

اسم الجهاز والتفاصيل

1-Operative hysteroscope

Application	Used to view & diagnose problems in the anterior of the uterine cavity and also can be used for treatment of many disease of the uterus.
Type	Operative Hysteroscope Set with Resectoscope (Complete System)
Hysteroscope Telescope with color code	<ol style="list-style-type: none"> 1. Consist of 0°, 12°, and 45° optical lenses. 2. Suitable diameter(2 – 5) mm with a working length & degree for oblique lens, auto clavable; Fiber optic light transmission incorporated, compatible diameter Diagnostic sheath with leur lock adapter 3. Continuous irrigation Operative Hysteroscope 4. Resectoscope including connecting tube for inflow and outflow for the hysteroscope telescope complete with continuous irrigation double sheath system 5. Size of resectoscope as per requirement 6. Bipolar & unipolar for electrodes & knife 7. Suction and irrigation pump for use in hysteroscopy 8. Maximum parameters for hysteroscopy are automatically set 9. Precise presetting of volume and pressure of suction and irrigation parameters via touch keys. 10. Adjacent display scales for set values and actual value to ensure safe monitoring. 11. Vacusafe promotion packs suction, hysteroscopic silicone tubing set for suction, steizable set. 12. Suction and irrigation tube, antireflex surface with two way stop cock FOR single hand control. 13. Suction bottle with bottle stand and bottle stand holder.
Optional accessories	<ol style="list-style-type: none"> 1) Biopsy and Grasping forceps. 2) Needle electrode and ball electrode-Unipolar – high frequency cords of any make should be compatible with the above equipment. 3) Other options.
Endoscopic outputs	<ol style="list-style-type: none"> 1) Digital Endoscopic Camera 2) Camera Control Unit 3) MONITOR 4) VIDEO COLOUR PRINTER
Endoscopic Camera	<ol style="list-style-type: none"> 1. 3 CCD chip camera HD 2. Light weight, programmable function keys

(Digital)	<ol style="list-style-type: none"> 3. Camera integrated parfocal zoom lens. 4. PAL system/ multimedia 5. Automatic white balancing 6. High sensitivity 7. Cable should have buckling protection. 8. Microprocessor controlled. 9. Built in antifogging device. 10. Camera head (preferred) compatible with any telescope and light. 11. Integrated universal power supply. 12. Compatible with medical grade monitor 13. Should have specific built in facility for camera functionality automatically optimizing all settings. 14. Signal to noise ratio ≥ 60 dB.
Camera Control Unit	<ol style="list-style-type: none"> 1. Microprocessor control 2. Multiple video input and out puts – BNC,RGB,Y/C etc 3. Connecting cables between camera head and video monitor
MONITOR	<ol style="list-style-type: none"> 1- Color monitor for different color systems 2- Compatible with endovision camera of any make 3- Screen size diagonal ≥ 21" HD. 4- Monitor menu displays all controls, capabilities and operations via curser keys, user defined captions, easy to use and highly dependable. 5- Composite, multiple video input and out puts – BNC,RGB,Y/C, SDI, DVI etc 6- Should have facilities for recording the data on computer DVD, USB Storage Device. 7- On screen menu for monitor setting , Compact and light weight , Drip water protected dust proof , all connecting cables to be supplied. 8- Antireflection quoted front glass.
VIDEO COLOUR PRINTER	<ol style="list-style-type: none"> 1- For endovision camera and multi colour systems existing in country 2- Large colour prints of video images with outstanding quality at least 4 different images can be stored and printed on one sheet. 3- Should be compatible with any monitor and should be supplied with all connecting cables, satisfying international quality controls, safety norms and power supply 3- Upgradable.

