

Ophthalmology

A-B Scan

No.	Item Specifications
1	Description of Function
1.1	A-Scan can be used for biometric calculation and for quantifying the reflectivity of lesions in the eye and orbit. B-Scan is used for imaging the anatomy.
2	Operational Requirements
2.1	System completes with all hardware and software and report printer and image recorder is required.
3	System Configuration
3.1	A+B Scans Ultrasound for Ophthalmology, complete unit with complete accessories.
4	Technical Specifications
4.1	Shall have A-scan mode.
4.2	Shall have B-scan mode.
4.3	Shall have dynamic movie archiving.
4.4	Shall have Laser & video CD recording facility.
4.5	Shall have auto & manual measure function.
4.6	Shall have distance & area measurement on B-scan images.
4.7	Shall have vector A-scan measurement.
4.8	Shall have simultaneous B-scan with vector A-scan.
4.9	Shall have A-scan dynamic recording with gain adjustments.
4.1	Shall have facility for IOL power calculations (all formulas).
5	Accessories, spares and consumables
5.1	Accessories:
	☐ A Scan Probe, frequency > 10 MHz: 01 no.
	☐ B Scan Probe, frequency> 10 MHz: 01 no.
	☐ Integrated or compatible recorders/printers: CD recorder, printer.
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.
6	Operating Environment
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.
6.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.
7	Standards and Safety Requirements
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.
7.3	Shall meet IEC 60601-2-37 Medical Electrical Equipment - PART 2 Particular Requirements for the Safety of Ultrasonic Medical Diagnostic and Monitoring Equipment.
8	User Training
8.1	Must provide user training (including how to use and maintain the equipment).
9	Warranty
9.1	Comprehensive warranty for 2 years.
10	Maintenance Service During Warranty Period
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
11	Documentation
11.1	User (Operating) manual in English.
11.2	Service (Technical / Maintenance) manual in English.

11.3	List of important spare parts and accessories with their part numbers and costing.
11.4	Certificate of calibration and inspection from factory.

Auto Refractometer

No.	Item Specifications
1	Description of Function
1.1	Auto refractometer is computerized vision testing machines used obtain and objective measure the eye's refractive error. This measurement provides the most accurate prescription for corrective lenses.
2	Operational Requirements
2.1	Auto Refractometer with full auto mode.
3	System Configuration
3.1	Auto Ref-Keratometer, complete unit with all standard accessories.
4	Technical Specifications
4.1	Shall have automatic radius measurement.
4.2	Shall have automatic peripheral measurement.
4.3	It must have adjustable tilt colour LCD monitor.
4.4	Shall have active accommodation relaxation.
4.5	Shall have IOL measuring mode
4.6	Shall have reliable PD measurement.
4.7	Shall have large cylinder measuring range up to 10 D.
4.8	Measurement as from 2.3 mm pupillary diameter
4.9	In-built printer with paper cutter function.
4.1	Refractometry:
	☐ Sphere (SPH): -30 to + 22D when VD is set to 12mm.
	☐ Cylinder (CYL):0 to +/- 10D.
	☐ Axis (AX): 1 to 180 degree.
	☐ Automatic measurement (release) in the case of correct centering.
	☐ 1 to 10 automatic measurements possible.
4.11	Radius Measurement:
	☐ Surface refraction power 33.75 D-67.5 D in 0.01/0.12/0.25 D steps.
	☐ Radius 5.0 - 10.0 mm in 0.01 mm steps.
	☐ Cylinder size 0-9.0 D (Axis 0deg. to 180deg. in 1deg. steps).
4.12	Cornea vertex distance: 0 10 12 13.5 15 mm.
4.13	Minimum pupillary diameter: 2.3 mm.
4.14	Pupillary distance up to 85 mm in 1 mm steps.
4.15	Shall have RS232C and video NTSC.
5	Accessories, spares and consumables
5.1	Accessories:
	☐ Trolley: 01 no.
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.
6	Operating Environment
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.
6.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.
7	Standards and Safety Requirements
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.

