foot pedal)

○ **Formulas Includes:**

- 6 formulas for implant calculation: SRK-T, SRK II, HOLLDAY, BINKHORST-II, HOFFER-Q, HAIGIS
- Post-Op refractive calculation:
- Pre-Op and Post-Op and Post-Op keratometry
- 6 different methods for keratometry correction and implant calculation: history derived, refraction derived, contact lens method, ROSA regression, SHAMMAS regression, double K / SRK-T (Dr ARAMBERRI's formula)
- 9 different implant powers for desired ametropia value
- Screen display of 2 different implant calculations
- Implant values available in increments of: 0.25D or 0.50D

SPECIFICATIONS:

- Gain: 110dB
- TGC: 0 to 30 dB

SPECIFICATIONS:

- Bias correction: 80 to 120%

With:

Compatible Printer

Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)

Country of Origin: USA, EEC, Japan or Equivalent

8.	<p><u>OPTICAL BIOMETER WITH A SCAN AND CORNEAL PACHY-METER</u></p> <ul style="list-style-type: none"> • Capability to measure following values • Axial length • Corneal curvature radius • Anterior chamber depth • Central corneal thickness • White-to-white distance • Pupil size • 3-D AUTO TRACKING AND AUTO SHOT • ANTERIOR SEGMENT OBSERVATION WITH IMAGING OF LENS, PUPIL, AND DOUBLE MIRE RINGS • IOL CALCULATION WITH ITS OWN MEASURED VALUES • IOL CONSTANTS OPTIMIZATION • ASSIST FOR TORIC IOL ALIGNMENT • ABILITY TO MEASURE EYES WITH EVEN DENSE CATARACT • BUILT-IN ULTRASOUND BIOMETER • CORNEAL CURVATURE MEASUREMENT 360 POINTS WITH DOUBLE MIRE RING <p>TECHNICAL SPECIFICATIONS</p> <p><u>Optical measurement:</u></p> <p>Axial length Measurement range 14 to 40 mm Corneal curvature radius Measurement range 5.00 to 13.00 mm Anterior chamber depth Measurement range 1.5 to 6.5 mm Central corneal thickness Measurement range 250 to 1,300 µm White-to-white distance Measurement range 7 to 14 mm Pupil size Measurement range 1 to 10 mm</p> <p><u>Ultrasonic measurement</u></p> <p>Axial length Measurement range 12 to 40 mm Corneal thickness Measurement range 200 to 1,300 µm IOL calculation formula SRK, SRK II, SRK/T, Binkhorst, Hoffer Q, Holladay, Camellin-Calossi, Haigis Auto tracking / Auto shot X-Y-Z directions, Auto shot Display Tilttable 8.4-inch color LCD touch screen Printer Thermal line printer with automatic paper cutter Interface LAN, USB</p> <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period) Country of Origin: USA, EEC, Japan or Equivalent</p>	01	Unit	
9.	<p><u>CORNEAL TOPOGRAPH</u></p> <p>CORNEAL TOPOGRAPHY</p> <ul style="list-style-type: none"> • The 28-ring Placido cone should allow coverage over 90% of the corneal surface. 	01	Unit	

- The "Arc-Step" calculation method, for the measurement of both curvature and height at each point on the cornea
- The patented Eye Position Control System (EPCS) should allow image acquisition only at the correct focusing distance

TECHNICAL SPECIFICATIONS:

VIDEOKERATOSCOPE

AREA OF ANALYSIS: 10mm x 14mm (visible on the monitor)

KERATOSCOPE CONE: 28 border mires, equally spaced on a sphere

ANALYSED POINTS: Over 80,000

MEASURED POINTS: 7,168

CORNEAL COVERAGE: From 0.33mm (minimum diameter on a 43D sphere) up to 11mm on a normal eye

MEASURED AREA: 90% of the corneal surface (normal eyes)

DIOPTRIC POWER RANGE From 1D to over 120D

RESOLUTION: +/- 0.01D, 1 micron

FOCUSING DEVICE: Eye Positioning Control System EPCS (patented) automatic acquisition, with decentration correction

TV CAMERA: High resolution (C.C.I.R.)

