Freezer Operation Manual

i.Series® and Horizon Series™ - Upright

Laboratory

i.Series
iLF120
iLF125

Horizon Series
HLF120
HLF125

Plasma Storage

i.Series
iPF120
iPF125

Horizon Series
HPF120
HPF125

Document History

Revision	Date	CO	Supersession	Revision Description
A	4 OCT 2016	12216	n/a	Initial release (all units with serial numbers 2035000 and greater).
B	26 FEB 2018	13354	B supersedes A	Updated Mute Active Alarms text to provide more detail Updated Horizon Access Control content for clarity. Updated Emergo Address

* *Date submitted for Change Order review. Actual release date may vary.*

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.

Contents

1   About this Manual

This manual provides information on how to use i.Series® and Horizon Series™ laboratory and plasma storage freezers. It is intended for use by end users of the freezer and authorized service technicians.

Models are indicated by a distinguishing model number that corresponds to the series, type, number of doors, and capacity of the freezer. For example, "iLF125" refers to an i.Series Laboratory Freezer with 1 door and a capacity of 25 cu ft, while "HLF120" refers to a Horizon Series Laboratory Freezer with 1 door and a capacity of 20 cu ft.

Generic references are used throughout this manual to group models that contain similar features. For example, "125 models" refers to all models of that size (iPF125, HPF125, iLF125, HLF125). This manual covers all upright freezers, which may be identified singly, by their size, or by their respective "Series."

1.1   Safety Precautions and Symbols

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.

Manufacturer

EC REP   Authorized representative in the European Community

Symbols found on the units

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

CE Mark (European units only)		Earth / ground terminal	
Caution: Risk of damage to equipment or danger to operator		Protective earth / ground terminal	
Caution: Hot surface		Compliance with Restriction of Hazardous Substances Directive	
Caution: Shock / electrical hazard		Product falls under the scope of the WEEE (Waste Electrical and Electronic Equipment) directive.	
Caution: Unlock all casters			

Avoiding Injury

Review safety instructions before installing, using, or maintaining the equipment.
♦ Do not open multiple, loaded drawers at the same time.
♦ Do not move a unit whose load exceeds 900 lbs / 408 kg.
♦ Before moving unit, ensure casters are unlocked and free of debris.
♦ Never physically restrict any moving component.
♦ Avoid removing electrical service panels and access panels unless so instructed.
♦ Use manufacturer supplied power cords only.

⚠ **CAUTION**

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

1.2   General Recommendations

Intended Use

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

General Use

Allow freezer to come to room temperature before switching power on.
During initial startup, high temperature alarm may sound while freezer reaches operating temperature.

⚠ **CAUTION**

Do not remove the cover from the condensate evaporator tray.

Initial Loading

Allow the freezer to reach room temperature before powering on. Allow chamber temperature to stabilize at the setpoint before storing product.

ℹ **Note**

Do not overload top drawer, basket, or shelf such that airflow from the unit cooler is obstructed.

Product Loading Guidelines

When loading your freezer, take care to observe the following guidelines:
♦ Never load freezers beyond capacity.
♦ Always store items within shelves, drawers or baskets.
♦ Temperature uniformity is maintained by air circulation, which could be impeded if unit is overfilled, particularly at the top or back. Ensure proper clearance is provided below the fan.

ℹ **Note**

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

2   Installation

2.1   Location

♦ Has a grounded outlet meeting the electrical requirements listed on the product specification label.
♦ Is clear of direct sunlight, high temperature sources, and heating and air conditioning vents.
♦ Minimum 8" (203 mm) above, and minimum 3" (76 mm) behind.
♦ Meets limits specified for ambient temperature 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 freezer.
- Do not use the water evaporation tray, located on the rear of the freezer, as a handle. The tray may be hot.
- Do not sit, lean, push or place heavy objects on top surface.

1. Roll freezer into place. Lock casters if installed.
2. Ensure freezer is level.

ⓘ **Note**

Helmer recommends the use of leveling feet. Contact Helmer Technical Service for parts and instruction.

2.3   Temperature Probes

A probe bottle along with a container of propylene glycol have been provided with this unit. The propylene glycol is mixed with water to create a solution which simulates the product stored in the freezer. The product simulation solution temperature reflects the product's temperature during normal operation.

ⓘ **Note**

Temperature probes are fragile; handle with care.

