

Low Temperature

Technical Data Sheet  
**P/N 3002316\_E**

**NSF® Certified**

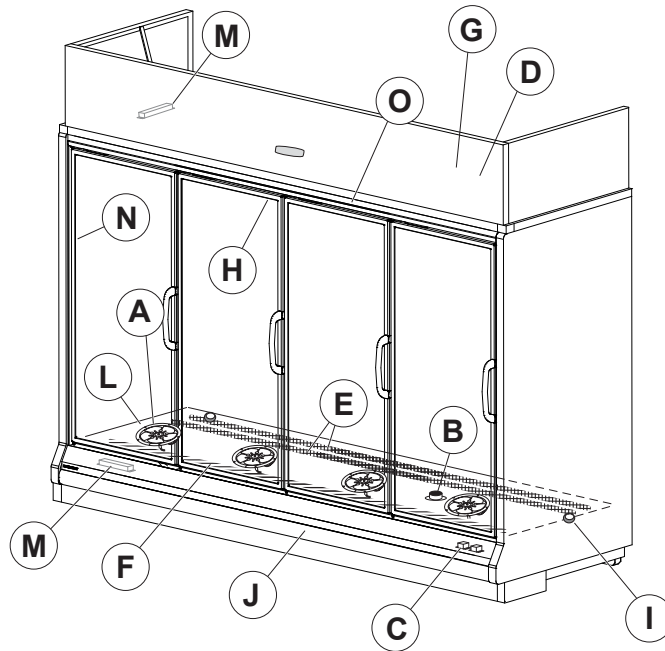
October 2018

**DOE 2017  
Energy Efficiency  
Compliant**

**Freedom Line  
merchandisers  
are top mount  
refrigeration  
ready**

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.

Item	Part #	(Qty)	Description	Wiring Item #	Item	Part #	Description	Wiring Item #
<b>FAN ASSEMBLIES AND THERMOSTATS</b>					<b>CONTROL PANEL</b>			
A.	12W Standard Energy Efficient Fan Assembly	(1)			G.	3007825	Dixell XR75 Control	(7)
	0477655		Fan Motor, Evaporator		H.	0334802	Dixell Discharge Air Sensor	(8)
	0461805		Fan Blade		I.	0334802	Dixell Defrost Sensor	(9)
<b>RELAYS</b>					<b>REFRIGERATION</b>			
B.	0344662	(2)	Defrost Limit Thermostat		J.	0516897	Condensate Pump	(10)
C.	0342599	(3)	Fan Control Relay (208V) Electrical Defrost		K.	0538255	Condensate Pan with Heater (Evapoway)	(11)
D.	0459304		Defrost and Compressor Relay		L.	0460993	TEV 3-4-5 Door Models	
<b>HEATERS</b>					<b>LED FIXTURES AND POWER SUPPLY</b>			
E.	Electric Defrost Heaters – Front (208V)	(4)			M.	0499399	Power Supply	(12)
	3015372		2 Door		N.	Door Lamp, LED		
	3015373		3 Door			BU.4440877	4100K Center	(13)
	3015374		4 Door			BU.4440878	4100K End	(14)
	3015375		5 Door		O.	Facade Lamp, LED		
	Electric Defrost Heaters — Rear (208V)	(5)				BU.4441411	2900K 29.5 In. Length	(15)
	3015376		2 Door			BU.4441412	2900K 30.5 In. Length	(15)
	3015377		3 Door					
	3015378		4 Door					
	3015379		5 Door					
F.	Drain Pan Heater — Electric (120V)	(6)						
	0387036		2 Door					
	0387037		3 Door					
	0387038		4 Door					
	0387039		5 Door					