<p>Xenon light source</p>	<ol style="list-style-type: none"> 1-300 watts Xenon bulb minimum 1000 hrs. With at least one spare Xenon bulb of 15V 300 watts 2- Fully automatic with light intensity continuously adjustable from 0-100% automatically by the cameras video output signal 3- Display of lamp service life. 4- Standby mode 5- Monitoring of lamp function. 6- Built in antifog air pump. 7- preferred Universal jaw assembly to adapt cable of any make. 8- Should be quoted along with spare lamp 9- Fibreoptic light cable ≤ 5mm in diameter and ≥ 270 cms in length
<p>Electrocautery</p>	<ol style="list-style-type: none"> 1. Should have unipolar cutting and coagulation as well as bipolar cutting and coagulation modes and have the facility of blending cutting and coagulation in different ratios and degree –soft, standard and or forced coagulation and spray coagulation. 2. Arc controlled (cutting & coagulation) with a pre selectable power in both unipolar and bipolar modes. 3. Auto stop function with automatic power – off on completion of coagulation process. 4. Automatic start function for bi- polar coagulation. Should be operable both in hand and foot mode and should have hand control switch on the handle of the electrode. Bipolar application with irrigation with sodium chloride. 5. Endoscopy mode with reduced voltage output for use with fine endoscopic electrodes.(micro function) 6. Automatic read out panel to display current being used and actual output at distal tip of electrode, simple operation due to clearly arranged control with easy to read symbols. 7. Compatible with under water operative procedures 8. Neural electrode monitoring through a patient contact system. 9. Automatic high frequency power cut off by auto coagulation stop and auto start facility 10. Self-testing for trouble shooting. 11. Visual and acoustic signs of HF activation by different colored indicators and different acoustic tones for cutting and coagulating. 12. Unit should have safety monitoring circuit in event of malfunction for output monitoring. Neutral electrode connection. Automatic self test and automatic power cutoff in event of malfunction. Ground leakage current (LF/HF) HF application time. 13. the unit should be supplied with all standard accessories such as

	electrode, foot switch, twin earth pad, bipolar forceps with cord, electrode handle with switches, neutral plate, ball electrodes, loop electrodes, variable output power for all types of currents.
Other specification	<ol style="list-style-type: none"> 1. Comes complete with container of sterilization (bowel) 2. The unit shall be capable of operating continuously in ambient temperature of 15-40 deg C and relative humidity of 15-90% 3. The unit shall be capable of being stored continuously in ambient temperature of 0-70deg C and relative humidity of 15-90%
Power supply	<ul style="list-style-type: none"> - 220/240 VAC, 50/60 Hz - Over current & over heated protection circuit - Three Pin G type Plug - Voltage corrector/stabilizer circuit of (Input 160-260 V and output 220-240 V and 50 Hz) - UPS of suitable rating with voltage regulation and spike protection for 60 minutes back up
Environmental requirements	the equipment suitable for work in the climat conditions in Iraq in terms of temperature & humidity.

2-Phototherapy-LED (fiber optic blanket)

- ❖ Application: used to treat hyperbilirubinemia in infant.
- ❖ Heavy duty & compatible design.
- ❖ Illumination Device (Light Box): LED emits blue light in 430-480nm in the form of panel with fiber optic cable and ventilation area.
- ❖ Fiber optic blanket fits easily within existing patient enclosures such as cribs (bed), bassinets, radiant warmers and incubators.
- ❖ Intensity: Peak intensity at patient surface $>30 \mu\text{w}/\text{cm}^2/\text{nm}$.
- ❖ Portable and light weight allows transport to different locations like (Hospital, Home...etc).
- ❖ Accessories: goggles (eye protection) and clips patch.
- ❖ Alarms:
 - Ensure the panel or circuit support adaptor is securely locked into place.
 - Power failure, others.
- ❖ Input power: 220/240 VAC, 50/60 Hz single phase, minimum length of the wire (3m).
Three Pin G type Plug, Voltage stabilizing and over current protection circuit.
- ❖ Environmental requirements:
 - The unit shall be capable of being stored continuously in ambient temperature of (0to60) deg C and relative humidity of (5-95) % non-condensing.
 - The unit shall be capable of operating in ambient temperature of (5-40) deg C.

3-Non-Contact Tonometer(Air puff)

- Application: Measure intraocular pressure (IOP).
- Measurement principle Air puff non-contact method.
- touch screen user interface.
- Bench top orientation

□ Input power: 220/240 VAC, 50/60 Hz single phase. Three Pin G type Plug, Voltage stabilizing and over current protection circuit.

□ The supplier should be confirmed that: The Equipment is suitable for work in climateconditions of Iraq in terms of temperature and humidity.