⚠ **CAUTION**

Failure to fill probe bottles or keep probe bottles filled to the appropriate level may not allow the chamber temperature to stabilize at the freezer setpoint or the chamber temperature to display higher or lower than the actual temperature.

Primary Probe

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

Primary probe   *Access Port*

☑ **Fill Temperature Probe Bottle**

ⓘ **Note**

Use approximately 4 oz. (120 mL) of product simulation solution (1:1 ratio of water to propylene glycol). Propylene glycol is included in freezer box.

1. Remove all probes 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 probes, immersing at least 2" (50 mm) in solution.

2.4 Chart Recorder (if included)

ⓘ **Note**

For complete information, refer to the Temperature Chart Recorder Operation and Service Manual provided with this unit.

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.

ⓘ **Note**

If chart recorder is operated on battery power, the battery should be replaced to ensure the back-up source has proper charge.

Prior to Use

Place probe in bottle with primary monitor probe.

Setup and Operation

Access chart recorder by pressing and releasing (i.Series) or pulling door open (Horizon Series).

i.Series chart door

Horizon Series chart door

☑ **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.

Chart recorder stylus and time line groove

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.
3. Place 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 battery is either not installed or needs to be changed.
♦ The LED indicator flashes red to indicate that 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. Turn the AC power switch ON.
3. Turn the Backup battery switch ON.

ⓘ **Notes**
- For models equipped with optional Access Control, the backup battery is turned ON with a key switch.
- The Start screen is displayed when the i.C^3 is powered on. The i.C^3 will take approximately 2-5 minutes to boot up.

Start screen

The language screen is displayed when the i.C^3 is powered on. Use the Language screen to select the i.C^3 display language.

Language screens

ⓘ **Note**
English is the default language.

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

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)*

i.Series Operation

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.

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

Settings screen

Device Control Settings screen

ⓘ **Notes**

• Default Settings password is 1234.
• Default setpoint is -30.0 °C.

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 screens

Alarm settings control the circumstances and timing of alarm condition indicators displayed on the i.C³ Home screen.

i.Series Operation

3.5   Active Alarms

Home screen with active alarm

Table 1.   i.Series Active Alarms

Alarm	Description
Primary Monitor Probe High Temp	Primary monitor probe reading is above high temperature alarm setpoint
Primary Monitor Probe Low Temp	Primary monitor probe temperature reading is below low temperature alarm setpoint
Primary Monitor Probe Failure	Primary monitor probe not functioning properly
Secondary Monitor Probe High Temp (if installed)	Secondary monitor probe reading is above high temperature alarm setpoint
Secondary Monitor Probe Low Temp (if installed)	Secondary monitor probe temperature reading is below low temperature alarm setpoint
Secondary Monitor Probe Failure (if installed)	Secondary monitor probe not functioning properly
Control Probe Failure	Control probe not functioning properly
Evap Defrost Probe Failure	Evaporator defrost probe not functioning properly
Compressor High Temperature	Compressor temperature reading is above high temperature alarm setpoint
Compressor Probe Failure	Compressor probe not functioning properly
Power Failure	Power to unit has been disrupted
Door Open	Door is open beyond user-specified duration
Low Battery	Rechargeable battery voltage is low
No Battery	Battery is not connected
Communication Failure Messages 1, 2, 3	1 Communication lost between i.C³ display board and control board 2 Communication lost between i.C³ display board and internal system memory 3 Corrupt database

3.6 Mute and Disable Active Alarms

Audible alarms may be muted by touching the Mute icon to set delay. Touching the Mute icon repeatedly will increase the Mute delay timer incrementally between 5 - 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.

Unmuted   *Muted*

Table 2. Application Icons

Icon	Description	Icon	Description	Icon	Description	Icon	Description
	Home		Temperature Graph		Upload		Save
	Event Log		Alarm Test		Access Control		Cancel
	Mute		Information Logs		Access Log		Back Arrow
	Reset		Contact Information/ Contact Helmer		Defrost Cycle		Scroll
	Zoom Information		Display Brightness		Defrost Log		Temperature Graph Foward/Back
	i.C³ Applications		Icon Transfer		Alarm Conditions		Battery Power
	Settings		Download		Cancel Test		

i.Series Operation

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.

i.Series Operation

5   i.Series® Access Control (Optional)

Allows user-specific secure access to the freezer.

