

HiCARE -CXII⁺



HLL Lifecare Limited
(A Government of India Enterprise)

HiCARE - CXII+ is a breakthrough in blood component separation technology. Designed to deliver unmatched accuracy, efficiency, and safety. HiCARE - CXII+ transforms the way blood banks and medical facilities handle Plasma, Red blood cells (RBCs), Platelets and buffy coat extraction. With cutting-edge automation, HiCARE - CXII+ ensures standardized production, reduces manual intervention, and enhances operator safety—all in just 3-4 minutes with 99% accuracy.

REVOLUTIONIZING BLOOD COMPONENT SEPARATION WITH PRECISION AND SPEED

LIGHTNING-FAST PRECISION

- Separates blood components in under 4 minutes with microcontroller-driven technology.
- Colorimetric sensors and optical detection ensure flawless segregation of RBCs, platelets, and plasma.

SMART AUTOMATION FOR SAFER WORKFLOWS

- Auto air removal and high-precision weighing scales maintain component integrity.
- Touchscreen interface for real-time monitoring of bag weights, clamp positions, and process status.
- Self-diagnostic systems with remote troubleshooting capabilities (optional).

ENGINEERED FOR EXCELLENCE

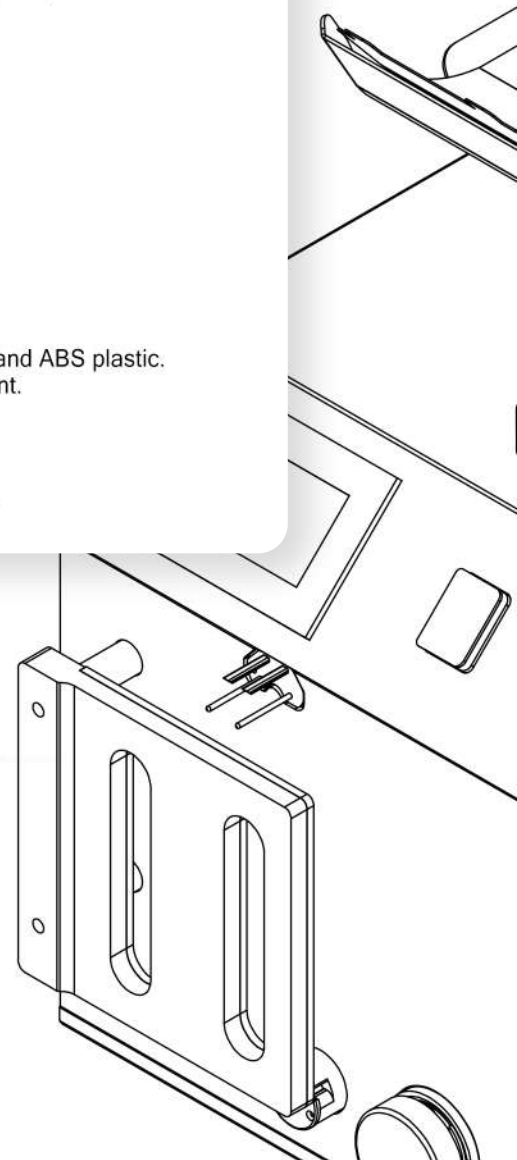
- Zero-noise motor-driven press with 70kg maximal force for smooth,
- Consistent extraction. with ZERO HAEMOLYSIS
- Inbuilt tube sealers and squeezing clamps for seamless tubing management.
- Barcode reading and data storage options for traceability and compliance.

BUILT TO LAST

- Robust construction using medical-grade materials: stainless steel, aluminum, and ABS plastic.
- Compact and lightweight (40-45 kg) for easy integration into any lab environment.

