

Refrigerator Operation Manual

i.Series® and Horizon Series™



Model Group	i.Series	Horizon Series
Blood Bank	iB111 (Version A) iB120, iB125, iB245, iB256 (Versions A and B) iHB111 (Version B) iHB120, iHB125, iHB245, iHB256 (Versions A and B)	HB111 (Version A) HB120, HB125, HB245, HB256 (Versions A and B) HHB111 (Version A) HHB120, HHB125, HHB245, HHB256 (Versions A and B)
Laboratory	iLR111 (Version A) iLR120, iLR125, iLR245, iLR256 (Versions A and B)	HLR111 (Version A) HLR120, HLR125, HLR245, HLR256 (Versions A and B)
Pharmacy	iPR111 (Version A) iPR120, iPR125, iPR245, iPR256 (Versions A and B)	HPR111 (Version A) HPR120, HPR125, HPR245, HPR256 (Versions A and B)

HELMER SCIENTIFIC
14400 Bergen Boulevard
Noblesville, IN 46060 USA



PH +1.317.773.9073
FAX +1.317.773.9082
USA and Canada 800.743.5637



Document History

Revision	Date	CO	Supersession	Revision Description
L	01 APR 2014*	9313	L supersedes A, B, C, D, E, F, G, H, I, J, K	Revised layout for ease of navigation and locating information.

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

Contents

Section I: General Information	4
1 About this Manual	4
1.1 Intended Audience	4
1.2 Model References	4
1.3 Copyright and Trademark	4
2 Safety	4
2.1 Safety Definitions	4
2.2 Product Labels	5
2.3 Avoiding Injury	5
3 General Recommendations	5
3.1 Intended Use	5
3.2 General Use	5
3.3 Initial Loading	5
4 Specifications	6
5 Compliance	8
5.1 Regulatory Compliance	8
5.2 WEEE Compliance	8
6 Installation	8
6.1 Location Requirements	8
6.2 Placement	8
6.3 Temperature Probes	9
6.4 Chart Recorder	9
6.4.1 Install and Change Chart Paper	10
7 Maintenance Schedule	11
Section II: i.Series® Models	12
8 Operation	12
8.1 Initial Start Up	12
8.2 Normal Operation	12
8.3 Change Temperature Setpoint	13
8.4 Set Alarm Parameters	14
8.5 Active Alarms	14
8.6 Mute and Disable Active Alarms	14
8.7 Light Operation	14
9 i.Center Screen Reference	15
10 Components	17
10.1 Front and Chamber	17
10.2 Rear	18
10.3 Top	19

Section III: Horizon Series™ - Blood Bank Models	20
11 Operation	20
11.1 Initial Start Up	20
11.2 Normal Operation	20
11.3 Change Temperature Setpoint	21
11.4 Set Alarm Parameters	22
11.5 Active Alarms	22
11.6 Mute and Disable Active Alarms	22
11.7 Light Operation	22
12 Horizon Series Screen Reference	23
13 Components	25
13.1 Front and Chamber	25
13.2 Rear	26
13.3 Top	27
Section IV: Horizon Series™ - Laboratory, Pharmacy, and International Blood Bank Models	28
14 Operation	28
14.1 Initial Start Up	28
14.2 Temperature Setpoints	28
14.2.1 Change Setpoint	28
14.2.2 Monitor Offset	29
14.2.3 Control Sensor Offset	29
14.2.4 Hysteresis	29
14.2.5 Change a Temperature Alarm Setpoint	30
14.3 Active Alarms	31
14.4 Mute and Disable Audible Alarms	31
14.5 Light Operation	31
15 Components	32
15.1 Front and Chamber	32
15.2 Rear	33
15.3 Top	34

Section I: General Information

1 About this Manual

1.1 Intended Audience

This manual is intended for use by end users of the refrigerator and authorized service technicians.

1.2 Model References

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 (iB125, HB125, iHB125, HHB125, iLR125, HLR125, iPR125, HPR125). This manual covers all upright refrigerators, which may be identified singly, by their size, or by their respective “Series.”

1.3 Copyright and Trademark

Helmer®, i.Series®, i.Center®, Horizon Series™, and Rel.i™ are registered trademarks or trademarks of Helmer, Inc. in the United States of America. Copyright © 2014 Helmer, Inc. All other trademarks and registered trademarks are the property of their respective owners.

Helmer, Inc., doing business as (DBA) Helmer Scientific and Helmer.

2 Safety

The operator or technician performing maintenance or service on Helmer Scientific products must (a) inspect the product for abnormal wear and damage, (b) choose a repair procedure which will not endanger his/her safety, the safety of others, the product, or the safe operation of the product, and (c) fully inspect and test the product to ensure the maintenance or service has been performed properly.

2.1 Safety Definitions

The following general safety alerts appear with all safety statements within this manual. Read and abide by the safety statement that accompanies the safety alert symbol.



WARNING The safety statement that follows this safety alert symbol indicates a hazardous situation which, if not avoided, could result in serious injury.



CAUTION The safety statement that follows this safety alert symbol indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE The safety statement that follows this safety alert symbol indicates a situation which, if not avoided, could result in damage to the product or stored inventory.

2.2 Product Labels



Caution: Risk of damage to equipment or danger to operator



Caution: Hot surface



Caution: Shock/electrical hazard



Caution: Unlock all casters



Earth / ground terminal



Protective earth / ground terminal

2.3 Avoiding Injury

- ▶ Review safety instructions before installing, using, or maintaining the equipment.
- ▶ Before moving unit, ensure door(s) is closed and casters 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 biological materials are stored at recommended temperatures determined by standards, literature, or good laboratory practices.
- ▶ Proceed with caution when adding and removing samples from the refrigerator.
- ▶ Use supplied power cord only.
- ▶ Using the equipment in a manner not specified by Helmer Scientific may impair the protection provided by the equipment.
- ▶ Decontaminate parts prior to sending for service or repair. Contact Helmer Scientific or your distributor for decontamination instructions and a Return Authorization Number.
- ▶ Ensure biological materials are 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.

