Freezer Instructions for Use

i.Series® and Horizon Series™
Upright - Undercounter

Laboratory

i.Series
- iLF105-GX
- iLF120-GX
- iLF125-GX

Horizon Series
- HLF105-GX
- HLF120-GX
- HLF125-GX

Blood Bank/Plasma Storage

i.Series
- iBF105-GX
- iBF120-GX
- iBF125-GX

Horizon Series
- HBF105-GX
- HBF120-GX
- HBF125-GX

360416/B

Document History

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B	8 MAR 2021	15909	B supersedes A	Updated content to include upright freezers.

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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.

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Part No. 360416/B

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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™ laboratory and plasma storage freezers. It is intended for use by end users of the freezer 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 freezer. For example, “iLF105-GX” refers to an i.Series Laboratory Freezer 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 freezers 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; personal injury is unlikely.

Symbols and Labels found on the units

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

Warning: Consult manual for important cautionary information

Warning: Hot surface

Warning: Shock / electrical hazard

Warning: Crushing of hands / fingers

Danger: Risk of Fire or Explosion. Flammable refrigerant used

Refer to documentation

1.5 Avoiding Injury

- 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 freezer.
- 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 freezer is not considered to be a storage cabinet for flammable or hazardous materials.
- Use caution when moving a stacked configuration.

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

1.6 General Recommendations

General Use

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

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

Initial Loading

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

Product Loading Guidelines

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

- Never load freezers beyond capacity.
- Always store items within shelves or drawers.
- 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

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.
- Upright units require a minimum of 8” (203 mm) above, and a minimum of 3” (76 mm) behind the unit for proper ventilation, clearance, and feature access.
- Undercounter units require a minimum of 3” (76 mm) of space behind the unit for clearance and feature access.
- Meets specified limits for ambient temperature and relative humidity as stated in the Product Specifications section of this manual.

2.2 Placement and Leveling

NOTICE

- To prevent tipping, ensure the casters (if installed) are unlocked and the door is closed before moving the freezer.
- To avoid damaging refrigerant tubing or risking refrigerant leak, use caution when moving or operating the unit.
- Use of leveling feet or casters is required.

Undercounter units only

- Do not sit, lean, push or place heavy objects on top surface of undercounter units.
- Do not lean on or push down on an open door or extended drawers.

1. Ensure door is secured and casters (if installed) are unlocked.
2. Move freezer into place. Lock casters if installed.
3. Ensure freezer 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

NOTICE

- 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

Use only manufacturer supplied power cord.

Install power cord

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

2.5 Temperature Probes

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

Notes

- Temperature probes are fragile; handle with care.
- Failure to fill probe bottle(s) or keep probe bottle(s) 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 freezer.

Upright probe bottle

Undercounter probe bottle

Secondary Monitor Probe *(upright i.Series models only)*

The location of the secondary monitor probe varies based on the unit storage configuration.

Fill Temperature Probe Bottle

Notes

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

Notes

- Upright access port is located on the top of the unit.
- Undercounter access port is located on the back of the unit.

Install Additional Probe Through Access Port

1. Peel back putty to expose the port.
2. Insert the probe through the port into the chamber.
3. Insert the probe into the bottle.
4. Replace putty, ensuring a tight seal.

2.6 Chart Recorder (if included)

Note

- For complete information, refer to the Temperature Chart Recorder Operation and Service Manual.
- If chart recorder has been operating 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:

Place probe in bottle with primary monitor probe.

Set up and Operation

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

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

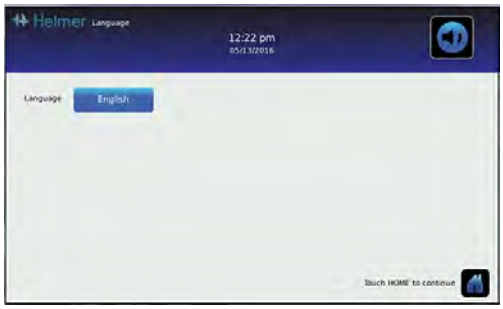
1. Plug the power cord into a grounded outlet that meets the electrical requirements on the product specification label.
2. Switch AC ON/OFF switch ON.
3. Switch back-up battery switch ON.

