



# REF20 Upright

## laboratory & pharmacy refrigerators

### Features

Powerful refrigeration system and superior plenum air distribution

- modular refrigeration system with microprocessor controller provides a  $\pm 1$  C (1.8 F) performance throughout
- industry-exclusive plenum air distribution delivers cold air at six different levels
- frost-free and auto-evaporating condenser

User-friendly interface

- 7" LCD capacitive touchscreen digital temperature display available in user-programmable C or F
- integral event and data logging with easy downloading via convenient USB port

Protection for your valuable products

- audible and visual high/low temperature, door open, power failure, low battery alarms
- dry contacts for remote alarming

Full stainless steel cabinet and high quality components

- full stainless steel interior and exterior provide resistance to rust and corrosion
- quick-connect RTD product temperature probe easily accessible inside storage cabinet
- dished stainless floor contains spills for easy clean up
- heavy-duty dual casters roll easily and lock securely
- 2.75" (6.98 cm) of CFC-free foam insulation throughout
- four heavy-duty epoxy-coated shelves standard on LB models, six baskets standard on PH models

Heavy-duty door for ease of use and energy savings

- dual-pane glass door with ADA-compliant full length locking handle
- energy efficient low-E glass coating to reduce energy loss by 30 - 50% compared to non-coated glass
- glass remains condensation-free to 27 C (80 F) at 60% RH and eliminates need for heated doors in most applications
- self-closing hinges lock open at 90 degrees for easy product loading

Cool, energy-efficient LED lights

- full length LED light bars illuminate all shelves or baskets
- instant-on LEDs eliminate delay of fluorescent lights and deliver longer life
- energy-efficient LEDs allow products to be placed next to lights
- auto-on with door opening; ON/OFF front panel switch

Warranty

- 2 years parts, 5 years compressor parts, 2 years labor

Model configurations					
Storage system	Hinging	Heated door	Keypad	Door style	Item number
4 shelves	right	yes	yes	glass	<b>REF20-LB-RHTKPG</b>
4 shelves	right	yes	no	glass	<b>REF20-LB-RHT00G</b>
4 shelves	right	no	yes	glass	<b>REF20-LB-R00KPG</b>
4 shelves	right	no	yes	stainless steel	<b>REF20-LB-R00KPS</b>
4 shelves	right	no	no	glass	<b>REF20-LB-R0000G</b>
4 shelves	right	no	no	stainless steel	<b>REF20-LB-R0000S</b>
4 shelves	left	yes	yes	glass	<b>REF20-LB-LHTKPG</b>
4 shelves	left	yes	no	glass	<b>REF20-LB-LHT00G</b>
4 shelves	left	no	yes	glass	<b>REF20-LB-L00KPG</b>
4 shelves	left	no	yes	stainless steel	<b>REF20-LB-L00KPS</b>
4 shelves	left	no	no	glass	<b>REF20-LB-L0000G</b>
4 shelves	left	no	no	stainless steel	<b>REF20-LB-L0000S</b>
6 baskets	right	yes	yes	glass	<b>REF20-PH-RHTKPG</b>
6 baskets	right	yes	no	glass	<b>REF20-PH-RHT00G</b>
6 baskets	right	no	yes	glass	<b>REF20-PH-R00KPG</b>
6 baskets	right	no	yes	stainless steel	<b>REF20-PH-R00KPS</b>
6 baskets	right	no	no	glass	<b>REF20-PH-R0000G</b>
6 baskets	right	no	no	stainless steel	<b>REF20-PH-R0000S</b>
6 baskets	left	yes	yes	glass	<b>REF20-PH-LHTKPG</b>
6 baskets	left	yes	no	glass	<b>REF20-PH-LHT00G</b>
6 baskets	left	no	yes	glass	<b>REF20-PH-L00KPG</b>
6 baskets	left	no	yes	stainless steel	<b>REF20-PH-L00KPS</b>
6 baskets	left	no	no	glass	<b>REF20-PH-L0000G</b>
6 baskets	left	no	no	stainless steel	<b>REF20-PH-L0000S</b>