3 General Recommendations

3.1 Intended Use

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

3.2 General Use

Allow refrigerator to come to room temperature before powering on.

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

3.3 Initial Loading

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

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

4 Specifications

	111	120	125	245	245
iB, iLR, and iPR Exterior Dimensions ⁽¹⁾					
Width	25.25" (616 mm)	29.50" (749 mm)		59.25" (1505 mm)	
Height	70.50" (1791 mm)	79.75" (2026 mm)			
Depth	28.25" (718 mm)	32.50" (826 mm)	38.50" (978 mm)	32.50" (826 mm)	38.50" (978 mm)
iHB, HB, HHB, HLR, and HPR Exterior Dimensions ⁽¹⁾					
Width	25.25" (616 mm)	29.50" (749 mm)		59.25" (1505 mm)	
Height	70.50" (1791 mm)	78.75" (2000 mm)			
Depth	28.25" (718 mm)	32.50" (826 mm)	38.50" (978 mm)	32.50" (826 mm)	38.50" (978 mm)
Physical					
Weight (iB, iHB, iPR, HB, HPR, HHB Models)	340 lbs (154 kg)	510 lbs (231 kg)	535 lbs (243 kg)	800 lbs (363 kg)	880 lbs (400 kg)
Weight (iLR, HLR Models)	320 lbs (145 kg)	465 lbs (211 kg)	476 lbs (216 kg)	692 lbs (314 kg)	754 lbs (342 kg)
Interior Volume	11.5 ft ³ / 326 L	20.2 ft ³ / 572 L	25.2 ft ³ / 714 L	44.9 ft ³ / 1271 L	56 ft ³ / 1586 L
Refrigeration System					
Refrigerant	R-134A (non-CFC)				
Compressor	0.25 HP, air-cooled	0.33 HP, air-cooled		0.5 HP, air-cooled	
Initial Charge	9.5 oz. (269 g)	10.0 oz. (283 g)		115 V; 230 V, 50 Hz: 16.5 oz. (468 g) 230 V, 60 Hz: 12.5 oz. (354 g)	
Operational					
Default Set Point	4 °C (39 °F)				
Temperature Control Range	2 °C to 10 °C (36 °F to 50 °F)				
Cabinet					
Insulation	High-density, non-CFC foam				
Wall Thickness	2" (51 mm)				
Door Thickness	2" (51 mm)				
External Material	Galvannealed steel with bacteria-resistant powder-coated finish				
Internal Material	Galvannealed steel with bacteria-resistant powder-coated finish				
Drawer, Shelf, or Basket Load	100 lbs (46 kg)				
External Top Port	1 standard (all models)				
External Side Port	1 standard (laboratory and pharmacy models); 1 optional (blood bank models)				
Temperature Chart Recorder	4" (102 mm) 7-day inkless, pressure-sensitive chart paper, backup battery; standard on blood bank models; optional on laboratory and pharmacy models				
Interior Configuration ⁽²⁾					
iB Models	5 drawers	6 drawers	12 drawers		
iHB Models	5 drawers	6 drawers	12 drawers		
iLR Models	4 shelves	4 shelves	8 shelves		
iPR Models	5 drawers	6 drawers	12 drawers		
HB Models	5 drawers	6 drawers	12 drawers		
HHB Models	5 drawers	6 drawers	12 drawers		
HPR Models	5 drawers	6 drawers	12 drawers		
HLR Models	4 shelves	4 shelves	8 shelves		

(1) Includes features that protrude from the cabinet.

(2) Blood bank models (iB, iHB HB, and HHB) and pharmacy models (iPR and HPR) feature drawers as the standard storage configuration. Laboratory models (iLR, and HLR) feature shelves as the standard storage configuration. Any combination of drawers or shelves may be installed.

	111	120	125	245	245
Electrical					
Input Voltage and Frequency	115 V (60 Hz); 230 V (50 Hz); 230 V (60 Hz)				
Voltage Tolerance	±10%				
Circuit Breakers	6 A (230 V models, quantity 2)			7 A (230 V models, quantity 2)	
Power Consumption	7 A (115 V); 3.5 A (230 V, 50 Hz); 3 A (230 V, 60 Hz)	7.5 A (115 V); 4 A (230 V)		11.5 A (115 V); 6 A (230 V)	
Power Source	Grounded outlet, meeting national electric code (NEC) and local electrical requirements				
Control and Monitoring					
Interface	iB, iLR, iPR, iHB, HB models: Monitoring and display system; separate temperature control system iHB, HHB, HPR, HLR models: Temperature control and display system				
Alarms	<ul style="list-style-type: none"> ▶ iB, iLR, iPR, iHB models: High, low, and condenser temperature; door open; AC power failure; low battery; no battery; change chart paper ▶ HB models: High and low temperature; door open; AC power failure; change chart paper ▶ HPR, HLR, HHB models: High and low temperature; door open; AC power failure 				
Remote Alarm Interface	Dry contacts (standard)				
Remote Alarm Capacity	<ul style="list-style-type: none"> ▶ iB, iPR, iLR, iHB, and HB models: 0.5 A at 30 V (RMS); 1.0 A at 24 V (DC) ▶ HLR, HPR, and HHB models: 0.25 A at 30 V (RMS); 0.25 A at 60 V (DC) 				
Environmental					
Operating Standards	<ul style="list-style-type: none"> ▶ 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 				


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.

NOTE

In the event of a power failure, the power failure alarm condition is transmitted through the remote alarm contacts.

5 Compliance

5.1 Regulatory Compliance

This device complies with the requirements of directive 93/42/EEC concerning Medical Devices, as amended by 2007/47/EC.
 Sound level is less than 70 dB(A).



Emergo Europe
 Molenstraat 15
 2513 BH
 The Hague, Netherlands

5.2 WEEE Compliance

The WEEE (waste electrical and electronic equipment) symbol (right) indicates compliance with European Union Directive WEEE 2002/96/EC and applicable provisions. The directive sets requirements for the labeling and disposal of certain products in affected countries.



