REF45 Upright

double door blood bank refrigerators

Features

Powerful refrigeration system and superior plenum air distribution

- modular refrigeration system with microprocessor controller provides a ±1 C (1.8 F) performance throughout
- industry-exclusive center plenum air distribution delivers cold air to both sides at six different levels
- auto-evaporating condensate
- meets AABB, ARC and FDA standards for blood storage at 1 to 6 C

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
- integral 6.00" (15.24 cm) 7-day chart recorder standard with 50 Celsius charts
- dry contacts for remote alarming

Superior drawer system for easy, trouble-free rolling

- twelve (six per side) full-extension stainless steel drawers store up to (816) 450 ml bags
- stainless steel roller bearings and S-track design eliminate binding and uneven wear
- drawers and slides lift out without tools for easy cleaning
- track/drawer interface minimizes risk of catching product tubing in slides

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 CARB compliant non-HFC foam throughout

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

Model configurations					
Storage system	Hinging	Heated door	Keypad	Door style	**Item number**
12 drawers	outer	yes	yes	heated glass	**REF45-BB-0HTKPG**
12 drawers	outer	yes	no	heated glass	**REF45-BB-0HT00G**
12 drawers	outer	no	yes	glass	**REF45-BB-000KPG**
12 drawers	outer	no	no	glass	**REF45-BB-00000G**
12 drawers	right	yes	no	heated glass	**REF45-BB-RHT00G**
12 drawers	right	no	no	glass	**REF45-BB-R0000G**
12 drawers	left	yes	no	heated glass	**REF45-BB-LHT00G**
12 drawers	left	no	no	glass	**REF45-BB-L0000G**

Outer   Left   Right

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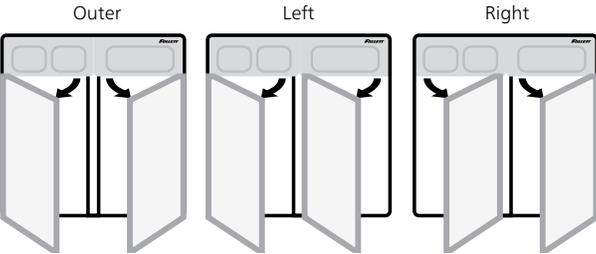
Features (continued)

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

Warranty
  - 2 year parts and labor
  - 5 year compressor parts only
  - optional extended one year warranty (item# EW12)
      • 3 year parts and labor
      • 5 year compressor parts only
  - optional extended three year warranty (item# EW36)
      • 5 year parts and labor

Certifications

Commercial Refrigerator
SAFETY US/CA – SA12646

Factory-installed options:

Integral keypad and electronic locking system with keyed access manual override (available on outer-hinged units only)
    Keypad integral to touchscreen controls; electronic locking mechanism opens both doors simultaneously
Heated glass door and frame (recommended for ambients above 27 C (80 F), 60% RH)
NOTE: Factory-installed options must be specified at time of order – for details contact factory or your local sales representative.

Accessories

Replacement "quick connect" RTD probe with certificate of NIST-traceable calibration, REF12, REF20/25, REFVAC20/25, REF45 and REFVAC45 before serial number Q86639, FZR20/25 and FZRVAC20/25 (item# 01140458)

Replacement "quick connect" RTD probe with certificate of NIST-traceable calibration, REF45 and REFVAC45 after serial number Q86638 (item# 01540640)

Replacement high-side refrigeration module (complete condensing unit) (item# 01147891)

Glycerine, 16 oz (item# 00959296)

Wall bracket kit, seismic anchoring (item# 00927194)

NOTE: Accessories ship separately.

Touchscreen display

Integral 6.00" (15.24 cm) 7-day chart recorder
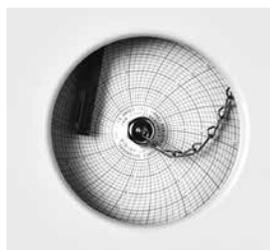
Specification

Nominal capacity	45 cu ft (1274 L)
Ventilation clearance	16.00" (40.6 cm) top, 2.00" (5.08 cm) back

Exterior

W1 Width	59.75" (151.7 cm)
D1 Depth with handle	33.55" (85.2 cm)
H1 Height with casters	79.54" (202.0 cm)
Casters	(6) swiveling dual wheel casters with toe locks
D2 Door swing	59.55" (151.3 cm)

Interior

Height	54.31" (138.0 cm) with upper return panel
Lighting	(2) energy efficient full length LED lights
Storage system	(12) full-extension stainless steel drawers (6 per side)
Inside drawer dimensions	22.50" W x 24.69" D x 3.00" H (57.5 cm x 62.7 cm x 7.62 cm)
Space between drawers	8.00" (20.32 cm) fixed
Blood bag capacity per drawer	68
Max. load rating per drawer	117 lb (53 kg)

Door configurations

Door	(2) dual-pane glass, argon filled with low-E coating (heated opt)
Door lock	cylinder type with one key per door
Door handle	ADA-compliant, full length handle
Door hinges	torsion rod self-closing with 90º hold open feature
Gasket	magnetic dart style (replaceable)