Measurement range	($\leq 5 - 60$) mm Hg 1 mm Hg increments Others to be specified.
Light source	Light emitting diode
Measurement mode	automatic , manual , others to be specified
Display	≥ 5 inch color LCD
USB port	Yes
Headrest or chin rest	Yes
Printer	Yes
3D fully automated operation	Optional

4-Indirect Ophthalmoscope

Type	Indirect
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المواصفات الفنية الصادرة من وزارة الصحة دائرة الامور الفنية-قسم ادارة الاجهزة الطبية

	Binocular
interpupillary distances	(≤ 52 mm - ≥ 74 mm)
light source	Halogen or LED
Accessories	Headband Extension Cord Plug-in Transformer
Diffuser Aperture	YES ≥ 3 spot sizes: small spot, medium and large.
integrated filters	≥ 3 filters: red-free, cobalt blue and yellow
Adjustment	YES
Interface	USB, others
Power source	Rechargeable battery ≥ 4 hr. operation AC adapter Power input to be 220-240VAC, 50Hz.
Environmental Requirements	The supplier should be confirmed that: The Equipment is suitable for work in climate conditions of Iraq in terms of temperature and humidity.

5-AUTO REFRACTOMETER

- ❖ **Application:** Use for eye examination to provide an objective measurement of a person's refractive error and prescription for glasses or contact lenses.
- ❖ Heavy duty and compatible design
- ❖ **Objective refractometer mode:**
 - Sphere range: $\geq (-20$ to $+22D)$ step (0.12D, 0.25D)
 - Cylinder range: 0 to $\geq \pm 10D$ step (0.12D, 0.25D)
 - Axis range: 1° to 180° (1° step and/or 5° step)
 - Minimum pupil diameter: ϕ 2.0mm
- ❖ **Chart:** Yes
- ❖ **Pupil Distance (PD) measurement range:** 0~85mm (1mm step)
- ❖ **3D measurement:** auto focus/ auto track /auto start and manual (optional)
- ❖ **Corneal diameter measurement (pupil diameter) range :** 2 ~ 15mm (step 0.1mm)
- ❖ **Display Type:** \geq 5.7-inch color LCD, touch control panel
- ❖ **Printer (with auto cutter):** Yes, built in thermal printer
- ❖ **Power saves:** off, 5, 10, 15 mins (selectable).
- ❖ **IOL (implantation of intraocular lens):** Special IOL switch to adjust to circumstances of IOL implantation.
- ❖ **Interface:** RS-232C (IN / OUT), video output, LAN and USB
- ❖ **Electric chin rest:** Yes
- ❖ **Power supply:**
 - Voltage: 220~240 VAC, 50/60 Hz
- ❖ **Other specification:**
 - Colour mapping software

❖ **Accessories:**

- Test eye / 2pc
- Power cable / 2 pc
- Fuse: 2A / 1pc
- Printer paper/ 3 rolls
- Chinrest paper / 1 pack (1000 sheets)
- Chinrest pin / 2 pcs
- Dust cover
- Contact lens holder/ 1pc
- Operating manual /2 pcs
- USB driver CD / 1pc

❖ **Environmental requirements:**

- 1- The unit shall be capable of being stored continuously in ambient temperature of 0-60 deg C and relative humidity of 15-90%.
- 2- The unit shall be capable of operating continuously in ambient temperature of 15-35 deg C and relative humidity of 15-90%.

6-Tympanometry

- ❖ Application:middle ear analyzer.
- ❖ Heavy duty & compatible design.
- ❖ Tests:
 - Automatic and manual tympanometry.
 - Automatic and manual acoustic reflex (Ipsi/Contra).
 - Reflex decay (Ipsi/Contra).

- Eustachian tube function open & close tympanic membrane.
- Acoustic reflex latency.
- Trigger cable for assessment of function of cochlear implant.

- ❖ Probe tone-multifrequency.
- ❖ Headphone.
- ❖ Eartips.
- ❖ LCD display.
- ❖ Stimulating pure tones (0.5, 1, 2, 4 KHZ).
- ❖ Built-in printer.
- ❖ Selectable pressure range (daPa): $\geq (+200 \sim -600)$.
- ❖ Input power: 220/240 VAC, 50/60 Hz single phase. Three Pin G type Plug, Voltage stabilizing and over current protection circuit.
- ❖ Environmental requirements: according to the standards of companies.