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

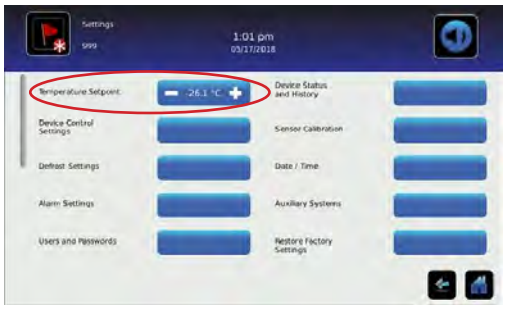
Home screensaver (touch to return to Home screen)

3.3 Change Temperature Setpoint

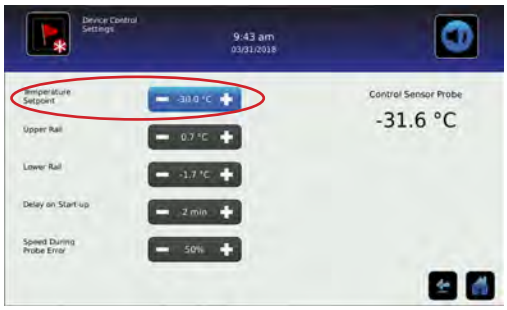
Note

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



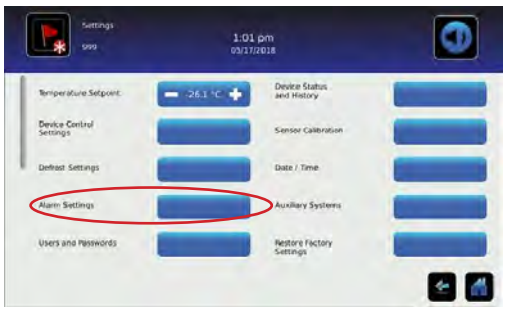
Device Control Settings screen

Notes

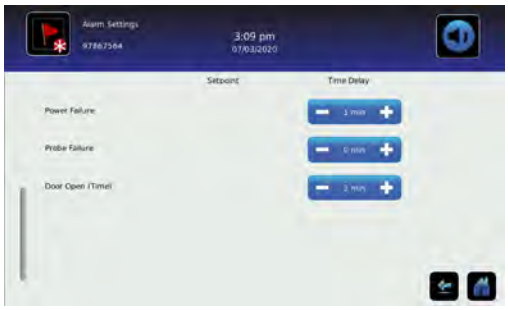
- Default Settings password is 1234.
- Default setpoint is -30.0 °C.

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 Settings screens

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

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
Evap Defrost Probe Failure	Evaporator defrost 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
Secondary Monitor Probe Failure (if installed)	Probe not functioning properly
Secondary Probe High Temperature (if installed)	Secondary monitor probe reading is above high temperature alarm setpoint
Secondary Probe Low Temperature (if installed)	Secondary 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.

Unmuted

Muted

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

Table 2. Application Icon Table

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

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 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 Setup

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

> > 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 Freezer with Access Control

Access Control keypad

Enter a valid PIN using the keypad.

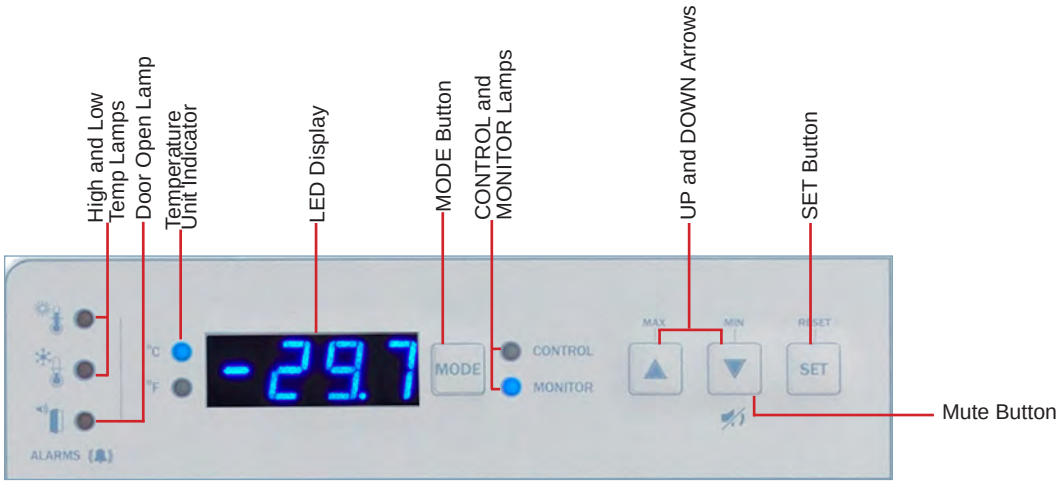
6 Horizon Series™ Operation

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. Switch AC ON/OFF switch **ON**.
3. Remove the 9V battery from the literature box and install it.
4. Switch the Alarm ON/OFF key switch to **ON**.
5. Press **Down Arrow** (Mute) if high temperature alarm sounds.