SELF-CHECKING & MAINTENANCE-FREE

- Auto-diagnostic system monitors pressure, load balance, and sensor accuracy.
- Remote troubleshooting (optional) minimizes downtime



THE VALUE OF AUTOMATION*

PRECISION BLOOD COMPONENT SEPARATION WITH HiCARE-CXII +

HOW HiCARE - CXII+ AUTOMATES CRITICAL SEPARATION STEPS

HiCARE - CXII+ replaces human-dependent steps with precision automation to consistently produce:

- Platelet concentrates with optimized yield (PYI-guided)
- Leukoreduced plasma meeting regulatory standards
- Packed RBCs with minimal residual leukocytes

ESSENTIAL FUNCTIONS IN ONE AUTOMATED WORKFLOW

INTELLIGENT CENTRIFUGATION

- Precisely divides buffy coat, plasma, and RBCs
- Maintains closed system throughout entire process

INTEGRATED LEUKOREDUCTION

- Filters plasma components without manual handling
- Validated $<1 \times 10^6$ WBC residual count

RF-DRIVEN TUBE SEALING

- Non-contact RF energy prevents heat damage to blood products
- Gentle yet secure sealing that preserves component integrity
- Automated quality verification of every seal

FINAL PRODUCT PREPARATION

- Creates ready-to-store blood components with optimal shelf life

DUAL-USE RF-DRIVEN TUBE SEALING FLEXIBILITY

HiCARE - CXII+ offers unique operational versatility:

- Integrated sealing during automated processing
- Stand-alone sealing mode for manual workflows

Provision to use the RF sealers independently when the main system isn't processing
Ideal for small batches or special processing needs



PARTS IDENTIFICATION

Automatic air removal from Plasma bag

Swiftly and easily removes remains of air from the bag to maintain the integrity of the plasma when frozen

LCD touch display

Displays of bag weights, Plate force and status of various operating parameters

Motor-driven press movement

Noise-less Stepper motor

High precision separation

Electronic process control with optic sensors that detect blood components for accurate segregation

Top and bottom squeezing clamps

Smooth and simple tubing pathways with squeezing clamps

Plasma and Platelet Tube sealing clamps

High precision and smooth sealing clamps to seal the tubes

Optical sensor

for second stage security

Accurately Calibrated weighing scale

for PRBC

PRBC Tube sealing clamps

High precision and smooth sealing clamps to seal the tubes



OPTICAL INFRARED SENSORS TRACK LEUKOCYTE

- Accurately detect and track leukocytes (WBCs) during blood component separation.
- Ensure minimal residual leukocytes in platelet/plasma products, improving transfusion safety.



SPECIALIZED RF TUBE SEALERS WITH SMART PRECISION AND SAFETY

- Our RF-generated tube sealers are purpose-built for Plasma, Platelets, and RBCs, with separate units for each component. They ensure clean, consistent, and leak-proof seals without causing hemolysis, making them ideal for blood banks and component separation labs.
- Each unit comes with inbuilt tube detection to prevent accidental activation and ensure proper alignment. The sealing time is adjustable, allowing customization based on tubing type and component-specific needs—offering both safety and flexibility in one compact device.



INTUITIVE TOUCH DISPLAY INTERFACE

- The 4.3-inch full-color touch display combines intuitive operation with robust functionality, featuring a streamlined icon-based interface and responsive touch controls. Its user-friendly design minimizes training time while ensuring precise command execution.
- For enhanced workflow efficiency, the display provides real-time visual feedback through progress bars and color-coded alerts



REMOVABLE ELECTRODE PROTECTION CAPS - EASY MAINTENANCE

- Each plasma, platelet, and RBC tube sealer is equipped with a dedicated Removable cap to shield the electrode head from accidental contacts.
- The removable electrode protection caps ensure easy maintenance by shielding the sealing heads from contamination while allowing quick detachment for cleaning, ensuring hygiene and prolonging the component's lifespan with their secure snap-fit universal design compatible with all tube sealers.



