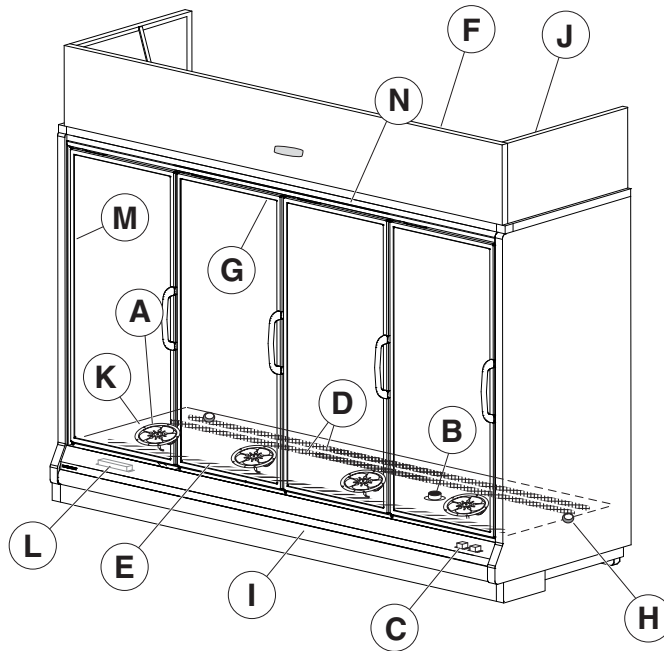


Freedom Line merchandisers are top mount refrigeration ready



Low Temperature
Technical Data Sheet
P/N 0537768_K
NSF® Certified
October 2018

DOE 2017
Energy Efficiency
Compliant

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 #
FAN ASSEMBLIES, AND THERMOSTATS					CONTROL PANEL			
A.	12W Standard Energy Efficient Fan Assembly	(1)			F.	3007825	Dixell XR75 Control	(7)
	0477655		Fan Motor, Evaporator		G.	0334802	Dixell Discharge Air Sensor	(8)
	0461805		Fan Blade		H.	0334802	Dixell Defrost Sensor	(9)
RELAYS					REFRIGERATION			
B.	0344662		Defrost Limit Thermostat	(2)	I.	0516897	Condensate Pump	(10)
C.	0342599		Fan Control Relay	(3)	J.	0538255	Condensate Pan with Heater (Evapoway)	(11)
			(208V) Electrical Defrost (KG Only)		K.	0460992	TEV 2 Door Models	
						0460993	TEV 3-4-5 Door Models	
HEATERS					LED FIXTURES AND POWER SUPPLY			
D.	Electric Defrost Heaters – Front (208V)	(4)			L.	0499399	Power Supply	(12)
	3015518	(1)	1 Door Models		M.	Door Lamp, LED		
	3015372	(1)	2 Door Models			BU.4440877	4100K Center	(13)
	3015373	(1)	3 Door Models			BU.4440878	4100K End	(14)
	3015374	(1)	4 Door Models		N.	Facade Lamp, LED		
	3015375	(1)	5 Door Models			BU.4441411	2900K 29.5 In. Length	(15)
	Electric Defrost Heaters — Rear (208V)	(5)				BU.4441412	2900K 30.5 In. Length	(15)
	3015519	(1)	1 Door Models					
	3015376	(1)	2 Door Models					
	3015377	(1)	3 Door Models					
	3015378	(1)	4 Door Models					
	3015379	(1)	5 Door Models					
E.	Drain Pan Heater — Electric (120V)	(6)			<p>Refer to INNOVATOR REACH-IN GLASS DOOR INSTALLATION AND SERVICE manual, PIN 0425683, for Innovator, and Innovator II door and frame replacement parts.</p>			
	0489708	(1)	1 Door Models					
	0387036	(1)	2 Door Models					
	0387037	(1)	3 Door Models					
	0387038	(1)	4 Door Models					
	0387039	(1)	5 Door Models					

Note: Revision K: Updated refrigerant charges.