**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 E Updated refrigerant charges.

# Engineering Plan Views

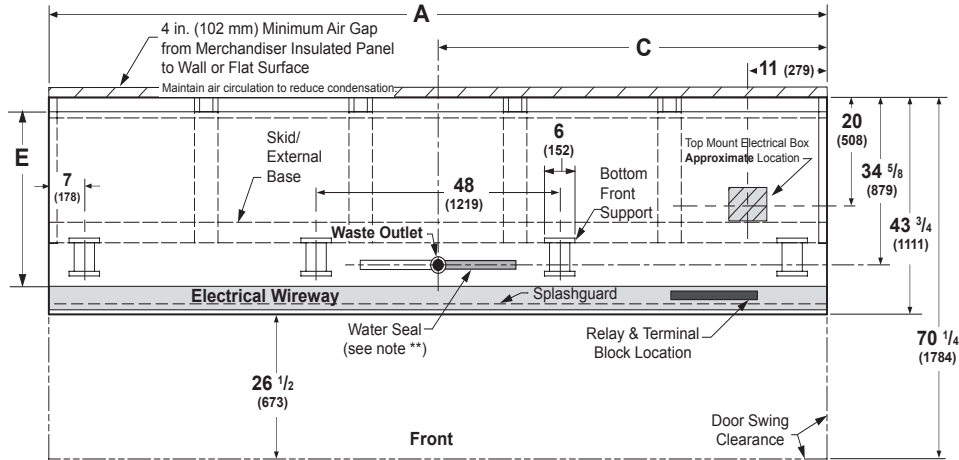
Reach-In  
3 & 4 Door

# Freedom Line RFL Plan View

PHYSICAL DATA	
Merchandiser Drip Pipe (in.)	1 1/4
Merchandiser Liquid Line (in.)	3/8
Merchandiser Suction Line (in.)	5/8

Dimensions shown as inches and (mm).

## Freedom Line — Standard Plan View 4 Door



	2 Dr	3 Dr	4 Dr	5 Dr
<b>General</b>				
<b>(A)</b> Case Length (without ends or partitions)	62 (1575)	92 1/2 (2350)	122 7/8 (3121)	153 3/8 (3896)
**NOTE: Each solid end adds approximately 2 3/8 in (60 mm) to length of line up; each partition add approximately 2 3/4 in (70 mm); case to case joints can add approximately 1/8 in (3 mm) for gasket material.				
Maximum O/S dimension of case back to front <i>(Includes bumper. Add 26 1/2 in. (673 mm) for door swing.)</i>	43 3/4 (1111)	43 3/4 (1111)	43 3/4 (1111)	43 3/4 (1111)
Back of case to rear of splashguard	39 7/8 (1013)	39 7/8 (1013)	39 7/8 (1013)	39 7/8 (1013)
Width of Skidrail	3 3/4 (95)	3 3/4 (95)	3 3/4 (95)	3 3/4 (95)
Width of Bottom Front Support	6 (152)	6 (152)	6 (152)	6 (152)
Stub-up area between front support and splashguard	3 1/8 (79)	3 1/8 (79)	3 1/8 (79)	3 1/8 (79)
<b>Electrical Service</b>				
<b>(B)</b> RH end of case to the center of nearest knockout	4 (102)	4 (102)	4 (102)	4 (102)
RH end of case to the center of LH knockout	58 (1473)	88 1/2 (2248)	118 7/8 (3019)	149 3/8 (3794)
Back O/S of case to center of knockout	41 5/8 (1058)	41 5/8 (1058)	41 5/8 (1058)	41 5/8 (1058)
* NOTE: Electrical Field Wiring Connection Point is at terminal.				
<b>Waste Outlet</b>				
<b>(C)</b> Right end of case to center of waste outlet	23 7/8 (606)	54 1/4 (1378)	46 1/4 (1175)	76 5/8 (1946)
Back O/S of case to center of waste outlet	34 5/8 (879)	34 5/8 (879)	34 5/8 (879)	34 5/8 (879)
<b>Water Seal</b>				
Edge of water seal to center of waste outlet	13 (330)	13 (330)	13 (330)	13 (330)
Schedule 40 PVC drip pipe	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)
** NOTE: Field installed water seal outlets, tees, and connectors are shipped with case				
<b>Refrigeration Outlet</b>				
RH end of case to center of RH refrigeration outlet	5 3/8 (137)	5 3/8 (137)	5 3/8 (137)	5 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 3/4 (170)	6 3/4 (170)	6 3/4 (170)	6 3/4 (170)
Center bottom front support from Centerline	24 (610)	24 (610)	24 (610)	24 (610)
<i>Distance between Center and Outside supports will vary</i>				