7-ENT unit fully equipped

Application	ENT diagnostic and treatment work station
Where used	ENT OPD , ENT mobile clinics

<p>System contents</p>	<ol style="list-style-type: none"> 1. Basic unit. 2. Microscope. 3. Ear irrigation.. 4. Mirror preheater. 5. Endoscope unit. 6. LED light source ≥ 2 7. Automatic headlight hook. 8. LCD HD monitor or better. 9. UV lamp. 10.Rhinomanometry. 11.ENT chair. 12.Doctor stool 	
<p>Basic Unit with Instrumentation Section</p>	<ul style="list-style-type: none"> • Modular with (PU)POLYURETHANE (work surface) or better • instrument trays with stainless steel(or aluminum) dividers ≥ 2 • Placement area for(sprayer bottles) ≥ 4 • Automatic Holder for handle and hoses ≥ 2 • \geqTwo storage small drawers . • \geqTwo large drawers • Monitor shelf & arm. • Used instrument deposit. • Waste bin. • Built-in holder for ≥ 4 endoscopes(flexible & rigid) 	

<p>Microscope</p>	<ul style="list-style-type: none"> • Magnifications:2x / 4x / 6x (At f-230mm) Three step conversion or better . • Objective lens :Convertible (f-200mm ~ 250mm). • Illumination: Co-axial fiber light. • straight binocular head. • Photo/video adapter. • color ,UV, IR Filters 	
<p>Ear Irrigation</p>	<ul style="list-style-type: none"> • compressed air with Handles. • Water warmer, 37 deg with electric temperature control. • Small basin with irrigation. • different • sprayer bottles \geq 2. • medication sprayers \geq 2 • Control : yes 	
<p>Suction unit</p>	<ul style="list-style-type: none"> • secretion canister \geq 2 different sizes. • Min.600mmHg. • \geq 40 l/min • Oil less Vacuum Pump. 	

<p>Headlight</p>	<ul style="list-style-type: none"> • LED • white cold light • Shelf life $\geq 50,000$ h 	
<p>Video Stroboscope</p>	<ul style="list-style-type: none"> • Endo-Stroboscope • Integrated HD camera • LED light source • Ear microphone • Voice analysis: spectrogram and waveform. • Documentation system • Foot switch 	
<p>Endoscopy</p>	<ul style="list-style-type: none"> • Rigid Laryngoscopes, ≥ 3 autoclavable, different sizes different working length. • Rigid Nasopharyngioscope endoscopes ≥ 3 , different sizes different working length, Autoclavable. • Rigid Ear endoscopes ≥ 2 , different sizes different 	

		<p>working length, Autoclavable.</p> <ul style="list-style-type: none">● Flexible video naso - pharyngoscope :<ul style="list-style-type: none">▪ Working length: ≥ 300 mm▪ angle:\geq $100^\circ /$ 100°▪ LED light source .▪ color camera: HD.▪ Monitor LCD HD or better , size \geq 15".▪ Light guide cables.▪ Disinfecti on tray.▪ BIOPSY FORCEP S	
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ENT Treatment Chair	<ul style="list-style-type: none"> • Rotation 340° or more • Foot Switch • Back-rest movement : adjustable 	
Radio frequency surgery	<ul style="list-style-type: none"> • Main unit ≤ 200 W • Bipolar Cable qty (1) • Bipolar Forceps qty (1) • Bipolar Tip set qty (1) • Patient Plate qty (1) • Monopolar Tip Set qty(1) • Monopolar Handle qty (1) 	
Power & Environmental Requirements	<ul style="list-style-type: none"> • Power input to be 220-240VAC, 50Hz. • The supplier should be confirmed that: The Equipment is suitable for work in climate conditions of Iraq in terms of temperature and humidity. 	

8-Nasopharyngio-laryngoscope

Application: biopsy, aspiration and removal of foreign objects.

Endoscope:

- Working length: $\leq 40\text{cm}$.
- Outer diameter: $\leq 4.0\text{mm}$.
- Range angulation (up/down) $\geq 120\text{deg}$.
- Compatible color camera: HD.
- Leak test facility.
- Fully **IMMERSIBLE**.
- Optional: Integrated light source for portability with rechargeable batteries.

