Freedom Line RFM with INNOVATOR Doors

Medium Temperature
Technical Data Sheet
P/N 3056469_B
NSF® Certified
October 2018

Options shown:
- Lighted Facades

Warning:
Terminal block NOT for case-to-case wire connection!

We reserve the right to change or revise specifications and product design in connection with any feature of our products. Such changes do not entitle the buyer to corresponding changes, improvements, additions or replacements for equipment previously sold or shipped.

Refer to Innovator Reach-In Glass Door Installation and Service manual, P/N 0425683, for Innovator and Innovator II door and frame replacement parts.

Note: Revision B: Updated refrigerant charges.
**PHYSICAL DATA**

- Merchandiser Drip Pipe (in.) 1 \(\frac{1}{4}\)
- Merchandiser Liquid Line (in.) 3\(\frac{3}{8}\)
- Merchandiser Suction Line (in.) 5\(\frac{3}{8}\)

Dimensions shown as inches and (mm).

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**Freedom Line — Standard**

**Plan View**

4 Door

**General**

(A) Case Length (without ends or partitions)

2 Dr 3 Dr 4 Dr 5 Dr

26\(\frac{1}{2}\) (673) 34\(\frac{5}{8}\) (879) 43\(\frac{3}{4}\) (1111) 50 (1270)

**NOTE:** Each solid end adds approximately 2\(\frac{3}{8}\) in (60 mm) to length of line up; each partition add approximately 2\(\frac{3}{4}\) in (70 mm); case to case joints can add approximately 1\(\frac{1}{8}\) in (3 mm) for gasket material.

**Electrical Service**

(B) RH end of case to the center of nearest knockout

2 Dr 3 Dr 4 Dr 5 Dr

43\(\frac{3}{4}\) (1111) 43\(\frac{3}{4}\) (1111) 43\(\frac{3}{4}\) (1111) 43\(\frac{3}{4}\) (1111)

*NOTE: Electrical Field Wiring Connection Point is at terminal.*

**Waste Outlet**

(C) Right end of case to center of waste outlet

2 Dr 3 Dr 4 Dr 5 Dr

23\(\frac{7}{8}\) (606) 34\(\frac{5}{8}\) (879) 34\(\frac{5}{8}\) (879) 34\(\frac{5}{8}\) (879)

**NOTE:** Field installed water seal outlets, tees, and connectors are shipped with case.

**Water Seal**

Edge of water seal to center of waste outlet

13 (330) 13 (330) 13 (330) 13 (330)

Schedule 40 PVC drip pipe

1\(\frac{1}{4}\) (32) 1\(\frac{1}{4}\) (32) 1\(\frac{1}{4}\) (32) 1\(\frac{1}{4}\) (32)

**Refrigeration Outlet**

RH end of case to center of RH refrigeration outlet

5\(\frac{3}{8}\) (137) 5\(\frac{3}{8}\) (137) 5\(\frac{3}{8}\) (137) 5\(\frac{3}{8}\) (137)

Back O/S of case to center of refrigeration outlet

32 (813) 32 (813) 32 (813) 32 (813)

Outside bottom front supports from end of case

6\(\frac{3}{4}\) (170) 6\(\frac{3}{4}\) (170) 6\(\frac{3}{4}\) (170) 6\(\frac{3}{4}\) (170)

Center bottom front support from Centerline

24 (610) 24 (610) 24 (610) 24 (610)

Distance between Center and Outside supports will vary.
**Freedom Line** Reach-in
Top-Mount-Refrigeration Ready
2, 3, 4 & 5 Door Models

*Standard Reach-in configuration consists of Innovator I doors, energy efficient fan motors, and EcoShine II LED vertical lighting.*

**DOE 2017 Energy Efficiency Compliant**

Hussmann refrigerated merchandisers configured for sale for use in the United States meet or surpass the requirements of the DOE 2017 energy efficiency standards.

Provide adequate clearance for air circulation at rear to reduce condensation.

Dimensions shown as inches and (mm).

Note: Facade is field-installed. Electrical connection box, external supports, door handle and front raceway may be removed to facilitate passage through door way.