# Freedom Line Reach-in Top-Mount-Refrigeration Ready 2, 3, 4 & 5 Door Model

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

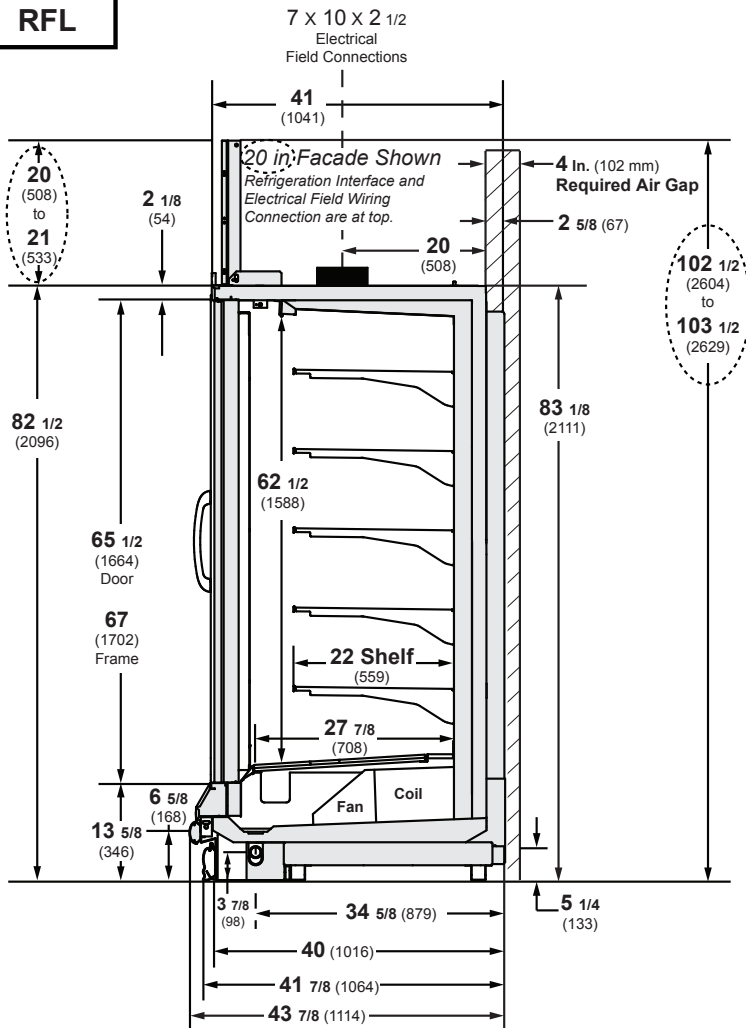


Hussmann refrigerated merchandisers configured for sale for use in the United States meet or surpass the requirements of the DOE 2017 energy efficiency standards.

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

Dimensions shown as inches and (mm).

**Freedom  
Line  
RFL**



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

## Freedom Line RFL With Innovator Doors or Innovator III Doors Low Temperature

### REFRIGERATION DATA

Note: This data is based on store temperature and humidity that does not exceed 75°F and 55% R.H.

	FF	IC	AHRI Rating*
Discharge Air (°F)	-5	-12	-2
Evaporator (°F)	-11	-19	-7
Unit Sizing (°F)	-14	-22	-10

\*With door A/S controller

### Btu/hr/Door

	FF	IC	AHRI Rating*
<b>INNOVATOR</b>			
Parallel	955	1065	910
Conventional	970	1085	940
<b>INNOVATOR III</b>			
Parallel	935	1035	
Conventional	955	1055	

§ 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

	FF	IC
Frequency (hr)	24	24
Defrost Water (lb/Dr/day)	1.2	1.2

(± 15% based on merchandiser configuration and product loading.)

