Refrigerator Operation Manual

i.Series® and Horizon Series™ - Undercounter

Laboratory

i.Series
iLR105-GX

Horizon Series
HLR105-GX

Pharmacy

i.Series
iPR105-GX

Horizon Series
HPR105-GX

Blood Bank

i.Series
iBR105-GX

Horizon Series
HBR105-GX

360397/A

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Document Updates

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The screenshots and component images appearing in this guide are provided for illustrative purposes only, and may vary slightly from the actual software screens and/or product components.

Helmer Scientific
14400 Bergen Boulevard
Noblesville, IN 46060 USA
www.helmerinc.com

Part No. 360397/A

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1 About this Manual

1.1 Intended Audience

This manual provides information on how to use i.Series® and Horizon Series™ undercounter laboratory, blood bank, and pharmacy refrigerators. It is intended for use by end users of the refrigerator and authorized service technicians.

1.2 Model Reference

Models are indicated by a distinguishing model number that corresponds to the series, type, and capacity of the refrigerator. For example, “iLR105-GX” refers to an i.Series Laboratory Refrigerator with 1 door and a capacity of 5 cu ft.

1.3 Intended Use

Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Helmer refrigerators are intended for the storage of blood products and other medical and scientific products.

1.4 Safety Symbols and Precautions

Symbols found in this document

The following symbols are used in this manual to emphasize certain details for the user:

Task Indicates procedures which need to be followed.

Note Provides useful information regarding a procedure or operating technique when using Helmer Scientific products.

NOTICE Advises the user against initiating an action or creating a situation which could result in damage to equipment; person injury is unlikely.

CAUTION Advises the user against initiating an action or creating a situation which could result in damage to equipment or impair the quality of the products or cause minor injury.

WARNING Advises the user against initiating an action or creating a situation which could result in damage to equipment and serious personal injury to a patient or the user.

Symbols and Labels found on the units

The following symbols may be found on the refrigerator or refrigerator packaging:

Caution: Risk of damage to equipment or danger to operator

Caution: Hot surface

Caution: Shock / electrical hazard

Warning: Flammable material

Warning: Crushing of hands / fingers

Warning: Cold surface below -30°C

Caution: Follow handling instructions carefully.

Caution: Consult instruction manual prior to installation or service.

Pantone 185 (Red)
Warning: Puncturing or opening refrigerant circuit might be expected.

Earth / ground terminal

Protective earth / ground terminal

Refer to documentation

Caution: Unlock all casters

Caution: Dispose of properly

Danger: Repair only by trained service personnel.

Danger: Do not use mechanical devices to defrost.

Caution: Follow handling instructions carefully in compliance with U.S. Government regulations

Intended use per ANSI/ASHRAE

1.5 Avoiding Injury

WARNINGS

- Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.
- Do not damage the refrigerant circuit.

Review safety instructions before installing, using, or maintaining the equipment.

- Before moving unit, ensure door is closed and casters (if installed) are unlocked and free of debris.
- Before moving unit, disconnect the AC power cord and secure the cord.
- Never physically restrict any moving component.
- Avoid removing electrical service panels and access panels unless so instructed.
- Keep hands away from pinch points when closing the door.
- Avoid sharp edges when working inside the electrical compartment and refrigeration compartment.
- Ensure products are stored at recommended temperatures determined by standards, literature, or good laboratory practices.
- Proceed with caution when adding and removing product from the refrigerator.
- Do not open multiple loaded drawers at the same time.
- Use manufacturer supplied power cord only.
- Avoid risk of ignition by using only manufacturer supplied components and authorized personnel when servicing the unit.
- Using the equipment in a manner not specified by the manufacturer may impair the protection provided by the equipment.
- Ensure product is stored safely, in accordance with all applicable organizational, regulatory, and legal requirements.
- The refrigerator is not considered to be a storage cabinet for flammable or hazardous materials.
- Use caution when moving a stacked configuration.

CAUTION

Decontaminate parts prior to sending for service or repair. Contact Helmer Scientific or your distributor for decontamination instructions and a Return Authorization Number.

1.6 General Recommendations

General Use

Allow refrigerator to come to room temperature before switching power on.

During initial startup, high temperature alarm may sound while refrigerator reaches operating temperature.

Initial Loading

Allow chamber temperature to stabilize at the setpoint before storing product.

Product Loading Guidelines

When loading your refrigerator, take care to observe the following guidelines:

- Never load refrigerators beyond capacity.
- Always store items within shelves or trays.
- Temperature uniformity is maintained by air circulation, which could be impeded if unit is overfilled, particularly at the top or back. Ensure a minimum of 2" (50 mm) clearance is provided below the fan.

Note

Products stacked against back wall may obstruct air flow and affect performance of unit.

2 Installation

2.1 Location

WARNING

Keep all ventilation openings in the enclosure or, in the structure for building-in, clear of obstruction.

- Has a grounded outlet meeting the electrical requirements listed on the product specification label.
- Is clear of direct sunlight, high temperature sources, heating vents, and air conditioning vents.
- Has a minimum of 3” (76 mm) of space behind the refrigerator for clearance and feature access.
- Meets the limits specified for ambient temperature (15 °C to 32 °C) and relative humidity.

2.2 Placement and Leveling

CAUTION

- To prevent tipping, ensure the casters (if installed) are unlocked and the door is closed before moving the refrigerator.
- Use of leveling feet or casters is required.
- Do not sit, lean, push or place heavy objects on top surface.
- Do not lean on or push down on an open door or extended drawers.
- To avoid damaging refrigerant tubing or risking refrigerant leak, use caution when moving or operating the unit.

