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Item	Part #	Description	Wiring Item #	Item	Part #	Description	Wiring Item #
<b>FAN ASSEMBLIES AND THERMOSTATS</b>				D.	0137880	Optional Adjustable Refrigeration Thermostat (CT.4481084)	(4)
A.	4W Standard Fan Assembly		(1)	<b>HEATERS</b>			
	0392457	Fan Motor, Evaporator (MO.4410101)		E.	0496496	Heater, Anti-Sweat (HE.4850738)	(5)
	0409513	Fan Blade, (FB.0409513) embossing toward motor		<b>LAMPS AND BALLASTS</b>			
	4W Energy Efficient Fan Assembly		(1)	F.	0355716	Ballast, Electronic <b>2 lamps</b> (BA.0355716)	(6)
	0477653	Fan Motor, Evaporator (MO.4410544)			0355398	Ballast, Electronic <b>3 lamps</b> (BA.4480118)	
	0409513	Fan Blade, (FB.0409513) embossing toward motor		G.		Fluorescent Lamp <i>Replace with like fixtures</i>	(7)
B.	0404551	Fan Motor, Ambient (MO.0404551)	(2)				
C.	0411744	Standard Non-adjustable Defrost Thermostat (CT.0411744)	(3)				

Note: Rev. B adds EEF; adds Product Data, page 5; Btu note on page 3.



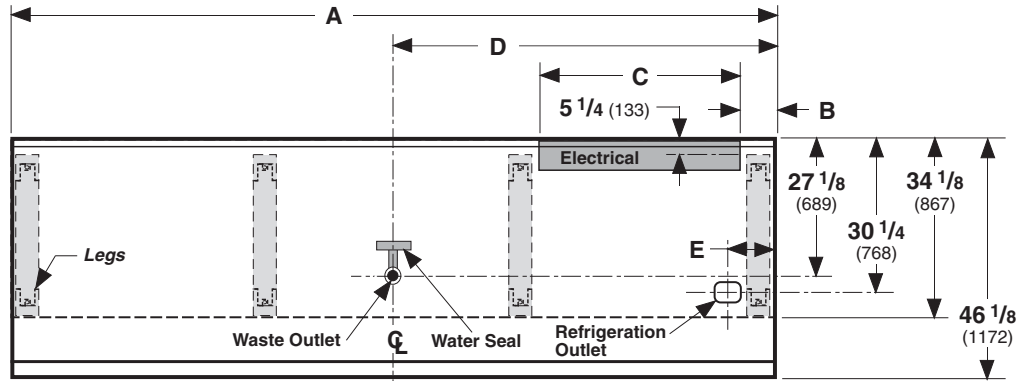
# Engineering Plan Views

PHYSICAL DATA	
Merchandiser Drip Pipe (in.)	1 1/2
Merchandiser Liquid Line (in.)	3/8
Merchandiser Suction Line (in.)	7/8





ES1  
Delicatessen  
Precut & Packaged  
Produce

Dimensions shown as inches and (mm).

10-2005



12 ft plan view is shown.

	4 ft	6 ft	8 ft	12 ft
<b>General</b>				
<b>(A)</b> Case Length (without ends or partitions) <i>(Each end and insulated partition adds 1 in. (25 mm) to case line up.)</i>	48 1/4 (1226)	72 3/8 (1838)	96 3/8 (2448)	144 1/2 (3670)
Maximum O/S dimension back to front (with bumper)	46 1/8 (1172)	46 1/8 (1172)	46 1/8 (1172)	46 1/8 (1172)
Back of case to front of front panel	34 1/8 (867)	34 1/8 (867)	34 1/8 (867)	34 1/8 (867)
RH end of case to outside edge of external support	1 3/8 (35)	1 3/8 (35)	1 3/8 (35)	1 3/8 (35)
Distance between edges of external support and center support	NA	28 1/2 (724)	40 1/2 (1029)	40 1/2 (1029)
Distance between edges of center supports	NA	NA	NA	43 7/8 (1114)
Distance between edges of external supports	37 (940)	NA	NA	NA
<b>Electrical Service</b>  (Electrical Field Wiring connection point)				
<b>(C)</b> Length of electrical raceway	34 1/2 (876)	26 (660)	38 (965)	38 (965)
RH End of case to center of farthest knockout	12 1/4 (311)	12 1/4 (311)	12 1/4 (311)	12 1/4 (311)
Back of case to center of end knockout	5 1/4 (133)	5 1/4 (133)	5 1/4 (133)	5 1/4 (133)
<b>(B)</b> RH End of case to RH end of raceway	6 7/8 (175)	6 7/8 (175)	6 7/8 (175)	6 7/8 (175)
<b>Waste Outlet</b> 				
<b>(D)</b> RH End of case to the center of waste outlet	24 1/8 (613)	24 1/8 (613)	24 1/8 (613)	72 1/4 (1835)
LH End of case to the center of waste outlet	24 1/8 (613)	48 1/4 (1226)	72 1/4 (1835)	72 1/4 (1835)
Back O/S of case to center of waste outlet	27 1/8 (689)	27 1/8 (689)	27 1/8 (689)	27 1/8 (689)
<b>Water Seal</b> 				
Edge of water seal to center of waste outlet	4 (102)	4 (102)	4 (102)	4 (102)
Outside diameter of the drip pipe	1 1/2 (38)	1 1/2 (38)	1 1/2 (38)	1 1/2 (38)
<i>(Field installed water seal outlets, tees, and connectors are shipped with the merchandiser.)</i>				
<b>Refrigeration Outlet</b> 				
Back of case to center of refrigeration outlet	30 1/4 (768)	30 1/4 (768)	30 1/4 (768)	30 1/4 (768)
<b>(E)</b> RH end of case to center of refrigeration outlet	8 3/8 (213)	8 3/8 (213)	8 3/8 (213)	8 3/8 (213)