COLOUR MONITOR:

- Portable integrated digital video monitor cum recorder compatible with the camera system provided.
- Ability to record video digital format.
- Monitor size $\geq 15"$.

VIDEO PROCESSORS: High-Definition digital

- Should provide flicker and blue free images.
- technologies to provide perfect color reproduction.
- Provision for still image capturing/ Digital recording of images.
- ≥ 5 mega pixels stored images.
- Electronic Magnification.
- DVD/CD, USB, LAN output.

LIGHT SOURCE:

- Compatible light source system.
- Automatic light adjustment to maintain optimum brightness.
- Effective and efficient xenon source of illumination.
- Halogen secondary light source.
- Battery powered.

TROLLY:

- Stainless steel.
- Castors with brakes.

Accessories:

- Light guide cables.
- Disinfection tray.
- BIOPSY FORCEPS.

Power requirements:

- Power input to be 220-240VAC, 50Hz.
- UPS of suitable rating.
- Environmental requirements:**the equipment suitable for work in the climat conditions in Iraq in terms of temperature & humidity.

9-Video Nasoscope (ENT Endoscope)

- **Application:** the routine inspection of ear, nose, and throat.
- Handheld, integrative, small-size and lightweight design.

Scope:

- **Optical System:**
 - Field Of View: (80 – 100) deg.
 - Direction of view: wide angle.
 - Depth of focus: (3-60) mm. angle of (70-90) deg.
- **Working length :**(300 – 500) mm.
- **Working diameter:** (2-4) mm.
- **Deflection:** up 160°- down 160°.

Medical camera:

- HD 3-Chip Endoscopic Camera.

- Clear bright image.
- High Noise Immunity.
- Autoclavable.

Medical Monitor:

- Full High-definition (HD).
- .size (19 – 25) in.
- Flat Panel LCD Monitor.
- Excellent maneuverability.
- Multi-system compatibility.
- Variety of analog and digital I/O ports.
- Multiple viewing options.
- Picture in Picture or Split Screen Display.

Video processor:

- Provision for still image capturing/ Digital recording of images.
- Full High-definition (HD).
- Color adjustment.
- ;digital zoo, image freezing.
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Light source:

- Compatible Light source (200-300) Watt. Halogen with stand by lamp.
- **Cold light fountain.**
- Automatic light adjustment to maintain optimum brightness.

Power and environmental requirements:

- Power input to be 220-240VAC, 50Hz.
- UPS of suitable rating.
- The unit shall be capable of being stored continuously in ambient temperature of (-5to60) deg C and relative humidity of (5-95)% non-condensing.

The unit shall be capable of operating in ambient temperature of (5-40) deg C.

10-SHOCK WAVE THERAPY

- ❖ Frequency:Adjustable Ranging from 1-35 Hz
- ❖ Efficiency Pressure: up to 5 bar, adjustable
- ❖ Shock wave generation: electromagnetic, pneumatically and/or other
- ❖ Channels: ≥ 2 output channels
- ❖ Techniques should cover stimulation of the muscle metabolism and trigger points and myofascial pain therapy
- ❖ Number of shocks: adjustable
- ❖ Display Type:color touch screen LCD (≥ 5 inch)
- ❖ Air compressor: Large heavy duty, built in, low noise, free of oil compressor
- ❖ User defined diagnoses and interface: Yes
- ❖ Automatic alarming for changing accessories
- ❖ Power supply:Voltage: 220~240 VAC, 50/60 Hz
- ❖ Accessories:
 - Gel 1000ml

- Trolley: yes
 - Exchangeable Kit
 - General application applicators
 - Acupuncture shockwave applicators,differentdepth
 - Focused shock wave applicator/s
 - Deep impact applicator
 - Combined shockwave and vibration applicator for different depth
 - Deep vibration applicator
 - Radial shockwave hand piece
 - Pain measurement meter
- ❖ Other specification:Bidirectional RS232 interface to PC or other

11-Electrical stimulator

- ❖ Application: useful for treatment of muscle weakness, functional Paralysis resulting from Traumatic Neurosis, Hysterical of Neuropraxia, Flaceded Paralysis, Spastic Paralysis, Cardio Vascular Disorders, Muscle Strains etc.
- ❖ Heavy duty & compatible design.
- ❖ Light weight & portable.
- ❖ Microprocessor Control.
- ❖ LCD display.
- ❖ The device should be completed with advanced programs is suitable for performing therapy to overcome various health problems.
- ❖ Currents types: Galvanic, Interrupted Galvanic, Faradic and Surge Faradic currents &

TENS, Kotz, Trabert, Russian or called inter-ferential.