RELIABLE & GENTLE COMPONENT EXPRESSION

- Equipped with a noiseless stepper motor and advanced motor driver, our pressing plate ensures precise, smooth movement. The high-quality lead screw, made from advanced materials, provides stable and accurate linear motion.
- The system delivers consistent pressure and controlled flow, reducing cell damage and ensuring efficient separation. Its quiet, reliable operation makes it ideal for modern blood processing environments.



SECONDARY CLAMPING SECURITY WITH BACKUP COLOR SENSOR

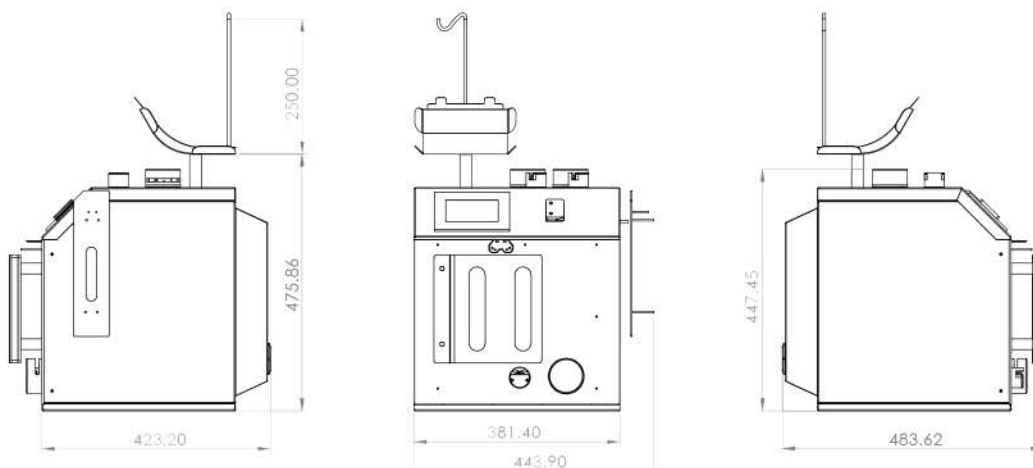
- To enhance safety, our system features a secondary clamping unit with a color sensor that activates only if the primary optical sensor fails to detect flow. This acts as a redundant security measure, ensuring controlled and accurate clamping to prevent incorrect or unsafe blood component flow.

FLEXIBLE CONNECTIVITY WITH RS232 & LAN

- The system supports RS232 and LAN connectivity for smooth integration with Hospital Management Systems (HMS). This enables efficient data transfer, centralized monitoring, and streamlined workflow within healthcare environments.



DIMENSION OF HICARE-CXII +



OVERVIEW

FEATURE

DESCRIPTION

Design Philosophy	Compact, lightweight (40-45 kg), and ergonomic for lab efficiency.
Construction Materials	High-quality mild steel, stainless steel, aluminum, acrylic, and brass for durability and corrosion resistance.
Separation Technology	Precision separation of top-top and top-bottom blood bags.
Sealing Mechanism	Integrated 3 Radio frequency operated-tube sealers for secure, leak-proof sealing.
Sensor System	Advanced colorimetric sensors for distinguishing RBCs, platelets, and plasma.
Buffy Coat Detection	High-accuracy buffy coat layer identification for optimal yield.
Process Monitoring	Real-time display of component flow, weight, clamp positions, and sealing status.
Display	Intuitive full-color touchscreen for seamless operation.
Alerts & Indicators	Audible + visual signals for process completion, errors, and system status (ON/OFF, failures).
Data Storage	Microcontroller + high-capacity PCB (optional extended storage).
Communication Ports	USB, RS232, Ethernet for seamless integration with lab systems.
Pressure Management	Intelligent pressure detection system for the front pressing plate.
Auto-Diagnostics	Self-checking for plunger function, tube placement, load/pressure balance, and electrode movement.
Remote Troubleshooting	Optional remote fault detection & resolution for minimal downtime.