7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.
8	User Training
8.1	Must provide user training (including how to use and maintain the equipment).
9	Warranty
9.1	Comprehensive warranty for 2 years.
10	Maintenance Service During Warranty Period
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
11	Documentation
11.1	User (Operating) manual in English.
11.2	Service (Technical / Maintenance) manual in English.
11.3	List of important spare parts and accessories with their part numbers and costing.
11.4	Certificate of calibration and inspection from factory.

Ophthalmic set

No.	Item Specifications
1	Technical Specifications
	Standard specifications
2	Operating Environment
2.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.
3	Standards and Safety Requirements
3.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
3.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
4	Warranty
4.1	Comprehensive warranty for 2 years after acceptance.

Ophthalmic table

No.	Item Specifications
1	Mechanical Movement
2	The adjustable cushioned head rest comfort for operation
3	The adjustable wrist support provides comfort and stability while operating.
4	Versatile operation table for Ophthalmic surgery and certain special procedures.
5	Up & Down:
	Minimum Height : 610 mm
	Maximum. Height : 890 mm
6	Stroke Length : 280 mm
7	Tilting (Forward & Reverse) Back Rest Section 30 Leg Section 20
8	Weight capacity : not less than 200 kg.
9	DIMENSIONS Aprox: not less than L890 mm, W 690 mm

Ophthalmic Unit

No.	Item Specifications
1	Required Ophthalmic features:-
2	One fully upholstered elegant ophthalmic chair with full motorized recline facilities with full motorized up & down
3	movement for 300mm
4	One stand and console:-
5	with illuminated soft light for examination

6	with controls for ophthalmic chair, for recline and up & down movements, back and
7	forward movement. One foot pedal for the up and down movement is also required.
8	Required Base dimensions and Floor space
9	Base Dimension Floor Space required
10	Height 7-8 feet
11	Length after reclining 9-10 feet
12	Width 4 inch
13	Input power supply: 220 $\pm$ 20 % V AC , 50Hz
14	Output 3V, 6V, 12V

Ophthalmic Operating Microscope

No.	Item Specifications
1	Description of Function
1.1	Ophthalmic operating microscopes are used to magnify eye anatomy to assist during ophthalmic surgery.
2	Operational Requirements
2.1	A binocular stereoscopic type microscope with built in illumination provided with facility for changing the magnification without disturbing other alignments i.e. when the magnification is changed the image remains in focus.
3	System Configuration
3.1	Ophthalmic Operating Microscope (Floor Mounted), complete unit with all standard accessories.
4	Technical Specifications
4.1	Binocular optical head with coaxial illumination.
4.2	Eye Piece:
	☐ Wide field minimum 10 X to 12.5X individually adjustable
	☐ Inclined binocular tube 45 deg.
	☐ Must have dioptric adjustment of -5.00 to +5.00.
	☐ Inter-pupillary distance : 55mm to 75mm.
4.3	Objective Lens: focal length (f' minimum 175+/-25 & above).
4.4	Working Distance: To be stated for each alternative not less than 150 mm.
4.5	Total Magnification: 4 to 17.5X or more, if stepped, the steps to be stated.
4.6	Assistant Binocular Microscope: Assistant Microscope to match the focusing of main Microscope.
4.7	Zooming ratio if available 1:6.
4.8	Field of Vision: Range 40 mm to 50 mm or more (at the minimum magnification).
4.9	Motorized focussing.
4.1	Motorized foot control.
4.11	Intensify: Maximum 80,000 lux or more.
4.12	Type: Coaxial dual lamp/ by optical light guide. Halogen bulbs, no. of bulbs, voltage, wattage and secondary power source to be stated by bidder. Fan Cooling arrangement shall be available.
4.13	Field: Range 45 mm to 60 mm or more.
4.14	U.V. Filter: U.V filters switchable facility for occluding pupillary light.
4.15	Construction (Mounting & Adjustments): Arms:
	☐ Counter balanced spring type.
	☐ Horizontal lengths of Arms: To be stated not less than 800mm.
	☐ Range of vertical adjustment: 300 to 550 mm or more.
	☐ Rotation of arms: not less than 300 deg.
	Base:
	☐ The base must be stable and must not topple when optical units articulated arm is fully extended.
	☐ Dimension of base in mm: To be stated by the Bidder.
	Means of Mobility:

	☐ To be stated and stability & safety arrangements described in details by the Bidder.
5	Accessories, spares and consumables
5.1	Accessories:
	☐ Spare Halogen Bulbs
	☐ Sterilizeable & detachable caps for nobs: 2 sets
	☐ Dust cover for covering the microscopes: 1 no.
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).
6	Operating Environment
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.
6.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.
7	Standards and Safety Requirements
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.
8	User Training
8.1	Must provide user training (including how to use and maintain the equipment).
9	Warranty
9.1	Comprehensive warranty for 2 years.
10	Maintenance Service During Warranty Period
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
11	Documentation
11.1	User (Operating) manual in English.
11.2	Service (Technical / Maintenance) manual in English.
11.3	List of important spare parts and accessories with their part numbers and costing.
11.4	Certificate of calibration and inspection from factory.

Phaco Machine

No.	Item Specifications
1	Description of Function
1.1	Phaco multifunction systems are used to break up and remove cataracts lenses of the eye.
2	Operational Requirements
2.1	The units must possess irrigation, irrigation/aspiration, ultrasound, diathermy, and vitrectomy operational modes.
3	System Configuration
3.1	Phaco multifunction machine, complete unit with all standard accessories.
4	Technical Specifications
4.1	Phaco multifunction unit must work on venturi & peristaltic pump and shall provide light weight steel hand piece.
4.2	Ultrasonic mode shall have continuous and pulse mode.
4.3	Shall provide two IA straight hand pieces with 4 piezo electric crystals.
4.4	Machine must have good panel display with digital control good audio, memory set up for surgical parameters.
4.5	Shall have multifunctional foot switch.

4.6	Shall have facilities for Bipolar Coagulation, Phacoemulsification, Aspiration and Anterior Vitrectomy.
4.7	Shall have multiple programmes.
4.8	Digital LCD panel display of parameters.
4.9	Bipolar Coagulation: 2 to 6 watts, foot controlled
4.1	Phaco multification:
	☐ Ultrasonic tip frequency: 29-60 KHz.
	☐ Phaco power in both linear and pulse mode.
	☐ Ultrasound pulse rate 1-14 pulses/sec.
	☐ Micro flow tip.
	☐ Auto priming, auto fluidic and auto tuning.
4.11	Aspiration: 0-500 mmHg linear vacuum.
4.12	Anterior Vitrectomy : 30-600 cuts/min.
4.13	Multifunctional foot pedal with a reflux switch.
5	Accessories, spares and consumables
5.1	Accessories:
	☐ 30 degree US tips: 30 nos.
	☐ Tubing: 06 nos.
	☐ Silicon Sleeves: 50 nos.
	☐ Test chambers: 50 nos.
	☐ Diathermy cord: 01 no.
	☐ Customized Trolley having wheels with brakes: 01 no.
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.
6	Operating Environment
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.
6.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.
7	Standards and Safety Requirements
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.
8	User Training
8.1	Must provide user training (including how to use and maintain the equipment).
9	Warranty
9.1	Comprehensive warranty for 2 years.
10	Maintenance Service During Warranty Period
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
11	Documentation
11.1	User (Operating) manual in English.
11.2	Service (Technical / Maintenance) manual in English.
11.3	List of important spare parts and accessories with their part numbers and costing.
11.4	Certificate of calibration and inspection from factory.