<b>ELECTRIC</b>	FF	IC
Temp Term (°F)	48°	48°
Failsafe (minutes)	45	45

<b>GAS</b>	FF	IC
OFFTIME	Not Available	Not Recommended

### CONVENTIONAL CONTROLS

	Cut In	Cut Out
HPC (psig)	320	395
LPC (psig)	15	5

### Working charge with recommended Condensing Unit installed:

2Dr	6 lb	96 oz	2.72 kg
3Dr	6.45 lb	103.2 oz	2.93 kg
4Dr	6.9 lb	110.4 oz	3.13 kg
5Dr	7.4 lb	118.4 oz	3.36 kg

### NSF Certification

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

## Freedom Line RFL

With Innovator Doors or Innovator III Doors  
Low Temperature

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

### Electrical Data

	2Dr	3Dr	4Dr	5Dr				
Number of Fans—12W	2	3	4	5				
	Amperes				Watts			
Merchandiser	2Dr	3Dr	4Dr	5Dr	2Dr	3Dr	4Dr	5Dr
<b>Energy Efficient Evaporator Fan</b>								
120V 50/60Hz Innovator	0.60	0.90	1.20	1.50	36	54	72	90
<b>Door Anti-sweat Heaters (on fan circuit)</b>								
120V 50/60Hz Innovator	1.50	2.30	3.00	3.80	182	273	364	455
120V 50/60Hz Innovator III	0.9	1.3	1.7	2.2	104	156	208	260
<b>Frame Anti-sweat Heaters (on fan circuit)</b>								
120V 50/60Hz Innovator	0.78	1.18	1.57	1.97	94	141	188	236
<b>Heated Condensate Pan</b>	5.0	5.0	5.0	5.0	600	600	600	600
<b>Condensate Pump</b>	1.9	1.9	1.9	1.9	87	87	87	87
<b>Defrost</b>								
Drain Heaters (120V)	0.63	1.25	2.00	2.57	75	150	240	300
208V 1Ø Electric Defrost	6.72	10.08	13.46	16.82	1400	2100	2800	3500
<b>120V Circuit</b>								
<i>(Fans, anti-sweat heaters, drain pan heater, condensate pan heater, condensate pump, and standard Ecoshine 2 LED's)</i>								
With Innovator Doors (standard)	10.4	12.9	15.4	17.8	1117	1370	1637	1876
With Innovator III Doors	9.8	11.9	14.1	16.2	1039	1253	1481	1681
Maximum Overcurrent								
Protection Device (MOPD)	20	20	20	20				
<b>208V Circuit†</b>								
208V Circuit (Defrost heaters)	6.7	10.1	13.5	16.8	1400	2100	2800	3500
Maximum Overcurrent								
Protection Device (MOPD)	20	20	20	20				
<i>Refer to condensing unit data sheet for additional condensing unit electrical requirements</i>								
<b>Standard Vertical LED Lighting</b>	2Dr	3Dr	4Dr	5Dr	2Dr	3Dr	4Dr	5Dr
Hussmann EcoShine II™ - A (120V)	0.31	0.46	0.62	0.77	37.1	55.6	74.2	92.7

#### † Notes:

1. Electrical input for the RFL Freedom case requires two electrical connections at the top of the case: one 120V connection for the RFL case components and one 208/230V connections for the defrost heater and condensing unit. Defrost heater and condensing unit circuits are non-concurrent loads. To determine the circuit size, use the larger of the two loads - do not add the two loads together.
2. Without heated condensate pan and pump, subtract 6.9 Amps.
3. For total electrical circuit requirements with optional single point wiring, refer to the Condensing Unit datasheet (3049062).

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.