Electrical

Electrical 115 V/60/1 (103 - 132 V)	12 full load amps, NEMA 5-20P, 90º hospital-grade plug, 9' (2.7 m) cord.
Maximum size of branch circuit overcurrent device	20 amps dedicated circuit

Controls

Temperature display	7" LCD capacitive touchscreen digital temperature display available in user-programmable C or F
3rd party probe access	soft access port on left side of cabinet
Product temperature display probe	(2) quick-connect RTD ($\pm$ 0.4 C, $\pm$ 0.7 F)
Temperature probe calibration	top probe calibration in 0.1º increments
Password protection PIN	4 digit password to prevent interface setting/selection changes
Date and time	programmable
Product simulation bottle size	(2) 125 ml
Refrigeration and defrost probes	NTC thermistor type
Refrigeration cycle with probe error	factory set at 2 min on, 6 off
Programmable operating range	3.3 to 10 C (38 to 50 F)
Factory preset	3.3 C

Dimensional drawing
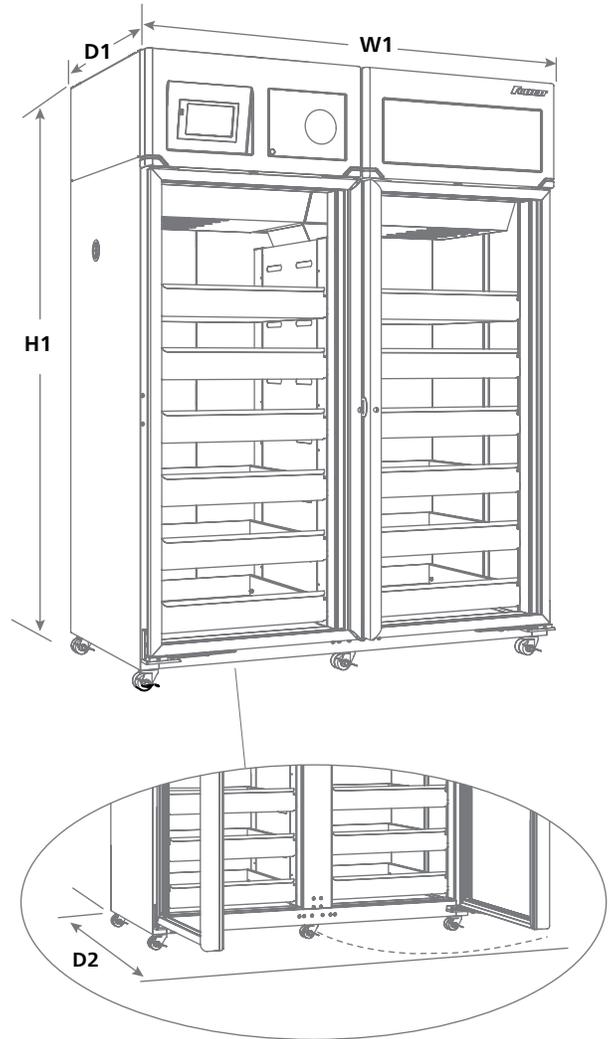
Alarming

High and low product temperature alarm (top probe)	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
Alarm mute	10 minute ring-back, adjustable
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
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 modules with 1/2 hp compressor and air-cooled condenser
Refrigerant and charge	non-CFC R134a refrigerant, 13 oz
Air circulation system	ducted air to each storage level through plenum openings
Air temperature pull down	27 to 4 C (80 to 39 F) in 60 minutes
Product simulation bottle temperature pull down	27 to 4 C (80 to 39 F) in 6 h (to 6 C (43 F) in 2 h 40 min)
Energy consumption	7.4 kWh/day (auto-off defrost)
BTU/hr normal heat rejection, includes duty cycle (75 F ambient)	1480 BTU/hr (434 W)
BTU/hr maximum (total) heat rejection, continuous operation (75 F ambient)	5240 BTU/hr (1536 W)

Shipping

Shipping size	70.00" W x 48.00" D x 83.00" H (177.8 x 121.9 x 210.8 cm)
Approximate refrigeration condenser module net weight	52 lb (24 kg)
Approximate net weight	790 lb (359 kg)
Approximate ship weight	930 lb (422 kg)

NOTE: For indoor use only

SHORT FORM SPECIFICATION: Upright double door blood bank refrigerator with 45 cu ft (1274 L) of nominal capacity. To include (12) full-extension stainless steel drawers with shielded roller bearings and stainless S-tracks. Environmentally responsible R134a refrigeration system to include top-mounted modules with 1/2 hp compressor and air-cooled condenser. 7" LCD capacitive touchscreen with user selectable C or F. Event and data logging with USB download capability. Integral 6.00" (15.24 cm) 7-day chart recorder. Air circulation system distributes cold air to both sides at 6 different levels. Storage area to be insulated with CARB compliant non-HFC foam. 9' (2.7 m) power cord with NEMA 5-20 90º hospital-grade plug. UL listed.

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