



RESEARCH LAB



2018
Edition

مقدمه

تم إعادة تشكيل لجنة المعامل بالكلية بقرار سعادة عميد كلية العلوم الصحية بالليث يوم ٢٧ شعبان ١٤٣٨هـ الموافق ٢٣ مايو ٢٠١٧م وعضوية كل من:

د. أسامه فتحي عبد الوهاب محمد	رئيس اللجنة	د. حسن الصديق حسن فرج الله	عضو
د. محمد أحمد فؤاد سيد أحمد	عضو	د. الشبلي عبد النبي شرف الدين	عضو
د. غزالة هلال بن خاتم اليزيدي	عضو	د. مضوي النور مضوي الخليفة	عضو
د. الأشعري آدم عيسى حمدون	عضو		

ووضعت علي عاتقها مهمة اكمال تجهيز معامل الكلية لشطري الطلاب والطالبات ونتيجة للعمل الدؤوب لأعضائها وبتوجيه من سعادة عميد الكلية أشرفت اللجنة على تجهيز ٣ معامل بشطر الطلاب وهي:

١. معمل الكيمياء الحيوية: ويحتوي أجهزة فصل وتحليل الدم والكيمائيات الخاصة بها.

٢. معمل الأحياء الدقيقة والطفيليات: ويحتوي على أجهزة معملية ومعدات خاصة بتحليل الطفيليات والأحياء الدقيقة.

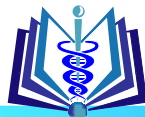
٣. معمل الأبحاث: وهذا المعمل يعتبر وحدة بحثية فائقة التجهيز ويحتوي على أجهزة بحثية متقدمة تخدم مختلف المجالات بالكلية. كما دعم بوحدة بحثية متنقلة لتجميع العينات سواء سوائل بيولوجية أو عينات بيئية من مياه وتربة وهواء. وهذا المعمل تم أنشاؤه للدفع بعجلة البحث العملي بالكلية ومحاولة من الكلية لإيجاد حلول للمشكلات الصحية بالليث عن طريق البحث العلمي السليم للوصول للنتائج المرجوة.

وبالنسبة لشطر الطالبات فقد تم تخصيص معملين بالمبني وتم تجهيزهم بالمتطلبات الأساسية والأجهزة الضرورية لخدمة العملية التعليمية للطالبات.

كما أن للجنة دور فعال في رفع احتياجات الكلية للجهات المعنية بالجامعة وفق احتياجات الكلية.

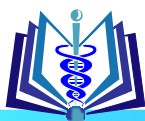
رئيس لجنة المعامل بالكلية

د. أسامه فتحي عبد الوهاب




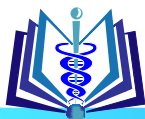
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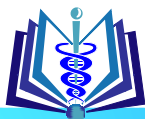
Gas chromatography (GC)

Device Name	Gas chromatography (GC)	
Manufacturer	Agilent	
Model	AAS31	
Available units count	1	
Actual Image		
Description	GC is a common type of chromatography used in analytical chemistry for separating and analyzing compounds that can be vaporized without decomposition.	
Specifications	<ul style="list-style-type: none"> • Four intended 24- Volt connections (up to 150 mA) • 550 timed events via data system- 50 time via GC keyboard. 	
Typical Applications	Typical uses of GC include; testing the purity of a particular substance and physical separation of different components of a mixture. It can be used in many different fields such as pharmaceuticals, cosmetics and even environmental toxins.	



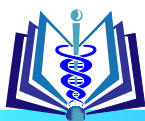
HPLC

Device Name	HPLC
Manufacturer	Agilent
Model	1200 series
Available units count	1
Actual Image	
Description	HPLC Agilent 1200 system usually separate, detect, and analyze components of a sample. The liquid sample enters the HPLC system through the injection system port and is pushed through the chromatography column by degassed solvent delivered under high pressure by a pump. Components of the sample are detected by a detector and analyzed with specialized software.
Specifications	<ul style="list-style-type: none"> Hydraulic system: Dual piston pump with servo-controlled variable stroke drive, floating pistons and active inlet valve. Pressure: 0 – 40 MPa up to 5 ml/min Operating range 0 – 20 MPa up to 10 ml/min Communication: Controller-area network (CAN), GPIB, RS-232C, APG Flow range: 0.2 – 10.0 ml/min Recommended pH: 1-12.5 Analog output: 2mV/bar




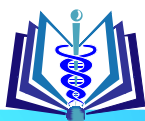
Typical Applications

- Biochemical analysis of complex mixtures (proteins, amino acids, carbohydrates, lipids).
- Purification of chemical compounds.
- Isolation of natural products.
- Analysis of air, water pollutants, pesticides, herbicides and PCBs.
- Analysis of food components (Additives, artificial sweeteners, antioxidants and vitamins).
- Analysis of drug products (antibiotics, sedatives, steroids).
- Forensic chemistry analysis (drugs, poisons, Blood alcohol, Narcotics).