MONITOR: 6" B&W

OTHER FEATURES: Automatic OD/OS detection, Placido ring image available on the B&W screen

ACCESSORIES INCLUDED: Table top with head rest, calibration kit, footswitch, Scout software

BRIDGE UNIT

IMAGE ACQUISITION: Acquisition through footswitch and EPCS, digital conversion and storage (freeze) on B&W monitor

PC-VK LINK: Through USB port

SOFTWARE: Scout release 3.2 or higher if it comes to vent unit **Complete with the following:**

- VIDEOKERATOSCOPE WITH IR PUPILLOMETRY
- SOFTWARE
- CONTACT LENS ANALYZER KIT
- CONTACT LENS HOLDER
- ELECTRIC STAND
- BRIDGE
- FAR MIRE CONE
- COMPUTER SYSTEM

Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)

Country of Origin: USA, EEC, Japan or Equivalent

10.	<p><u>OPERATING MICROSCOPE FOR EYE SURGERY WITH CAMERA AND ALL ACCESSORIES</u></p> <ul style="list-style-type: none"> Ophthalmic Surgical Operation Microscope with beam splitter, 0 to 180 degree inclinable binocular tube with interpupillary distance adjustment, wide angle oculars with ametropia correction, full apochromatic optics, motorized fine focusing, motorized zoom ratio 1:6 digital display, high definition progressive scan 3 CCD camera with apochromatic HDTV optics; f=50mm, resolution 1920 x 1080 pixels, aspect ratio 16:9, HD video and image recorder, HD monitor, motorized XY coupling, microprocessor controlled depth of focus management system, retinal protection device, stereo coaxial fiber optic halogen illumination for brilliant red reflex, fully automatic lamp change. Mobile floor stand. Stereo co observation assistant component with three axis inclination with image erection mechanism. Wireless foot control panel with back up cable. <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)</p> <p>Country of Origin: USA, EEC, Japan or Equivalent</p>	01	Unit	
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SIGNATURE

CONTRACTOR NAME

DATE & SEAL

BIDDING DOCUMENTS

CIVIL HOSPITAL KARACHI

HEALTH DEPARTMENT

GOVERNMENT OF SINDH

Contract NO:- PD-Trauma Centre-CHK/017 (Rev) 2013-14

Tender Documents for
Supplying, Installation, Testing, Commissioning &
Maintenance (during maintenance period) of
Ophthalmology Equipments
at
“Shaheed Mohtarma Benazair Bhutto Accident,
Emergency & Trauma Centre and Ancillary Services
Complex at Civil Hospital Karachi”

VOLUME-II

FINANCIAL BID DOCUMENTS

SUMMARY OF CONTENTS

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4.	BILL OF QUANTITY	5 TO 14

FORM OF BID

The Project Director,
Shaheed Mohatarma Benazair Bhutto,
Accident, Emergency & Trauma Centre,
And Ancillary Services Complex At,
Civil Hospital Karachi.

Sub: Supplying, Installation, Testing, Commissioning and Maintenance (during maintenance period) of Ophthalmology Equipments for the project Shaheed Mohatarma Benazir Bhutto, Accident, Emergency & Trauma Centre and Ancillary Services Complex at Civil Hospital Karachi, (Contract No. PD-Trauma Centre-CHK/017 (Rev) 2013-14).

Dear Sir,

1. Having examined the Tender Documents and the site conditions for the above mentioned Project, we, the undersigned offer to Supply, Installation, Testing, Commissioning and maintenance (during maintenance period) of the whole of the said works in conformity with the said tender Documents (and Addendum if any) for the sum of undermentioned amount on DDP basis:-

Bid Price (In Figure):	
Bid Price (In Words):	

2. The above total sum is based on the quantities shown in the Bill of Quantities and other works as mentioned in Salient Features.
3. We undertake, if our tender is accepted, to sign an agreement within 15 calendar days following receipt of letter of award in the form laid out in annexure to this Tender with such alterations and additions thereto as may be required to adopt, such Agreement to circumstances of this Tender.
4. We undertake, if our Tender is accepted, to mobilize on site within 7 calendar days of receipt of the letter of award and commence the works on the first works comprised in the contract within the time of completion specified in the Salient Features.
5. We agree to abide by the Tender for a period of 90 calendar days from the date of opening of tender and shall remain binding upon us and may be accepted at any time before the expiration of that period.