Trial Sets

No.	Item Specifications
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1	The lenses should be 20mm in diameter, amount of 38mm diameter, anodized red for minus and black for plus.
	The Sphere lenses with handle and cylinder without handle
2	Trial lenses of good quality, the case made of melamine polished wood, sturdy and attractive finish.
3	lenses—Spheres
	a. Concave and convex-0.12 b. 0.25 to 4.0 in 0.25 steps
	c. 4.5 to 6.0 in 0.5 steps
	d. 7.0 to 14.0 in 1.0 steps e. 16.0 to 20.0 in 2.0 steps f. 0.25 to 3.5 in 0.25 steps g. 4.0 to 6.0 in 0.5 steps
	e. Prisms-1/2, 1, 2, 3, 4, 5, 6, 8, 10, 12.
4	Accessories-Trial frames, one adult size and one for child, adjustable with slots
	i. -Red glass
	ii. green glass iii. -Pin hole iv. -Slit
	v. -Two blank discs vi. two occlude
	vii. -cross cylinder +/- 0.25 and +/- 0.5

Direct Ophthalmoscope

No.	Item Specifications
1	Description of Function
1.1	Ophthalmoscope is an instrument designed to visualize the interior of the eye, with the instrument relatively close to the subject's eye and the observer viewing an upright magnified image.
2	Operational Requirements
2.1	Compact system, battery operated.
3	System Configuration
3.1	Ophthalmoscope set with all standard accessories.
4	Technical Specifications
4.1	Ophthalmoscope set shall have diagnostic head threaded on a handle.
4.2	Head shall have wheel with lens dioptres (0 to +20 and 0 to -20), apertures small, large and semi-circle, fixation star and green filter.
4.3	Shall have halogen bulb, 2.5V with bright white light.
4.4	Handle shall have on/off switch.
4.5	Shall work with 2 AA-batteries (1.5V / LR6 alkaline).
5	Accessories, spares and consumables
5.1	Accessories:
	☐ 1 x spare 2.5V halogen bulb.
	☐ 1 x set of 2 AA-batteries (1.5V / LR6 alkaline).
	☐ 1 x storage case.
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.
6	Operating Environment
6.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature, Humidity, etc. for Sudan.
7	Standards and Safety Requirements
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
8	User Training
8.1	Must provide user training (including how to use and maintain the equipment).
9	Warranty
9.1	Comprehensive warranty for 1 year after acceptance.
10	Maintenance Service During Warranty Period

10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
11 Documentation	
11.1	User (Operating) manual in English.
11.2	Service (Technical / Maintenance) manual in English.
11.3	List of important spare parts and accessories with their part numbers and costing.
11.4	Certificate of calibration and inspection from factory.

Argon Laser

No.	Item Specifications
1	(photocoagulator)
2	Argon Laser (400-600 nm)
3	Internal water cooled system
4	Slit lamp
5	power on the cornea 50-1700 mW
6	Can be connected with a yag laser

Yag Laser

No.	Item Specifications
1	multiFrequencies
2	Slit lamp Delivery (Solid State Design)
3	1064 nm wavelength
4	cone angle 16 D
5	Motorized Table
6	Can be connected with an argon laser on the same slit lamp
7	Full Range Of Delivery Accessories
8	Focus shift mechanism to shift the beam (continuously variable)

Perimeter

No.	Item Specifications
1	Target Size : Goldmann III Size
2	Method of Presentation : Rear Projection LED
3	(50 to 10dB)Luminance Range : 0.01 to 1000 Apostilbs
4	Number of Stimuli approx : 133
5	Luminance Accuracy : +/- 0.5dB
6	Colour : Pale Green
7	Duration : 0.2 to 5.0 sec in 0.2 sec increment
8	Interval : 0.3 to 4.9 sec in 0.2 sec increment
9	Spatial Angle : +/-70deg. Horizontal
10	Input power supply: 220 ± 20 % V AC , 50Hz

