

ANNEX 1-MEDICAL

1'st Priority: Xoogga Hospital

a. MRI TESLA 1.5 SPECIFICATION

Overview

The 1.5 Tesla MRI (Magnetic Resonance Imaging) machine is a widely used diagnostic imaging tool that utilizes a magnetic field of 1.5 Tesla to produce detailed images of the body's internal structures. It is commonly employed in medical settings for a variety of diagnostic purposes.

Key Features:

- **Magnetic Field Strength:** 1.5 Tesla
- **Imaging Modalities:** T1, T2-weighted imaging, diffusion-weighted imaging, and more.
- **Applications:** Neurology, orthopedics, oncology, and cardiovascular imaging.
- **Patient Comfort:** Designed with a wide bore to accommodate larger patients and enhance comfort.
- **Advanced Technology:** Equipped with high-resolution coils and advanced imaging software for improved image quality.

Specifications

- **Dimensions:** Typically ranges from 1.5 to 2.5 meters in length.
- **Weight:** Approximately 3,000 to 5,000 kg, depending on the model.
- **Power Requirements:** Usually requires a three-phase power supply.
- **Cooling System:** Often includes a cryogenic cooling system to maintain superconducting magnets.

Safety Features

- **Emergency Stop Button:** Easily accessible for immediate shutdown.
- **Patient Monitoring:** Continuous monitoring systems to ensure patient safety during procedures.



- **Faraday Cage:** Shielding to minimize external electromagnetic interference.

b. CT scan 256 Slice Specification

Overview

The 256-slice CT (Computed Tomography) scanner is a state-of-the-art imaging device that offers high-speed imaging and exceptional detail for various diagnostic applications. It utilizes 256 detector rows to capture detailed cross-sectional images of the body.

Key Features

- **Slice Capability:** Capable of acquiring 256 slices per rotation.
- **Imaging Modalities:** 2D and 3D imaging, including MPR (Multi-Planar Reconstruction) and VR (Volume Rendering).
- **Applications:** Oncology, neurology, trauma assessment, and vascular imaging.
- **Speed:** Rapid acquisition times, allowing for quick scans and reduced motion artifacts.
- **Patient Comfort:** Designed with a wide aperture to accommodate larger patients and enhance comfort.

Specifications

- **Dimensions:** Typically ranges from 1.5
- **Weight:** Approximately 1,000 to 2,000
- **Power Requirements:** Commonly supply.
- **X-ray Tube:** High-performance rotating



to 2 meters in length.
kg, depending on the model.
requires a three-phase power
anode tube for faster imaging.

Safety Features

- **Automatic Exposure Control:** Adjusts and anatomy.
- **Patient Monitoring:** Continuous safety.
- **Shielding:** Designed to minimize radiation exposure to both patients and staff.

exposure based on patient size
monitoring during scans to ensure

c. Doppler Ultrasound Specification

Overview

Doppler Ultrasound is a non-invasive imaging technique that uses high-frequency sound waves to assess blood flow and movement within the body. It is commonly used in cardiology, obstetrics, and vascular studies to visualize blood circulation.

Key Features

- **Functionality:** Measures the speed and direction of blood flow.
- **Imaging Modalities:** Color Doppler, Power Doppler, and Spectral Doppler imaging.
- **Applications:** Cardiac assessments, fetal monitoring, and vascular examinations.
- **Real-time Imaging:** Provides immediate results for dynamic assessment of blood flow.
- **Patient Safety:** Non-invasive and does not use ionizing radiation.

Specifications

- **Frequency Range:** Typically, between 2 to 10 MHz, depending on the application.
- **Transducer Types:** Linear, curved, and phased array transducers for different imaging needs.

- **Image Display:** High-resolution imaging on LCD screens with various color modes.
- **Portability:** Many models are portable for bedside and field use.

Safety Features

- **Non-invasive:** Safe for patients, including pregnant women.
- **Minimal Discomfort:** Procedures are usually quick and painless.

Continuous Monitoring: Allows for real-time assessment of blood flow during procedures.

d. Fully Automatic 780 CBC Machine Specification

Overview

The Fully Automatic 780 CBC (Complete Blood Count) Machine is a state-of-the-art laboratory instrument designed for the accurate and efficient analysis of blood samples. It streamlines the process of performing complete blood counts, making it essential for clinical laboratories.

Key Features

- **High Throughput:** Capable of processing up to 80 samples per hour, significantly enhancing laboratory efficiency.
- **Advanced Technology:** Incorporates cutting-edge technology for precise measurement of various blood parameters.
- **User-Friendly Interface:** Features a touchscreen display for easy navigation and operation.
- **Compact Design:** Optimized for space-saving without compromising performance.