- ❖ Adjustable pulse width, pulse rate & intensity.
- ❖ Rotary switch or touch key function.
- ❖ Protection fuse.
- ❖ Input power: 220/240 VAC, 50/60 Hz single phase.

Standard accessories:

- ❖ Plastic coated handle.
- ❖ Main cord.
- ❖ Ball electrode.
- ❖ Suitable length of Electrode wire.
- ❖ Gel bottle (500 ml).

12-Esophagogastroscope, Therapeutic

- ❖ Application:used to view and administer therapy to the interior of the esophagus and the stomach for diagnosing and managing upper-GI disorders (e.g., ulcers, lesions)
- ❖ Type: Therapeutic Gastroscope.
- ❖ Video: yes (High definition & High resolution) .
- ❖ Insertion tube:
 - Length (mm): $\geq (1,100)$.

- Working length, mm: $\geq (1,030)$.
- Working diameter (mm): (≥ 5.5) .
- Outer diameter, mm: 7, 9 or more.
- Graduation marks: yes.
- ❖ Working channels: (1).
 - Diameter (mm): (2) or more.
- ❖ Optics:
 - Field of view (degrees): (140).
 - Depth of field (mm): (2 ~100).
- ❖ Tip deflection range (degrees): (>90) in all directions.
- ❖ Umbilical cord:
 - Aspiration: yes.
 - Other functions.
- ❖ Compatible with Video system.
- ❖ Fully immersible in disinfectant solution.
- ❖ Standard accessories including biopsy forceps, cleaning brush, leakage tester etc.
- ❖ Lens washing.
- ❖ Heavy duty.
- ❖ Power requirement 220-240 volts 50Hz
- ❖ Environmental requirements: The supplier should be confirmed that: The Equipment is suitable for work in climate conditions of Iraq in terms of temperature and humidity.

13-Portable Ventilator

Tidal Volume	50~2000 ml (Digital Precise Adjustable)
Respiratory Rate	1~100 bpm (Digital Precise Adjustable)
O₂%	45~100% (Digital Precise Adjustable)
Trigger Level	-20~0 hpa (Digital Precise)

	Adjustable)
Peak Pressure	0~60 hPa (Digital Precise Adjustable)
PEEP	0~20 hPa (Digital Precise Adjustable)
SIGH	1~10 times per 100 breath (Digital Precise Adjustable)
Atmospheric Pressure	660~1060 hPa
Lowest Pressure in breathing sys.	400 cm H ₂ O
Large LCD Screen Data Display	Tidal Volume, O ₂ %, Sigh, Respiratory Rate, Flow, Pressure (Synchronized Trigger, Peak Airway, CPAP, PEEP)
Large LCD Screen Curve Display	Airway Pressure Time Waveform Display
Alarm Data Display	High/Low Airway Pressure Alarm, Lack of Gas/Power Alarm, Parameter Error
Other Display	Lock, Charge Indicator, Inspiratory/Expiratory Situation, DC/AC Power Supply
Circuit Connect Prompt	Remind the operator to connect the breath circuit correctly to access the using state
Sound Alarm Test	Test sound alarm, to guarantee the reliability using
Gas Pressure Test	Test gas pressure, remind operator to ensure the gas pressure supply
Internal Battery Capacity Test	Test the capacity of the internal battery
Circuit Leakage Test	Test Circuit Leakage, to lest circuit drop off or leak and unexpected situation to happen
Alarm functions	<ol style="list-style-type: none"> 1. High Airway Pressure 5. Low Airway Pressure 2. Low Battery Voltage Alarm 6. Low Gas Pressure 3. Parameter Error