Fundus Camera

No.	Item Specifications
1	Description of Function
1.1	A fundus camera or retinal camera is a specialized low power microscope with an attached camera designed to photograph the interior surface of the eye, including the retina, optic disc, macula, and posterior pole i.e. the fundus. A digital camera converts these images into digital images .
2	Operational Requirements

2.1	Digital Fundus Camera provides colour and fundus auto fluorescence (FAF) imaging within a small compact design.
3 System Configuration	
3.1	Digital Fundus Camera, complete with compatible printer for reporting and all standard accessories.
4 Technical Specifications	
4.1	Field angles 30-60 deg.
4.2	Image captures (Colour, Fluorescein Angiography, Green, Blue and Red).
4.3	Capture: 1 chip sensor colour 1 chip sensor black & white
4.4	Monitor 15 inches LCD for direct display.
4.5	Fixation light: internal and external fixation lights both.
4.6	Exposure interval 0.5 - 1 sec.
4.7	Facility for data storage, data transfer, image archiving, image analysis.
4.8	Instrument table: asymmetrical motorized suitable for patients in wheel chair.
4.9	Supporting latest computer hardware & software.
5 Accessories, spares and consumables	
5.1	Accessories:
	☐ Compatible printer for reporting: 01 no.
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.
6 Operating Environment	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.
6.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.
7 Standards and Safety Requirements	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.
8 User Training	
8.1	Must provide user training (including how to use and maintain the equipment).
9 Warranty	
9.1	Comprehensive warranty for 2 years.
10 Maintenance Service During Warranty Period	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
11 Documentation	
11.1	User (Operating) manual in English.
11.2	Service (Technical / Maintenance) manual in English.
11.3	List of important spare parts and accessories with their part numbers and costing.
11.4	Certificate of calibration and inspection from factory.

Optical Coherence Tomography

No.	Item Specifications
1 Description of Function	
1.1	Optical coherence tomography (OCT) is an interferometry, non-invasive optical tomographic imaging technique offering millimetre penetration (approximately 2-3 mm in tissue) with micrometre scale axial and lateral resolution.
2 Operational Requirements	

2.1	OCT machine automatically scans both eyes and produces simultaneously an OCT scan & red free images.
3 System Configuration	
3.1	Optical Coherence Tomography, complete unit with all standard accessories.
4 Technical Specifications	
4.1	Tomography Imaging:
	☐ Cross sectional imaging of fundus.
	☐ Signal type: Optical scattering from tissue.
	☐ Signal source: Super luminescent Diode, 820 nm.
	☐ Optical power: 750 microwatts at cornea.
	☐ Longitude/Axial Resolution: 20 µm in tissue.
	☐ Sample size: 2mm heavily calcified tissue.
	☐ Scanners: Galvanometric mirrors.
	☐ Scan patterns: Line, Circle, Concentric Rings, Radial lines.
	☐ Scan pixels: Adjustable from (1024 axial x 128 transverse) to (1024 axial x 768 transverse).
	☐ Longitudinal (Depth) range: 2 mm in tissue.
	☐ Scan rate: 2.5 msec / A-scan.
	☐ Normative database: RNFL (Retinal Nerve Fibre Layer) and Macular thickness.
4.2	Fundus Alignment, Documentation:
	☐ Signal type: CCD image.
	☐ Field of view: 290 x 230.
	☐ Viewing method: Flat panel display.
	☐ Illumination: Near IR / Red free.
	☐ Internal fixation: 32 x 16 LED Dot Matrix.
	☐ External fixation: Slit lamp type adjustable blinking LED.
	☐ Minimum pupil diameter: 3.2 mm.
	☐ Power consumption: 700VA.
	☐ Footprint: 120 x 85cm - 48inches x 34inches
4.3	PC workstation with Core i5 CPU with laser printer (colour), 300 GB HDD, DVD Read/Write, Image capture card and software loaded for digitization of images, 2GB RAM and interfaces to RVG and Intraoral digitization.
5 Accessories, spares and consumables	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.
6 Operating Environment	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.
6.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.
7 Standards and Safety Requirements	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.
8 User Training	
8.1	Must provide user training (including how to use and maintain the equipment).
9 Warranty	
9.1	Comprehensive warranty for 2 years.
10 Maintenance Service During Warranty Period	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.