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.

6 Installation

6.1 Location Requirements

- ▶ Has a grounded outlet meeting national electric code (NEC) and local electrical requirements.
- ▶ Is clear of direct sunlight, high temperature sources, heating vents, and air conditioning vents.
- ▶ Minimum 8" (203 mm) above, and minimum of 3" (76 mm) behind.
- ▶ Meets the limits specified for ambient temperature and relative humidity.

6.2 Placement



WARNING To prevent tipping, ensure the casters are unlocked and the doors are closed before moving the refrigerator.



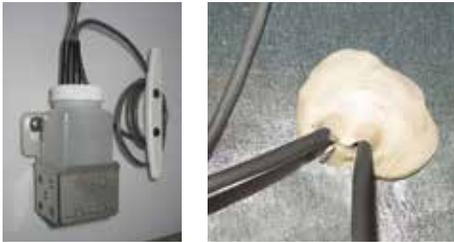
CAUTION Do not use the water evaporation tray, located on the rear of the refrigerator, as a handle. The tray may be hot.

- 1 Ensure all casters are unlocked and doors are closed.
- 2 Roll refrigerator into place and lock casters.
- 3 Ensure refrigerator is level.

6.3 Temperature Probes

For each probe bottle, use:

- ▶ Approximately 4 oz. (120 mL) of product simulation solution (10:1 ratio of water to glycerin).



6.4 Chart Recorder

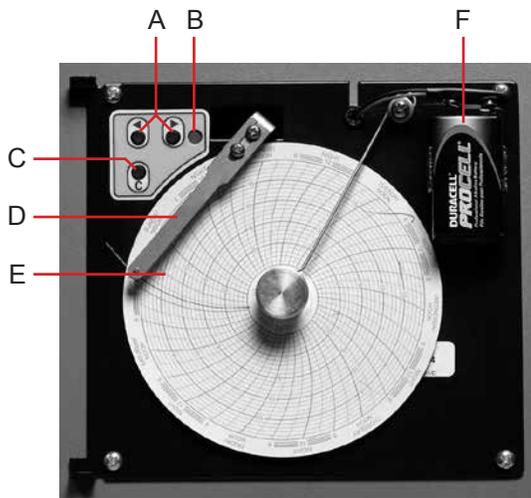


Chart recorder with paper and battery installed.

Label	Description	Function
A	Left and Right Arrow buttons	Adjust settings and stylus position
B	LED	Indicates status of chart recorder in operating mode, or selected temperature range in paper change mode
C	Chart change button	Adjust position of stylus when changing chart paper, or run a test pattern
D	Stylus	Mark temperature line on paper
E	Reset button	Restart chart recorder
F	Backup battery	Provides power during AC power failure. Connect prior to use.

6.4.1**Install and Change Chart Paper**

- 1 Press and hold **C** button. When stylus begins to move left, release button. The LED flashes to indicate current temperature range.
- 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 and reinstall chart knob.

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

- 6 Confirm the temperature range is set to the correct value.
- 7 Press and hold **C** button. When the stylus begins to move right, release the button.
- 8 Confirm the stylus is marking the temperature correctly.

7 Maintenance Schedule

Maintenance tasks should be completed according to the following schedule. Refer to the service manual for more detail on the various tasks.

NOTE These are recommended minimum requirements. Regulations for your organization or physical conditions at your organization may require maintenance items to be performed more frequently, or only by designated service personnel.

Task	Frequency		
	Quarterly	Annually	As Needed
Test the high and low temperature alarms.	✓		
Test the power failure alarm (as required by your organization's protocols).	✓		
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.			✓
<ul style="list-style-type: none"> ▶ Inspect electrical components and wiring terminals in the electrical box for discoloration. Contact Helmer Technical Service if any discoloration is found. ▶ Inspect all wiring terminals for secure connection. Tighten wiring terminal connections as necessary. 	✓		
Check the level of the solution in the probe bottle(s). Refill or replace solution if necessary.			✓
Examine the probe bottles and clean or replace if necessary.		✓	
Check the chamber lights and replace them if necessary.			✓
Clean the condenser grill.	✓		
Clean the door gaskets, interior, and exterior of the refrigerator.			✓
If applicable, test the ground fault circuit interrupter on the internal outlet.			✓



NOTICE Clean the condenser grill on a quarterly basis.

NOTE

- ▶ During a power failure, the backup batteries provide power to the monitoring system and the power failure alarm. If the backup batteries are not functioning, the power failure alarm will not be activated.
- ▶ If the backup batteries do not provide power to the monitoring system during the power failure alarm test, replace the batteries.
- ▶ If battery (batteries) have been in service for one year, replace battery (batteries).

Section II: i.Series® Models

NOTE This section applies to iB, iPR, iLR, and iHB models.

8 Operation

8.1 Initial Start Up

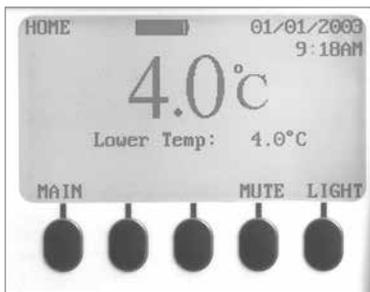
- 1 Plug the power cord into a grounded outlet that meets the electrical requirements on the product specification label.
- 2 Insert the D-cell backup battery in the monitoring system backup battery pack.
- 3 Select language.
 - a The SYSTEM OPTIONS screen is displayed.
 - b To select a different language, press the **INC** or **DEC** buttons until the preferred language is displayed. This assumes the language was previously loaded from the flash memory card.
 - c Press the **HOME** button. All text will display in the selected language.

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.

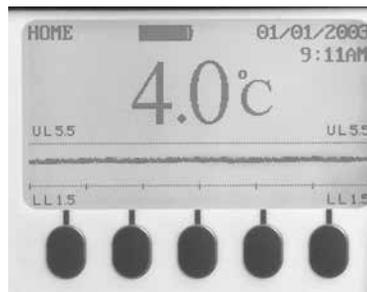
- 4 If an alarm sounds, temporarily mute the alarm by pressing the **MUTE** button.