1. Move refrigerator into place. Lock casters if installed.
2. Ensure refrigerator is level.

Note

Helmer recommends the use of leveling feet and wall and floor brackets (PN 400472-2) for stabilization. Contact Helmer Technical Service for parts and instruction.

2.3 Stacked Undercounter Units

CAUTION

- For stacked configuration, both units must have leveling feet installed.
- Back brace bars and front stabilizing brackets must be installed (Blue - PN 400821-1; Stainless Steel - PN 400821-2).
- When stacking units, place the heavier unit on the bottom.
- Do not open multiple loaded drawers at the same time.
- Do not lean on or push down on an open door or extended drawers.

Contact Helmer or your distributor for more information regarding the stacking kit and methods to secure both units to the wall and/or floor.

2.4 AC Power Cord

CAUTION

Use manufacturer supplied power cord only.

Install power cord

If packaged with modular cord, insert plug securely into the refrigerator power receptacle prior to connecting to grounded outlet.

2.5 Temperature Probes

A solid ballast or probe bottle and container of glycerin have been provided with this unit. The glycerin is used to create a solution which, when placed in the probe bottle, simulates the product stored in the refrigerator. The product simulation solution temperature reflects the product's temperature during normal operation.

Notes

- Temperature probes are fragile; handle with care.
- Solid ballast (if installed) should be placed in the bracket in a horizontal position.

CAUTION

Failure to fill probe bottles (if installed) or keep probe bottles filled to the appropriate level may cause the chamber temperature to display higher or lower than the actual temperature.

Primary Monitor Probe

The primary monitor probe bottle is located at the top left side of the refrigerator.

Primary monitor probe

Fill Temperature Probe Bottle

Note

Use approximately 4 oz. (120 mL) of product simulation solution (10:1 ratio of water to glycerin).
Glycerin packet included in refrigerator box.

1. Remove probe(s) from bottle and remove bottle from bracket.
2. Remove cap and fill with approximately 4 oz. (120 mL) of product simulation solution.
3. Secure cap on bottle and place in bracket.
4. Replace probe(s), immersing at least 2" (50 mm) in solution.

2.6 Chart Recorder (if included)

Note

- For complete information, refer to the Temperature Chart Recorder Operation and Service Manual.
- If chart recorder is operated on battery power, the battery should be replaced to ensure the back-up source has proper charge.

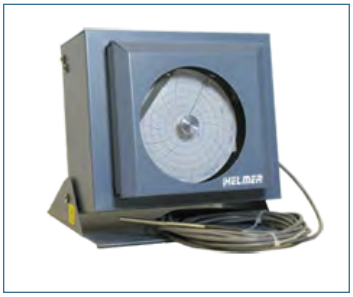
The chart recorder has a back-up battery system enabling a period of continuous operation if power is lost. Battery life varies by manufacturer as well as voltage level remaining. If full battery power is available, back-up power for the temperature chart recorder is available for up to 14 hours.

Prior to use:

Route the chart recorder probe through the rear access port and place in bottle with primary monitor probe, or install in ballast and secure with thumb screw.

Set up and Operation

Access the chart recorder by pulling the door open.



Install battery

Connect the leads to the battery to provide back-up power to the chart recorder.

Install / Replace Chart Paper

Note

For accurate temperature reading, ensure the current time is aligned with the time line groove when the chart knob is fully tightened.

1. Press and hold C button. When stylus begins to move left, release button. The LED flashes.
2. When stylus stops moving, remove chart knob then move knob up and away from chart paper.
3. Place new chart paper on chart recorder.
4. Gently lift stylus and rotate paper so current time line corresponds to time line groove.
5. Hold chart paper in place while making sure the chart knob is fully tightened. *(Failure to fully tighten the knob can result in paper slipping and losing time.)*
6. Press and hold C button. When stylus begins to move right, release button.
7. Confirm stylus is marking on paper and stops at the correct temperature.
8. Calibrate chart recorder to match primary temperature if needed and close recorder door.

Power Supply

The temperature chart recorder uses AC power when the system is operating. If AC power fails, the recorder continues to record temperature with back-up power provided by the nine volt battery.

- The LED indicator glows green continually when main power is functioning and the battery is charged.
- The LED indicator glows red continually when main power is functioning and the batteries is either not installed or needs to be replaced.
- The LED indicator flashes red to indicated the recorder is receiving power only from the back-up battery.
- The LED indicator flashes during chart paper change mode.

3 i.Series® Operation

3.1 Initial Power-up

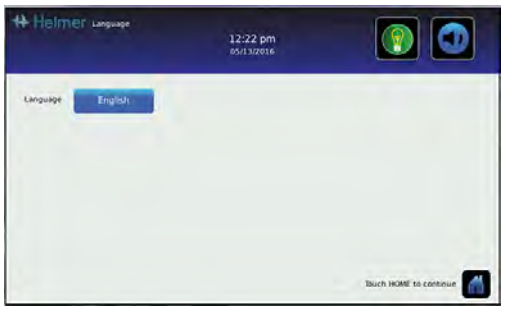
1. Plug the power cord into a grounded outlet that meets the electrical requirements on the product specification label.
2. Switch AC ON/OFF switch ON.
3. Switch back-up battery switch ON.