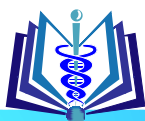
UV/Visible Spectrophotometer

Device Name	UV/Visible Spectrophotometer	
Manufacturer	JENWAY	
Model	6850	
Available units count	1	
Actual Image		
Description	<p>A highly stable optics with two detectors measure the sample and reference simultaneously optimizing measurement accuracy with measurement modes for photometrics, concentration, multi-wavelength, spectrum scanning, kinetics, quantitation, DNA/RNA and protein analysis.</p>	
Specifications	<ul style="list-style-type: none"> Wavelength range: 190 - 1100nm 	<ul style="list-style-type: none"> Wavelength resolution: 0.1nm
	<ul style="list-style-type: none"> Concentration range: 0- 99999 	<ul style="list-style-type: none"> Resolution: 0.1%T, 0.001A
	<ul style="list-style-type: none"> Light source: Tungsten halogen and Deuterium lamps 	<ul style="list-style-type: none"> Electrical supply: 120VA, 220/ 110V, 50/ 60Hz
Typical Applications	<p>Quality control, general research, pharmaceutical, biochemical and clinical laboratory applications.</p>	




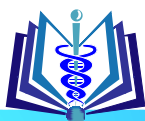
UV/Visible Spectrophotometer

Device Name	UV/Visible Spectrophotometer
Manufacturer	JENWAY
Model	6305
Available units count	3
Actual Image	
Description	The 6305 is ideal for applications using a single, pulsed xenon lamp the 6305 offers an extended lamp life and high energy throughput in the UV and visible regions.
Specifications	<ul style="list-style-type: none"> Wavelength range: 198 to 1000nm Wavelength resolution: 1nm Concentration range: – 300 to 1999 Resolution: 0.1%T, 0.001A Light source: Xenon lamps Electrical supply: <50W
Typical Applications	spectrophotometric applications in schools and colleges, as well as in QC and testing procedures for a wide variety of services and industries.




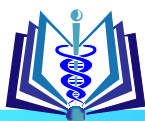
Electrophoresis Power Supply

Device Name	Electrophoresis Power Supply
Manufacturer	BIOTEC-FISCHER
Model	EV265
Available units count	1
Actual Image	
Description	The Electrophoresis Power Supply provides a stabilized direct current for electrophoresis applications and it controls both voltage (0 - 600V) and current output (0 - 500mA).
Specifications	<ul style="list-style-type: none"> Voltage: 0-600V Current: 0-500mA Power: 0-150W Resolution: 1V, 1mA, 1W Outputs: 4 in parallel 4mm sockets
Typical Applications	Protein, DNA and RNA electrophoresis including blotting.

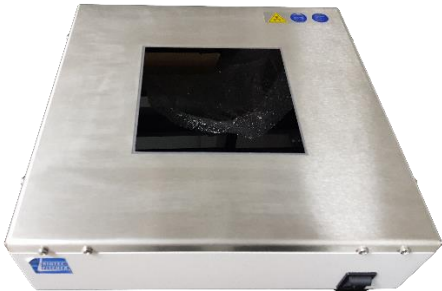


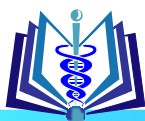
Horizontal Electrophoresis Tank

Device Name	Horizontal Electrophoresis Tank	
Manufacturer	BIOTEC-FISCHER GmbH	
Model	PHERO-sub 2020-E	
Serial Number (s)	110686	
Available units count	1	
Actual Image		
Description	<p>The PHERO-sub 2020-E is primarily designed for resolution of high numbers of samples such as from cloning or PCR. The PHERO-sub 2020-E allows ultra-high-resolution separations over extended runs.</p>	
Specifications	<ul style="list-style-type: none"> 1 x Gel Tray 200 x 200 mm, UV transpar. 1 x Casting Dams (2 pcs.) 2 x Comb, 20 slots, 1.0 mm Loading guides, Platform, Cable set 	
Typical Applications	Horizontal gel Electrophoresis	




UV Transilluminator Single Intensity

Device Name	UV Transilluminator Single Intensity
Manufacturer	BIOTEC-FISCHER GmbH
Model	PHlum SL158k
Serial Number (s)	110689
Available units count	1
Actual Image	
Description	UV-transilluminators are used in molecular biology labs to view DNA (or RNA) that has been separated by electrophoresis through an agarose gel. During or immediately after electrophoresis, the agarose gel is stained with a fluorescent dye which binds to nucleic acid. Exposing the stained gel to a UVB light source causes the DNA/dye to fluoresce and become visible.
Specifications	<ul style="list-style-type: none"> • Light source: 4X8-watt UV tubes • Illumination area: 15X15 cm • Wavelength: 365 nm
Typical Applications	For visualization of ethidium bromide-stained nucleic acids and similar fluorescence detection systems.



Carousel Tissue Processor


Device Name	Carousel Tissue Processor
Manufacturer	AMOS
Model	(ATP200)
Available units count	1
Actual Image	
Description	<ol style="list-style-type: none"> 1. Robust equipment easy to handle, mounted in tubular frame plate in high resistance plastic resin finishing. 2. External finishing in white resistant to the lab environment and products as xylol. 3. Micro-processed central digital touch screen LCD panel, which controls all functions of equipment such as: date, time and year and equipment adjustment parameters configuration. 4. Daily schedule for 24 hours and sloe time for weekends or extended holidays 5. Changeable programming with selectable time interval according to the need of the operator. Ability to pause processing in any bath or position 6. Adjustable bath speed and time control allowing total flow fully preventing contamination of one bath to other 7. High duration battery owns up to 10 years allowing data protection even in lack of power situations 8. +/- 20 min continuous operation in lack of power situation. Energy provided by no break variable according to no break capacity