6. Unless and until a formal Agreement is prepared and executed, this Tender together with your written acceptance thereof and other relevant correspondence subsequent to the Tender shall constitute a binding Contract between us.
7. We understand that you are not bound to accept the lowest or any tender you may receive, and that you will not reimburse any expenses incurred by us in preparing and submitting the Tender or otherwise in connection with the Tender.
8. As a guarantee for the performance of the undertakings and obligations of this Tender, we submit herewith Earnest Money/Bid Security equivalent to 2% of the quoted cost in an amount Rs. _____ (Rupees _____) in form of Pay Order issued by the Bank vide No. _____ dated _____ made in your favor and made payable to you without any reference to us and valid for 90 calendar days from the date of submission of Tender.
9. The Tender Documents referred to above constitute a part of this Tender and comprise of the documents listed hereunder:
 - a. Instructions to bidders.
 - b. Salient Features / Terms & Condition of the Tender.
Questionnaire / Proforma – Evaluation Criteria
 - c. Form of Agreement.
 - d. Scope of work / Bill of Quantities / Specification (Technical).
 - e. The Addendum (if any).
 - f. The Drawings (if any).

Dated this _____ day of _____ 20_____

Signature _____ in the capacity of _____ duly
authorized to sign bids for and on behalf of _____

(Name of Bidder in Block Capitals)
(Seal)

Address

Witness:

(Signature) _____

(Name) _____

Address: _____

Occupation _____

BILL OF QUANTITY

Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period) of Ophthalmology Equipment at Shaheed Mohatarma Benazair Bhutto, Accident, Emergency & Trauma Centre and Ancillary Services Complex at Civil Hospital Karachi