11	Documentation
11.1	User (Operating) manual in English.
11.2	Service (Technical / Maintenance) manual in English.
11.3	List of important spare parts and accessories with their part numbers and costing.
11.4	Certificate of calibration and inspection from factory.

Synaptophore

No.	Item Specifications
1	Movement of Optical Tubes:-
2	Horizontal: Adduction + 50 degree, Abduction-40 degree
3	Vertical: Hyper 30 degree, Hypo 30 degree
4	Torsional : Incyclo 20 degree, Excyclo 20 degree
5	Slide Illumination:
	By rheostat controlled 6v Lamp for each slide. After Image Illumination by 12v Lamp
6	Auto Flashing:
	Auto flashing of slide illumination either simultaneously or alternatively in rapid and variable models.
7	Mode & Mode Selection:
	Five Modes of slide illumination namely Normal, Flashing Right, Flashing R+L & Flashing, can be selected
8	Haidinger Brush:
	One Haidinger brush attachment along with rheostat for speed control and switch for direction reversal.
9	Dimensions:
	Longitudinal : 40-55cm
	Lateral : 30-40cm
	Vertical : 30-50cm
	Weight : 10-15kg
10	Power Supply:
	220 Volt A.C.
11	Standard Accessories:
	A set of slides containing 9 pairs
12	Accessories:
	One power cord
	One dust Cover
	Spare 6v Bulbs (2 Nos) & 12v Bulbs (2 Nos.)

Cataract Set

No.	Item Specifications
1	Wire speculum
2	St.Clark's self retaining speculums
3	Arragua's superior rectus needle holder.
4	Blade breacker
5	Micro corneal scissors with suture tying.
6	Universal corneal scissors.
7	Iris scissors str&cvd.
8	Micro corneal needle holder.
9	Iris repository double ended.
10	Arruga's capsular forceps.
11	Wire vectus.
12	Caughtry point.
13	Spring scissors straight.

14	Micro mosquito artery forceps.
15	Fixation forceps.
16	Micro suture tying forceps.
17	Simeco two-way canula.
18	Instrument tray with lid.
19	Toothed dissecting forceps 7"
20	Non toothed dissecting forceps 7"
21	Allis forceps 8"
22	Long Artery forceps 9" curved
23	Long Artery forceps 9" straight
24	Deaver retractors set of three 2", 2", 3"
25	Volsellum forceps
26	Kidney tray 1 litre
27	Kidney tray 500 ml

Slit Lamp

No.	Item Specifications
1	Description of Function
1.1	The slit lamp is an instrument consisting of a high-intensity light source that can be focused to shine as a slit. It is used in conjunction with a microscope.
2	Operational Requirements
2.1	Slit lamp with beam splitter and camera attachment is required.
3	System Configuration
3.1	Photo – Slit Lamp with Applanation Tonometer, complete unit with all standard accessories.
4	Technical Specifications
4.1	Slit width: 0-14 mm adjustable.
4.2	Slit length: 0.1 – 14mm.
4.3	Slit angle: +90 – 90 adjustable in steps continuous.
4.4	Decentring of slit image: +4 to –4 horizontal.
4.5	Diaphragm sizes: 0.2 – 14mm.
4.6	Rotation: 0-180 degrees.
4.7	Light source: Halogen lamps.
4.8	Slit tilt: 0-20 degrees.
4.9	Filters: cobalt blue, red free, neutral, UV protection.
4.1	Binocular microscope with standard objective and eyepieces.
4.11	5X to 40X magnification in steps with drum rotation.
4.12	Field of view: 6 to 40mm.
4.13	Movement: base movement (x, y, vertical), adequate chin rest movement
4.14	Shall come with:
	☐ Motorized imported table for slit lamp.
	☐ Applanation tonometer.
	☐ Beam splitter.
	☐ Slit lamp camera.
5	Accessories, spares and consumables
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.
6	Operating Environment
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.