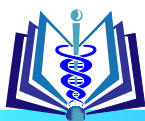


	<p>9. Protection sensor that controls paraffin mugs individually with visual and sonorous alarm protection for sub and super heating</p> <p>10. System protection not allowing the penetration of the last xylol paraffin bath, in case of not agreeable selected temperature parameter</p> <p>11. Automatic stop at end of cycle system, 9 storage protocols programs pre-selected by operator .</p> <p>12. System basket with capacity up to 85 cassettes with improves the processed material quality</p>
Specifications	<ul style="list-style-type: none"> • Paraffin Bath: Temperature Control in panel , with adjustable sensitivity to 80 ± 1 C . • Capacity up to 255 plastic cassettes using 3 baskets • Capacity to 10 Reagent baths and 2 paraffin baths, total 12 baths of 2L each • Sealant bath lid that fully prevent environment contamination • Height : 800mm, Width : 530mm, Weight : 70kg,Power : 500 W, Voltage : 220V at 50/60 HZ
Typical Applications	<p>This processor is used to process animal and human tissues automatically. It is accurate and easy to use and maintain. It is an excellent choice for histology and pathology labs of hospitals and research institutions</p>

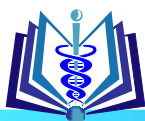


Vacuum Tissue Processor


Device Name	Vacuum Tissue Processor
Manufacturer	AMOS
Model	AVTP2500
Available units count	1
Actual Image	
Description	<ul style="list-style-type: none"> • Friendly and easy to learn the color touch screen with graphic symbols. • Simplified software with intelligent control. Reagent replacement automatically. • When the using times of first alcohol bottle arrive to max while the alcohol concentration is lower the required, the first bottle of alcohol be drained firstly and pump the alcohol from bottle 2 on the purpose of saving reagent. Up to hundreds of protocols meets different tissue processing requirement and modifying the current protocol. Tissue was placed in retort bath. Don't contact with air to drying under safety condition during processing. Safe and reliable retort cover so as to protect the safety of operation. 4 different level sensors to create great efficiency process. • Two kinds distributing valve for Reagent and wax be treat reagent and wax separately, maximum to prevent the tube blocking under ambient temperature. Power failure protection function. • The external UPS be optional can protect tissue from suffering damage once meet power failure. When power is restored, the previous protocols is automatically resumed and completed. • Check the seal situation automatically before working, and alarm any problem happens

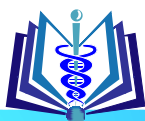


	<ul style="list-style-type: none"> • Pluggable reagent bottle makes easies to drain and fill reagent. • The maximum capacity is 300 cassettes to meet the different requirement. • Paraffin bath and Retort bath made by high quality stainless steel that easy to clean. • Reagent management remind the user maintenance automatically, to ensure the satisfactory results. • Fill the reagent and drain automatically. Intelligent the wax fill and drain. • Monitoring the processing by manual to help maintenance easily. Variety cleaning adapts different clean conditions.
Specifications	<ul style="list-style-type: none"> • PARAFFIN BATHS: Number of paraffin bath 3pcs ,Capacity 3.5Liters each ,Temperature 55-70°C Temperature accuracy $\pm 1^{\circ}\text{C}$,Paraffin melting time approx.10hours • RETORT BATH: Number of Retort bath 1pc, Capacity max 300cassettes (3baskets, Processing retort volume 4.5Liters. Temperature (paraffin): 55-70°C, Temperature (processing reagent): 55°C, Temperature accuracy: $\pm 1^{\circ}\text{C}$. Negative pressure max : 700 mbar, Positive pressure max : 350mbar • WASTE REAGENT BOTTLES: Number of waste reagent bottle 1pc, Maximum bottle volume::5Liters • REAGENT BOTTLES: Number of reagent bottles : 9pcs, Maximum bottle volume: 5Liters • CLEANING BOTTLES: Number of cleaning bottles : 4pcs, Maximum bottle volume: 5Liters. • WASTE WAX BOX: Number of waste wax box: 1pc ,Maximum bottle volume: 4Liters ,Power supply : 220 V AC ,Frequency: 50/60 Hz ,Dimensions : L: 650mm , W: 690mm , H: 1270mm , Weight (net): x190kg
Typical Applications	This processor uses Vacuum function to accelerate the speed of tissue processing for animal and human tissues automatically.

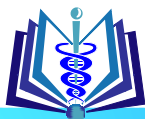


Embedding Center


Device Name	Embedding Center
Manufacturer	AMOS
Model	AEC380
Available units count	1
Actual Image	
Description	<ul style="list-style-type: none"> • Easy to learn to operate user interface with smart color touch screen. • To meet the great demand embedded work, the embedding platform can be arranged at both right and left sides which be controlled performance separately or process embedding work simultaneously. • It adopts six heating ways and precise temperature control system. • Embedding module, cold spot and paraffin trimmer are integrated. • The paraffin flow can be released by manual or foot switch through Electromagnetic valve. • Forceps holder with constant temperature support the residual wax be drained automatically, so it can effectively remove the paraffin adhering in the tip of the forceps. • Embedding mold tray with constant temperature be in favor of removing the wax adhering in embedding mold, which facilitate the recycling of embedding mold. • The brightness of LED lights can be freely adjusted according to desired needs. • The magnifier with metal hose which can be flexibly adjust the position according to the desired needs. <p>Safety works. It adopts non-metallic materials for the focus area in contact with the user's hands in avoid any discomfort caused by contacting heating parts during embedding</p>



Specifications	<ol style="list-style-type: none"> 1. Capacity of tissue tray: 4 baskets(100 cassettes/basket) 2. Capacity of embedding mold tray: 200 pcs 3. Paraffin reservoir: 7 L 4. Temperature range: <ul style="list-style-type: none"> ▪ Paraffin reservoir: ambient~90°C ▪ Basket tray: ambient~90°C ▪ Working area: ambient~90°C ▪ Forceps holder: 65°C constantly ▪ Cold spot: ambient~ -5°C ▪ Embedding mold tray: ambient~90°C 5. Power: 2010VA 6. Voltage: 220V±10% 50Hz 7. Dimensions: 1760mm X600mm X470mm (W*D*H)
Typical Applications	Embedding of human and animal tissues for histopathological studies