Notes

- For models equipped with optional Access Control, the back-up battery is turned ON with a key switch.
- The Start screen is displayed when the i.C³ is powered on. The i.C³ will take approximately 2-5 minutes to boot up.

Start screen

The language screen is displayed when the i.C³ is powered on. Use the Language screen to select the i.C³ display language.



Language screen

Note

English is the default language.

If an alarm sounds, temporarily mute the alarm by touching the Mute icon.

Home screen - alarm muted

Mute icon

Note

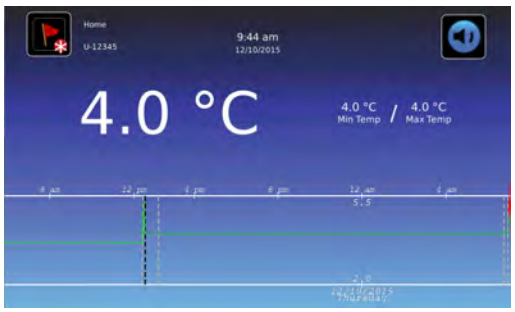
Active alarms are displayed on the Home screen. If an alarm condition other than High Temperature occurs, refer to the service manual for troubleshooting.

3.2 Operation

Notes

- Refer to the i.C³ User Guide for complete information regarding the i.C³ User Interface.
- The i.C³ Home screen displays temperature and alarm information, and provides icons to gain access to other functions of the i.C³.
- After two minutes of inactivity, the screensaver will be displayed. To return to the Home screen, touch the screensaver.

Home screen



Home screensaver (touch to return to Home screen)

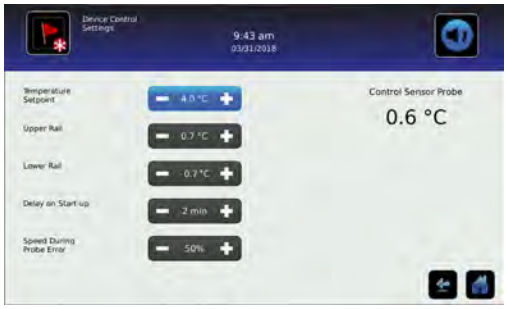
3.3 Change Temperature Setpoint

Note

The Temperature Setpoint toggle button can be accessed from either the initial Settings screen or the Device Control Settings screen.

i.C³ APPS > > Enter the Settings password. Select Temperature setpoints. Touch minus (-) or plus (+) on the spin box to change the value.

Settings screen



Device Control Settings screen

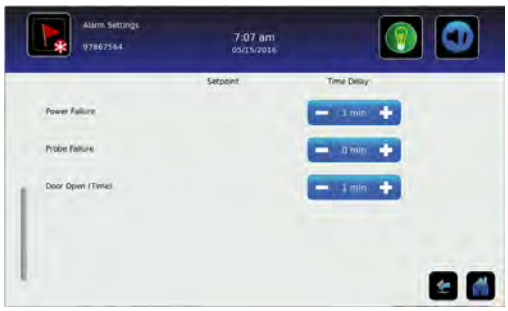
Notes

- Default Settings password is 1234.
- Default setpoint is 4.0 °C for iLR and iBR models, or 5.0 °C for iPR models.

3.4 Set Alarm Parameters

> > Enter the Settings password. Scroll down to select Alarm Settings. Touch minus (-) or plus (+) on spin box to set each alarm parameter.

Settings screen



Alarms Settings screens

3.5 Active Alarms

Home screen with active alarm

Table 1. Active Alarms

Alarm	Description
Communication Failure 1	Communication lost between i.C³ display board and control board
Communication Failure 2	Configuration file is corrupt or i.C³ is unable to access the configuration file
Communication Failure 3	Corrupt database
Compressor Probe Failure	Probe not functioning properly
Compressor High Temperature	Compressor temperature reading is above high temperature alarm setpoint
Control Probe Failure	Probe not functioning properly
Drive Space Low	SD card that holds downloadable data is approaching capacity
Drive Space Full	SD card that holds downloadable data is full
Door Open	Door is open beyond user-specified duration
Inverter Communication Failure	Communication is lost between the i.C³ control board and the VCC inverter
Low Battery	Monitoring system backup battery voltage is low
No Battery	Monitoring system backup battery voltage is deficient
Power Failure	Power to the unit has been disrupted
Primary Monitor Probe Failure	Probe not functioning properly
Primary Probe High Temperature	Primary monitor probe reading is above high temperature alarm setpoint
Primary Probe Low Temperature	Primary monitor probe reading is below low temperature alarm setpoint

3.6 Mute Active Alarms

Audible alarms may be temporarily muted by touching the Mute icon. The delay duration can be set and changed by selecting Sound Settings from the Settings screen. The duration may be set to any value from 1 - 60 minutes. The delay time remaining will be displayed in the bottom right corner of the icon. If the alarm is still active after the mute delay has ended, the audible alarm will sound.

> > Enter the Settings password. Scroll down to select Sound Settings. Touch minus (-) or plus (+) on spin box to set the mute duration.

3.7 Light Operation (optional)

Press Light Icon to turn LED lights ON or OFF.
Auto ON/OFF feature can be configured in Settings.