Job \_\_\_\_\_

Item \_\_\_\_\_

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## Factory-installed options

Left-hinged door, facing unit (right-hinged door standard)

Integral keypad and electronic locking system with keyed access manual override

Solid stainless steel door with 2.60" (6.60 cm) thick insulation and ADA-compliant full-length locking handle (full-length glass door standard)

Heated glass door and frame (recommended for ambients above 27 C (80 F), 60% RH)(glass door only)

NOTE: Factory-installed options must be specified at time of order – for details contact factory or your local sales representative.

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## Accessories

Additional shelves, set of 2 (item# 00927251)

Quick-connect replacement RTD temperature probe with ISO 17025 certificate of traceable calibration (item# 01140458)

Pyxis® compatible door bracket (item# 00927202)

Omniceil® compatible door bracket (item# 00966432)

medDISPENSE® compatible door bracket (item# 00978296)

Glycerine, 16 oz (item# 00959296)

Additional key (item# 00945436) for glass door

Additional key (item# 01035013) for solid door

Wall bracket kit, seismic anchoring (item# 00927194)

NOTE: Accessories ship separately.

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Touchscreen display



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Heavy-duty epoxy coated shelves on LB models



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"Floating" basket system on PH models



## Specification

Nominal capacity	19.7 cu ft
Ventilation clearance	10.00" (25.4 cm) top, 2.00" (5.08 cm) back

### Exterior

<b>W1</b> Width	29.75" (75.6 cm)
<b>D1</b> Depth with handle	30.50" (77.5 cm)
<b>H1</b> Height with casters	79.50" (201.9 cm)
Casters	(4) swiveling dual wheel casters with toe locks
<b>D2</b> Door swing	56.50" (143.5 cm)

### Interior

Height	55.94" (142.1 cm)
Lighting	(2) energy efficient full length LED lights
Storage system	(4) full, epoxy-coated shelves, adjustable in 1/2" (1.27 cm) increments on LB models, (6) full extension, epoxy-coated baskets on PH models
Shelf dimensions (LB models)	23.38" W x 19.50" D (59.4 cm x 49.5 cm)
Overall basket dimensions (PH models)	23.50" W x 20.00" L x 6.38" D (59.7 x 50.8 x 16.21 cm)
Inside basket dimensions (PH models)	21.75" W x 19.25" L x 5.88" D (55.2 x 48.9 x 14.94 cm)
Space between baskets (PH models)	8.00" (20.32 cm)
Working load rating per shelf or basket	59 lb (27 kg)
Max. load rating per shelf or basket	88 lb (40 kg)

### Door configurations

Door	dual-pane glass door or solid stainless steel
Door lock	cylinder type with one key
Door handle	ADA-compliant, full length handle
Door hinges	torsion rod self-closing with 90° hold open feature
Gasket	magnetic dart style (replaceable)

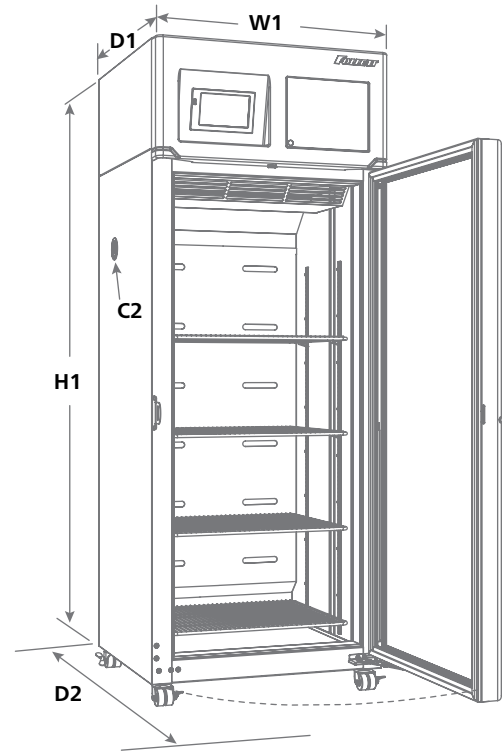
### Electrical

<b>C1</b> Electrical 115 V/60/1 (103 - 132 V)	8.4 run load amps, NEMA 5-15 90° hospital-grade plug. Max. fuse 15 amps, 9' (2.7 m) cord.
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### Controls