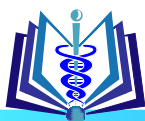
Thermal Console

Device Name	Thermal Console
Manufacturer	AMOS
Model	AEC380
Available units count	1
Actual Image	
Description	<ul style="list-style-type: none"> • It can hold any type of cassette, embedding mold and processed tissue specimen. • Large capacity :2.5L (252 cassettes), The temperature could be set from ambient to 75°C . • It also can be used as a water bath near microtome
Specifications	<ul style="list-style-type: none"> • Supply voltage: 220V±10%, 50hz /110V±10%, 60 hz, Nominal power : 335W • Working temperature: from ambient to 75 °C, increments 1°C • Capacity: 2.5 L (252 cassettes), • Dimension(W*D*H):300*540*390mm, • Weight: about 7.5kgs
Typical Applications	<ul style="list-style-type: none"> • Thermal Console (AEC380) is one component of the integrated embedding center



Cryo Console

Device Name	Cryo Console
Manufacturer	AMOS
Model	AEC380
Available units count	1
Actual Image	
Description	<p>The TEC 2800-C Cryo Console consists an advanced compressor that can cool the paraffin blocks rapidly. The Teflon coated surface guarantee a minimum of ice formation and easy clean. Temperature is adjustable from 15°Cto -15°C.TEC 2800-C Cryo Console can also be used as a stand-alone unit near the microtome.</p>
Specifications	<ul style="list-style-type: none"> • Supply voltage: 220V±10%, 50hz /110V±10%, 60 hz, • Power Draw: 330W • Working temperature: from 15°C to -15 °C , increments 1°C, • Capacity: 70 cassettes • Dimension(W*D*H): 390*540*390mm , • Weight: 24Kgs
Typical Applications	Cryo Console is one component of the integrated embedding center

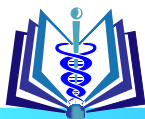


Fully-Automatic Microtome


Device Name	Fully-Automatic Microtome
Manufacturer	AMOS
Model	AEM 480
Available units count	1
Actual Image	
Description	<ul style="list-style-type: none"> • The casing of microtome is made from fire-retardant ABS plastic with streamlined design. • Spacious and ingenious waste tray. • Advanced retraction function makes better sectioning. The retraction value is also adjustable . • Universal and fast specimen holders fits international embedding cassettes. • Hand wheel locking may be activated at any position and improve operation safety standard . • The electric coarse feed operates two speeds which is easy to record the feed. • Separated control panel is much easier to operate. • Three motorized sectioning modes (Cont, Single and Step) are available for user to select . • Automatic memorized coarse feed and reload function can significantly improve cutting efficiency .

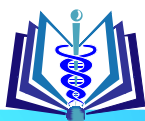


Specifications	<ul style="list-style-type: none"> • Section thickness : <ul style="list-style-type: none"> ▪ 0 to 600μm ▪ 0 to 2μm, 0.5μm increments ▪ 2 to 10μm, 1μm increment ▪ 10 to 20μm, 2μm increments ▪ 20 to 100μm, 5μm increments ▪ 100 to 600μm, 50μm increments • Trimming thickness: <ul style="list-style-type: none"> ▪ 0 to 600μm ▪ 0.5 to 2μm, 0.5μm increments ▪ 2 to 10μm, 1μm increment ▪ 10 to 20μm, 2μm increments ▪ 20 to 100μm, 5μm increments ▪ 100 to 600μm, 50μm increments • Retraction thickness: 5-100μm, 5μm increments (can deactivate) • Specimen horizontal feed:28mm • Specimen vertical feed:70mm • Maximum specimen : 40x50x30mm,or standard cassette • Specimen holder adjusted system: <ul style="list-style-type: none"> ▪ Horizontal orientation: $\pm 8^{\circ}$ ▪ Vertical orientation: $\pm 8^{\circ}$ • Repositioning of knife holder base ,(left-right):50mm • Electric Coarse Feed Speed : 300μm/s (Slow) and 900μm/s (Quick) • Cutting speed (5 grades): <ul style="list-style-type: none"> ▪ 1st:100~164mm/s, ▪ 2nd:164~228mm/s, ▪ 3rd:228~292mm/s, ▪ 4th:292~356mm/s, ▪ 5th:356~420mm/s • Dimension: Length:575mm, Width:405mm ,(without handwheel, 310mm) • Height:325mm , • Weight: about 37 kg
Typical Applications	Sectioning of human and animal tissues

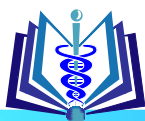


Semi-automatic Cryostat Microtome


Device Name	Semi-automatic Cryostat Microtome
Manufacturer	AMOS
Model	AST500
Available units count	1
Actual Image	
Description	<ul style="list-style-type: none"> • It is designed under overall engineering and ergonomic concept. • All the components are processed by computer numerical controlled machine. • Retraction function prevents specimen damage from blade. • Total thickness calculation. • The low temperature refrigeration system with environment friendly refrigerant R404. • Adopt UV and O3 sterilize for 30 minutes every time. • Peltier specimen clamp refrigeration may be turned on or off manually. • Two defrosting methods: automatic and manual. • The high-precision unit is enclosed outside the cryostat chamber to prevent it from thermal expansion and contraction, and keep minimum maintenance requirement . • Artificial intelligent interface is easy for user to learn and operate. • LCD screen can display all information including thickness, thickness sum , controlling time, temperature, timed on/off and so on.