Engineering Plan Views

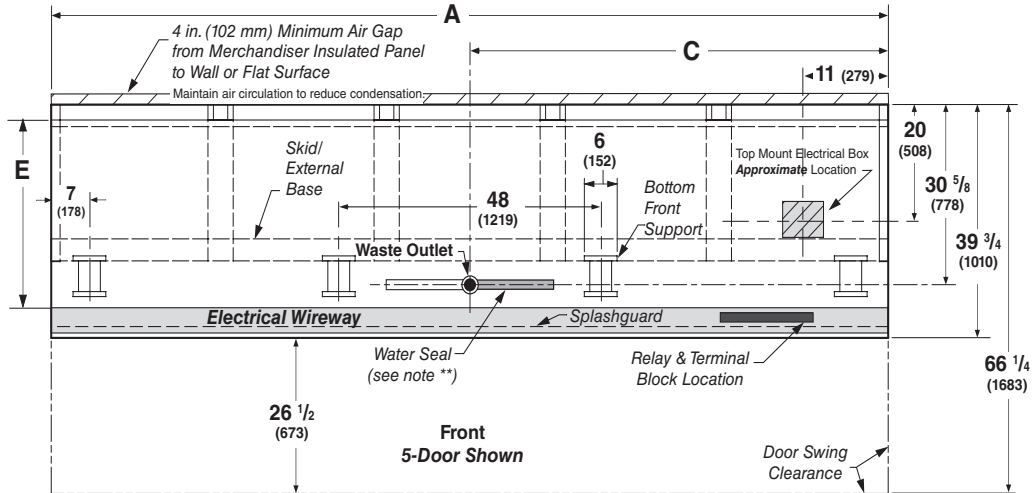
Reach-In
2, 3, 4 & 5 Door



Freedom Line RFLN - RFMN 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 Narrow Footprint Plan View 2, 3, 4 & 5 Door



General	1 Dr	2 Dr	3 Dr	4 Dr	5 Dr
(A) Merchandiser Length	31 1/2 (800)	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 merchandiser back to front ***	39 3/4 (1010)	39 3/4 (1010)	39 3/4 (1010)	39 3/4 (1010)	39 3/4 (1010)
*** Add 26 1/2 in. (673 mm) for door swing.					
Back of merchandiser to rear of splashguard	35 7/8 (911)	35 7/8 (911)	35 7/8 (911)	35 7/8 (911)	35 7/8 (911)
Width of Skid rail	3 3/4 (95)	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)	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)	3 1/8 (79)
Electrical Service (dimensions are approximate)					
(B) RH end of merchandiser to center of Electrical Service Area	11 (279)	11 (279)	11 (279)	11 (279)	11 (279)
Back O/S of merchandiser to center of Electrical Service Area	20 (508)	20 (508)	20 (508)	20 (508)	20 (508)
* NOTE: Electrical Field Wiring Connection Point is at top of merchandiser.					
Waste Outlet 					
(C) Right end of merchandiser to center of waste outlet	15 3/4 (400)	23 7/8 (606)	54 1/4 (1378)	46 1/4 (1175)	76 5/8 (1946)
Water Seal 					
Edge of water seal to center of waste outlet	13 (330)	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)	1 1/4 (32)
** NOTE: Field installed water seal outlets, tees, and connectors are shipped with merchandiser.					
Refrigeration Outlet					
(D) RH end of merchandiser to center of refrigeration interface	5 3/8 (136)	5 3/8 (136)	5 3/8 (136)	5 3/8 (136)	5 3/8 (136)
Back O/S of merchandiser to center of refrigeration interface	49 5/8 (1260)	49 5/8 (1260)	49 5/8 (1260)	49 5/8 (1260)	49 5/8 (1260)
* NOTE: Refrigeration interface is at top of merchandiser.					
Outside bottom front supports from end of merchandiser	7 (178)	7 (178)	7 (178)	7 (178)	7 (178)
Center bottom front support from Centerline	24 (610)	24 (610)	24 (610)	24 (610)	24 (610)
Distance between Center and Outside supports will vary					
(E) Depth when disassembled for door entry	35 1/2 (902)	35 1/2 (902)	35 1/2 (902)	35 1/2 (902)	35 1/2 (902)