Specifications

- **Test Parameters:** Measures key blood components, including red blood cells, white blood cells, hemoglobin, hematocrit, and platelets.
- **Sample Types:** Suitable for whole blood and anticoagulated samples.
- **Data Management:** Interfaces with laboratory information systems (LIS) for streamlined data handling and reporting.



- **Dimensions:** Typically compact, allowing it to fit in smaller laboratory spaces.

Safety Features

- **Quality Control:** Built-in quality control protocols to ensure accuracy and reliability of results.
- **Self-Diagnostics:** Regular self-checks to maintain equipment integrity.
- **Biohazard Safety:** Designed to minimize risks associated with handling biological samples.



e. Biochemistry Machine (BS240) Specification

Overview

The BS240 Biochemistry Analyzer is a laboratory instrument designed for the quantitative analysis of biochemical parameters in various biological samples. It is widely used in clinical laboratories for routine tests and diagnostics.

Key Features

- **Measurement Principle:** Utilizes photometric methods for accurate analysis.
- **Throughput:** Capable of processing up to 240 tests per hour.
- **Sample Types:** Accepts serum, plasma, and other bodily fluids.
- **User-Friendly Interface:** Equipped with a touchscreen for easy operation and navigation.
- **Reagent Management:** Automatic calibration and reagent monitoring features.

Specifications

- **Test Parameters:** Commonly measures glucose, cholesterol, electrolytes, liver enzymes, and more.
- **Display:** High-resolution LCD for result visualization and data management.
- **Connectivity:** Interfaces with laboratory information systems (LIS) for efficient data handling.

- **Dimensions:** Compact design suitable for various laboratory settings.

Safety Features

- **Quality Control:** Built-in QC programs to ensure the reliability of results.
- **Self-Diagnostics:** Regular self-checks to maintain operational integrity.
- **Biohazard Safety:** Designed to minimize the risk of contamination and exposure.

f. Best 4°C Blood Bank Refrigerator (Medium Capacity) Specification

Overview

The Best 4°C Blood Bank Refrigerator is engineered for optimal storage of blood products, maintaining a stable temperature of 4°C to ensure the safety and efficacy of blood components. This model is ideal for hospitals and blood banks requiring medium storage capacity.

Key Features

- **Temperature Control:** Consistently maintains a temperature of 4°C with minimal fluctuations.
- **Storage Capacity:** Designed to hold approximately 200 to 300 blood bags or equivalent volume, making it suitable for medium-sized facilities.
- **Digital Temperature Display:** Features a clear digital display and alarm system for immediate alerts on any temperature deviations.
- **Adjustable Shelving:** Equipped with adjustable shelves to accommodate various blood bag sizes and maximize storage efficiency.



Specifications

- **Dimensions:** Typically measures around 70 cm (W) x 70
- **Power Supply:** Operates on standard electrical supply for an emergency backup system.
- **Cooling System:** High-performance compressor with even temperature distribution.
- **Construction Material:** Made from high-quality, stainless steel with superior insulation.

Safety Features

- **Alarm System:** Integrated alarms for temperature and door openings.
- **Security Lock:** Equipped with secure locks to prevent
- **Backup Power Supply:** Optional battery backup to operation during power outages.



cm (D) x 185 cm (H).

(220-240V) with options

forced air circulation for

corrosion-resistant

deviations, power failures,

unauthorized access.

ensure continued

g. Microbiological Incubator Specification

Overview

A Microbiological Incubator is a vital laboratory instrument used to cultivate and maintain microbiological cultures under controlled environmental conditions. It is essential for research, clinical diagnostics, and quality control in microbiology.

Key Features

- **Temperature Control:** Precise temperature regulation typically ranging from ambient to 60°C, with accuracy within $\pm 0.1^{\circ}\text{C}$.
- **Interior Design:** Equipped with stainless steel interiors for easy cleaning and resistance to corrosion.
- **Air Circulation:** Forced air circulation to ensure uniform temperature distribution throughout the chamber.

- **Digital Controls:** User-friendly digital interface for easy temperature and timer settings.

Specifications

- **Capacity:** Available in various sizes, commonly ranging from 30 to 300 liters.
- **Shelving:** Adjustable shelves to accommodate experiments.
- **Power Supply:** Operates on standard electrical supply (220-240V).
- **Insulation:** High-quality insulation to minimize heat loss and maintain stability.