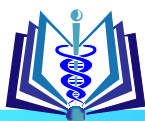


	<ul style="list-style-type: none"> • Sleep Function. After activating this function, the temperature in cryostat chamber can be kept between -1°C and -10°C; After stopping this function, the temperature in freeze chamber will arrive to working temperature within 30 minutes. • Control panel with locking function could avoid wrong operation. • Hand wheel locking function. • Wide freezing shelf can load 8 specimen cassettes simultaneously, and two of them are equipped with Peltier to meet different temperature
Specifications	<ul style="list-style-type: none"> • Freeze chamber minimum temperature : $-35^{\circ}\text{C}\pm 2^{\circ}\text{C}$ • Freeze shelf minimum temperature: $-45^{\circ}\text{C}\pm 5^{\circ}\text{C}$ • Lowest temperature of Peltier unit on freeze shelf: $-55^{\circ}\text{C}\pm 5^{\circ}\text{C}$ • Lowest temperature of Peltier unit on Specimen Clamp: $-50^{\circ}\text{C}\pm 5^{\circ}\text{C}$(working time of Peltier is 15 minutes.) • Maximum specimen size: $35\times 35\text{mm}$ • Specimen vertical stroke: $48\pm 1\text{mm}$ • Specimen horizontal stroke: $15\pm 0.2\text{mm}$ Coarse feeding speed: $300\mu\text{m/s}$ (slow) or $900\mu\text{m/s}$(rapid) • Section thickness range: $0\mu\text{m}\sim 100\mu\text{m}$ adjustable; $0\mu\text{m}\sim 3\mu\text{m}$, in $0.5\mu\text{m}$ increments; $3\mu\text{m}\sim 10\mu\text{m}$, in $1\mu\text{m}$ increments; $10\mu\text{m}\sim 20\mu\text{m}$, in $2\mu\text{m}$ increments; $20\mu\text{m}\sim 100\mu\text{m}$, in $5\mu\text{m}$ increments; • Trimming thickness range: $10\mu\text{m}\sim 600\mu\text{m}$ adjustable; $10\mu\text{m}\sim 50\mu\text{m}$, in $5\mu\text{m}$ increments; $50\mu\text{m}\sim 100\mu\text{m}$, in $10\mu\text{m}$ increments; $100\mu\text{m}\sim 600\mu\text{m}$, in $50\mu\text{m}$ increments; • Retraction range: $0\sim 80\mu\text{m}$ adjustable , in $5\mu\text{m}$ increments • Voltage and frequency: $220\text{ V} \pm 10\%$, 50 HZ / $110\text{ V} \pm 10\%$, 60 HZ, Nominal Power: 1000 W • Weight: about 130 KG, • Dimensions (W×D×H): $805\times 715\times 1195\text{mm}$
Typical Applications	Used for tissue samples for studies and tests that are affected by heat and stabilizers



Slide Stainer


Device Name	Slide Stainer
Manufacturer	AMOS
Model	ASS190
Available units count	1
Actual Image	
Description	<ol style="list-style-type: none"> 1. Microcomputer technology advanced intelligent control system. 2. Two slide racks with two protocols run simultaneously that improve working efficiency greatly. 3. Besides the Stainer function, the programmable feature make the equipment ideal for different processing and lab tests. The system can control the rack to start or end at any station desired. It is capable of up to 25 steps for each program. 4. The system can store 4 groups (8 different) programs which better meet various slide staining requirements. It also has wash function. 5. With security protection function, the equipment cannot be damaged by any abnormal condition or incorrect operation. 6. It has automatic position search function which can control the basket to move to the set position whatever it stays at any position. 7. Alarm function: monitors being carried out to prevent any incorrect operation in time. 8. Secondary running function: If machine meet any break off during automatic running or the slide staining effect is not perfect, user could restart from any step as willing. 9. It applies high-performance stepping motor systems to ensure running stability and positioning accurately with low noise.

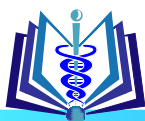


	<p>10. The streamlined exterior shape makes it easier to clean.</p> <p>11. Environmental protection: Adsorb the volatile gas with active carbon that can prevent toxic gases from entering the laboratory environment.</p> <p>12. LCD: with user-friendly keyboard to program and display all information concerning staining.</p> <p>13. Protection function: it can prevent damage to tissue samples caused by basket movement be physically blocked while in operation.</p> <p>14. The in-out water pipe allow to wash the tissue at any time.</p>
Specifications	<ul style="list-style-type: none"> • Quantity of slide racks: 2 • Throughout capacity: 96 slides at a time (48 slides on each slide rack) • Number of tank: 19 • Volume of container: 800ml for each tank , the first and second tank comprise the washing station with circulated water • Retention time in each tank : 1 seconds~99minutes 59 seconds , can be set as desired • The two baskets agitates every 15 seconds in turns . (The agitation time can be selected from 5 seconds to 30 seconds) • Voltage/Frequency : 220V \pm 10% ,50HZ / 110V \pm 10% ,60HZ • Power : 120 W • Dimensions (W×D×H) : 1200×430×590 mm • Weight : About 70 KG
Typical Applications	For routine staining of animal, plant and human body tissues



Immunohistochemistry Stainer

Device Name	Immunohistochemistry Stainer
Manufacturer	AMOS
Model	AIHS 620
Available units count	1
Actual Image	
Description	<ul style="list-style-type: none"> • Compatible system with wide range antibody manufacturers: Amos AIHS 620 utilizes an open source staining system, so pathologists are able to choose any antibody from any manufacturer. • Wider range of specimens: Paraffin section, Frozen section, Punctured section, cells smear and marrow section. • The excellent expansibility: A number of different staining protocols can be performed according to the pathologists' special requirements. • Independent heating and monitoring modules: It consists of 48 independent heating modules and 48 independent thermostats. Moreover, these 48 slides can be incubated independently to achieve special staining requirements. • Real-time temperature monitoring: Once the main program has been set up, the instrument automatically monitors and controls the 48 independent heating modules to accurately match the incubating temperature for different steps in a real-time way. • Advanced evaporation proof function: The optimized solvent membrane can cover staining area completely to reduce the chances of non-specific dark background staining caused by antibody master mix evaporation.