Notes

- Failure to install the 9V battery will result in Er06 alarm.
- 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 Freezer Temperature Setpoint

Note

Default setpoint is -30.0 °C.

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 3. 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 40.0 (˚C); -40 to 104 (˚F)	-20 °C
Low Temperature	MONITOR Lamp & LOW Lamp	-40.0 to 40.0 (˚C); -40 to 104 (˚F)	-35 °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
Evaporator Defrost Offset	MONITOR lamp & 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); -0.1 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 freezer. 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 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
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
Control Probe Failure *(RTD1)*	Er01	Probe not functioning properly
Primary Monitor Probe Failure *(RTD2)*	Er02	Probe not functioning properly
Evaporator Defrost Probe Failure *(RTD3)*	Er03	Probe not functioning properly
No Battery	Er06	Battery voltage is low or battery is disconnected
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.

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.

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 Freezer 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 25 °C; 55% at 32°C (90°F)
- Temperature control range: -15 °C to -30 °C
- Overvoltage Category II
- Pollution Degree 2
- RF Emissions: Group 1 - Class A
- EMC Environment: Basic
- Sound level is less than 70 dB(A).

Table 5. Electrical Specifications (Laboratory and Plasma Storage)

Model	Input Voltage & Frequency	Voltage Tolerance	Circuit Breakers	Current Draw	Power Source	Remote Alarm Capacity
105	115V 60 Hz	±10%	7A quantity 2	4.1A	Grounded outlet, meeting national electric code (NEC) in the U.S. and local electrical requirements in all locations.	115V or 230V: 1A at 33V (AC) RMS or 30V (DC)
	220-240V 50/60 Hz			2.0A		
120	115V 60 Hz		12A quantity 2	6.6A		
	220-240V 50/60 Hz			3.1A		
125	115V 60 Hz		12A quantity 2	6.6A		
	220-240V 50/60 Hz			3.1A		

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

Notes

- 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 30V (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 6. Freezer Specifications

Model	Voltage Code	Amps*	Cu. Ft/ Liters	Cabinet	Door	Dimensions W x H x D in. (mm) Exterior*	Net Wt. lbs (kg)
iLF105-GX	115V 60 Hz	4.1	5.3 (150)	Undercounter	Single hinged solid	24 x 31.9 x 28.4 (610 x 809 x 721)	179 (82)
	220-240V 50/60 Hz	2.0					
iBF105-GX	115V 60 Hz	4.1	5.3 (150)	Undercounter	Single hinged solid	24 x 31.9 x 28.4 (610 x 809 x 721)	187 (85)
	220-240V 50/60 Hz	2.0					
HLF105-GX	115V 60 Hz	4.1	5.3 (150)	Undercounter	Single hinged solid	24 x 31.9 x 28.4 (610 x 809 x 721)	179 (82)
	220-240V 50/60 Hz	2.0					
HBF105-GX	115V 60 Hz	4.1	5.3 (150)	Undercounter	Single hinged solid	24 x 31.9 x 28.4 (610 x 809 x 721)	187 (85)
	220-240V 50/60 Hz	2.0					
iLF120-GX	115V 60 Hz	6.6	20.2 (572)	Upright	Single hinged solid	30.4 x 80.3 x 33.7 (773 x 2039 x 855)	400 (182)
	220-240V 50/60 Hz	3.1					
iBF120-GX	115V 60 Hz	6.6	20.2 (572)	Upright	Single hinged solid	30.4 x 80.3 x 33.7 (773 x 2039 x 855)	469 (213)
	220-240V 50/60 Hz	3.1					
HLF120-GX	115V 60 Hz	6.6	20.2 (572)	Upright	Single hinged solid	30.4 x 80.3 x 32.3 (773 x 2039 x 820)	397 (181)
	220-240V 50/60 Hz	3.1					
HBF120-GX	115V 60 Hz	6.6	20.2 (572)	Upright	Single hinged solid	30.4 x 80.3 x 32.3 (773 x 2039 x 820)	466 (212)
	220-240V 50/60 Hz	3.1					
iLF125-GX	115V 60 Hz	6.6	25.2 (714)	Upright	Single hinged solid	30.4 x 80.3 x 39.7 (773 x 2039 x 1008)	444 (202)
	220-240V 50/60 Hz	3.1					
iBF125-GX	115V 60 Hz	6.6	25.2 (714)	Upright	Single hinged solid	30.4 x 80.3 x 39.7 (773 x 2039 x 1008)	524 (238)
	220-240V 50/60 Hz	3.1					
HLF125-GX	115V 60 Hz	6.6	25.2 (714)	Upright	Single hinged solid	30.4 x 80.3 x 38.3 (773 x 2039 x 973)	441 (201)
	220-240V 50/60 Hz	3.1					
HBF125-GX	115V 60 Hz	6.6	25.2 (714)	Upright	Single hinged solid	30.4 x 80.3 x 38.3 (773 x 2039 x 973)	521 (237)
	220-240V 50/60 Hz	3.1					