Safety Features

- **Overheat Protection:** Built-in safety mechanisms to prevent overheating.
- **Alarm System:** Alerts for temperature deviations and power failure.
- **Window Access:** Transparent door/window for easy monitoring without opening the incubator.



different types of cultures and
supply (220-240V).
heat loss and maintain

mechanisms to prevent
deviations and power failure.
easy monitoring without

h. MAGLUMI X3 Specification

Overview

The MAGLUMI X3 is a compact and efficient analyzer designed for clinical laboratories. It provides rapid testing capabilities, making it an ideal choice for small to medium-sized hospitals and laboratories.

Key Features

- **High Throughput:** Capable of performing up to 200 tests per hour, ensuring efficient workflow.
- **Compact Design:** Optimized for minimal space usage, making it suitable for various laboratory settings.
- **Advanced Technology:** Utilizes X-TECH technology for enhanced precision and reliability in results.
- **User-Friendly Interface:** Equipped with an intuitive touchscreen for easy operation and navigation.

Specifications

- **Test Types:** Supports a wide range of immunoassay tests, including hormones, tumor markers, and infectious diseases.
- **Sample Types:** Compatible with serum, plasma, and other biological fluids.

- **Connectivity:** Interfaces with laboratory information systems (LIS) for seamless data management.
- **Dimensions:** Designed to fit easily in limited spaces while maintaining high performance.

Safety Features

- **Quality Control:** Built-in quality control results.
- **Self-Diagnostics:** Regular self-checks to and reliability.
- **User Safety:** Designed with safety features to biohazardous materials.



measures to ensure accurate
maintain operational integrity
minimize the risk of exposure to

i. List of Culture Media Used in Microbiology

Overview

Culture media are essential for growing microorganisms in microbiology. They provide the necessary nutrients and environmental conditions for the growth of various microbes, including bacteria, fungi, and viruses.

Common Types of Culture Media and Their Uses

Nutrient Agar

- **Uses:** General-purpose medium for the growth of a wide variety of non-fibrous microorganisms.
- **Components:** Peptones, agar, and distilled water.

Blood Agar

- **Uses:** Enriched medium for growing fastidious organisms and for hemolysis observation.
- **Components:** Nutrient agar supplemented with sheep or horse blood.

MacConkey Agar

- **Uses:** Selective and differential medium for Gram-negative bacteria; distinguishes lactose fermenters.
- **Components:** Bile salts, crystal violet, lactose, and neutral red.

Mannitol Salt Agar

- **Uses:** Selective for Staphylococcus species; differentiates Staphylococcus aureus from other species.
- **Components:** High salt concentration, mannitol, and phenol red.

Sabouraud Dextrose Agar

- **Uses:** Ideal for the cultivation of fungi and yeasts.
- **Components:** Peptones, dextrose, and agar.

Cetrimide Agar

- **Uses:** Selective for Pseudomonas aeruginosa.
- **Components:** Cetrimide, agar, and nutrient components.

Tryptic Soy Agar

- **Uses:** General-purpose medium for the growth of a wide variety of bacteria.
- **Components:** Tryptone, soytone, and agar.

XLD Agar (Xylose Lysine Deoxycholate)

- **Uses:** Selective for Enterobacteriaceae and differentiates lactose fermenters from non-fermenters.
- **Components:** Xylose, lysine, phenol red, and deoxycholate.



j. Donor Chair Specification

Overview

The Donor Chair is an essential piece of equipment used in blood donation centers and hospitals. It is designed to provide comfort and support to donors during the blood donation process, ensuring a safe and pleasant experience.

Key Features

- **Ergonomic Design:** Contoured seating and adjustable armrests to accommodate various body types and enhance comfort.

- **Adjustable Height:** Hydraulic or manual height adjustment to ensure optimal positioning for both the donor and the phlebotomist.
- **Sturdy Construction:** Made from durable materials to support various weights and provide stability during the donation process.
- **Easy-to-Clean Surface:** Upholstered in materials that are resistant to spills and easy to disinfect.

Specifications

- **Weight Capacity:** Typically supports up to 300 lbs (136 kg) or more, depending on the model.
- **Dimensions:** Standard dimensions range from 60 cm (W) x 120 cm (L) x 75 cm (H) to fit various spaces.
- **Color Options:** Available in multiple colors to match Will be Blue and Green.
- **Footrest:** Adjustable footrest to provide additional comfort and support.

Safety Features

- **Safety Straps:** Integrated straps to secure the donor safely during the donation process.
- **Non-Slip Base:** Designed with a non-slip base to prevent movement during use.
- **Wide Armrests:** Provides a stable resting place for arms during the procedure.