Freedom Line Narrow Footprint Reach-in
Top-Mount-Refrigeration Ready
2, 3, 4 and 5 Door Models

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



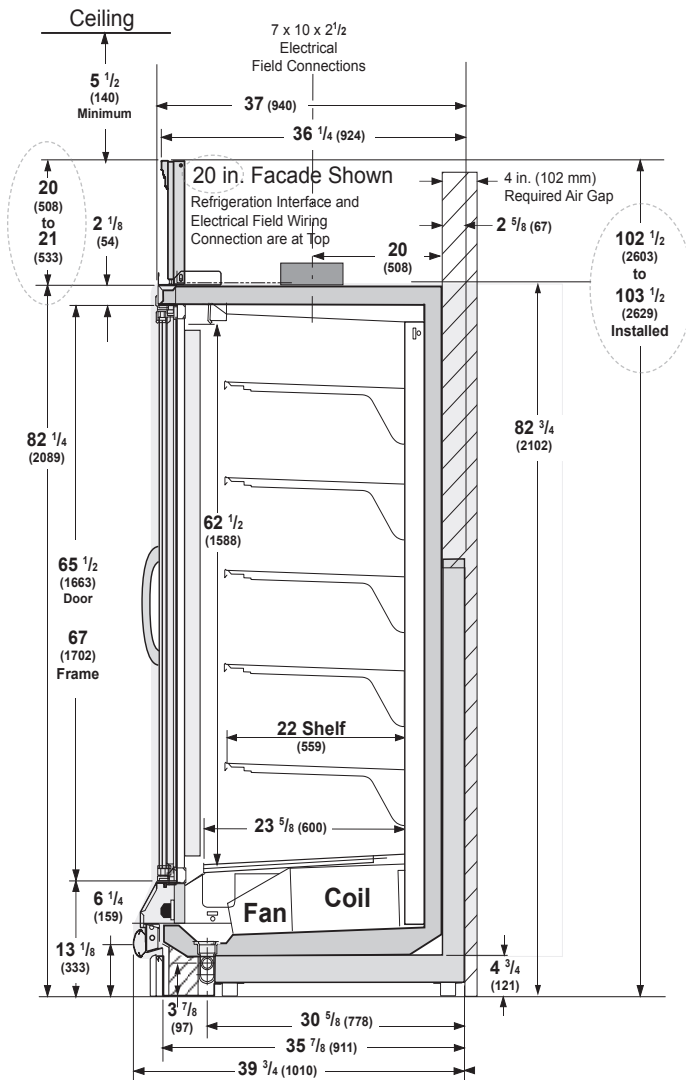
Hussmann refrigerated merchandisers configured for sale for use in the United States meet or surpass the requirements of the DOE 2017 energy efficiency standards.

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

Dimensions shown as inches and (mm).

Note: An optional Louvered Facade Panel kit is available that will allow for the top spacing minimum clearance of 3 inches (76 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.

Freedom Line RFLN
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*
INNOVATOR			
Parallel	955	1065	910
Conventional	970	1085	940
INNOVATOR III			
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.)