8.2 Normal Operation

The HOME screen displays temperature and alarm information, and provides buttons for reaching other functions of the i.Center monitoring system. If the temperature graph is enabled, a graph of the chamber temperature is displayed over time on the HOME screen. Temperature setpoints and calibration settings are configured through the temperature controller.



i.Center Home screen.



i.Center temperature graph.

8.3 Change Temperature Setpoint



Independent temperature controller.



NOTICE

- ▶ Do not change the setpoint to a value outside the temperature control range.
- ▶ Parameter values are factory-preset and should not be changed unless directed by Helmer Technical Service.

NOTE

- ▶ Default setpoint is 4.0 °C.
- ▶ When there is no interaction for 60 seconds, the temperature controller exits program mode and returns to normal mode.
- ▶ The reference temperature displayed on the temperature controller may not be the same as the temperature displayed on the i.Center monitoring system.

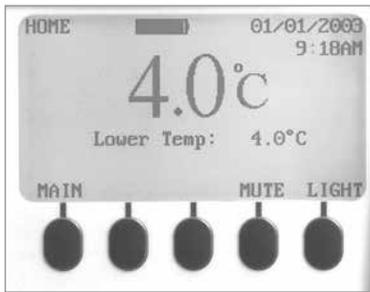
- 1 Observe the chamber temperature displayed on the i.Center monitoring system.
- 2 Determine how much the refrigerator setpoint will be changed.

EXAMPLE

- ▶ Current setpoint is 4.0 °C
- ▶ Target setpoint is 5.0 °C
- ▶ Setpoint adjustment value is +1.0 °C

- 3 Access the setpoint adjustment function:
 - a Press and hold the * button.
 - ▶ The controller displays current setpoint value.
- 4 Change the setpoint by the setpoint adjustment value:
 - a Press and hold the * button.
 - b Press the **UP** or **DOWN** buttons to increase or decrease setpoint in increments of 0.1 °C.
- 5 Release all buttons to exit the setpoint parameter. New settings are saved.

8.4 Set Alarm Parameters



i. Center Home screen.

- 1 Press the **MAIN** button.
- 2 Press the **DOWN** button to highlight Edit Configuration. Press the **SELECT** button.
- 3 Enter the password when prompted.
- 4 Press the **DOWN** button to highlight Alarm Setpoints. Press the **SELECT** button.
- 5 Press the **DOWN** button to highlight the desired alarm setting.
- 6 Press the **INC** or **DEC** buttons to set the alarm setpoint.
- 7 Press the **BACK** button to return to the Edit Configuration screen, or press the **HOME** button to exit. The new settings are saved.

8.5 Active Alarms

The HOME screen displays the number and type of alarms that are active.

Alarm	Description
High Temperature	Chamber temperature reading is above high temperature alarm setpoint
Low Temperature	Chamber temperature reading is below low temperature alarm setpoint
Low Battery	Battery voltage is low
No Battery	Battery voltage is zero or battery (or batteries) has been removed
Power Failure	Power to unit has been disrupted
Door Open	Door is open beyond user-specified duration
Condenser Temperature	Condenser temperature reading is above high temperature alarm setpoint

8.6 Mute and Disable Active Alarms

- 1 On the HOME screen, press the **MUTE** button once to mute an alarm for five minutes.
 - ▶ “MUTE05” is displayed, indicating that five minutes remain on the mute timer.
- 2 Each additional press of the **MUTE** button adds five minutes of muting.
 - ▶ The timer duration is changed, and the new time is displayed.

8.7 Light Operation

Press the Light ON/OFF button to turn the light on or off.

9 i.Center Screen Reference

HOME screen

MAIN button

MAIN screen

MUTE button (changes mute timer)

LIGHT button (turns light on or off)

MAIN screen

Event Log option

(Press the **SELECT** button)

EVENT LOG screen

System Alarm Test & Status option

SYSTEM ALARM TEST & STATUS screen

Edit Configuration option

(Enter the password)

CONFIGURATION screen

View Configuration option

VIEW CONFIGURATION screen

Product/Company Information option

INFORMATION screen

i.Help Index option

i.Help screen

EVENT LOG screen

EVENT LOG DETAIL screen

SYSTEM ALARM TEST & STATUS screen

Start High Alarm Auto Test option

Start Low Alarm Auto Test option

Cancel High or Low Test option

Chart Paper Days Left or Chart Paper Timer display

Door Status display

Condenser Temp display

CONFIGURATION screen

Set Date & Time option

SET DATE & TIME screen

System Options option

SYSTEM OPTIONS screen

Alarm Setpoints option

SET ALARM SETPOINT screen

Temperature Calibration option

TEMPERATURE CALIBRATION screen

Factory Default Settings option

FACTORY DEFAULT SETTINGS screen

Change Password option

(Enter a new password)