6.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.
7	Standards and Safety Requirements
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.
8	User Training
8.1	Must provide user training (including how to use and maintain the equipment).
9	Warranty
9.1	Comprehensive warranty for 2 years.
10	Maintenance Service During Warranty Period
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
11	Documentation
11.1	User (Operating) manual in English.
11.2	Service (Technical / Maintenance) manual in English.
11.3	List of important spare parts and accessories with their part numbers and costing.
11.4	Certificate of calibration and inspection from factory.

Indirect Ophthalmoscope (LED light)

1	Description of Function
1.1	Indirect Ophthalmoscope is used to observe and examine the fundus of eye as well as to be used in ophthalmic surgeries and in treatment of eye diseases like cataract, myopia and others.
2	Operational Requirements
2.1	Binocular indirect ophthalmoscope, shall work on rechargeable battery.
3	System Configuration
3.1	Indirect Ophthalmoscope with LED light, complete unit and with all standard accessories.
4	Technical Specifications
4.1	It shall have ergonomically designed light weight, adjustable, soft cushioning, non slip head band.
4.2	It shall have facility for precision viewing.
4.3	It shall have facility for all pupil features.
4.4	It shall have synchronized convergence and parallax adjustment system.
4.5	It shall have adjustable interpupillary distance approx. 50mm to 70mm.
4.6	Apertures: Integrated to choose from small, medium and large.
4.7	Filters: Integrated filters to choose from red filter, cobalt blue filter, yellow filter.
4.8	It shall have diffuser filter for brightening the illumination.
4.9	It shall have locking facility with protect mechanism for aperture and filter adjustment levers to the desired position.
4.10	Illumination:
	☐ 6V, 1-3 watt or even lower white light LED.
	☐ Uniform brilliant white light.
	☐ Colour temperature: 4000-4500 K .
	☐ CRI > 90-92.
4.11	The life span of LED shall be at least 10,000 hours of operation.
4.12	It shall have illumination control through head band.
4.13	It shall operate on Li-Ion rechargeable battery of suitable capacity with LED indicators.
	Shall provide battery charger/transformer along with connecting cable & extension cord of 3metres length.
4.14	Shall come with:
	☐ Teaching mirror.
	☐ Marking pencils.
	☐ Fundus chart.

	☐ Large & small scleral depressor.
5	Accessories, spares and consumables
5.1	Accessories:
	☐ Spare Li-ion rechargeable battery: 01 set.
	☐ Carrying case: 01 no.
	☐ Antireflective coated 20D lens: 02 nos.
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).
6	Operating Environment
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.
6.2	Shall work on rechargeable battery. Battery charger with AC adaptor shall be provided and it shall be compatible with power supply of 220-240 VAC, 50Hz.
7	Standards and Safety Requirements
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.
8	User Training
8.1	Must provide user training (including how to use and maintain the equipment).
9	Warranty
9.1	Comprehensive warranty for 2 year after acceptance.
10	Maintenance Service During Warranty Period
10.1	During warranty period supplier must ensure and corrective/breakdown maintenance whenever required.
11	Installation and Commissioning
11.1	Supplier must accomplish proper commissioning of equipment onsite.
12	Documentation
12.1	User (Operating) manual in English.
12.2	Service (Technical / Maintenance) manual in English.
12.3	List of important spare parts and accessories with their part numbers and costing.
12.4	Certificate of calibration and inspection from factory.