**Product Data**

<i>Recommended Usable Cube</i> <sup>1</sup> (Cu Ft/Dr)	23.46 ft <sup>3</sup> /Dr (0.66 m <sup>3</sup> /Dr)
<i>AHRI Total Display Area</i> <sup>2</sup> (Sq Ft/Dr)	13.31 ft <sup>2</sup> /Dr (1.24 m <sup>2</sup> /Dr)
<i>Shelf Area</i> <sup>3</sup> (Sq Ft/Dr)	29.32 ft <sup>2</sup> /Dr (2.72 m <sup>2</sup> /Dr)

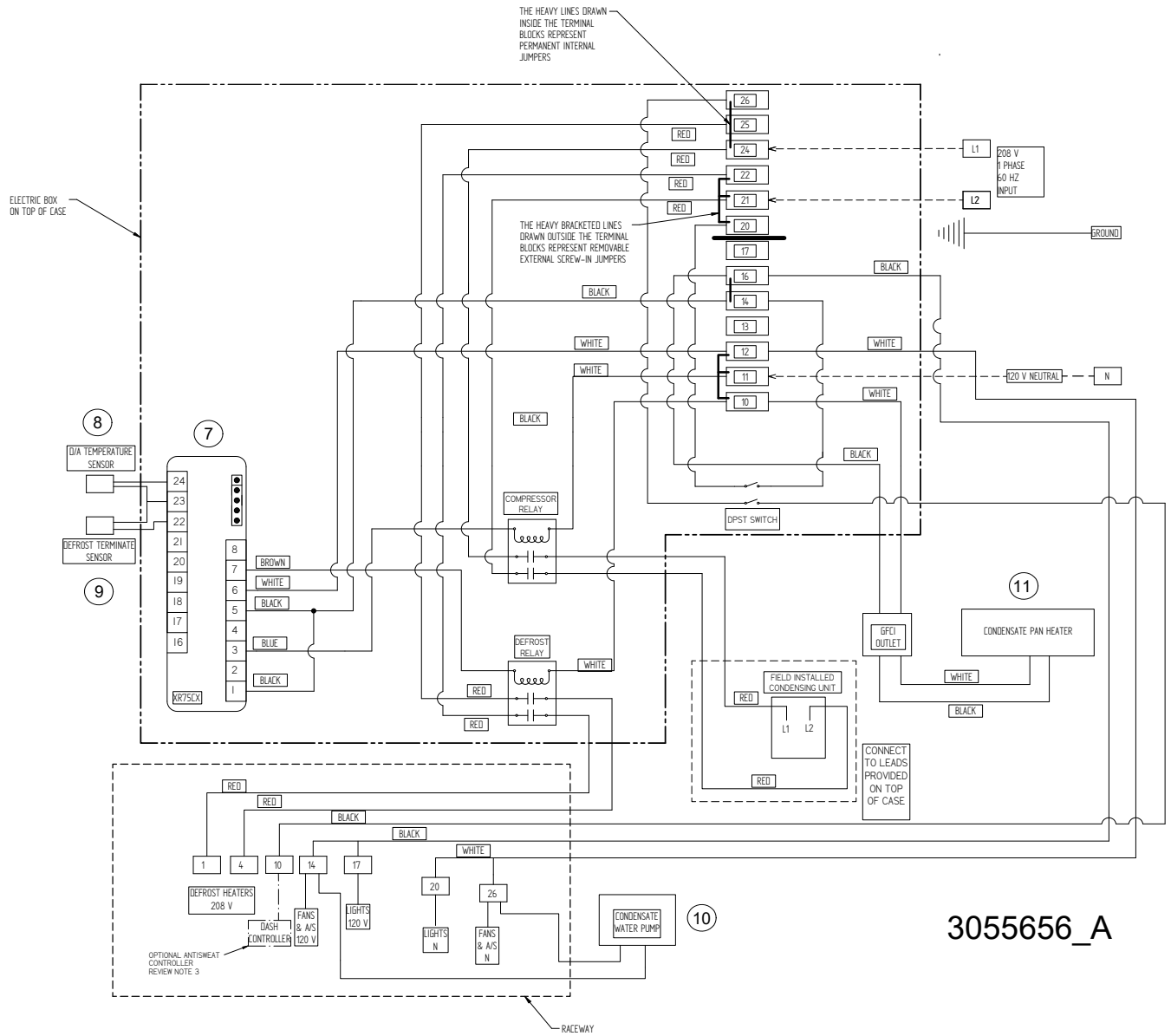
- <sup>1</sup> AHRI Refrigerated Volume less shelving and other unusable space: Refrigerated Volume/Unit of Length, ft<sup>3</sup>/ft [m<sup>3</sup>/m]
- <sup>2</sup> Computed using AHRI 1200 standard methodology: Total Display Area, ft<sup>2</sup> [m<sup>2</sup>]/Unit of Length, ft [m]
- <sup>3</sup> 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.