SYSTEM OPTIONS screen

Language option

Date Format option

Alarm Volume option

Alarm Pulse option

Temperature Units option

Chart Paper Timer option

SET ALARM SETPOINT screen

High Alarm Setpoint option

Low Alarm Setpoint option

Cond. Alarm Setpoint option

Door Ajar Timeout option

Power Failure Timeout option

Temperature Graph option

TEMPERATURE CALIBRATION screen

Select Temp Probe option

Temperature option

VIEW CONFIGURATION screen

Clock Mode display

Date Format display

Door Ajar Timeout display

Pwr Failure Timeout display

High Alarm Setpoint display

Low Alarm Setpoint display

Cond. Alarm Setpoint display

Alarm Volume display

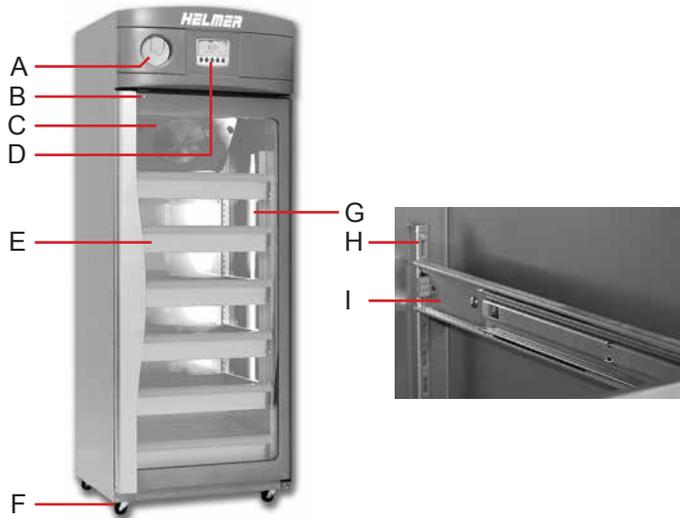
Alarm Pulse display

Chart Paper Days Left or Chart Paper Timer display

Temperature Graph display

10 Components

10.1 Front and Chamber

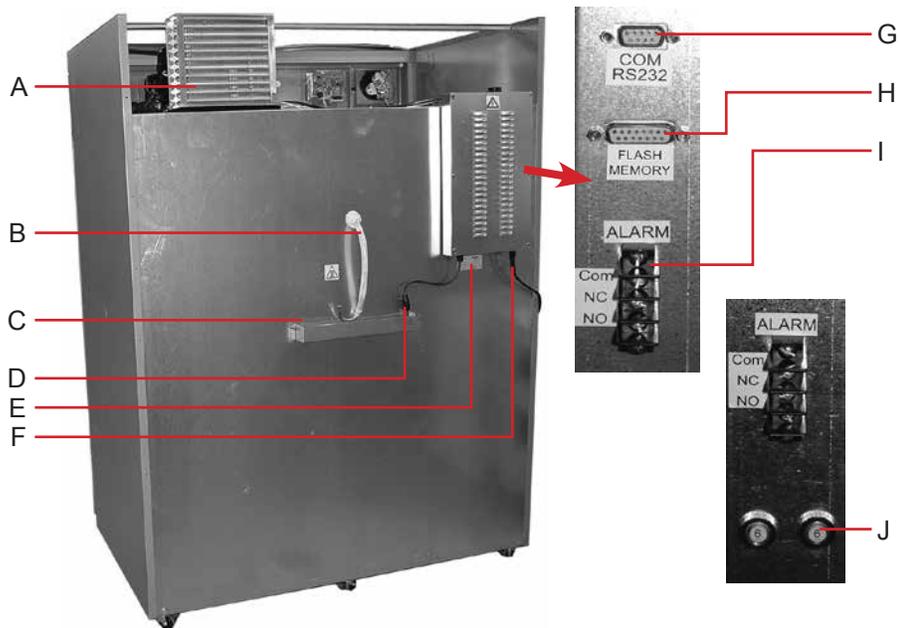


Chamber and front features (iB120 model shown).

Label	Description
A	Chart recorder (standard on blood bank models, optional on laboratory and pharmacy models)
B	Door lock
C	Unit cooler with fan guard
D	i.Center monitoring system
E	Drawer
F	Caster
G	Light
H	Standard for adjusting storage components
I	Drawer/basket slide
Not shown	Upper probe bottle
	Lower probe bottle (excluding 111 models)

NOTE Blood bank models (iB) and pharmacy models (iPR) feature drawers as the standard storage configuration. Laboratory models (iLR) feature shelves as the standard storage configuration. Any combination of drawers or shelves may be installed.

10.2 Rear

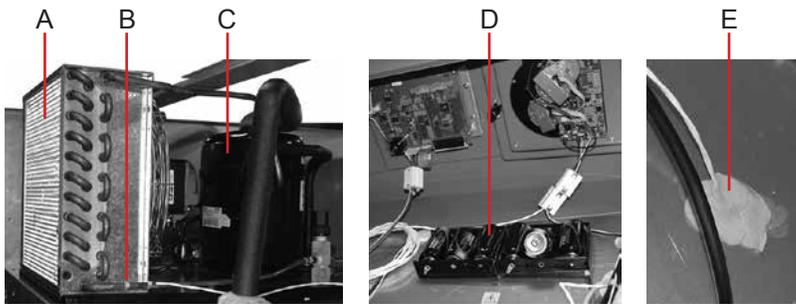


Rear features (iB256 model shown).

Label	Description
A	Condenser grill
B	Drain line
C	Water evaporation tray
D	Condensate evaporator
E	Product specification label
F	Power cord
G	RS-232 port
H	Flash port
I	Remote alarm interface
J	Circuit breakers (230 V models)

10.3

Top



Top features (iB256 model shown).

Label	Description
A	Condenser
B	Condenser probe
C	Compressor
D	Monitoring system backup batteries
E	Access port (number and location vary by model)

Section III: Horizon Series™ - Blood Bank Models

NOTE This section applies to HB models.

11 Operation

11.1 Initial Start Up

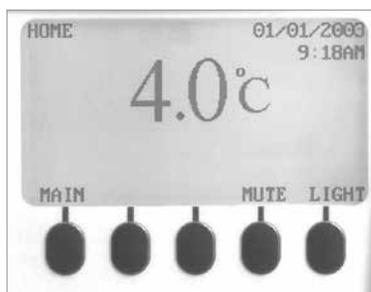
- 1 Plug the power cord into a grounded outlet that meets the electrical requirements on the product specification label.
- 2 Insert the D-cell backup battery in the monitoring system backup battery pack.
- 3 Select language.
 - a The SYSTEM OPTIONS screen is displayed.
 - b To select a different language, press the **INC** or **DEC** buttons until the preferred language is displayed. This assumes the language was previously loaded from the flash memory card.
 - c Press the **HOME** button. All text will display in the selected language.

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.

- 4 If an alarm sounds, temporarily mute the alarm by pressing the **MUTE** button.