**NSF Certification**

This merchandiser model is manufactured to meet NSF/ANSI (National Sanitation Foundation) Standard #7 requirements for construction, materials & cleanability.

**REFRIGERATION DATA**

*Note: This data is based on store temperature and humidity levels that do not exceed NSF guidelines.*

<table>
<thead>
<tr>
<th>MEDIUM TEMP</th>
<th>AHRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Air °F</td>
<td>32</td>
</tr>
<tr>
<td>Evaporator °F</td>
<td>27</td>
</tr>
<tr>
<td>Unit Sizing °F</td>
<td>25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Btu/hr/Door</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>NSF Type I</td>
</tr>
<tr>
<td>Temp °F / R.H. 75% 55%</td>
</tr>
</tbody>
</table>

**INNOVATOR**

- Parallel: 480 505 470
- Conventional: 500 525 490

§ Average evaporator temperature shown. Use dew point for high glide refrigerants for unit sizing. Care should be taken to use the dew point in PT tables for measuring and adjusting superheat. Adjust evaporator pressure as needed to maintain discharge air temperature shown.

**DEFROST DATA**

- Frequency (hr): 24
- Defrost Water (lb/Dr/day): 0.36 (± 15% based on case configuration and product loading.)
- Offtime:
  - Temp Term (°F): 48
  - Failsafe (minutes): 40

**CONVENTIONAL CONTROLS**

<table>
<thead>
<tr>
<th>Cut In</th>
<th>Cut Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPC (psig)</td>
<td>320</td>
</tr>
<tr>
<td>LPC (psig)</td>
<td>15</td>
</tr>
</tbody>
</table>

Working charge with recommended Condensing Unit installed:

- 2Dr: 4.4 lb 70.4 oz 2.00 kg
- 3Dr: 4.9 lb 78.4 oz 2.22 kg
- 4Dr: 5.6 lb 89.6 oz 2.54 kg
- 5Dr: 6.1 lb 97.6 oz 2.77 kg

based on 27°F (-2.8°C) Evaporator temperature for medium temperature applications.
**Freedom Line RFM with Innovator Doors**

**Medium Temperature**

**Technical Data Sheet**

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**Hussmann recommends against frame heater cycling with Innovator doors or Innovator III doors to prevent door seals from freezing to the frames and tearing.**

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### Electrical Data

<table>
<thead>
<tr>
<th></th>
<th>2Dr</th>
<th>3Dr</th>
<th>4Dr</th>
<th>5Dr</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Fans—12W</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Merchandiser</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Efficient Evaporator Fan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>120V 50/60Hz Innovator</td>
<td>0.60</td>
<td>0.90</td>
<td>1.20</td>
<td>1.50</td>
</tr>
</tbody>
</table>

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**Door Anti-sweat Heaters (on fan circuit)**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>120V 50/60Hz Innovator</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Frame Anti-sweat Heaters (on fan circuit)**

<table>
<thead>
<tr>
<th></th>
<th>2Dr</th>
<th>3Dr</th>
<th>4Dr</th>
<th>5Dr</th>
</tr>
</thead>
<tbody>
<tr>
<td>120V 50/60Hz Innovator</td>
<td>0.39</td>
<td>0.59</td>
<td>0.79</td>
<td>0.99</td>
</tr>
</tbody>
</table>

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**Heated Condensate Pan**

<table>
<thead>
<tr>
<th></th>
<th>2Dr</th>
<th>3Dr</th>
<th>4Dr</th>
<th>5Dr</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
<td>600</td>
</tr>
</tbody>
</table>

**Condensate Pump**

<table>
<thead>
<tr>
<th></th>
<th>2Dr</th>
<th>3Dr</th>
<th>4Dr</th>
<th>5Dr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
<td>87</td>
</tr>
</tbody>
</table>

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**Defrost**

**Drain Heaters (120V)**

<table>
<thead>
<tr>
<th></th>
<th>2Dr</th>
<th>3Dr</th>
<th>4Dr</th>
<th>5Dr</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**120V Circuit**

*(Fans, anti-sweat heaters, drain pan heater, condensate pan heater, condensate pump, and standard EcoShine II LED’s)*