<b>ESTIMATED SHIPPING WEIGHT <sup>4</sup></b>					
	<i>2 Dr</i>	<i>3 Dr</i>	<i>4 Dr</i>	<i>5 Dr</i>	<i>Solid End (each)</i>
<b>Standard Freedom Line Merchandiser (18-Inch Facade, no Arch)</b>					
<b>lb (kg)</b>	997 (453)	1295 (589)	1595 (725)	1874 (852)	55 (25)

<sup>4</sup> Actual weights will vary according to optional kits included.



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 With Innovator Doors or Innovator III Doors  
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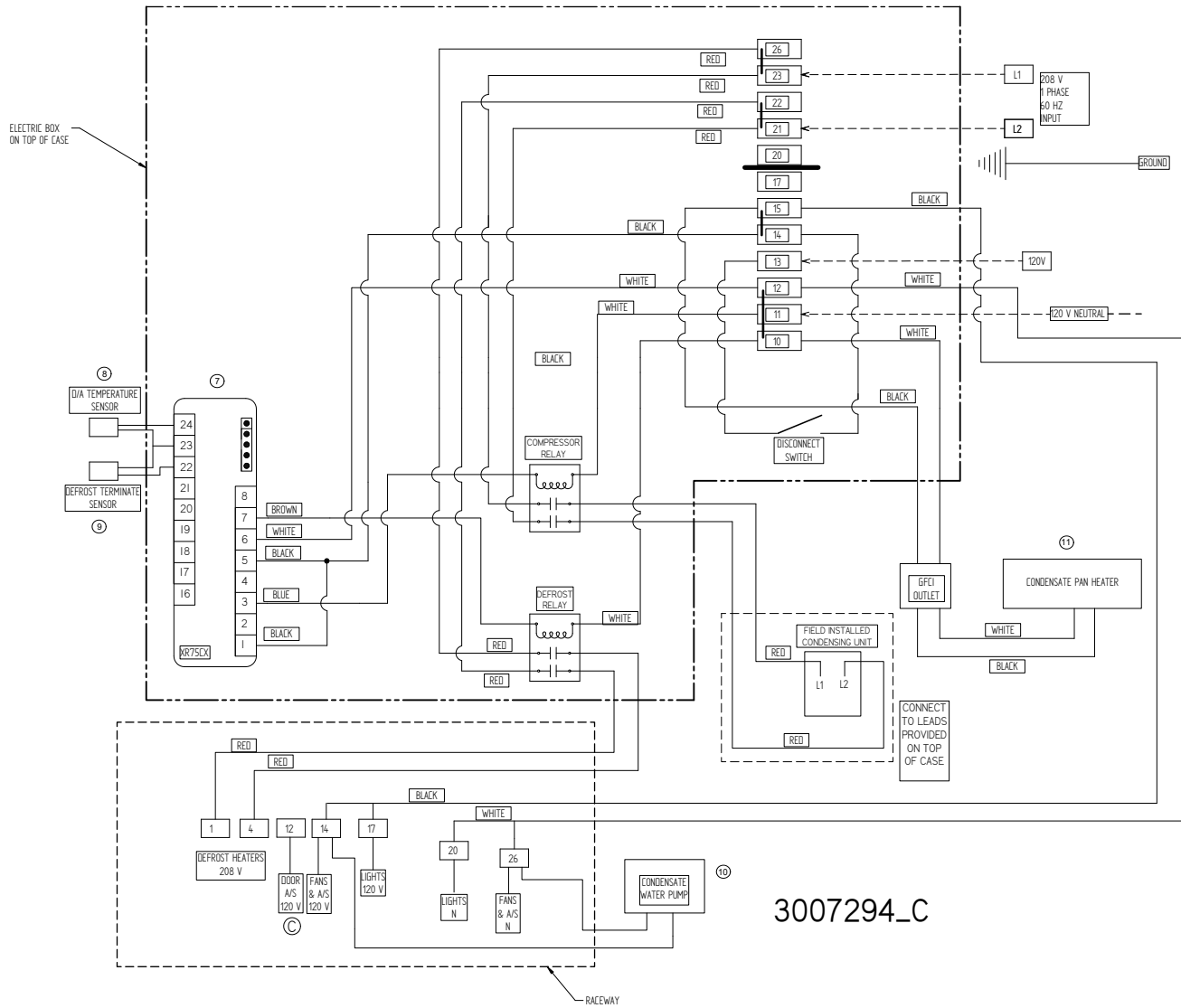