Application Icon Table

Image	Name	Image	Name	Image	Name	Image	Name
	Home		Temperature Graph		PDF Download		Save
	Event Log		Alarm Test		Upload		Cancel
	Mute		Information Logs		Access Control		Back Arrow
	Reset		Contact Information/ Contact Helmer		Access Log		Scroll
	Zoom Information		Display Brightness		Alarm Conditions		Temperature Graph Forward/Back
	i.C³ Applications		Icon Transfer		Cancel Test		Battery Power
	Settings		CSV Download		Light On/Off		

4 Min/Max Temperature Monitoring

The Min/Max temperature display provides the highest and lowest Primary Monitor probe temperature reading since the last system reset (power-on event) or manually-initiated reset. Touch the Reset icon to the right of the display to manually reset.

Notes

- The Min/Max temperature display can be turned on or off through Display Settings.
- Once the time reaches the maximum display of 999 hours and 60 minutes, the message will display “>999:60”, but minimum and maximum temperatures will continue to be tracked.

5 i.Series® Access Control (Optional)

Allows user-specific secure access to the refrigerator.

Notes

- During a power failure, the optional Access Control lock will remain locked until battery power is depleted or until the back-up battery key switch is switched OFF.
- Switching the back-up battery key switch OFF will disable the monitoring system during a power failure.
- During a power failure, switch the battery back-up switch OFF and use the mechanical door key to provide secure storage for refrigerator contents.
- Refer to i.C³ User Guide for complete information regarding Access Control.

5.1 Setup

Configure and manage user-specific accounts to allow controlled access to the refrigerator.

> > Access Setup

Access Control Setup password screen

Access Control Setup screen

Enter the supervisor PIN to set up Access Control. Select the Add User button and follow the on-screen prompts to set up users.

Notes

- Initial factory supervisor PIN = 5625
- The supervisor PIN cannot be deleted, and should be changed to prevent unauthorized user ID setup. The supervisor PIN does not allow access to the unit. At least one user ID must be set up to gain access to the unit.

5.2 Open Refrigerator with Access Control

Enter a valid PIN using the keypad.

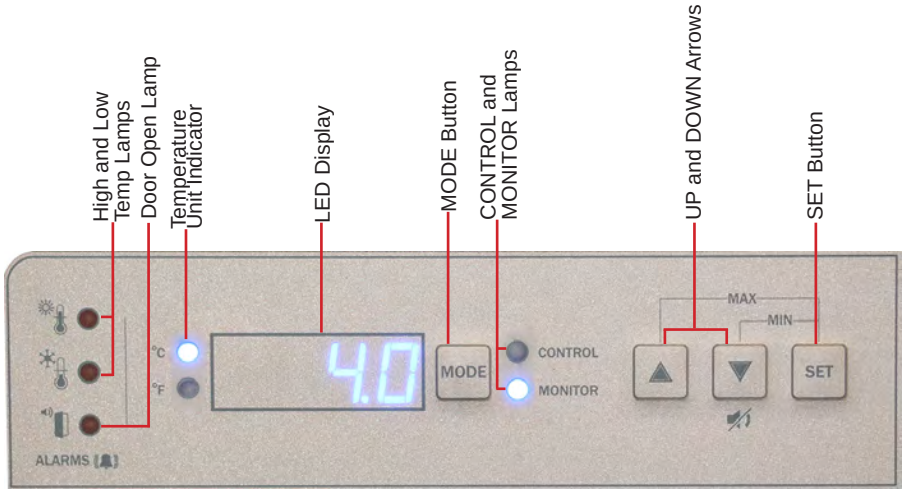
6 Horizon Series™ Operation

6.1 Initial Power Up

1. Plug the power cord into a grounded outlet that meets the electrical requirements on the product specification label.
2. Switch AC ON/OFF switch **ON**.
3. Remove the 9 V battery from the literature box and install it.
4. Press **Down Arrow** (Mute) if high temperature alarm sounds.

Notes

- For models equipped with the optional Access Control, switch the back-up battery key switch **ON.**
- During a power failure, the back-up battery continues to provide power to the optional Access Control lock (if equipped). If the back-up battery is not functioning, the optional Access Control lock will not secure the door.
- If an alarm condition other than High Temperature occurs, refer to the service manual for troubleshooting.



Horizon Series™ temperature monitor and control interface

6.2 Display Minimum and Maximum Monitor Temperature Recordings

The minimum and maximum recording feature allows the user to view a minimum temperature occurrence and a maximum temperature occurrence within a given period of time. The timer provides a time reference in which those temperatures occurred.

View minimum temperature recording

1. Press and hold the **Down Arrow** button for 1 second and listen for a single beep.
2. The display will alternate between **LO** and a valid temperature value five (5) times followed by a single beep to indicate exit back to the temperature display.

View maximum temperature reading

1. Press and hold the **Up Arrow** button for 1 second and listen for a single beep.
2. The display will alternate between **HI** and a valid temperature value five (5) times followed by a single beep to indicate exit back to the temperature display.

View recorded temperature timer

Notes

- The timer denotes the period of time that has elapsed. It does not display the time at which a minimum or maximum temperature occurred.
- The maximum period of time the timer can record is 99:59 (99 hours and 59 minutes). The timer will reset automatically when this maximum is reached.

1. Press and hold either the **Up** or **Down Arrow** button for 1 second.
2. While the display is flashing the **HI** or **LO** value, press and hold the **SET** button for 1 second.
3. The display will alternate five (5) times between **CLr** and a value representing the number of hours and minutes that have elapsed since the last recording (example: 12:47 would represent 12 hours and 47 minutes). A single beep will follow to indicate exit back to temperature display.

Clear minimum and maximum temperature recordings.