ⓘ 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 freezer contents.
- Refer to i.C³ User Guide for complete information regarding Access Control.

5.1   Set Up

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

 > > Access Set Up

Access Control Setup Password screen

Access Control Setup screen

Enter the supervisor PIN to set up Access Control and follow the on-screen prompts to add, delete or edit user information.

ⓘ 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 Freezer with Access Control

Access Control Keypad

Enter a valid PIN using the keypad.

6 Horizon Series™ Operation
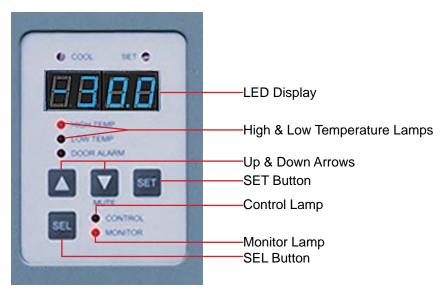
6.1 Initial Power Up

1. Plug the power cord into a grounded outlet that meets the electrical requirements on the product specification label.
2. Turn the AC power switch ON.
3. Install 9 V backup battery located on top of unit.
4. Press **Down Arrow** (Mute) if high temperature alarm sounds.

ⓘ Notes

- For models equipped with optional Access Control, the backup battery is turned ON with a key switch.
- If an alarm condition other than High Temperature occurs, refer to the service manual for troubleshooting.

LED Display

High & Low Temperature Lamps

Up & Down Arrows
SET Button

Control Lamp

Monitor Lamp
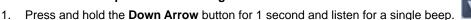SEL Button

Monitor and Control Panel

6.2 Display Minimum and Maximum Monitor Temperature Recordings

ⓘ Notes

- This feature is standard on Horizon Series™ models with serial numbers of 2015494 or higher. Some exceptions may exist. For confirmation on your unit, please contact Helmer Technical Service.
- This feature only applies to the Monitor temperature probe.
- Units which do not include the minimum and maximum recording feature will not display ˚C or ˚F when entering the program mode.
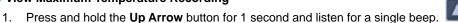
The minimum and maximum recording feature allows the user to view a minimum temperature occurrence and a maximum temperature occurrence within a given period of time. The timer provides a time reference in which those temperatures occurred.

☑ 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 Recording

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.

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☑ 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).

1. Press and hold either the **Up** or **Down Arrow** button for 1 second. ▲ or ▼
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. ▲ or ▼
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 Freezer Temperature Setpoint

ⓘ Note

Default setpoint is -30.0°C

1. Press and release **SEL** 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 the **Up** or **Down Arrow** as necessary to set the desired setpoint value.
4. Release all buttons; the setpoint is changed.
5. Press and release **SEL** 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 **SEL** 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 Hysteresis values.

Table 3. Parameter Values

Parameter	Visual Indicator	Range	Default
Celsius or Fahrenheit	None	˚C, ˚F	˚C
High Temperature	MONITOR Lamp & HIGH Lamp	-40.0 to 25.0 (˚C) -40 to 77 (˚F)	-20.0 ˚C
Low Temperature	MONITOR Lamp & LOW Lamp	-40.0 to 25.0 (˚C) -40 to 77 (˚F)	-40.0 ˚C
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
Hysteresis	COOL Lamp	0.5 to 2.5 (˚C) 1 to 5 (˚F)	2.0˚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 Display will show ˚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   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 Hysteresis

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

Hysteresis helps control the refrigeration based on the control probe temperature reading and the set point and should not be changed from the default setting.

> ### ⚠ NOTICE
> Control Sensor Offset and Hysteresis are factory-preset and should not be changed. Contact Helmer Technical Service for instructions regarding changing these values.

6.6   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 **SEL** 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.

6.7   Active Alarms

The controller displays temperature and alarm information.

Table 4.   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
Power Failure	"PoFF" appears on display	Power to unit has been disrupted
Probe Failure	"Prob" appears on display	Probe not functioning properly
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.

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6.8   Mute and Disable Audible Alarms

ℹ 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.

Horizon Series Operation

7   Horizon Series™ Access Control (Optional)

Allows user-specific secure access to the freezer.

> ### ⓘ 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 freezer 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. The master code also releases the door lock.