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

GAS 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:

1Dr	2.3 lb	36.8 oz	1.04 kg
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

Freedom Line RFLN

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

	1Dr	2Dr	3Dr	4Dr	5Dr					
Number of Fans—12W	1	2	3	4	5					
	Amperes					Watts				
Merchandiser	1Dr	2Dr	3Dr	4Dr	5Dr	1Dr	2Dr	3Dr	4Dr	5Dr
Energy Efficient Evaporator Fan										
120V 50/60Hz Innovator	0.30	0.60	0.90	1.20	1.50	18	36	54	72	90
Door Anti-sweat Heaters (on fan circuit)										
120V 50/60Hz Innovator	0.76	1.50	2.30	3.00	3.80	91	182	273	364	455
120V 50/60Hz Innovator III	0.43	0.9	1.3	1.7	2.2	52	104	156	208	260
Frame Anti-sweat Heaters (on fan circuit)										
120V 50/60Hz Innovator	0.39	0.78	1.18	1.57	1.97	47	94	141	188	236
Heated Condensate Pan	5.0	5.0	5.0	5.0	5.0	600	600	600	600	600
Condensate Pump	1.9	1.9	1.9	1.9	1.9	87	87	87	87	87
Defrost										
Drain Heaters (120V)	1.67	0.63	1.25	2.00	2.57	200	75	150	240	300
208V 1ø Electric Defrost	2.88	6.72	10.08	13.46	16.82	600	1400	2100	2800	3500
120V Circuit										
<i>(Fans, anti-sweat heaters, drain pan heater, condensate pan heater, condensate pump, and standard EcoShine 2 LED's)</i>										
With Innovator Doors (standard)	9.9	10.4	12.9	15.4	17.8	1044	1117	1370	1637	1876
With Innovator III Doors	9.6	9.8	11.9	14.1	16.2	1005	1039	1253	1481	1681
Maximum Overcurrent										
Protection Device (MOPD)	20	20	20	20	20					
208V Circuit†										
208V Circuit (Defrost heaters)	2.8	6.7	10.1	13.5	16.8	600	1400	2100	2800	3500
Maximum Overcurrent										
Protection Device (MOPD)	20	20	20	20	20					
<i>Refer to condensing unit data sheet for additional condensing unit electrical requirements</i>										
Standard Vertical LED Lighting	1Dr	2Dr	3Dr	4Dr	5Dr	1Dr	2Dr	3Dr	4Dr	5Dr
Hussmann EcoShine II™ - A (120V)	0.18	0.31	0.46	0.62	0.77	18.5	37.1	55.6	74.2	92.7

† Notes:

1. Electrical input for the RFLN Freedom case requires two electrical connections at the top of the case: one 120V connection for the RFLN 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

*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> ¹ (Cu Ft/Dr)	22.80 ft ³ /Dr (0.65 m ³ /Dr)
<i>AHRI Total Display Area</i> ² (Sq Ft/Dr)	13.04 ft ² /Dr (1.21 m ² /Dr)
<i>Shelf Area</i> ³ (Sq Ft/Dr)	28.50 ft ² /Dr (2.65 m ² /Dr)

¹ AHRI Refrigerated Volume less shelving and other unusable space: Refrigerated Volume/Unit of Length, ft³/ft [m³/m]

² Computed using 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

	<i>1 Dr</i>	<i>2 Dr</i>	<i>3 Dr</i>	<i>4 Dr</i>	<i>5 Dr</i>	<i>Solid End (each)</i>
Standard Freedom Line Merchandiser (18-Inch Facade, no Arch)						
lb (kg)	617 (80)	1085 (492)	1357 (616)	1828 (829)	2230 (1012)	74 (34)

⁴ Actual weights will vary according to optional kits included.