1. Press and hold either the **Up** or **Down Arrow** button for 1 second.
2. While the display is flashing the **HI** or **LO** value, press and hold the **SET** button for 1 second and listen for a single beep.
3. While the display is flashing the elapsed time since last reset, press and hold the **SET** button for 2 seconds. **CLr** will be displayed followed by a series of 3 beeps to indicate exit back to the temperature display.

Notes

The minimum and maximum temperature and timer will reset when:

- the unit is powered off and battery back-up is not engaged, or
- after 99 hours and 59 minutes have elapsed.

Change Refrigerator Temperature Setpoint

Note

Default setpoint is 4.0 °C for HBR and HLR models; 5.0 °C for HPR models.

1. Press and release **MODE** to change to Control mode. The CONTROL lamp will illuminate.
2. Press and hold **SET** to display the current setpoint temperature.
3. Hold **SET** and press **Up** or **Down Arrow** as necessary to set the desired setpoint value.
4. Release all buttons; the setpoint is changed.
5. Press and release **MODE** to return to Monitor mode. The MONITOR lamp will illuminate.

6.3 Set Parameter Values

1. Press and hold the **Up** and **Down Arrows** simultaneously for 3 seconds to enter program mode.
2. The LED Display will show .C or .F to indicate Celsius or Fahrenheit.
3. Press and release **MODE** button to scroll through the parameters.
4. Once the desired parameter is selected, press and hold the **SET** button while pressing the **Up** or **Down Arrow** to select the desired value.
5. Release **SET** button. The new setting is saved.
6. Press and hold the **Up** and **Down Arrows** simultaneously for 3 seconds to exit program mode.

Note

Contact Helmer Technical Service to set Rail Limit values.

Table 2. Parameter Values

Parameter	Visual Indicator	Range	Default
Celsius or Fahrenheit	°C Lamp or °F Lamp	˚C, ˚F	˚C
High Temperature	MONITOR Lamp & HIGH Lamp	-40.0 to 25.0 (˚C); -40 to 77 (˚F)	5.5 °C *(HBR and HLR models)*
			6.5 °C *(HPR models)*
Low Temperature	MONITOR Lamp & LOW Lamp	-40.0 to 25.0 (˚C); -40 to 77 (˚F)	1.5 °C *(HBR models)*
			2.0 °C *(HLR and HPR models)*
Monitor Offset	MONITOR Lamp	-10.0 to 10.0 (˚C); -18 to 18 (˚F)	Varies
Control Offset	CONTROL Lamp	-10.0 to 10.0 (˚C); -18 to 18 (˚F)	Varies
Upper Rail Limit	CONTROL Lamp & HIGH Lamp	0.1 to 10.0 (˚C); 1 to 18 (˚F)	0.7 °C
Lower Rail Limit	CONTROL Lamp & LOW Lamp	0.1 to 10.0 (˚C); 1 to 18 (˚F)	-0.7 °C

6.4 Set Temperature Units

Note

If temperature units are changed, the temperature setpoints, offsets and alarm settings must be recalibrated.

1. Press and hold the **Up** and **Down Arrows** simultaneously for 3 seconds to enter program mode.
2. The LED will display .C or .F to indicate Celsius or Fahrenheit.
3. Press and hold the **SET** button while pressing the **Up** or **Down Arrow** to select the desired temperature unit.
4. Release **SET** button. The new setting is saved.
5. Press and hold the **Up** and **Down Arrows** simultaneously for 3 seconds to exit program mode.

6.5 Set Alarm Setpoints (Parameters)

1. Press and hold the **Up** and **Down Arrows** simultaneously for 3 seconds to enter program mode.
2. The LED Display will show .C or .F to indicate Celsius or Fahrenheit.
3. Press **MODE** until HIGH TEMP or LOW TEMP and MONITOR lamps flash.
4. Hold **SET**, then press **Up** or **Down Arrow** to change the setpoint.
5. Release **SET** button. The new setting is saved.
6. Press and hold **Up** and **Down Arrows** simultaneously for 3 seconds to exit program mode.

6.6 Temperature Calibration Offsets

Temperature calibration offsets indicate an acceptable margin of error between the actual temperature value and the desired temperature value.

Monitor Offset

- Value is factory-set to match a calibrated reference thermometer.
- Refer to the service manual for instructions regarding changing the Monitor Offset.

Control Sensor Offset and Rail Limits

The control sensor affects the reading of the control probe temperature and therefore the actual temperature of the refrigerator. This should not be adjusted from the original setting unless directed by Helmer Technical Service.

The Upper and Lower Rail Limits help control the refrigeration based on the control probe temperature reading and the set point. These limit values should not be changed from the default setting unless directed by Helmer Technical Service.

NOTICE

Control Sensor Offset and Rail Limits are factory-preset and should not be changed. Contact Helmer Technical Service for instructions regarding changing these values.

6.7 Active Alarms

The controller displays temperature and alarm information.

Table 3. Horizon Series Active Alarms

Alarm	Visual Indicator	Description
High Temperature	HIGH TEMP lamp flashes	Chamber temperature reading is above high temperature alarm setpoint
Low Temperature	LOW TEMP lamp flashes	Chamber temperature reading is below low temperature alarm setpoint
Display/Control Board Communication Error	Er04	Display board fails to communicate with the control board
Control Board to Compressor Inverter Error	Er05	Communication loss from control board to compressor inverter
Power Failure	”PoFF” appears on display	Power to unit has been disrupted
Primary Monitor Probe Failure *(RTD1)*	Er01	Probe not functioning properly
Control Probe Failure *(RTD2)*	Er02	Probe not functioning properly
No Battery	Er06	Battery voltage is low
Configuration Error	Er07	Indicates that an EEPROM reading was corrupted or dip switch settings on the control board have changed since last power-up
Door Open < 3 min.	DOOR ALARM lamp lights	Door is open (less than three minutes)
Door Open > 3 min.	DOOR ALARM lamp flashes	Door has been open 3 minutes or longer*

**Audible alarm will sound after door is open for 3 minutes.*

6.8 Mute and Disable Audible Alarms

Note

Muting audible alarms does not disable alarm lamps or signals sent through the remote alarm interface.