> ### ⓘ 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 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 Freezer with Access Control

1. Enter the user code
2. Press #

Horizon Series Operation

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, decreasing linearly to 50% at 40 °C
♦ Temperature control range: -15 °C to -30 °C

Table 5. Electrical Specifications (Laboratory and Plasma Storage)

Model	120 / 125
Input Voltage and Frequency	115 V, 60 Hz; 230 V, 50 Hz; 208/230 V, 60 Hz
Voltage Tolerance	±10%
Circuit Breakers (230 V only)	12.0 A (quantity 2)
Current Draw	8.5 A (115 V, 60 Hz) 3.8 A (230 V, 50 Hz) 4.3 A (208/230 V, 60 Hz)
Power Source	Grounded outlet, meeting national electric code (NEC) in the U.S. and local electrical requirements in all locations.
Remote Alarm Capacity	i.Series: 0.5 A at 30 V (RMS); 1.0 A at 24 V (DC) Horizon Series: 0.25 A at 30 V (RMS); 0.25 A at 60 V (DC)

⚠ **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 30 V (RMS) or 60 V (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.

ⓘ **Notes**

• Add 0.375" (10 mm) to width for optional access control.
• Maximum load per drawer, shelf or basket - 100 lbs (46 kg).

Table 6. Laboratory Freezer Specifications

Model	Voltage Code	Amps	Cu. Ft/ Liters	Cabinet	Door	Shelves	Dimensions W x H x D in. (mm) Exterior	Net Wt. lbs (kg)
iLF120	115 V 60 Hz	8.5	20 (566)	Upright	Single hinged solid	4	30.75 x 80 x 32.5 (782 x 2032 x 826)	443 (201)
	230 V 50 Hz	3.8						
	208/230 V 60 Hz	4.3						
HLF120	115 V 60 Hz	8.5	20 (566)	Upright	Single hinged solid	4	30.75 x 80 x 32.5 (782 x 2032 x 826)	440 (200)
	230 V 50 Hz	3.8						
	208/230 V 60 Hz	4.3						
iLF125	115 V 60 Hz	8.5	25 (708)	Upright	Single hinged solid	4	30.75 x 80 x 38.5 (782 x 2032 x 978)	481 (219)
	230 V 50 Hz	3.8						
	208/230 V 60 Hz	4.3						
HLF125	115 V 60 Hz	8.5	25 (708)	Upright	Single hinged solid	4	30.75 x 80 x 38.5 (782 x 2032 x 978)	478 (217)
	230 V 50 Hz	3.8						
	208/230 V 60 Hz	4.3						

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Table 7. Plasma Storage Freezer Specifications

Model	Voltage Code	Amps	Cu. Ft/ Liters	Cabinet	Door	Shelves	Dimensions W x H x D in. (mm) Exterior	Net Wt. lbs (kg)
iPF120	115 V 60 Hz	8.5	20 (566)	Upright	Single hinged solid	8	30.75 x 80 x 32.5 (782 x 2032 x 826)	505 (230)
	230 V 50 Hz	3.8						
	208/230 V 60 Hz	4.3						
HPF120	115 V 60 Hz	8.5	20 (566)	Upright	Single hinged solid	8	30.75 x 80 x 32.5 (782 x 2032 x 826)	502 (228)
	230 V 50 Hz	3.8						
	208/230 V 60 Hz	4.3						
iPF125	115 V 60 Hz	8.5	25 (708)	Upright	Single hinged solid	8	30.75 x 80 x 38.5 (782 x 2032 x 978)	557 (253)
	230 V 50 Hz	3.8						
	208/230 V 60 Hz	4.3						
HPF125	115 V 60 Hz	8.5	25 (708)	Upright	Single hinged solid	8	30.75 x 80 x 38.5 (782 x 2032 x 978)	554 (252)
	230 V 50 Hz	3.8						
	208/230 V 60 Hz	4.3						

Horizon Series Operation

9   Compliance

9.1   Regulatory Compliance

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

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

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Sound level is less than 70 dB(A).

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

RoHS
COMPLIANT

9.2   WEEE Compliance

The WEEE symbol (right) indicates this product falls under the scope of the WEEE (Waste Electrical and Electronic Equipment) directive.

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.

10   Preventive Maintenance

ℹ️ Notes

- It is important to ensure that all scientific equipment is maintained regularly for optimum performance.
- These are recommended minimum requirements. Regulations for your organization or physical conditions at your facility may require maintenance items to be performed more frequently, or only be designated service personnel.