S.No	Specification	Qty	Unit	Unit Price	Total Amount																																																														
(1)	(2)	(3)	(4)	(5)	(6)																																																														
1.	<p><u>PHACO-EMULSIFICATION SURGICAL SYSTEM</u></p> <p><u>U/S Power</u></p> <table border="0"> <tr> <td>Ultrasound Modes (Fix / Linear)</td> <td>Range</td> </tr> <tr> <td>U/S continuous</td> <td>0- 100 %</td> </tr> <tr> <td>U/S Pulse (0-100%)</td> <td>5-100 pps (depending upon % Time On)</td> </tr> <tr> <td>U/S I /A</td> <td>U /S Epi mode 0% 100%)</td> </tr> <tr> <td>U/S Burst(0-100%)</td> <td>5 to 500ms</td> </tr> <tr> <td>U/S Hand piece</td> <td>4 Piezo electric crystal,20 gm light weight</td> </tr> <tr> <td>Frequency</td> <td>40 KHz (38.0+/- 1.9KHz)</td> </tr> <tr> <td>Irrigation mode</td> <td>Through Foot Switch / Free Flow(Irrigation Continuous)</td> </tr> <tr> <td>Vacuum</td> <td>0-650mmHg+(Fix/I linear)</td> </tr> <tr> <td>Fluidic System</td> <td>Enhanced Fluidics</td> </tr> <tr> <td></td> <td>Low compliance membrane technology for improved Chamber stability, surge suppression & quick responses</td> </tr> <tr> <td>Aspiration(Aspiration flow rate)</td> <td>5-60cc/min (Fix/Linear)</td> </tr> <tr> <td>Pump</td> <td>Advanced Peristaltic</td> </tr> <tr> <td>Irrigation</td> <td>Gravity, Valve controlled</td> </tr> <tr> <td>Irrigation/Aspiration modes</td> <td></td> </tr> <tr> <td>I / A Cortex</td> <td>0-650mmHg+, range available</td> </tr> <tr> <td>I / A Cap Vac</td> <td>0-650mmHg+, range available</td> </tr> <tr> <td>I / A visco</td> <td>0-650mmHg+, range available</td> </tr> <tr> <td>Anterior Vitrectomy</td> <td>Electrically driven</td> </tr> <tr> <td>Vitrectomy cutter</td> <td>20-Gauge Guillotine(Auto clave able)</td> </tr> <tr> <td>Sub modes</td> <td>Cut I/A,I/A Cut</td> </tr> <tr> <td>Cut rates</td> <td>10 to 1500 cuts / minutes</td> </tr> <tr> <td>Vacuum</td> <td></td> </tr> <tr> <td>Coagulation</td> <td>10 watt max,75ohm</td> </tr> <tr> <td>Power required</td> <td>220-240V,50/60 Hz</td> </tr> <tr> <td></td> <td>User's guide programed</td> </tr> <tr> <td>Graphic Interface</td> <td></td> </tr> <tr> <td>Customised Foot Switch</td> <td>Programmable four switch with treadle</td> </tr> <tr> <td>Micro coaxial capability</td> <td>Enhances surgeon's capabilities</td> </tr> <tr> <td>Vacuum pressure sensor</td> <td>Non invasive optical vacuum pressure sensor for quick responses</td> </tr> <tr> <td></td> <td>Designed to minimize surgical complications</td> </tr> </table>	Ultrasound Modes (Fix / Linear)	Range	U/S continuous	0- 100 %	U/S Pulse (0-100%)	5-100 pps (depending upon % Time On)	U/S I /A	U /S Epi mode 0% 100%)	U/S Burst(0-100%)	5 to 500ms	U/S Hand piece	4 Piezo electric crystal,20 gm light weight	Frequency	40 KHz (38.0+/- 1.9KHz)	Irrigation mode	Through Foot Switch / Free Flow(Irrigation Continuous)	Vacuum	0-650mmHg+(Fix/I linear)	Fluidic System	Enhanced Fluidics		Low compliance membrane technology for improved Chamber stability, surge suppression & quick responses	Aspiration(Aspiration flow rate)	5-60cc/min (Fix/Linear)	Pump	Advanced Peristaltic	Irrigation	Gravity, Valve controlled	Irrigation/Aspiration modes		I / A Cortex	0-650mmHg+, range available	I / A Cap Vac	0-650mmHg+, range available	I / A visco	0-650mmHg+, range available	Anterior Vitrectomy	Electrically driven	Vitrectomy cutter	20-Gauge Guillotine(Auto clave able)	Sub modes	Cut I/A,I/A Cut	Cut rates	10 to 1500 cuts / minutes	Vacuum		Coagulation	10 watt max,75ohm	Power required	220-240V,50/60 Hz		User's guide programed	Graphic Interface		Customised Foot Switch	Programmable four switch with treadle	Micro coaxial capability	Enhances surgeon's capabilities	Vacuum pressure sensor	Non invasive optical vacuum pressure sensor for quick responses		Designed to minimize surgical complications	02	Units		
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	<p>Phaco Tip options A full line of phaco tip design including Kelman,ABS,Flared & tapered</p> <p>Includes: U/S Hand piece – 3 U/S Hand piece Vitrector Foot switch Dust Cover</p> <p>Optional accessories I/A tip bent .3mm – 3 I/A hand piece I/A Hand piece body</p> <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)</p> <p>Country of Origin: USA, EEC, Japan or Equivalent</p>				
2.	<p><u>VITRECTOMY WITH ARGON LASER</u></p> <ul style="list-style-type: none"> • Vitrectomy (Combine Procedure VR+Phaco System) with Green Laser 532nm <p><u>SPECIFICATIONS</u></p> <p>PERFORMANCE SPECIFICATIONS:</p> <p>PRESSURIZED INFUSION/IRRIGATION @SEA LEVEL:</p> <ul style="list-style-type: none"> • Range: 0 to 120 mmHg • Accuracy: ±(2% of setpoint +5 mmHg) • Flow Rate: 0 to 20 cc/min. for infusion (20 Ga) • 0 to 60 cc/min. for irrigation • Setpoint Transient: 500 ms maximum <p>IOP CONTROLLED INFUSION:</p> <ul style="list-style-type: none"> • Setpoint Range: 0-120 mmHg • Repeatability1: ± 2 mmHg • Setpoint Response Time: <500 ms (20 Ga) • Transient Disturbance • Response Time: <500 ms3 • Flow Range: 0-20 cc/min • 1 BSS Dual chamber mode. • 2 BSS medium, 20 gauge high flow Cannula, steady state condition at rated flow range • 3 Transient condition from no flow state to 10cc/min <p>ASPIRATION/SUCTION @SEA LEVEL:</p> <ul style="list-style-type: none"> • Standard & Reduced • Pressure Range: 0-650 mmHg Vacuum • Minimal Pressure Range: 0-600 mmHg Vacuum • Pressure Accuracy: ±(2% of Setpoint +5 mmHg) • Flow Range: • Posterior Modalities: 0-20 cc/min • Anterior Modalities: 0-60 cc/min • Transient Response Time • (Standard Pressure Range): From 0 to 400 mmHg @0 cc/min • 1090% Rise Time.300mscc max 	01	Unit		