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**Optional Single Point Wiring Diagram**

# Freedom Line RFL

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Low Temperature

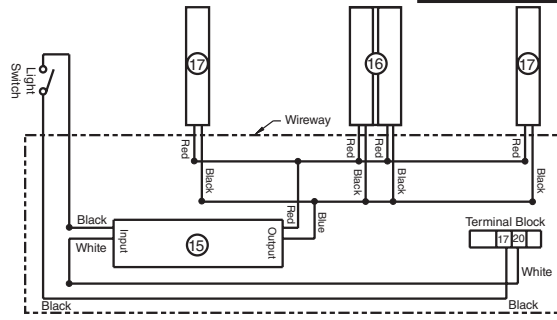


Dixell Wiring Diagram — Low Temperature Reach-in

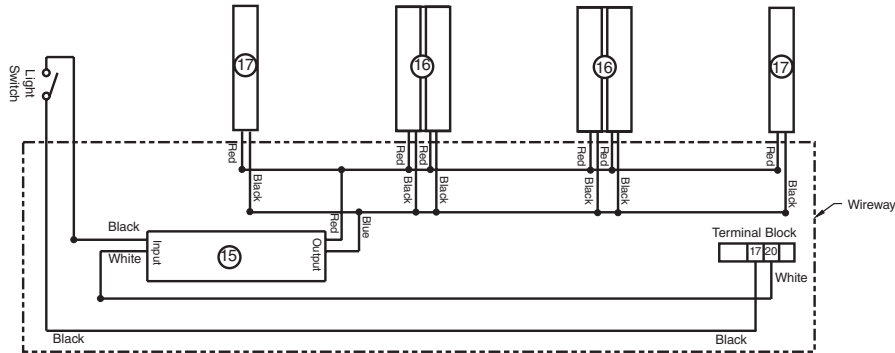


**Standard  
Vertical  
Lighting  
Husmann  
EcoShine™  
LED  
Fixtures**

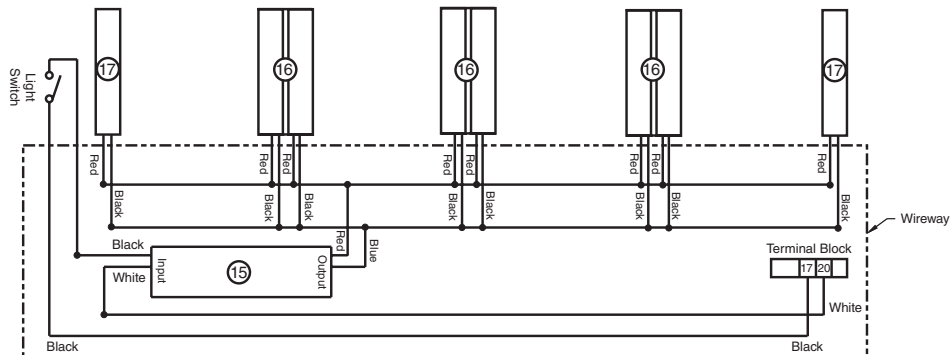
**Freedom Line RFL**  
With Innovator Doors or Innovator III Doors  
Low Temperature