Maintenance tasks should be completed according to the following schedule. Refer to the service manual and the i.C³ User Guide for detailed information on tasks.

Table 8.   Preventive Maintenance Schedule

Task	Frequency			
	Quarterly	Annually	2 years	As Needed
i.Series: Test the high and low temperature alarms. Horizon Series: Test the high temperature alarm.	✔			
Test the power failure alarm (as required by your organization's protocols).	✔			
Models with Access Control Test the Access Control battery.	✔ (Horizon Series)			
Replace Access Control back-up battery.			✔	
Test the door alarm (as required by your organization's protocols).				✔
Check the temperature calibration on the monitor and change it if necessary.	✔			
Models with Chart Recorders Check the backup battery for the chart recorder after an extended power failure and change it if necessary, or change the battery if it has been in service for one year. Refer to the Temperature Chart Recorder Operation and Service Manual.				✔
Electrical Compartment • Inspect electrical components and wiring terminals in the electrical box for discoloration. Contact Helmer Technical Service if any discoloration is found. • Inspect all wiring for terminals for secure connection. Tighten wiring terminal connections as necessary.	✔			
Replace the monitoring system back-up battery.		✔ (Horizon Series)	✔ (i.Series)	
Check the level of the solution in the probe bottles. Refill or replace solution if necessary.				✔
Examine the probe bottles and clean or replace if necessary.		✔		
Clean the condenser grill.	✔			
Clean the door gaskets, interior, and exterior of the freezer.				✔
If applicable, test the ground fault circuit interrupter on the internal outlet.				✔
Inspect ground strap (Units prior to serial number 2022299)	✔ (i.Series)			

⚠️ NOTICE

Clean the condenser grill on a quarterly basis.

ℹ️ Note

During a power failure, the back-up battery provides power to the monitoring system, power failure alarm, and optional Access Control. If the back-up battery is not functioning, the power failure alarm will not be activated and the battery should be replaced.

Appendix A

i.Series® Parts

Table 9.   i.Series Parts and Description

Letter	Description	Letter	Description
A	Temperature Chart Recorder *	P	Condenser grill
B	Door lock	Q	Drain line fan
C	i.C³ control	R	Drain line heater
D	USB port	S	Drain line
E	Door handle with lock	T	Condensate evaporator
F	Caster	U	Water evaporation tray
G	Unit cooler with fan guard	V	Remote alarm interface
H	Primary monitor probe bottle	W	RJ-45 Ethernet port
I	Cold-Shield door (Plasma storage models)	X	USB port
J	Drawer	Y	RS-232 COM port (optional)
K	Shelf	Z	Back-up battery switch
L	Standard	AA	Main power switch
M	Roll out basket	BB	Circuit breakers (230 V only)
Not Shown	Drawer/basket and slide	CC	Condenser
	Secondary monitor probe bottle	DD	Compressor
N	Back-up battery key switch (optional Access Control)	EE	Monitoring system back-up battery (and optional Access Control)
O	Magnetic lock (optional Access Control)	FF	Access port (number and location vary by model)

 * Temperature chart recorder is standard on plasma storage models, optional on laboratory models)

Appendix B

Horizon Series™ Parts

Table 10. Horizon Series Parts and Description

Letter	Description	Letter	Description
A	Temperature Chart Recorder	P	Roll out basket
B	Door lock	Q	Condenser grill
C	Temperature monitor and control	R	Drain line fan
D	Alarm key switch	S	Drain line heater
E	Door handle with lock	T	Drain line
F	Casters	U	Condensate evaporator
G	Keypad (optional Access Control)	V	Water evaporation tray
H	Back-up battery key switch (optional Access Control)	W	Remote alarm interface
I	Magnetic lock (optional Access Control)	X	Main power switch
J	Unit cooler with fan guard	Y	Circuit breakers (230 V only)
K	Probe bottle	Z	Monitoring system back-up battery
L	Cold-Shield door (Plasma storage models)	AA	Back-up battery (optional Access Control)
M	Drawer	BB	Condenser
N	Shelf	CC	Compressor
O	Standard	DD	Access port (number and location vary by model)
Not Show	Drawer/basket slide		

* Temperature chart recorder is standard on plasma storage models, optional on laboratory models

END OF MANUAL

Notes

360369/B