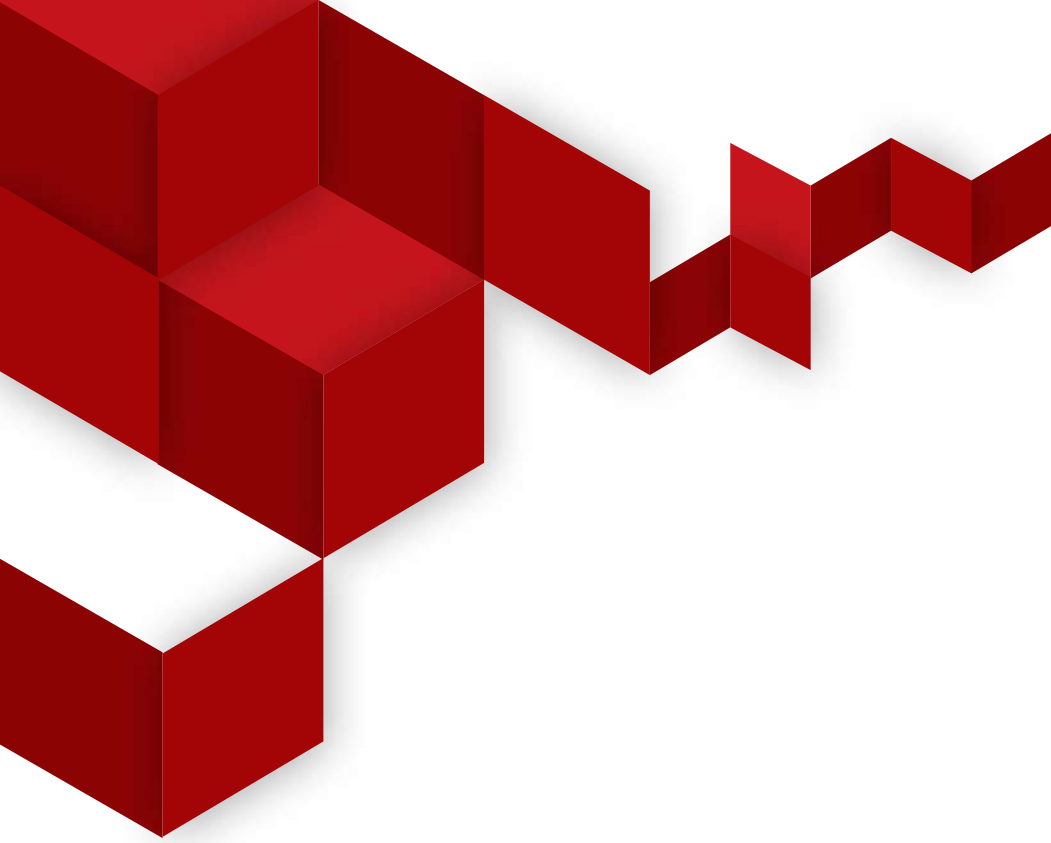
POWER & ENVIRONMENTAL REQUIREMENTS

Power Supply	200-240V AC (50/60 Hz) Current: 6 A Fuse Rating: 6.0 A.
Operating Temperature:	+10 to +40°C Humidity: 20-95% (non-condensing).
Storage Temperature:	10 to 70°C

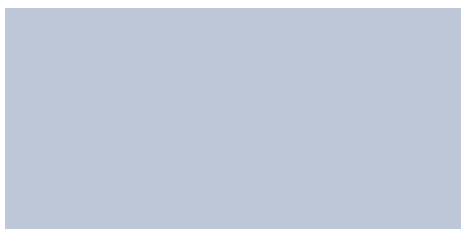
PERFORMANCE & EFFICIENCY

Processing Time	Rapid segregation in 2.5-4 minutes.
Pressing Max force:	50 kg Speed: 5 mm/sec Travel distance: 70-75 mm.
Total Weight Capacity:	999 g
Load Limits Safe load:	>7.5 kg
Lateral load resistance:	>15 kg.





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