- 9010% Fall Time: 300 msec max

VACUUM @ SEA LEVEL:

- Vitrectomy: 0 to 650 mmHg
- Fragmentation: 0 to 650 mmHg
- Extrusion: 0 to 650 mmHg
- Extraction: 0 to 650 mmHg
- Irrigation/Aspiration: 0 to 650 mmHg
- Phacoemulsification: 0 to 650 mmHg

LOW PRESSURE AIR SOURCE (LPAS) @SEA LEVEL:

- Pressure Range: 0 – 120 mmHg at rated flow
- Pressure Accuracy: $\pm 3\%$ of setpoint +3 mmHg
- Flow Rate: 1.2 slpm minimum at 120 mmHg

VITRECTOMY:

- Submodes: 3D, Momentary, PropVac, VitWet
- Cut Rate:
001 to 7,500 cpm

DIATHERMY:

- Frequency: 1.5 Mhz $\pm 10\%$.
- Proportional control.
- Waveshape: Sinusoidal
- Output power 10 Watts maximum at 100% setting
with 75 $\pm 10\%$ ohm non-inductive load
- Power range 0 100% of maximum output power

ILLUMINATION:

- Light Output through
20GA Fiber Probe: 0-200 hrs: 16 ± 6 lumens
at 115% set point 1
201400 hrs: 16 ± 6 lumens
at 115% set point 1
- Light Output through
23GA Fiber Probe: 0-200 hrs: 23 ± 13 lumens
at 115% set point 1
201400 hrs: 23 ± 13 lumens
at 115% set point 1
- Light Output through
25GA Fiber Probe: 0-200 hrs: 18 ± 8 lumens
at 115% set point 1
201400 hrs: 18 ± 8 lumens
at 115% set point 1
- Based on a representative nominal UFR fiber.

FRAGMENTATION:

- Submodes: Linear, Fixed, Momentary
- Tip Stroke @ 100%: 3.1 ± 0.5 mils at 100% power
- Resonant Frequency: 39.0 ± 1.9 KHz
- Pulse Rate Range: 0 – 100 pps

SCISSORS:

- Submodes: Proportional, Multi-Cut

	<ul style="list-style-type: none"> • Proportional Pressure: 0-50 psi @sea level • Multi Cut Rate: single cut to 450 cpm <p>PROPORTIONAL AND CONTINUOUS REFLUX @SEA LEVEL:</p> <ul style="list-style-type: none"> • Pressure Range: 0 to 120 mmHg • Pressure Accuracy: ±(2% of Setpoint +5 mmHg) <p>MICRO REFLUX:</p> <ul style="list-style-type: none"> • Pressure Range: 100 ± 50 mmHg • Volume: 15 ± 10 µL • 1 measured with unoccluded 20 Ga <i>UltraVit™</i> probe and aspiration tubing <p>VISCOUS FLUID CONTROL:</p> <ul style="list-style-type: none"> • Submodes: Inject, Extract • Injection Pressure: 0 to 551.6 KPascal (0 to 80 psi) 0 to 482.7 KPascal @ Reduced (0 to 70 psi) • Extract Vacuum at Sea Level: 0 to 650 mmHg <p>AUTO-GAS FILLING (AGF):</p> <ul style="list-style-type: none"> • Maximum Gas Pressure: 10 psig • Fill Purity: 99.7% gas concentration • following 3 purges & 1 fill <p>PHACOEMULSIFICATION:</p> <ul style="list-style-type: none"> • Submodes: Burst, Pulsed, Continuous • Tip Stroke @ 100%: 3.5 ± 0.5 mils • Resonant Frequency: 34khz – 42Khz ± 10%. • Pulse Rate Range: 0-100 pulses per second • Burst Length: 2.5 sec – user adjustable • Burst Pulse durations: 5 ms to 500 ms <p>ANTERIOR VITRECTOMY:</p> <ul style="list-style-type: none"> • Submodes: Wet, Dry • Cut Rate: 0 to probe maximum <p>GREEN LASER 532NM</p> <ul style="list-style-type: none"> • Class: IV • Power: 30 mW to 2 W (maximum) • Wavelength: 532 nm <p>• Aiming beam:</p> <ul style="list-style-type: none"> • Class: II • Power: less than 1 mW • Wavelength: 635 nm ± 5 nm <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)</p> <p>Country of Origin: USA, EEC, Japan or Equivalent</p>				
3.	<p><u>INDIRECT OPHTHALMOSCOPE AND 20 D</u></p> <p>FEATURES:</p> <ul style="list-style-type: none"> • Synchronized adjustment of convergence and parallax for high quality stereoscopic fundus image through any pupil size. 	02	Units		

	<ul style="list-style-type: none"> • Multi-coated illumination system new Xenon Halogen technology bulb. • Separate fine-tuning of the illumination beam $\pm 4^\circ$. • 3 integrated spot size, 3 integrated filters. <p>SPECIFICATION</p> <ul style="list-style-type: none"> • Illumination: 6V, 10W halogen lamp • Aperture size: Large spot, medium spot, small spot, diffuse spot. • Filter : Red-free, cobalt blue and yellow filters. • PD range : 46 – 74mm <p>ACCESSORIES</p> <ul style="list-style-type: none"> • 1 scleral depressor large, 1 scleral depressor small, 1 teaching mirror, 1 spare lamp, hard case. <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)</p> <p>Country of Origin: USA, EEC, Japan or Equivalent</p>				
4.	<p><u>OPHTHALMIC CRYOSURGICAL UNIT</u></p> <p>FEATURES:</p> <ul style="list-style-type: none"> • Simple & automatic System for Cryo Surgery • Wide Graphic Display • User Friendly Control Software • Probe Temperature Control • Count Down Function • High precision temperature reading • System efficiency test • Suitable for Reinal, Endovitreal, Glaucoma & Cataract Surgery <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Gas type : N2O or CO2 Medical Grade in non Syphon cylinder • Working Pressure : 50/60 bar (725-870 psi) • Maximum pressure : 70 bar (1015psi) <p>COMPLETE WITH THE FOLLOWING:</p> <ul style="list-style-type: none"> • CRYO SYSTEM COMPLETE WITH TUBE, FILTER, CARTRIDGE , FOOTSWITCH • N₂O CYLINDER ADAPTER • CRYO PROBE FOR RETINA • CRYO PROBE FOR GLAUCOMA <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)</p> <p>Country of Origin: USA, EEC, Japan or Equivalent</p>	01	Unit		
5.	<p><u>ELECTRIC STEAM AUTOCLAVE</u></p> <ul style="list-style-type: none"> • Fully Automatic High Speed Flash Autoclave • for Class "S" sterilization of flat instruments & • Instruments with medium size cavity e.g. Phaco Handpieces • Italy make 	02	Unit		

Features:

- Powerful vacuum pump which at the beginning of the cycle, expels any air pockets still present inside the chamber and, at the end of the sterilization phase, guarantees perfect drying of the materials treated.
- Constant monitoring of pressure, temperature and time. All the functions are automatic. Electromagnetic block device on the door. Stainless steel chamber, uniformly heated by a band heating element.
- Twin tank for clean and used / contaminated water:
- 5 sterilization cycles: 121°C and 134°C for unwrapped and wrapped instruments, and a "flash" cycle for rapid sterilization.

SPECIFICATIONS:

- Dimensions LxHxP: 450 x 385 x 540
- Diameter: 243 mm
- Depth: 320 mm
- Wattage: 2 Kw
- Rack for four trays

Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)

Country of Origin: USA, EEC, Japan or Equivalent

6.