	<ul style="list-style-type: none"> • Exceptionally low dispense, the minimum dispensing volume of reagents is 50ul, this means significantly reducing waste. • Teflon coated nozzle: Reagents dispensing nozzle is coated by Teflon to avoid staining contamination. • Environmental Friendly system: The integrated waste collection system makes waste management in an environmental friendly way.
Specifications	<ul style="list-style-type: none"> • Capacity: 48 slides • Number of reagent containers: 64 reagents (5ml for each) • Reagent titer increment: 50 µl, 75 µl, 100 µl, 150 µl, 200 µl, 250 µl. • Outside dimensions(W×D×H): 1015×665×520 mm • Power supply: 220V±10% at 50/60 Hz or 110V±10% at 50/60Hz • Power: ≤950W • Heating Module: temperature from ambient to 99°C • Weight: about 131Kg
Typical Applications	Staining human and animal tissues for Immunohistochemistry




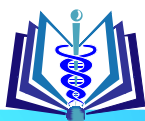
Knife sharpener

Device Name	Knife sharpener
Manufacturer	SLEE
Model	MMS
Available units count	1
Actual Image	
Description	SLEE have produced and reconditioned steel and hard-metal (tungsten-carbide) knives for decades in the factory in Mainz. However, it is not always economical to find a suitable factory for this service in your area or return the knives for reconditioning to us. Therefore, this low-cost microtome knife sharpener type MMS, is a valuable alternative and addition to our manufacturing program
Specifications	<ul style="list-style-type: none"> • For microtome knives profile C and D with a length of 100 – 250 mm • Variable honing programs by means of: 2 honing compounds • 2 honing surfaces (coarse + fine) • Variable speed, selectable • Time clock up to 120 minutes • Height adjustment for better sharpening result • High effectiveness by means of glass-plate oscillation and selection of honing • Program depending on amount of wear of knife • Sight check during honing • Safety switch stops unit as soon as plastic cover is opened • Universal power input 100 – 240 V, 50/60 Hz • Weight and Dimensions (Depth X Width X Height) • Dimensions (in mm) 380 x 370 x 280 • Dimensions packed (in mm) 550 x 650 x 480 • Weight net 17 kg • Weight packed 29 kg
Typical Applications	Microtome knife sharpener




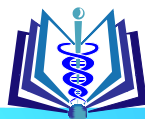
Bench Top Quick-freezing Unit

Device Name	Bench Top Quick-freezing Unit
Manufacturer	SLEE
Model	MTR
Available units count	1
Actual Image	
Description	<ul style="list-style-type: none"> • The fast cooling unit consists of a compressor cooling system with a flexible tube and a cooling block which can be adapted onto a standard object clamp of different kinds of microtomes. • Extremely silent due to special valves Self-optimizing controller for temperature accuracy • Manual defrosts • High cooling capacity to -45°C at 20°C room temperature
Specifications	<ul style="list-style-type: none"> • Dimensions 410 x 485 x 310 mm (width x depth x height) • Weight 28 kg • Cooling capacity -45 ° C
Typical Applications	Fast cooling unit

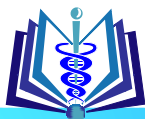


Surgical anatomical microscope


Device Name	Surgical anatomical microscope
Manufacturer	Kari Kaps GmbH & Co. KG / Asslar
Model	SOM62
Available units count	1
Actual Image	
Description	<p>Surgical anatomical microscope microscopes provide crystal-clear three dimensional imaging with great depth of focus and extraordinary color brilliance. Even the finest structures and the smallest details are clearly visible. This gives you maximum control over your work - the ideal prerequisite for a reliable diagnosis.</p>
Specifications	<ul style="list-style-type: none"> • Illumination: Coaxial cold light illumination (15V/150W) with spare bulb LED illumination (optional) • Lenses: Changeable lenses from 200mm to 400mm in steps of 50mm Lens f=200mm and f=250mm with integrated focusing (14mm) Kaps Variflex-100 objective lens with a focal length of 220 - 320mm (optional)

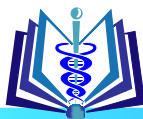


	<ul style="list-style-type: none"> • Binocular tubes: Straight tube $f=125\text{mm}$ or $f=159\text{mm}$, inclined tube $f=182\text{mm}$ 0- 210° on request • Eyepieces: Eyepieces WF 12.5xV or WF 10xV (with diopter adjustment) • Magnification: 3-step magnification changer, 5-step magnification changer or manual zoom 1-6 • Fine focusing: Manual fine focusing 40mm (optional) • Secondary viewer: Binocular or monocular • Video camera: Adaptation of C-mount video cameras via beam splitter and TV tube • Integrated endoscopic adapter: For direct adaption for existing endoscopic cameras
Typical Applications	<ul style="list-style-type: none"> • An operating microscope specifically designed to be used in a surgical setting, typically to perform microsurgery. • Examination microscope that is easy to operate and move into a particularly comfortable position. When it is no longer needed, it can be swiveled to one side to make more room. • Its operation is both intuitive and effective. Other lenses can be exchanged quickly and easily. This lets you stay beside the patient throughout and leaves you free to concentrate on the examination in hand.