Freedom Line RFLN

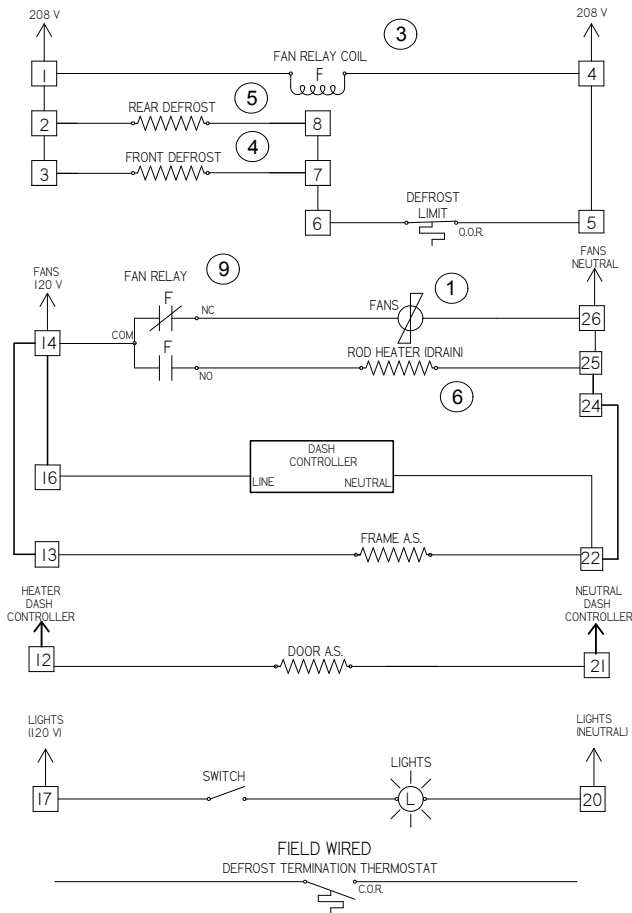
With Innovator Doors or Innovator III Doors
Low Temperature

CIRCLED NUMBERS = PARTS LIST ITEM NUMBERS
 R = Red P = Purple 2P = Purple (2 Bands) DB = Dark Blue BK = Black
 LB = Light Blue BR = Brown Y = Yellow OR = Orange W = White
THESE ARE MARKER COLORS (WIRE MAY VARY.)

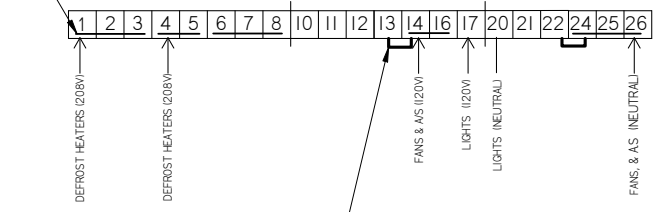
CAUTION: When multiplexing merchandisers equipped with defrost heaters, if branch circuit overcurrent protection is larger than the individual merchandiser's defrost circuit load, then additional supplemental overcurrent protection may be required per NEC Articles 210 and 240.

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

3024448_C



THE HEAVY LINES DRAWN INSIDE THE TERMINAL BLOCKS REPRESENT PERMANENT INTERNAL JUMPERS.



THE HEAVY LINES DRAWN OUTSIDE THE TERMINAL BLOCKS REPRESENT REMOVABLE EXTERNAL JUMPERS.

Electric Defrost Sequence - Low Temperature

1. Power from the defrost relay energizes Defrost Heaters and 208V Evaporator Fan Relay Coil (5). Relay Contacts open the fan circuit and energizes the Drain Pan Heater.
2. When Defrost Termination Thermostat ends defrost period, the defrost relay opens the Defrost Heater and Evaporator Fan Relay Coil Circuits. The Drain Pan Heater goes off and fans are on.