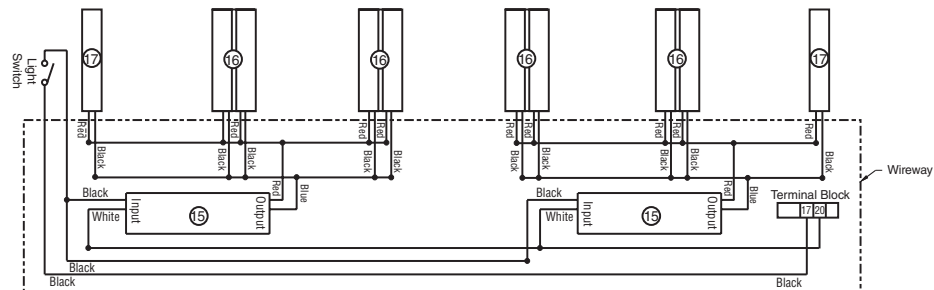
2 Door LED Light Wiring Diagram



3 Door LED Light Wiring Diagram



4 Door LED Light Wiring Diagram



5 Door LED Light 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 *m m* = Case Ground

# Freedom Line RFL

With Innovator Doors or Innovator III Doors  
Low Temperature

CIRCLED NUMBERS = PARTS LIST ITEM NUMBERS

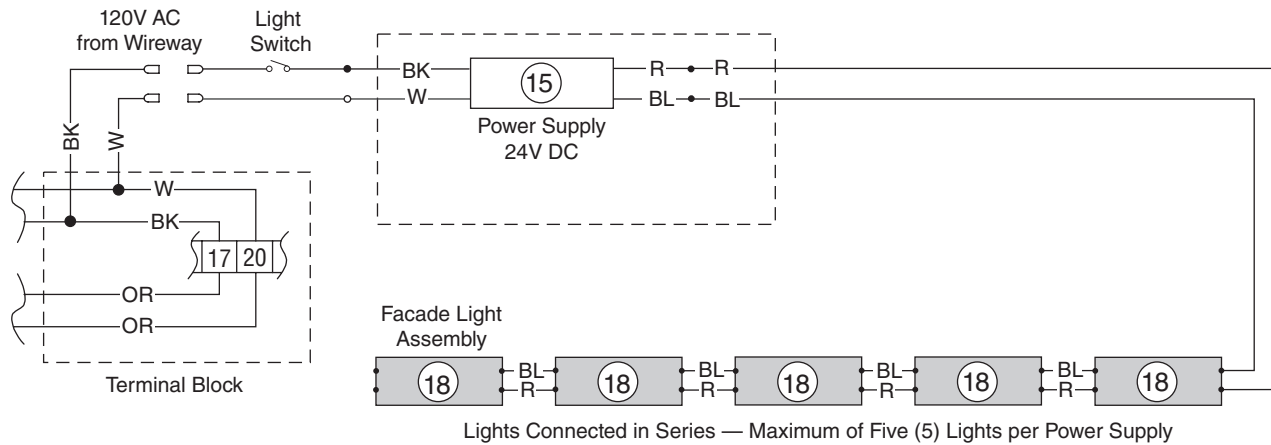
R = Red P = Purple 2P = Purple (2 Bands)

DB = Dark Blue BK = Black BL = Blue

BR = Brown Y = Yellow OR = Orange W = White

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

## Optional External Facade LED Wiring



### WARNING

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

● = 120V Power

○ = 120V Neutral

⊥ = Field Ground

mm = Case Ground