- Press **Down Arrow** (Mute) to mute audible alarms.
- To disable all audible alarms, insert the key in the Alarm Disable switch and turn.

6.9 Light Operation (optional)

The light switch is located on the monitoring and control panel and controls the LED light within the chamber.

7 Horizon Series™ Access Control (Optional)

Allows user-specific secure access to the refrigerator.

Notes

- During a power failure, the optional Access Control lock will remain locked until battery power is depleted or until the back-up battery key switch is switched OFF.
- During a power failure, switch the battery back-up switch OFF and use the mechanical door key to provide secure storage for refrigerator contents.
- Refer to Horizon Series Access Control manual for complete information.

7.1 Setup

The Access Control keypad was programmed at the factory with a master code (0000). The master code is used to program the keypad and enter user codes.

Note

The master code should be changed to prevent unauthorized user code setup.

Enter unique user codes for up to 100 users. Each user code is stored with a specific record location number. Keep a log of the location numbers and user codes with users' names.

Add User Code

1. Enter the master code followed by the * (asterisk) key
2. Press **1** to initiate user code programming function
3. Enter the location number (00 - 99)
4. Enter the user code (4 - 8 digit number) followed by the # (pound) key
5. Press * (asterisk) to save changes and return to normal operation

Delete User Code

1. Enter the master code followed by the * (asterisk) key
2. Press **1** to initiate delete user code programming function
3. Enter the location number (00 - 99) followed by the # (pound) key
4. Press ***** (asterisk) to save changes and return to normal operation

Open Refrigerator with Access Control

1. Enter the user code
2. Press # (pound) key

8 Product Specifications

8.1 Operating Standards

These units are designed to operate under the following environmental conditions:

- Indoor use only
- Altitude (maximum): 2000 m
- Ambient temperature range: 15 °C to 32 °C
- Relative humidity (maximum for ambient temperature): 80% for temperatures up to 31 °C; 76% at 32°C (90°F)
- Temperature control range: 2 °C to 10 °C
- Overvoltage Category II
- Pollution Degree 2
- Sound level is less than 70 dB(A).

Table 4. Electrical Specifications (Laboratory, Blood Bank, and Pharmacy)

	105	
Input Voltage and Frequency	115V 60 Hz	220-240V 50/60 Hz
Voltage Tolerance	±10%	
Circuit Breakers	4.0A quantity 2	
Current Draw*	1.4A	0.85A
Power Source	Grounded outlet, meeting national electric code (NEC) in the U.S. and local electrical requirements in all locations.	
Remote Alarm Capacity	115V or 230V: 1 A at 33 V (AC) RMS or 70 V (DC)	

** Amperage values are subject to change. Refer to the product specification label on your unit for current values.*

⚠ CAUTION

- The interface on the remote alarm monitoring system is intended for connection to the end user's central alarm system(s) that uses normally-open or normally-closed dry contacts.
- If an external power supply exceeding 33V (RMS) or 70V (DC) is connected to the remote alarm monitoring system's circuit, the remote alarm will not function properly; may be damaged; or may result in injury to the user.

Table 5. Refrigerator Specifications

Model	Voltage Code	Amps*	Cu. Ft/ Liters	Cabinet	Door	Dimensions W x H x D in. (mm) Exterior*	Net Wt. lbs (kg)
iLR105-GX	115V 60 Hz	1.4	5.3 (150)	Undercounter	Single hinged solid	24 x 31.9 x 28.1 (610 x 809 x 714)	174 (79)
	220-240V 50/60 Hz	0.85					
iBR105-GX	115V 60 Hz	1.4	5.3 (150)	Undercounter	Single hinged solid	24 x 31.9 x 28.1 (610 x 809 x 714)	186 (85)
	220-240V 50/60 Hz	0.85					
iPR105-GX	115V 60 Hz	1.4	5.3 (150)	Undercounter	Single hinged solid	24 x 31.9 x 28.1 (610 x 809 x 714)	182 (83)
	220-240V 50/60 Hz	0.85					
HLR105-GX	115V 60 Hz	1.4	5.3 (150)	Undercounter	Single hinged solid	24 x 31.9 x 27.8 (610 x 809 x 705)	174 (79)
	220-240V 50/60 Hz	0.85					
HBR105-GX	115V 60 Hz	1.4	5.3 (150)	Undercounter	Single hinged solid	24 x 31.9 x 27.8 (610 x 809 x 705)	184 (84)
	220-240V 50/60 Hz	0.85					
HPR105-GX	115V 60 Hz	1.4	5.3 (150)	Undercounter	Single hinged solid	24 x 31.9 x 27.8 (610 x 809 x 705)	182 (83)
	220-240V 50/60 Hz	0.85					

** Exterior dimensions include handle and leveling feet at lowest level.*

Notes

- The maximum height added with leveling feet or casters installed is 2" (51 mm).
- The maximum weight added per shelf is 6 lbs (3 kg)
- The maximum weight added per ventilated drawer is 10 lbs (5 kg)
- The maximum weight added per drawer with locking lid is 15 lbs (7 kg)
- The maximum weight added per standard drawer is 12 lbs (6 kg) - i.Series; 11 lbs (5 kg) - Horizon Series
- Maximum load per shelf or drawer - 100 lbs (46 kg).
- Net weight may vary depending on storage configuration. Weight listed in the table reflects standard configuration for each model.