CIRCLED NUMBERS = PARTS LIST ITEM NUMBERS

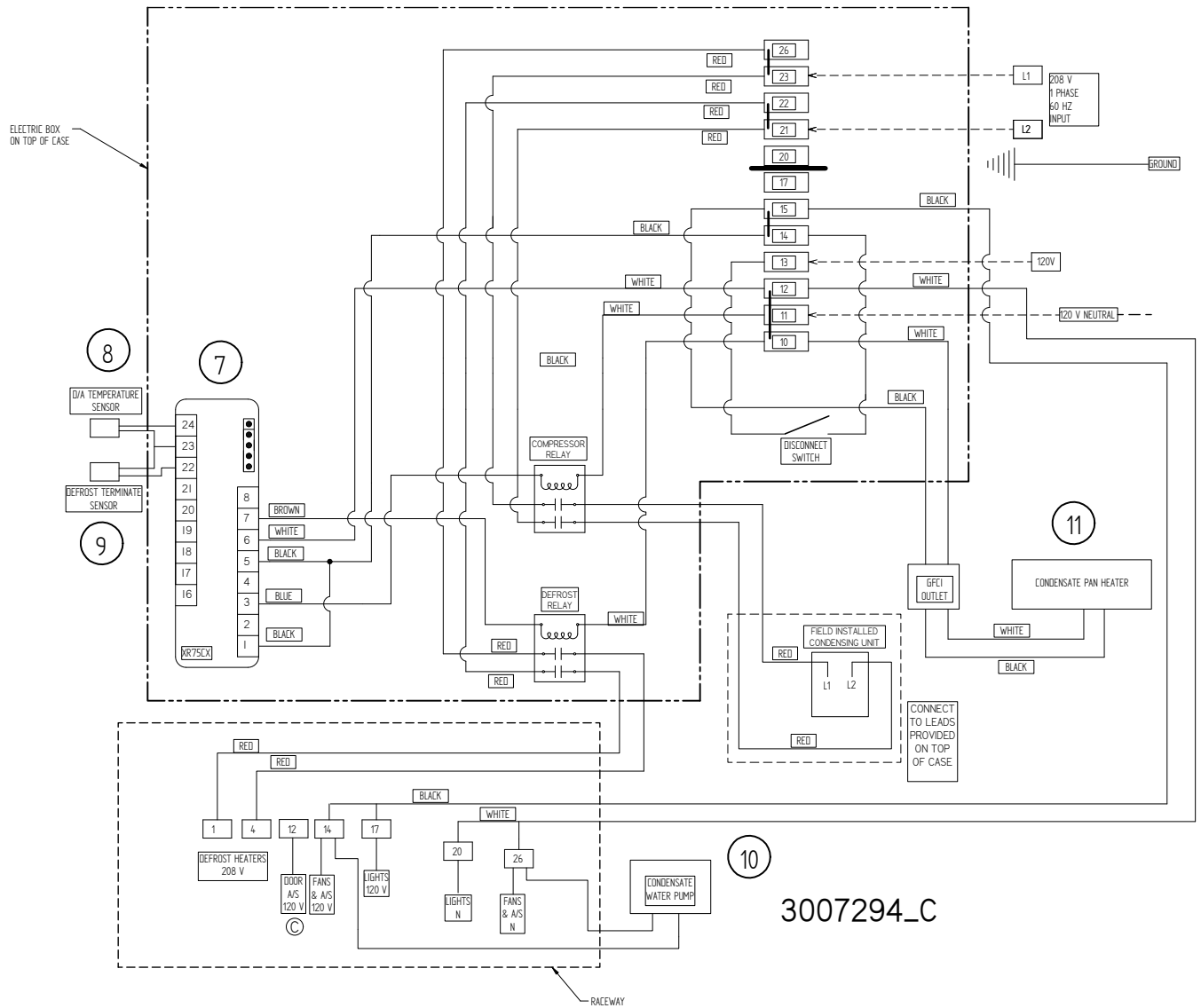
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Freedom Line RFLN
 With Innovator Doors or Innovator III Doors
 Low Temperature



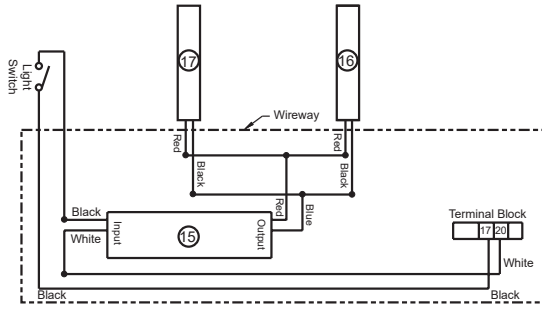
Dixell Wiring Diagram — Low Temperature Reach-in