	<p>7. Silence</p> <p>4. High Frequency Alarm</p>
Other specification	<ul style="list-style-type: none"> - Can be used for infant, pediatric and adult patients - Consists of ventilators, 2L Aluminum Oxygen Cylinder, Breathe Circuit, Carrying Package, Special Bracket for ambulance and pressure reducing valve for large oxygen cylinder - Microprocessor controlled valve
Power supply	<ul style="list-style-type: none"> - 200/240 VAC 50/60 Hz , 12VDC adapter or direct 12VDC - Typical solid state, over – current circuit protection
Battery	Rechargeable \geq 3 hours backup battery
Operating temperature	10~40°C
Relative humidity	15 to 95% non condensing
End tidal CO2 limits	0.5~20%, 4~10mmHg, 0.5~14KPa

14-Diagnostic Spirometers

Application	Used to measure the flow and volume of gas moving into and out of the lungs during inspiratory and expiratory efforts
PATIENT TYPE	Adult, pediatric
CONFIGURATION	Tabletop/portable
MEASUREMENT DEVICE	Any
Volume range, L	≥ 0-5
Accuracy	3%
Flow range, L/sec	≥ 0-10
Accuracy	3%
Bidirectional Calibration method	Yes
DISPLAYS, TYPE	Any
Data displayed	Actual results, predicted comparison, graphs, other options
PLOTS	
Timed spirogram	Yes
Flow-volume loop	Yes
DATA ANALYSIS	Processor based
User-entered data	Patient data
Procedures/parameters evaluated	>40 different parameters including pre-/post bronchodilator comparison
BTPS correction	Automatic
Actual, normal, % normal report	Yes
Predictive equations	ECCS, Knudson, NHANES III, Zapletal, others.
Respiratory status/diagnosis	Yes
Serial testing	Yes

HARD-COPY REPORT	Yes
Formatted	Yes
Size of plots	8.5 x 11“, A4, others
Type of printer	Integral and/or optional external
Strip chart	any Windows compatible
Paper	Yes
Speed, mm/sec	Thermal Depends on printer
DATA EXPORTS	Yes
Export method	Built-in function, and/or any one or combination of (Serial, USB , RS232 or other optional)
Export data format	According to manufacturer
COMPUTER INTERFACE	Yes
Modem available	Yes
Operating system	Yes
DATA MANAGEMENT	
Storage options	Hard disk, other optional
Capacity	Unlimited $\geq 1,000$ patients, 64 MB Compact Flash
STERILIZING METHOD	According to manufacturer (Autoclavable)
DISPOSABLE PARTS	Mouthpiece and/or bacteria filter
Power Supply	- 220VAC ,50/60 Hz - Three pin plug (G type) - UPS for ≥ 1 hour back up power (optional)
OTHER SPECIFICATIONS	Includes carrying case and predicted value calculator.

الشروط المطلوبة:-

1. ان يكون الجهاز حائز على احد شهادات الجودة (FDA الامريكية) او (CE الاوربية) وتقديم (declaration letter) نسخة اصلية من الشركة المصنعة للجهاز التي توضح حصول الموديل المطلوب شراؤه على هذه الشهادات او ارسالها بالبريد الالكتروني الخاص بقسم ادارة الاجهزة الطبية / دائرة الامور الفنية من قبل الشركة المصنعة
2. تقديم شهادة المنشأ وبوليصة الشحن مع كتلوكات التشغيل والصيانة لكل جهاز الى دائرة الصحة لغرض مصادقتها وفق الاليات المتبعة .
3. وجود وكيل للشركة المجهزة في العراق لمتابعة خدمات ما بعد البيع (النصب, الضمان , الصيانة) وان تكون الشركة المجهزة مسجلة لدى وزارة الصحة وان لا تكون مدرجة ضمن القائمة السوداء.
- 4 . ان تكون الاجهزة مضمونة لمدة خمس سنوات تبدأ الضمان من تاريخ انجاز العمل (نصب وتشغيل و.....الخ) والالتزام بتوفير البرامج التشغيلية وكتالوك الصيانة والعطلات للاجهزة.
5. يفضل ان يكون الجهاز من الاصناف المتوفرة في مؤسساتنا الصحية وان يكون من احدث التقنيات المنتجة خلال اخر ثلاث سنوات وان لا يكون مستعمل او معاد التاهيل.
6. تدريب الكوادر العاملة (طبيب, مهندس او تقني, مشغل) على الاجهزة في مركز تدريبي لمدة لا تقل عن اسبوع, وتدريب على كافة الاجهزة حول الاستخدام والتشغيل اثناء النصب و التركيب