11.2 Normal Operation

The HOME screen displays temperature and alarm information, and provides buttons for reaching other functions of the Horizon Series monitoring system. Temperature setpoints and calibration settings are configured through the temperature controller.



Horizon Series Home screen.

11.3 Change Temperature Setpoint



Independent temperature controller.



NOTICE

- ▶ Do not change the setpoint to a value outside the temperature control range.
- ▶ Parameter values are factory-preset and should not be changed unless directed by Helmer Technical Service.

NOTE

- ▶ Default setpoint is 4.0 °C.
- ▶ When there is no interaction for 60 seconds, the temperature controller exits program mode and returns to normal mode.
- ▶ The reference temperature displayed on the temperature controller may not be the same as the temperature displayed on the Horizon Series monitoring system.

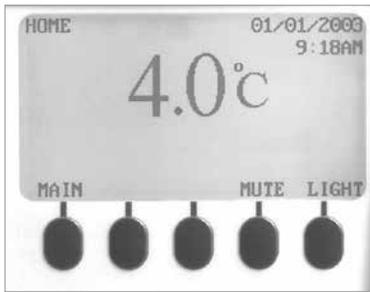
- 1 Observe the chamber temperature displayed on the Horizon Series monitoring system.
- 2 Determine how much the refrigerator setpoint will be changed.

EXAMPLE

- ▶ Current setpoint is 4.0 °C
- ▶ Target setpoint is 5.0 °C
- ▶ Setpoint adjustment value is +1.0 °C

- 3 Access the setpoint adjustment function:
 - a Press and hold the * button.
 - ▶ The controller displays current setpoint value.
- 4 Change the setpoint by the setpoint adjustment value:
 - a Press and hold the * button.
 - b Press the **UP** or **DOWN** buttons to increase or decrease setpoint in increments of 0.1 °C.
- 5 Release all buttons to exit the setpoint parameter. New settings are saved.

11.4 Set Alarm Parameters



Horizon Series Home screen.

- 1 Press the **MAIN** button.
- 2 Press the **DOWN** button to highlight Edit Configuration. Press the **SELECT** button.
- 3 Enter the password when prompted.
- 4 Press the **DOWN** button to highlight Alarm Setpoints. Press the **SELECT** button.
- 5 Press the **DOWN** button to highlight the desired alarm setting.
- 6 Press the **INC** or **DEC** buttons to set the alarm setpoint.
- 7 Press the **BACK** button to return to the Edit Configuration screen, or press the **HOME** button to exit. The new settings are saved.

11.5 Active Alarms

The HOME screen displays the number and type of alarms that are active.

Alarm	Description
High Temperature	Chamber temperature reading is above high temperature alarm setpoint
Low Temperature	Chamber temperature reading is below low temperature alarm setpoint
Power Failure	Power to unit has been disrupted
Door Open	Door is open beyond user-specified duration

11.6 Mute and Disable Active Alarms

- 1 On the HOME screen, press the **MUTE** button once to mute an alarm for five minutes.
 - ▶ "MUTE05" is displayed, indicating that five minutes remain on the mute timer.
- 2 Each additional press of the **MUTE** button adds five minutes of muting.
 - ▶ The timer duration is changed, and the new time is displayed.

11.7 Light Operation

Press the Light ON/OFF button to turn the light on or off.

12 Horizon Series Screen Reference**HOME** screen**MAIN** button**MAIN** screen**MUTE** button (changes mute timer)**LIGHT** button (turns light on or off)**MAIN** screen**Edit Configuration** option

(Enter the password)

CONFIGURATION screen**View Configuration** option**VIEW CONFIGURATION** screen**Product/Company Information** option**INFORMATION** screen**CONFIGURATION** screen**Set Date & Time** option**SET DATE & TIME** screen**System Options** option**SYSTEM OPTIONS** screen**Alarm Setpoints** option**SET ALARM SETPOINT** screen**Temperature Calibration** option**TEMPERATURE CALIBRATION** screen**Factory Default Settings** option**FACTORY DEFAULT SETTINGS** screen**Change Password** option

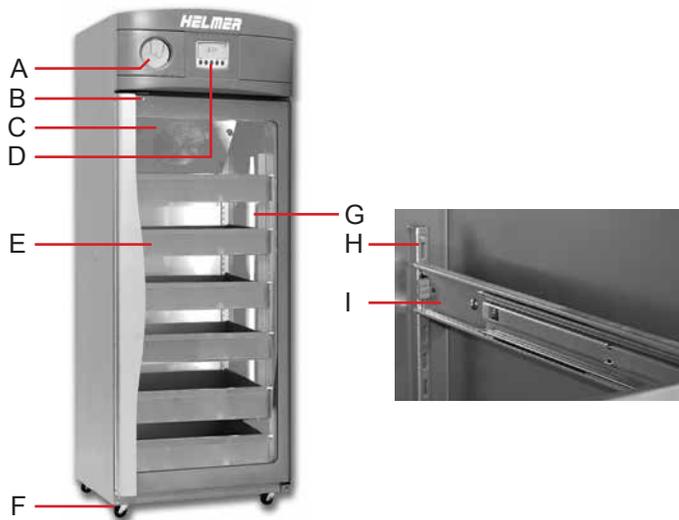
(Enter a new password)

SYSTEM OPTIONS screen**Language** option**Date Format** option**Alarm Volume** option**Alarm Pulse** option**Temperature Units** option**Chart Paper Timer** option**SET ALARM SETPOINT** screen**High Alarm Setpoint** option**Low Alarm Setpoint** option**Door Ajar Timeout** option**Power Failure Timeout** option**TEMPERATURE CALIBRATION** screen**Upper Temperature Probe** display**Temperature** option

VIEW CONFIGURATION screen**Clock Mode** display**Date Format** display**Door Ajar Timeout** display**Pwr Failure Timeout** display**High Alarm Setpoint** display**Low Alarm Setpoint** display**Alarm Volume** display**Alarm Pulse** display**Chart Paper Days Left** or **Chart Paper Timer** display