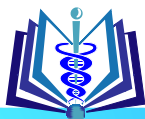


BAROMETER


Device Name	BAROMETER
Manufacturer	Reed instruments
Model	REED LM8000
Available units count	1
Actual Image	
Description	This compact 6-in-1 environmental meter measures air velocity, air temperature, ambient temperature, relative humidity, light and contact temperature. The LM-8000 features Data Hold, Minimum/Max functions and has been designed for one handed operation.
Specifications	<ul style="list-style-type: none"> • Air Velocity: <ul style="list-style-type: none"> ▪ Measuring Ranges 0.2 to 30.0 m/s; 1.4 to 108.0 km/h; 0.9 to 67.0 mph; 80 to 5910 fpm; 0.8 to 58.3 knots ▪ Accuracy <20 m/s: $\pm 3\%$ FS; ≥ 20 m/s: $\pm 4\%$ FS ▪ Resolution 0.1 m/s, km/h, mph, knot 1 fpm • Temperature: <ul style="list-style-type: none"> ▪ Measuring Ranges Air Temperature: 32 to 122.0°F (0 to 50°C); Contact Temperature (Type K): -148 to 2372°F (-100 to 1300°C) ▪ Accuracy Air Temperature: $\pm 1.2^\circ\text{C}$ (2.5°F); Contact Temperature: $\pm (1\% \text{ rdg} + 2^\circ\text{F}(1^\circ\text{C}))$ ▪ Resolution 0.1°F/°C • Humidity: <ul style="list-style-type: none"> ▪ Measuring Range 10 to 95% RH ▪ Accuracy $\geq 70\% \text{ RH}$: $\pm (4\% \text{ rdg} + 1.2\% \text{ RH})$; $< 70\% \text{ RH}$: $\pm 4\% \text{ RH}$ ▪ Resolution 0.1% RH • Light: <ul style="list-style-type: none"> ▪ Measuring Range 0 to 20,000 Lux (0 to 2,000 Ft-cd) ▪ Accuracy $\pm (5\% \text{ rdg} \pm 8 \text{ dgt})$ ▪ Resolution 1 Lux / 0.1 Ft-cd

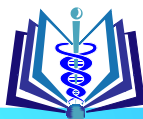


	<ul style="list-style-type: none"> • General Specifications: <ul style="list-style-type: none"> ▪ Response Time 1 sec ▪ Display LCD Data: Hold Yes; Min Yes Max Yes; ▪ Zero Adjustment Yes (for Light); ▪ Auto Shut-off Yes (after 10 mins); ▪ Low Battery Indicator Yes; ▪ Power Supply 9V ▪ Battery Product Certifications CE ▪ Operating Temperature 32 to 122°F (0 to 50°C) ▪ Storage Temperature 14 to 140°F (-10 to 60°C) ▪ Operating Humidity Range 10 to 85% ▪ Dimensions 6.1 x 2.4 x 1.3" (156 x 60 x 33mm) ▪ Weight 8.8 oz (160g)
Typical Applications	<ol style="list-style-type: none"> 1. Used in meteorology to measure atmospheric pressure. 2. Used for measuring the water vapor in the atmosphere. 3. Used for measuring ambient temperature. 4. Used for measuring light in industry, agriculture, and research is also used for determining illumination in the workplace. 5. HVAC and Refrigeration Servicing 6. Detecting Filter Blockage 7. Condensers and Chillers




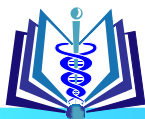
SLING PSYCHROMETER

Device Name	SLING PSYCHROMETER
Manufacturer	Bacharach, Inc
Model	SPIRIT FILL6T173,
Available units count	1
Actual Image	
Description	The uniquely compact Bacharach Sling Psychrometer accurately determines percent relative humidity without the necessity of consulting complex tables. There is no need to wet the wick each time a reading is taken; the Sling Psychrometer contains a slide rule calculator which correlates wet and dry bulb thermometer indications for direct reading of relative humidity. When not in use, the thermometer case telescopes into the handle for protection.
Specifications	<ul style="list-style-type: none"> • Designed for portability (7.5" long x 1" diameter) • Slide rule construction quickly converts temperature to relative humidity • Built-in water reservoir holds sufficient water for several hours of testing • Thin bulb design gives fast thermal response • Thermometers constructed of shock-resistant glass; stems have deep-etched numerals and 1° scale divisions for easy reading • Accurate to within $\pm 5\%$ R.H.
Typical Applications	<ul style="list-style-type: none"> • Measurement of comfort conditions in air-conditioned environments, hospital operating rooms, storage areas and laboratories • Tests in industrial atmospheres where high or low humidity may be critical in manufacturing processes • School athletics – to determine safe conditions for practice



RAIN GAUGE

Device Name	RAIN GAUGE
Manufacturer	Grainger
Model	CAT-3K1T6
Available units count	1
Actual Image	
Description	A rain gauge is an instrument used to gather and measure the amount of liquid precipitation over a set period of time
Specifications	<ul style="list-style-type: none"> • Item Rain Gauge Range to 5" • Graduations 0.05 • Material of Construction Polycarbonate • Mounting Bracket • Includes Bracket • Manufacturers Warranty Length 12 Months
Typical Applications	A rain gauge is an instrument used to gather and measure the amount of liquid precipitation over a set period of time