9 Compliance

9.1 Safety Compliance

CE 0086 This device complies with the requirements of directive 93/42/EEC concerning Medical Devices, as amended by 2007/47/EC.

This product is certified to applicable UL and CSA standards by a NRTL.

This device complies with FCC Radiated and Conducted Emissions Approval to CFR47, Part 15; Class A levels

9.2 Environmental Compliance

RoHS COMPLIANT This device complies with the 2011/65/EU Directive for the Restriction of Hazardous Substances (RoHS).

This device falls under the scope of Directive 2102/19/EU Waste Electrical and Electronic Equipment (WEEE) .

When disposing of this product in countries affected by this directive:

- Do not dispose of this product as unsorted municipal waste.
- Collect this product separately.
- Use the collection and return systems available locally.

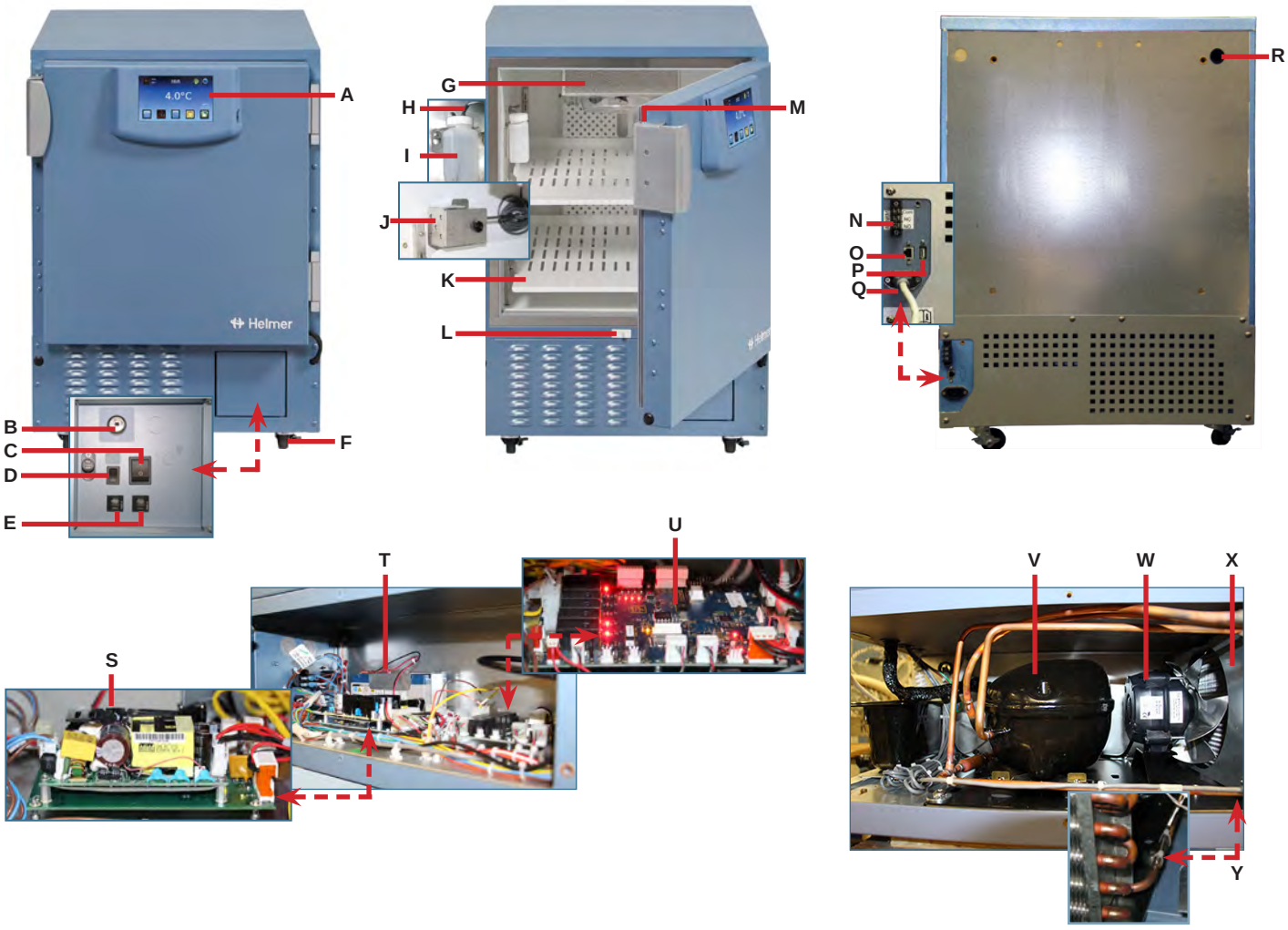
For more information on the return, recovery, or recycling of this product, contact your local distributor.