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

Table 7. Storage Component Specifications

Storage Component	Net weight lbs (kg) *105 models*	Net weight lbs (kg) *120 models*	Net weight lbs (kg) *125 models*
Shelf	6 (3)	7.3 (3.3)	8.7 (4)
Ventilated Drawer	8 (4)	9.5 (4.4)	11.2 (5)
Liquid-tight Stainless Drawer	10 (5)	11.8 (5.4)	14 (6.4)

Notes

- Amperage values listed represent the highest current draw presented among available factory configurations for each model.
- Undercounter maximum height added with casters installed or leveling feet adjusted to highest postion is 2” (51 mm).
- Maximum load per shelf or drawer - 100 lbs (46kg).
- 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 2797 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 product is IECEE CB Scheme certified and complies with national differences for safety certification beyond IEC 61010-1-12 3rd edition.

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.

9.3 EMC Compliance

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

This product is intended for use in the electromagnetic environment specified below. The customer or the user of the product should assure the product is used in such an environment.

Electromagnetic Emissions

Emissions Test	Compliance	Electromagnetic Environment - Guidance
RF emissions CISPR 11	Group 1	The product uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The product is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic Emissions IEC 61000-3-2	Class A	
Voltage Fluctuations/Flicker Emissions IEC 61000-3-3	Complies	

- The product should not be used adjacent to other equipment. If adjacent use is necessary, the product should be observed to verify normal operation in the configuration in which it will be used.
- The use of accessories other than those specified for the product by Helmer is not recommended. They may result in increased emissions or decreased immunity of the device.

Electromagnetic Immunity

Immunity Test	Compliance Level	Electromagnetic Environment - Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%
Electrical fast transient/burst IEC 61000-4-4	±2 kV ±1 kV for I/O lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode for AC ±2 kV common mode for AC	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips and interruptions IEC 61000-4-11	100% drop, 0.5 cycle, 3 times each (@ 0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°) 100% drop, 250 cycles, 3 times (@ 0°) 70% dip, 25 cycles, 3 times (@ 0°)	Mains power quality should be that of a typical commercial or hospital environment. If the user of the product requires continued operation during power mains interruptions, it is recommended that the product be powered from an uninterruptible power source.
Power frequency (50Hz) magnetic field IEC 61000-4-8	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Conducted RF IEC 61000-4-6	6 V_{rms} 150 kHz to 80MHz	Portable and mobile RF communications equipment should be used no closer to any part of the product, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter Recommended separation distance: $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P}$ for 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ for 800 MHz to 5.7 GHz where P is the maximum output power rating of the transmitter in Watt (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey[a], should be less than the compliance level[b] in each frequency range. Interference may occur in the vicinity of equipment marked with this symbol.
Radiated RF IEC 61000-4-3	3 V/m to 28 V/m at frequencies from 80MHz up to 5.785 GHz	

[a]Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered, if the measured field strength in the location in which the product is used exceeds the applicable RF compliance level above, the product should be observed. If abnormal operation is observed, additional measures may be necessary such as reorienting or relocating the product.

[b]Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Notes
- At 80MHz and 800MHz, the higher frequency range applies
- These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, people and animals.

Recommended Separation Distances

This product is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the product can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the product – according to the maximum output power and frequency of the communications equipment – as recommended in the following table.

Rated maximum output power of transmitter in watts (W)	Separation distance according to the frequency of transmitter in meters (m)		
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	80 kHz to 800 MHz $d = 1.2\sqrt{P}$	800 kHz to 5.7 GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Notes
- At 80MHz and 800MHz, the higher frequency range applies
- These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, people and animals.

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