AUTOREFRACTOR / KERATOMETER

AUTO REF-KERATOMETER

- TFT COLOR LCD DISPLAY
- PERIPHERAL KERATOMETRY, CLBC, PUPIL SIZE, REFRACTION MAP
- BUILT-IN PRINTER
- ONE TOUCH LOCK
- PUPIL AND IRIS SIZE MEASUREMENT
- CLBC (BASE CURVATURE)
- RETRO ILLUMINATION MODE
- GRAPHICAL DISPLAY OF REFRACTION MAP
- PERIPHERAL KERATOMETRY MEASUREMENT
- RELIABLE KERATOMETRY DATA USING 2 MIRE RINGS AND 2 LED

MEASUREMENT MODE:

- K/R Mod : Continuous Keratometry & Refractometry
- REF Mod : Refractometry
- KER Mode : Keratometry
- CLBC Mode : Contact Lens Base Curve Measurement
- KERP Mode : Peripheral Keratometry

REFRACTOMETRY

- Vertex Distance (VD) : 0.0, 12.0, 13.5, 15.0
- Sphere (SPH) : -25.00~+22.00 (When VD=12mm) (Increments: 0.12 and 0.25D)
- Cylinder (CYL) : 0.00~10.00D (Increments: 0.12 and 0.25D)
- CLBC Mode : 1 ~ 180° (Increments : 1°)
- Cylinder Form : -, +, ±
- Pupil Distance : 10 ~ 85mm
- Minimum Pupil Diameter : Ø 2.0mm

01

Unit

	<p><u>KERATOMETRY</u></p> <ul style="list-style-type: none"> • Radius of Curvature : 5 – 10.2mm(Increments : 0.01mm)33.00~67.50D • Corneal Power : (when corneal equivalent refractive index is 1.3375) ○ : (Increments : 0.05/0.12 /0/25D) • Aixs : 1 ~ 180°(Increments : 1°) • Pupil, IrisDiameter : 2.0~14.0mm(Increments :0.1mm) • Memory of Date : 10 measurements for each eye <p><u>OTHERS</u></p> <ul style="list-style-type: none"> • Internal Printer : Thermal Line Printer • Power Saving : Automatic switch – off(5min) • Display : 6.5 inch Color TFT LCD <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)</p> <p>Country of Origin: Korea, Japan or Equivalent</p>				
7.	<p><u>A/B SCAN - OPHTHALMIC ULTRASOUND FOR A-SCAN BIOMETRY & B-SCAN</u></p> <p>Technical Specification:</p> <p>B-MODE:</p> <ul style="list-style-type: none"> • Gain adjustable: from 20 to 110dB • Gain before (T.G.C): adjustable from 0 to 30dB • Dynamic range: adjustable from 25 to 90 dB • Unlimited image storage • Post-Processing measuring tools: Calipers, areas, angles, markers, comments. <p>PROBE:</p> <ul style="list-style-type: none"> • Frequency: 10 MHz • Angle of exploration: 50° • Depth of exploration: 60 mm – 0.24" • Focus: 24 to 26 m – 0.09" to 0.1" • Axial resolution: 200 μm • Lateral resolution: 600 μm <p>BIOMETRY:</p> <p>PROBE:</p> <ul style="list-style-type: none"> • Frequency: 11 MHz • Diameter of tip: 6 mm (0.23") • Method: Contact, immersion • Electronic resolution: 0.03 mm (0.002") • Depth: 50 mm (2.36") • Points on X: 1536 • Levels on Y: 256 • Axial Length Measurements: • Types of measurement: Anterior chamber, lens, vitreous, total length, automatic calculation of the standard deviation, and average, results analysis • Number of measurements: 10 • Precision: ± 0.03 mm (± 0.002") • Velocity: adjustable for each segment 	01	Unit		

