# REF45 Upright

## double door laboratory 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

### 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 CARB compliant non-HFC foam throughout
- 8 heavy-duty epoxy-coated shelves standard (4 per side)
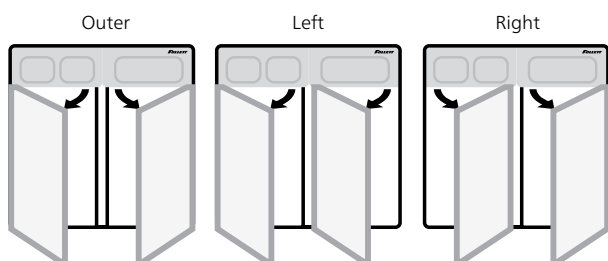
### Heavy-duty door for ease of use and energy savings
- dual-pane glass door or solid stainless door with ADA-compliant full length locking handle
- energy efficient low-E glass coating to reduce energy loss by 30 - 50% compared to non-coated glass
- glass remains condensation-free to 27 C (80 F) at 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
- 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

| Model configurations | | | | | |
|---|---|---|---|---|---|
| Storage system | Hinging | Heated door | Keypad | Door style | Item number |
| 8 shelves | outer | yes | yes | heated glass | REF45-LB-0HTKPG |
| 8 shelves | outer | yes | no | heated glass | REF45-LB-0HT00G |
| 8 shelves | outer | no | yes | glass | REF45-LB-000KPG |
| 8 shelves | outer | no | yes | stainless steel | REF45-LB-000KPS |
| 8 shelves | outer | no | no | glass | REF45-LB-00000G |
| 8 shelves | outer | no | no | stainless steel | REF45-LB-00000S |
| 8 shelves | right | yes | no | heated glass | REF45-LB-RHT00G |
| 8 shelves | right | no | no | glass | REF45-LB-R0000G |
| 8 shelves | right | no | no | stainless steel | REF45-LB-R0000S |
| 8 shelves | left | yes | no | heated glass | REF45-LB-LHT00G |
| 8 shelves | left | no | no | glass | REF45-LB-L0000G |
| 8 shelves | left | no | no | stainless steel | REF45-LB-L0000S |

Outer          Left          Right

## Features (continued)

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

UL CERTIFIED
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

Additional shelves (2), REF45-LB (item# 00927269)

Replacement "quick-connect" RTD probe with certificate of NIST-traceable calibration (item# 01140458)

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

Pyxis® compatible door bracket, available on one outside handled door of right or left hinged models only (item# 00927202)

Omnicell® compatible door bracket, available on one outside handled door of right or left hinged models only (item# 00966432)

medDISPENSE® compatible door bracket, available on one outside handled door of right or left hinged models only (item# 00978296)

Glycerine, 16 oz (item# 00959296)

Additional key for glass door (item# 00945436)

Additional key for stainless steel door (item# 01035013)

Wall bracket kit, seismic anchoring (item# 00927194)

NOTE: Accessories ship separately.

Touchscreen display



Heavy duty epoxy coated shelves

## Specification

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

### Exterior

| | |
|---|---|
| **W1** Width | 59.75" (151.8 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 | (8) full, epoxy-coated shelves adjustable in 1/2" (1.27 cm) increments |
| Overall shelf dimensions | 23.38" W x 25.50" D (59.4 cm x 64.8 cm) |
| Max. load rating per shelf | 125 lb (57 kg) |
| Max number of shelves per side | 10 |

### Door configurations

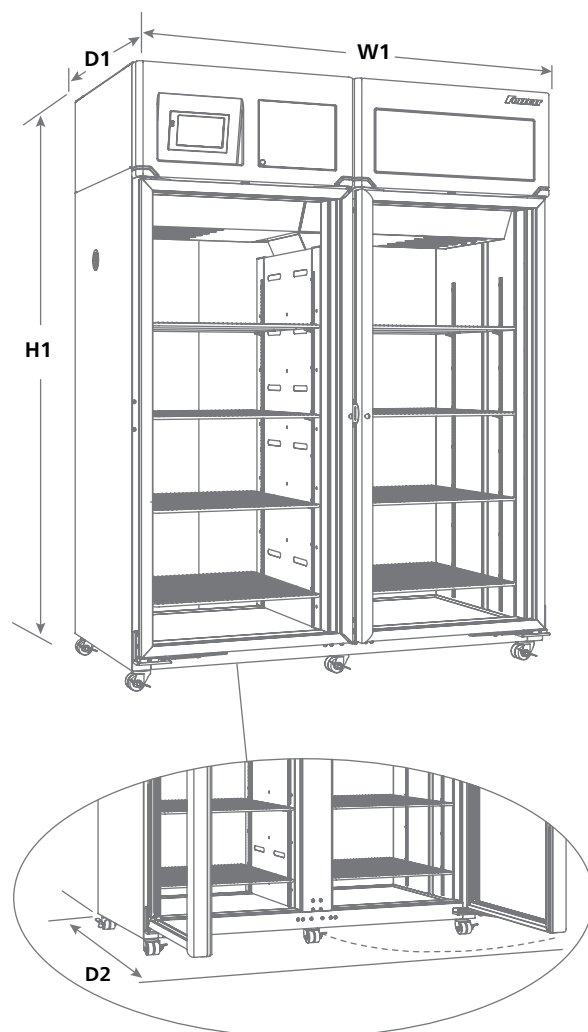| | |
|---|---|
| Door | (2) dual-pane glass, argon filled with low-E coating (heated opt) or stainless steel |
| Door lock | cylinder type with one key per door |
| Door handle | ADA-compliant, full length handle |
| Door hinges | torsion rod self-closing with 90º hold open feature |
| Gasket | magnetic 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 | (1) quick-connect RTD (± 0.4 C, ± 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 | (1) 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—product temperature probes, refrigeration and defrost |
| 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 |

## 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 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 30 minutes |
| Product simulation bottle temperature pull down | 27 to 4 C (80 to 39 F) in 5 h 45 min (to 8 C (46 F) in 1 h 50 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" L 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 | 610 lb (277 kg) |
| Approximate ship weight | 750 lb (341 kg) |
| NOTE: For indoor use only | |

SHORT FORM SPECIFICATION: Upright double door refrigerator with 45 cu ft of nominal capacity. To include (8) epoxy-coated shelves, adjustable in 1/2" (1.27 cm) increments. 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. 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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