Helmer Scientific
14400 Bergen Blvd.
Noblesville, Indiana 46060 USA

EC REP
Emergo Europe
Prinsessegracht 20
2514 AP The Hague
The Netherlands

Appendix A: Parts

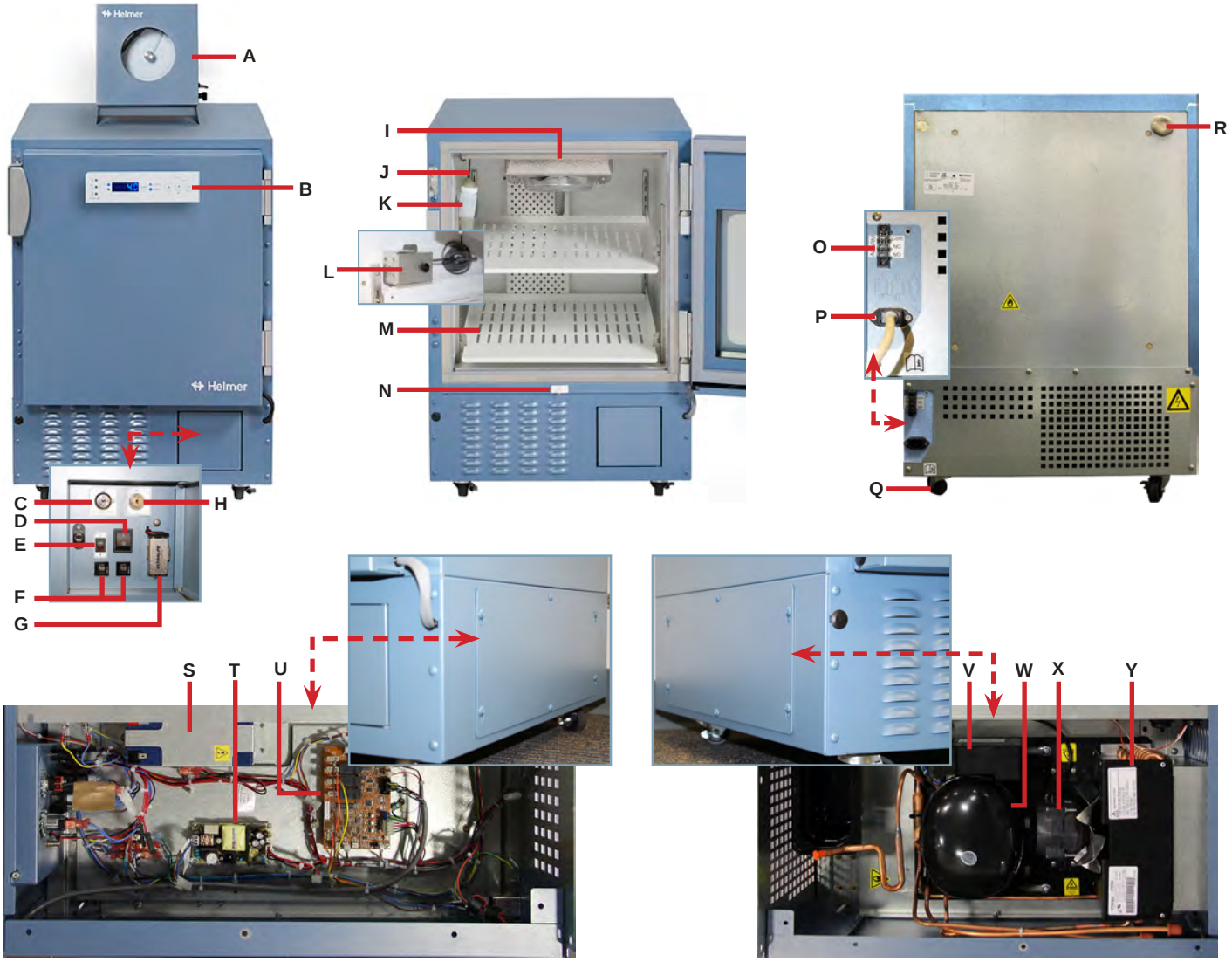
i.Series Parts



Letter	Description	Letter	Description
A	i.C³ user interface	N	Remote alarm contacts
B	Backup battery key switch	O	RJ45 Ethernet port
C	AC On/Off switch	P	USB Port
D	Battery switch	Q	AC output power cord receptacle
E	Circuit breakers	R	Rear access port
F	Casters	S	iC³ power supply board
G	Unit cooler with fan guard	T	iC³ monitoring system backup battery
H	Primary monitor probe	U	iC³ control oard
I	Probe bottle	V	Compressor
J	Solid ballast	Not Shown	Compressor Inverter
K	Ventilated shelf	W	Condenser fan motor
L	Door switch	X	Condensing unit
M	Key lock	Y	Condenser temperature probe

Appendix B: Parts

Horizon Series Parts



Letter	Description	Letter	Description
A	Temperature Chart Recorder	N	Door switch
B	Display board	O	Remote alarm contacts
C	Backup battery key switch	P	AC output power cord receptacle
D	AC On/Off switch	Q	Casters
E	Chamber light switch	R	Rear access port
F	Circuit breakers	S	Back-up battery (optional Access Control)
G	Monitoring system backup battery	T	Power supply board
H	Alarm display key switch	U	Control board
I	Unit cooler with fan guard	V	Compressor inverter
J	Primary probe	W	Compressor
K	Probe bottle	X	Condenser fan motor
L	Solid ballast	Y	Condensing unit
M	Ventilated shelf	Not Shown	Condenser temperature probe

END OF MANUAL

Helmer Scientific
14400 Bergen Boulevard, Noblesville, IN 46060 USA

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