<table>
<thead>
<tr>
<th></th>
<th>2Dr</th>
<th>3Dr</th>
<th>4Dr</th>
<th>5Dr</th>
<th>2Dr</th>
<th>3Dr</th>
<th>4Dr</th>
<th>5Dr</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Innovator Doors (standard)</td>
<td>8.0</td>
<td>8.8</td>
<td>9.6</td>
<td>10.5</td>
<td>813</td>
<td>877</td>
<td>939</td>
<td>1003</td>
</tr>
<tr>
<td>Maximum Overcurrent</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Standard Vertical LED Lighting**

<table>
<thead>
<tr>
<th></th>
<th>2Dr</th>
<th>3Dr</th>
<th>4Dr</th>
<th>5Dr</th>
<th>2Dr</th>
<th>3Dr</th>
<th>4Dr</th>
<th>5Dr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hussmann EcoShine II™ - A (120V)</td>
<td>0.31</td>
<td>0.46</td>
<td>0.62</td>
<td>0.77</td>
<td>37.1</td>
<td>55.6</td>
<td>74.2</td>
<td>92.7</td>
</tr>
</tbody>
</table>

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† Notes:

1. Electrical input for the RFM Freedom cases require two electrical connections at the top of the case: one 120V connection for the RFM and one 208/230V or 120V connection for the condensing unit.

2. The condensing unit amps must be used to calculate the total electrical load. Refer to the condensing unit data sheet.

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*A qualified electrician should perform all wiring in accordance with the NEC code and/or all local codes. Wire sizing must take into account the total distance from the electrical panel to the Freedom case.*

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4 of 9
Product Data

Recommended Usable Cube 1 (Cu Ft/Dr) 23.46 ft³/Dr (0.66 m³/Dr)
AHRI Total Display Area 2 (Sq Ft/Dr) 13.31 ft²/Dr (1.24 m²/Dr)
Shelf Area 3 (Sq Ft/Dr) 29.32 ft²/Dr (2.72 m²/Dr)

1 AHRI Refrigerated Volume less shelving and other unusable space: Refrigerated Volume/Unit of Length, ft³/ft³
2 AHRI 1200 standard methodology: Total Display Area, ft²/m²/Unit of Length, ft [m]
3 Shelf surface area is composed of bottom deck plus standard shelf complement, as shown in the Hussmann Product Reference Guide. The standard shelf complement for this model is (5) rows of 22-inch shelves.

ESTIMATED SHIPPING WEIGHT 4

<table>
<thead>
<tr>
<th></th>
<th>2 Dr</th>
<th>3 Dr</th>
<th>4 Dr</th>
<th>5 Dr</th>
<th>Solid End (each)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freedom Line Merchandiser (18-Inch Facade, no Arch)</td>
<td>997 (453)</td>
<td>1295 (589)</td>
<td>1595 (725)</td>
<td>1874 (852)</td>
<td></td>
</tr>
</tbody>
</table>

4 Actual weights will vary according to optional kits included.
Fan and Heater Circuits – Offtime Defrost (Standard)
Medium Temperature

**CIRCLED NUMBERS = PARTS LIST ITEM NUMBERS**

- **R** = Red
- **P** = Purple
- **2P** = Purple (2 Bands)
- **DB** = Dark Blue
- **BK** = Black
- **LB** = Light Blue
- **Pink** = Pink
- **BR** = Brown
- **Y** = Yellow
- **OR** = Orange
- **W** = White

**THESE ARE MARKER COLORS (WIRE MAY VARY).**

Refer to Innovator Reach-In Glass Door, Installation and Service manual, P/N 0425683, for Innovator door and frame replacement parts.

**WARNING**
All components must have mechanical ground, and the merchandiser must be grounded.

- **●** = 120V Power
- **○** = 120V Neutral
- **‖** = Field Ground
- **mhm** = Case Ground
Optional Single Point Wiring Diagram
WARNING
All components must have mechanical ground, and the merchandiser must be grounded.

Circled numbers = Parts List Item Numbers

R = Red  Y = Yellow  G = Green  BL = Blue  BK = Black  W = White

○ = 120V Power  □ = 120V Neutral  = Field Ground  = Case Ground