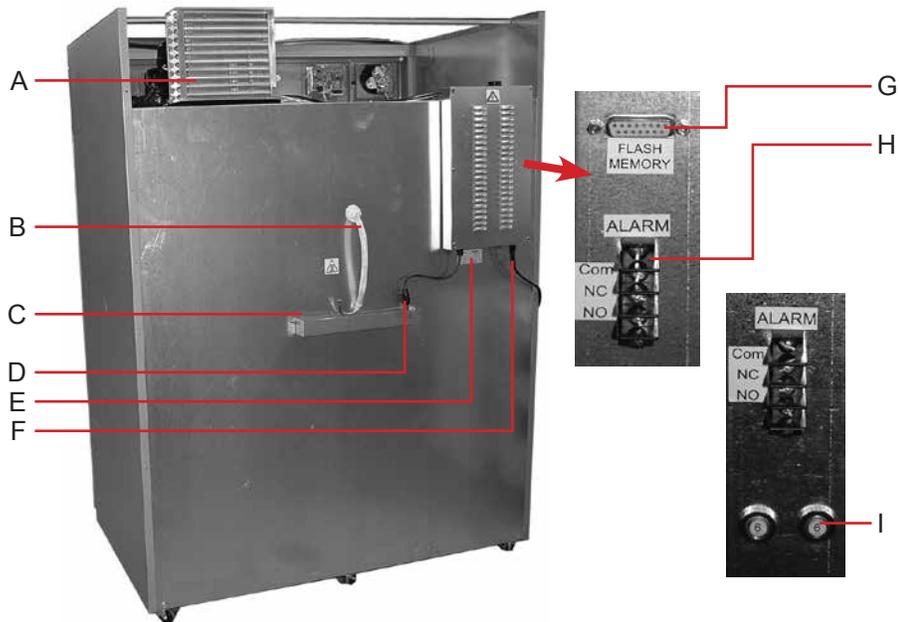
13 Components

13.1 Front and Chamber



Chamber and front features (HB120 model shown).

Label	Description
A	Chart recorder (standard on blood bank models, optional on laboratory and pharmacy models)
B	Door lock
C	Unit cooler with fan guard
D	Horizon Series monitoring system
E	Drawer
F	Caster
G	Light
H	Standard for adjusting storage components
I	Drawer/basket slide
Not shown	Upper probe bottle

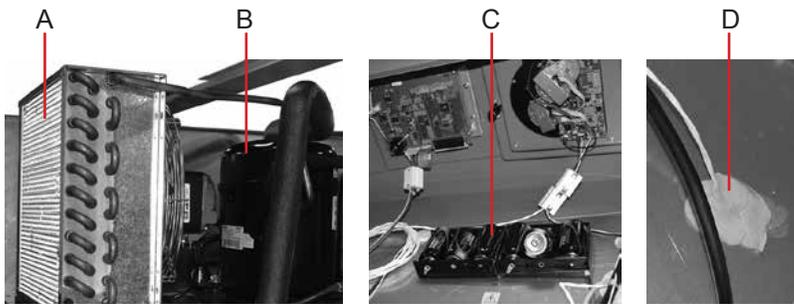


Rear features (HB256 model shown).

Label	Description
A	Condenser grill
B	Drain line
C	Water evaporation tray
D	Condensate evaporator
E	Product specification label
F	Power cord
G	Flash port
H	Remote alarm interface
I	Circuit breakers (230 V models)

13.3

Top



Top features (HB256 model shown).

Label	Description
A	Condenser
B	Compressor
C	Monitoring system backup batteries
D	Access port (number and location vary by model)

Section IV: Horizon Series™ - Laboratory, Pharmacy, and International Blood Bank Models

NOTE This section applies to HHB, HLR, and HPR models.

14 Operation

14.1 Initial Start Up

- 1 Plug the power cord into a grounded outlet that meets the electrical requirements on the product specification label.
- 2 Remove the 9 V battery from the accessory package and install it.

NOTE If an alarm condition other than High Temperature occurs, refer to the service manual for troubleshooting.

- 3 Press **Down Arrow** (Mute) if high temperature alarm sounds.



14.2 Temperature Setpoints



Horizon Series monitoring and control interface.

14.2.1 Change Setpoint

NOTE Default setpoint is 4.0 °C

- 1 On the monitoring system, press and release **SEL** to change to Control mode. CONTROL lamp will illuminate.
- 2 Press and hold **SET** to display the reference temperature.
- 3 Hold **SET** and press **Up Arrow** and **Down Arrow** as necessary to set the value.
- 4 Release all buttons; the setpoint is changed.
- 5 Press and release **SEL** to return to Monitor mode. MONITOR lamp will illuminate.

- EXAMPLE**
- ▶ Current setpoint is 4.0 °C
 - ▶ Target temperature is 5.0 °C
 - ▶ Setpoint adjustment value is +1.0 °C.
-

14.2.2 Monitor Offset

- ▶ Adjust if temperature displayed on the monitor does not match measured chamber temperature.
 - ▶ Value is factory-set to match an independent thermometer.
 - ▶ Value can be changed from -10.0 °C to +10.0 °C.
 - ▶ Refer to the service manual for instructions in changing the Monitor Offset.
-

NOTE If the variance is within acceptable limits, changing the offset value is optional.

14.2.3 Control Sensor Offset

- ▶ Controls chamber temperature.
 - ▶ Factory-set to match an independent thermometer.
 - ▶ Varies for each refrigerator.
-



NOTICE Control Sensor Offset is factory-preset and should not be changed unless directed by Helmer Technical Service.

14.2.4 Hysteresis

- ▶ Allowable temperature variance on each side of the refrigerator setpoint.
-



NOTICE Hysteresis is factory-preset and should not be changed.

14.2.5 Change a Temperature Alarm Setpoint



Flashing Lamp	Selected Setting
HIGH TEMP and MONITOR	High Temp alarm setpoint
LOW TEMP and MONITOR	Low Temp alarm setpoint
MONITOR only	Monitor Offset
CONTROL only	Control Sensor Offset
CONTROL only	Control Hysteresis

- 1 Hold **Up Arrow** and **Down Arrow** for three seconds. MONITOR lamp will flash to indicate entry into program mode.
- 2 Press **SEL** until desired setting appears.