Auto Lensometer

No.	Specifications
1	Description of Function
1.1	Auto lensometer can obtain accurate lens measurements with minimal training.
2	Operational Requirements
2.1	Must eliminate the subjective nature of manual lensometer readings and reduce operator error and provide repeatable, objective measurements every time.
3	System Configuration
3.1	Auto Lensometer, complete unit with all standard accessories.
4	Technical Specifications
4.1	Shall be easily and accurately measure all lenses including single vision, multi-focal, and progressive addition lenses.
4.2	Shall have auto focus /auto alignment /auto centering.
4.3	Contact lens module.
4.4	Shall have printer attachment.
5	Accessories, spares and consumables
5.1	Accessories: Compatible laser printer for report generation: 01 no.

5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).
6 Operating Environment	
6.1	The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.
6.3	Voltage corrector/stabilizer of appropriate ratings meeting international standards.(Input 160-260 V and output 220-240 V and 50 Hz)
7 Standards and Safety Requirements	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.
8 User Training	
8.1	Must provide user training (including how to use and maintain the equipment).
9 Warranty	
9.1	Comprehensive warranty for 2 years.
10 Maintenance Service During Warranty Period	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
11 Installation and Commissioning	
11.1	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.
12 Documentation	
12.1	User (Operating) manual in English.
12.2	Service (Technical / Maintenance) manual in English.
12.3	List of important spare parts and accessories with their part numbers and costing.
12.4	Certificate of calibration and inspection from factory.

Vision Chart

No.	Specifications
	Specification :
	1.LCD: 17-inch XGA Panel
	2.Brightness: >160 cd/m ² ;
	3.Opto Type: E,C,Letter,Number,Children
	4.Distance: 2-7M (step 0.1M) < 80-260 inches (step 5 inches)>
	5.Power: Input :110-230V AC ±10%, 50/60Hzm Output: 12V DC
	6.Power consumption : 30 Watt(max)
	7.Machine Dimension : 480mm x 430mm x 40mm, 2.0kg
	8.Remote control : IR
	9.Remote control battery : AAA
	Test function :
	Schober Test, Worth Test, Cross Grid, Coincidence Test, ETDRS, Stereo Test, Astigmatism Test, Fixation Point Test, Ishihara Test, Cross Cylinder, Red Green Panel, Red Green Balance, Contrast sensitivity
	FDA US,CE,TUV

Vision Measuring Set (Digital)

No.	Item Specifications
1	Technical Specifications
	Standard specifications
2	Operating Environment
2.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.
3	Standards and Safety Requirements
3.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
3.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
4	Warranty
4.1	Comprehensive warranty for 2 years after acceptance.

Non-contact Tonometer

No.	Specifications
1	Description of Function
1.1	In ophthalmology, tonometry is the procedure eye care professionals perform to determine the intraocular pressure (IOP), the fluid pressure inside the eye.
2	Operational Requirements
2.1	Shall operate on rechargeable battery.
3	System Configuration
3.1	Non-contact Tonometer, complete unit.
4	Technical Specifications
4.1	Air puff non-contact tonometer.
4.2	Shall be able to measure intraocular pressure without actual eye contact.
4.3	Digital display of intraocular pressure.
4.4	Measurement range 4 to 59 mm of Hg.
5	Accessories, spares and consumables
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).
6	Operating Environment
6.1	The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.
6.2	Shall work on rechargeable battery. Charger to be provided if integrated charger is not there.
7	Standards and Safety Requirements
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.
8	User Training
8.1	Must provide user training (including how to use and maintain the equipment).
9	Warranty
9.1	Comprehensive warranty for 2 year.
10	Maintenance Service During Warranty Period
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
11	Installation and Commissioning
11.1	Supplier must accomplish proper commissioning of equipment onsite.
12	Documentation
12.1	User (Operating) manual in English.
12.2	Service (Technical / Maintenance) manual in English.
12.3	List of important spare parts and accessories with their part numbers and costing.

12.4	Certificate of calibration and inspection from factory.
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