Temperature display	7" LCD capacitive touchscreen digital temperature display available in user-programmable C or F
<b>C2</b> 3rd party probe access	soft access port on left side of cabinet
Product temperature display probe	(1) quick-connect RTD ( $\pm 0.4$ C, $\pm 0.7$ F)
Temperature probe calibration	top probe calibration in 0.1° increments
Password protection PIN	4 digit password to prevent interface setting/selection changes
Date and time	programmable
Product simulation bottle size	(1) 125 ml
Refrigeration and defrost probes	NTC thermistor type

## Dimensional drawing



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Refrigeration cycle with probe error	factory set at 4 min on, 8 off, user adjustable
Programmable operating range	2.2 to 10 C (36 to 50 F)
Factory preset	4.4 C

### Alarming

High and low product temperature alarm	audible and visual, user programmable set points in C or F
Power failure alarm	audible and visual
Door ajar alarm	audible and visual
Probe error alarm	audible and visual – product temperature probes, refrigeration and defrost
Alarm mute	10 minute ring-back
Alarm volume	0-10 scale
Low battery alert	audible and visual
Back-up battery status	shows voltage level
Min/max temperature log	shows highest and lowest product temperature since last reset occurred
Remote contacts	NO/NC standard, located behind front panel

### Data logging

Information log	graphs or displays temperature data and displays chronological event data (50,000 data points)
Data export	USB export capabilities

### System performance

Top-to-bottom temperature consistency	± 1 C (1.8 F)
Refrigeration system	integral top-mounted module with 1/3 hp compressor and air-cooled condenser
Refrigerant and charge	non-CFC R134a refrigerant, 11.4 oz
Air circulation system	ducted air to each storage level through back plenum openings, front face return
Air temperature pull down	24 to 5 C (75 to 41 F) in 30 minutes
Product simulation bottle temperature pull down	24 to 5 C (75 to 41 F) in 120 minutes
Energy consumption	5.4 kWh/day (auto-off defrost)
BTU/hr normal heat rejection, includes duty cycle (75 F ambient)	955 BTU/hr (280 Watts)
BTU/hr maximum (total) heat rejection, continuous operation (75 F ambient)	3185 BTU/hr (933 Watts)

### Shipping

Shipping size	43.00" W x 35.00" D x 82.00" H (109.2 x 88.9 x 208.3 cm)
Approximate refrigeration module net weight	62 lb (28 kg)
Approximate net weight	REF20-LB models – 290 lb (132 kg) REF20-PH models – 380 lb (172 kg)
Approximate ship weight	REF20-LB models – 397 lb (180 kg) REF20-PH models – 460 lb (209 kg)

NOTE: For indoor use only

SHORT FORM SPECIFICATION: Upright refrigerator with 19.7 cu ft of nominal capacity. To include (choose one) \_\_\_\_ (4) full, epoxy-coated shelves, adjustable in 1/2" (1.27 cm) increments or \_\_\_\_ 6 full extension, epoxy-coated "floating" baskets. Environmentally responsible R134a refrigeration system to include an integral top-mounted module with 1/3 hp compressor and air-cooled condenser. 7" LCD capacitive touchscreen with user selectable C or F. Event and data logging with USB download capability. Air circulation system to duct air through back plenum openings with front face return. Storage area to be insulated with CFC-free, high density polyurethane foam. 9' (2.7 m) power cord with NEMA 5-15 90° hospital-grade plug. UL listed.

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