WIND METER

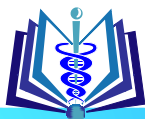
Device Name	WIND METER
Manufacturer	Nielsen – Kellerman KESTREL
Model	KESTREL POCKET WEATHER METER 3000
Available units count	1
Actual Image	
Description	<p>The Kestrel 3000 Pocket Weather Meter has traditionally been the most popular meter for firefighters for controlled burns and such, easily and rapidly giving wind and relative humidity readings. Before the Kestrel 3000 came along, the technology required to gather this information would require masses of equipment, in particular a Sling.</p>
Specifications	<ul style="list-style-type: none"> • Current Wind Speed • Maximum Wind Gust • Wind Speed 3 Second Running Average • Air, Water & Snow Temperature • Wind Chill • Relative Humidity • Heat Stress Index • Dew point • Protective cover with sure-grip over molding • Data hold function • Large easy-to-read display with backlight • Waterproof and floats • User-replaceable impeller • External temperature sensor • Patented Quick-Response RH Sensor • All instruments and accessories are completely assembled in the USA




Typical Applications

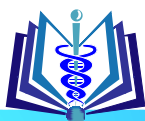
This device used to measure:

- Current Wind Speed
- Temperature.
- Wind Chill.
- Relative Humidity
- Heat Stress Index.
- Dew point.




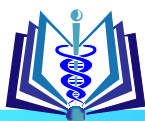
MIRRORED COMPASS

Device Name	MIRRORED COMPASS
Manufacturer	Grainger
Model	CAT-8CLW6
Available units count	1
Actual Image	
Description	Two Zone System, Fixed Declination Correction Scale, Jewel Bearing, Floating, Detachable Snap Lock Lanyard with Whistle, Sighting Hole and Notch for Accurate Bearings.
Specifications	<ul style="list-style-type: none"> • Liquid Filled Yes • Scales in., mm • Graduations 2 Degrees • Body Material Plastic • Needle Type Global • Tripod Mountable No • Overall Length 2-5/16" • Overall Width 3/4" • Overall Height 3/4"
Typical Applications	This mirrored compass used to sight a direction

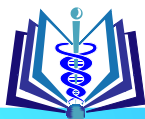


DISSOLVED OXYGEN

Device Name	DISSOLVED OXYGEN	
Manufacturer	Milwaukee	
Model	CAT-MW600	
Available units count	1	
Actual Image		
Description	<ul style="list-style-type: none"> • The MW600 is a Portable Dissolved Oxygen meter ideal for use in school laboratories. Dissolved Oxygen measurements are also very important in fish farms and ponds, where Oxygen levels are continuously monitored to obtain optimal reproduction. • The MW600 calibrates easily in 2 points (at 100% saturated air and in 0 Oxygen solution) and has Automatic Temperature Compensation which guarantees the highest accuracy. The low battery warning, easy to replace screw on cap membranes make this meter very simple to operate. Rugged Carrying Case (Optional) provides handy on-site meter calibration and measurements. • MW600 is supplied complete with a MA840 D.O. polarographic probe with 3 m cable, calibration screwdriver, 2 spare membranes, MA7040 (20 mL) electrolyte solution, battery, and instructions. 	
Specifications	<ul style="list-style-type: none"> • O2 Range 0.0 to 19.9 mg/l • O2 resolution 0.1 mg/l • O2 Accuracy ± 1.5 %Full Scale 	<ul style="list-style-type: none"> • Environment 0 to 50°C / 32 to 122°F; max RH 95% • Battery Type 1 x 9V alkaline (included)

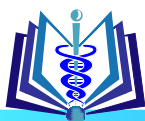


	<ul style="list-style-type: none"> • Calibration manual on 2 points (zero and slope) • Temperature Compensation automatic, from 0 to 30°C • Probe MA840 (included) • Battery Life approx. 70 hours of continuous use • Dimensions 145 x 80 x 40 mm • Weight 220 g (with battery)
Typical Applications	Measuring Dissolved Oxygen



Digital microscope

Device Name	Digital microscope
Manufacturer	OPTIKA
Model	B-290
Available units count	1
Actual Image	
Description	This microscope is a scientific precision instrument designed to last for many years with a minimum of maintenance. It is built to high optical and mechanical standards and to withstand daily use.
Specifications	<ul style="list-style-type: none"> • HEAD: B-292: binocular, 360° rotating, 30° inclined B-293: trinocular, 360° rotating, 30° inclined. Light split 50/50 • EYEPIECES: WF 10X/ 20mm • NOSEPIECE: Quadruple, reversed • OBJECTIVES: E-PLAN 4x, 10x, 40x and 100x (oil immersion) • WORKING STAGE: Double layer with mechanical sliding stage, 150x133mm, moving range 75x50mm. Belt-drive in X direction. • CONDENSER: 1.25 N.A. Abbe type, with iris diaphragm • FOCUSING SYSTEM: Coaxial coarse and fine focusing system, with tension adjustment mechanism • ILLUMINATION: X-LED3, 3.6W, with brightness control. • POWER SUPPLY: Input Voltage of the power supply: 100-240Vac / 50-60Hz
Typical Applications	The digital microscope is a superior microscope meeting the rugged demands for daily work needs in a Professional laboratory setting.



Stereomicroscope

Device Name	Stereomicroscope
Manufacturer	OPTIKA
Model	ST-50LED
Available units count	3
Actual Image	
Description	<p>The OPTIKA microscopes STEREO series are high-performance stereo microscopes with a large possibility of choice between various models with fixed magnification or rotatable objective. Total magnification ranges from 5x to 80x depending on the eyepieces (standard or optional).</p>
Specifications	<ul style="list-style-type: none"> • Head: Fixed – 45° inclined, forwards • Eyepiece WF 10x/20 mm • Objective Fixed – 2x • Stand Overhanging • Illuminator LED incident light on flexible Arm • Magnification:
Typical Applications	<p>These microscopes are suitable to analyze a variety of objects in 3D, for industrial, biological or educational applications.</p>