<ul style="list-style-type: none"> • Pupil size • Ultrasonic measurement • Axial length • Corneal thickness • IOL calculation formula • Auto tracking / Auto shot • Display • Printer • Interface • Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period) • Country of Origin: USA, EEC, Japan or Equivalent 	<p>Measurement range 1 to 10 mm</p> <p>Measurement range 12 to 40 mm</p> <p>Measurement range 200 to 1,300 μm</p> <p>SRK, SRK II, SRK/T, Binkhorst, Hoffer Q, Holladay, Camellin-Calossi, Haigis</p> <p>X-Y-Z directions, Auto shot</p> <p>Tilttable 8.4-inch color LCD touch screen</p> <p>Thermal line printer with automatic paper cutter</p> <p>LAN, USB</p>				
<p>9. CORNEAL TOPOGRAPHY</p> <ul style="list-style-type: none"> • The 28-ring Placido cone should allow coverage over 90% of the corneal surface. • The "Arc-Step" calculation method, for the measurement of both curvature and height at each point on the cornea • The patented Eye Position Control System (EPCS) should allow image acquisition only at the correct focusing distance <p>TECHNICAL SPECIFICATIONS:</p> <p>VIDEOKERATOSCOPE</p> <p>AREA OF ANALYSIS: 10mm x 14mm (visible on the monitor)</p> <p>KERATOSCOPE CONE: 28 border mires, equally spaced on a sphere</p> <p>ANALYSED POINTS: Over 80,000</p> <ul style="list-style-type: none"> • MEASURED POINTS: 7,168 • CORNEAL COVERAGE: From 0.33mm (minimum diameter on a 43D sphere) up to 11mm on a normal eye • MEASURED AREA: 90% of the corneal surface (normal eyes) <p>DIOPTRIC POWER RANGE: From 1D to over 120D</p> <p>RESOLUTION: +/- 0.01D, 1 micron</p> <p>FOCUSING DEVICE: Eye Positioning Control System EPCS (patented) automatic acquisition, with decentration correction</p> <p>TV CAMERA: High resolution (C.C.I.R.)</p> <p>MONITOR: 6" B&W</p> <p>OTHER FEATURES: Automatic OD/OS detection, Placido ring image available on the B&W screen</p> <p>ACCESSORIES INCLUDED: Table top with head rest, calibration kit, footswitch, Scout software</p> <p>BRIDGE UNIT</p> <p>IMAGE ACQUISITION: Acquisition through footswitch and EPCS, digital conversion and storage (freeze) on B&W monitor</p> <p>PC-VK LINK: Through USB port</p> <p>SOFTWARE: Scout release 3.2 or higher if it comes to vent unit,</p> <p style="padding-left: 40px;">Complete with the following:</p> <ul style="list-style-type: none"> • VIDEOKERATOSCOPE WITH IR PUPILLOMETRY • SOFTWARE • CONTACT LENS ANALYZER KIT • CONTACT LENS HOLDER 	01	Unit			

	<ul style="list-style-type: none"> ELECTRIC STAND BRIDGE FAR MIRE CONE COMPUTER SYSTEM <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)</p> <p>Country of Origin: USA, EEC, Japan or Equivalent</p>				
10.	<p><u>OPERATING MICROSCOPE FOR EYE SURGERY WITH CAMERA AND ALL ACCESSORIES</u></p> <ul style="list-style-type: none"> Ophthalmic Surgical Operation Microscope with beam splitter, 0 to 180 degree inclinable binocular tube with interpupillary distance adjustment, wide angle oculars with ametropia correction, full apochromatic optics, motorized fine focusing, motorized zoom ratio 1:6 digital display, high definition progressive scan 3 CCD camera with apochromatic HDTV optics; f=50mm, resolution 1920 x 1080 pixels, aspect ratio 16:9, HD video and image recorder, HD monitor, motorized XY coupling, microprocessor controlled depth of focus management system, retinal protection device, stereo coaxial fiber optic halogen illumination for brilliant red reflex, fully automatic lamp change. Mobile floor stand. Stereo co observation assistant component with three axis inclination with image erection mechanism. Wireless foot control panel with back up cable. <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)</p> <p>Country of Origin: USA, EEC, Japan or Equivalent</p>	01	Unit		

GRAND TOTAL

Grand Total in Pak. Rupees, on DDP / C&F basis _____

SIGNATURE

CONTRACTOR NAME

DATE & SEAL