NOTE The control lamp flashes when the Control Sensor Offset setting is selected. Press and release the **SEL** button again to select Control Hysteresis. The control lamp will continue to flash.

- 3 Hold **SET**, then press **Up Arrow** or **Down Arrow** to change the setpoint.
- 4 Release **SET** button.
- 5 To change another setting, repeat steps 2-4.
- 6 Hold **Up Arrow** and **Down Arrow** for three seconds. MONITOR lamp stops flashing to indicate exit from program mode. New settings are saved.

14.3 Active Alarms

The controller displays temperature and alarm information.



DOOR ALARM lamp lights	Door is open (less than 3 minutes)
DOOR ALARM lamp flashes	Door has been open 3 minutes or longer *
HIGH TEMP lamp flashes	Temperature reaches high temperature set point
LOW TEMP lamp flashes	Temperature reaches low temperature set point
“PoFF” appears on display	AC power failure
“Prob” appears on display	Probe circuit is open

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

14.4 Mute and Disable Audible Alarms

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.

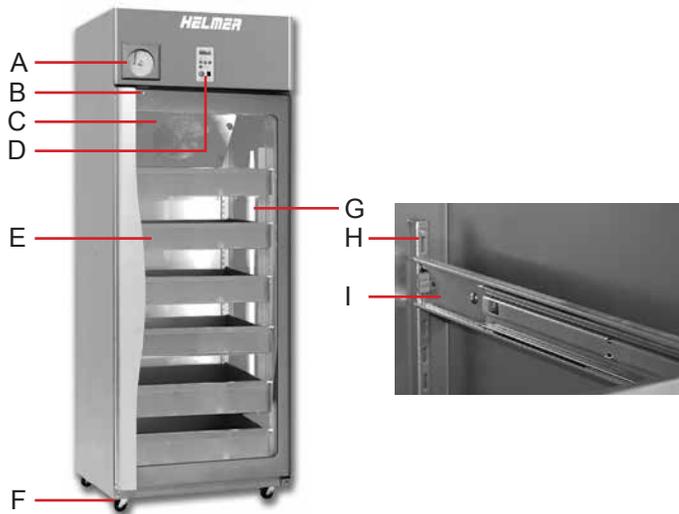
14.5 Light Operation

The light switch is located on the monitoring and control panel.



15 Components

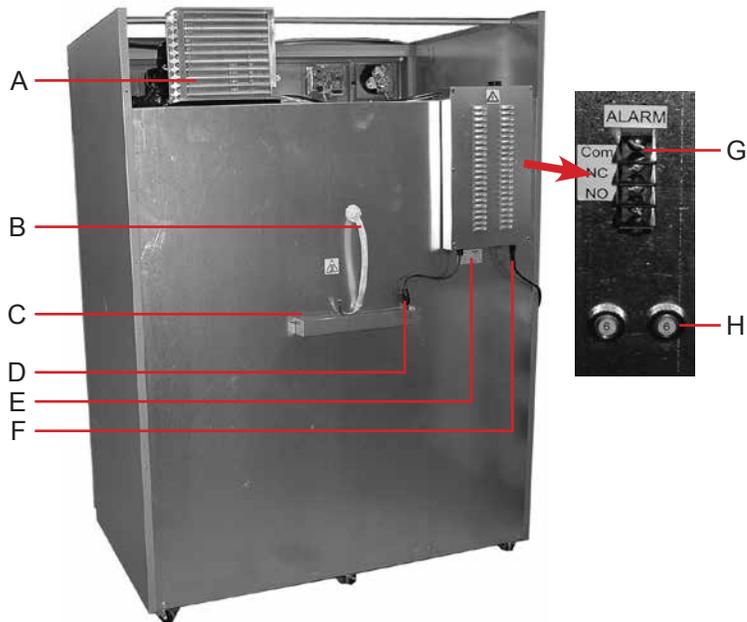
15.1 Front and Chamber



Chamber and front features (HB120 model shown).

Label	Description
A	Chart recorder (standard on blood bank models, optional on laboratory and pharmacy models)
B	Door lock
C	Unit cooler with fan guard
D	Laboratory combined monitoring and control system
E	Drawer
F	Caster
G	Light
H	Standard for adjusting storage components
I	Drawer/basket slide
Not shown	Probe bottle

NOTE Blood bank models (HHB) and pharmacy models (HPR) feature drawers as the standard storage configuration. Laboratory models (HLR) feature shelves as the standard storage configuration. Any combination of drawers or shelves may be installed.

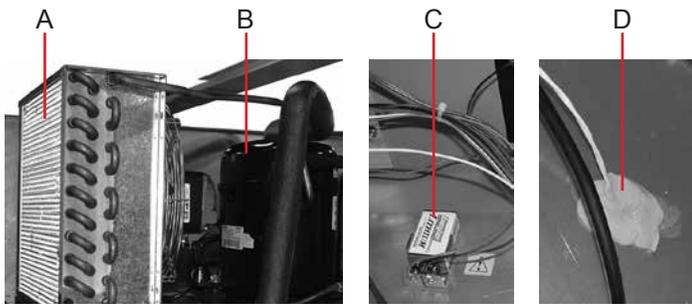


Rear features (HB256 model shown).

Label	Description
A	Condenser grill
B	Drain line
C	Water evaporation tray
D	Condensate evaporator
E	Product specification label
F	Power cord
G	Remote alarm interface
H	Circuit breakers (230 V models)

15.3

Top



Top features (HHB256 model shown).

Label	Description
A	Condenser
B	Compressor
C	Monitoring system backup battery
D	Access port (number and location vary by model)

END OF MANUAL

HELMER SCIENTIFIC
14400 Bergen Boulevard
Noblesville, IN 46060 USA

PH +1.317.773.9073
FAX +1.317.773.9082
www.helmerinc.com