Freedom Line RFLN

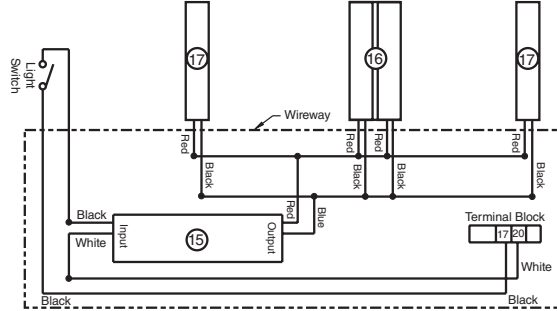
With Innovator Doors or Innovator III Doors
Low Temperature

Standard Vertical Lighting

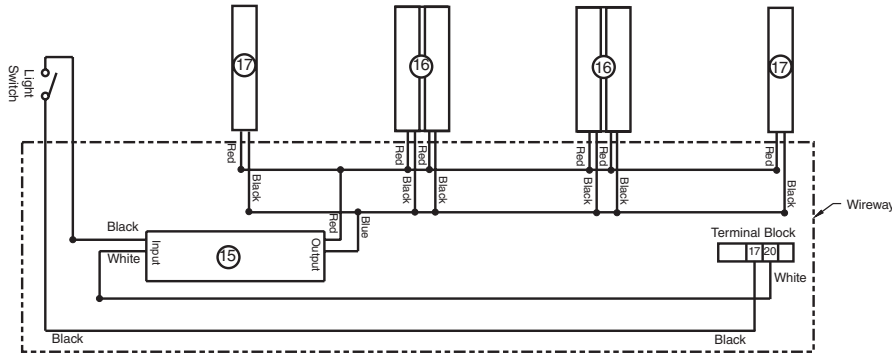
Husmann EcoShine™
LED Fixtures



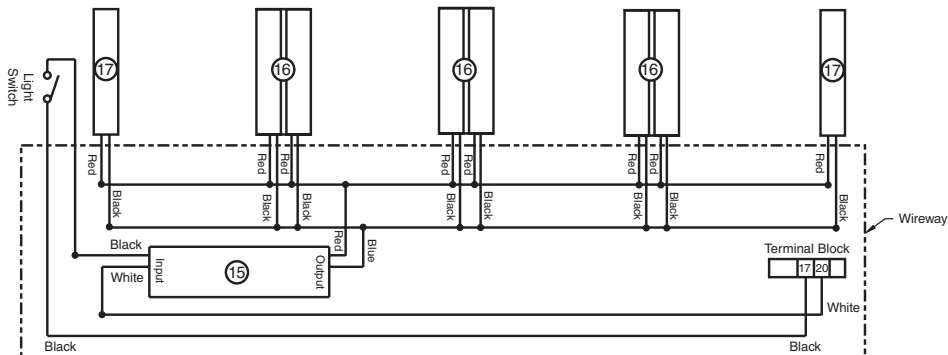
1 Door LED Light Wiring Diagram



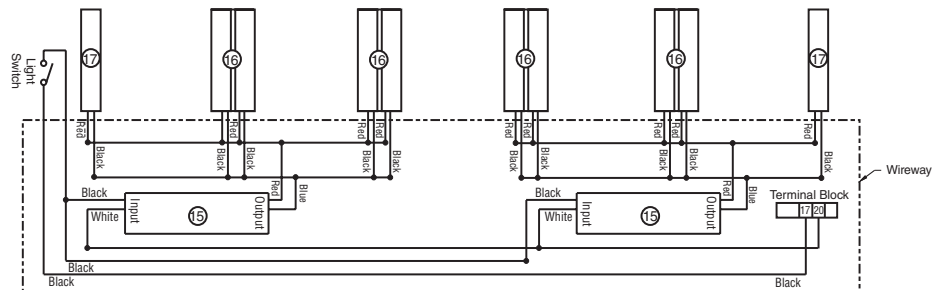
2 Door LED Light Wiring Diagram



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