**Impact *Elite* ES1**  
**Delicatessen**  
**Precut & Packaged Produce**

**REFRIGERATION DATA**

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

	<b>ES1</b>
<b>Discharge Air (°F)</b>	<b>28</b>
<b>Evaporator (°F)</b>	<b>20</b>
<b>Unit Sizing (°F)</b>	<b>18</b>

<b>Btu/hr/ft<sup>3</sup></b>	<b>ES1</b>
<b>Parallel</b>	<b>250</b>
<b>Conventional</b>	<b>270</b>

<sup>‡</sup>Optional energy efficient motors reduce the refrigeration load by 14 Btu/hr/ft.

**DEFROST DATA**

	<b>ES1</b>
<b>Frequency (hr)</b>	<b>12</b>
<b>Defrost Water</b>	<b>0.8 lb/ft/day</b>
<i>(± 15% based on case configuration and product loading).</i>	

<b>OFFTIME</b>	<b>ES1</b>
<b>Temp Term (°F)</b>	<b>43</b>
<b>Failsafe (minutes)</b>	<b>90</b>

*ELECTRIC OR GAS*      Not Recommended

**Standard Defrost Thermostat**  
 Close on rise: close 48°F – open 33°F

**CONVENTIONAL CONTROLS**

<b>Low Pressure Backup Control</b>	
<b>C/CO*</b>	<b>ES1</b>
<b>Temp</b>	<b>13°F / 3°F</b>

**Indoor Unit Only, Pressure Defrost**

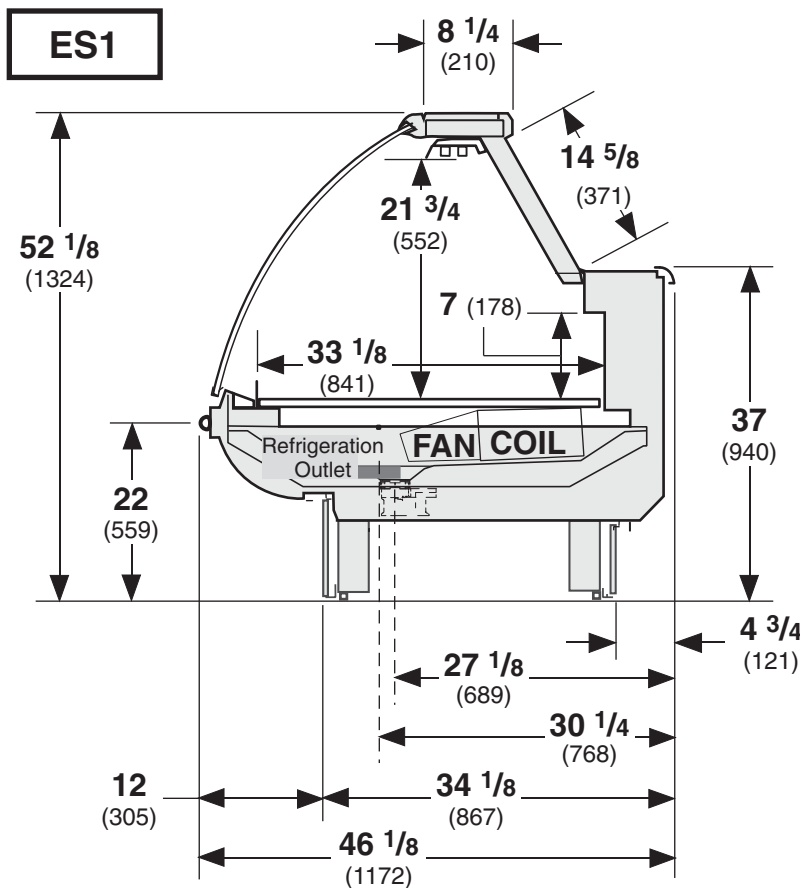
**Termination (Temp °F)\***      43°F

\*Use a Temperature Pressure Chart to determine PSIG conversions.

<b>Estimated Charge (lb)**</b>	<b>ES1</b>
<b>4 ft</b>	<b>0.8</b>
<b>6 ft</b>	<b>1.2</b>
<b>8 ft</b>	<b>1.5</b>
<b>12 ft</b>	<b>2.0</b>

\*\*This is an average for all refrigerant types actual refrigerant charge may vary by approximately half a pound.

Dimensions shown as in. & (mm).



**NSF Certification**

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

# Impact *Elite* ES1

Delicatessen  
Precut & Packaged Produce

## Electrical Data

	4 ft	6 ft	8 ft	12 ft
<b>Number of Fans — 4W</b>	1	2	2	3
<b>Number of Fans — 4W (Export)</b> (Export: 230V 50 hz shown)	1	2	2	3
<b>Ambient Air Wipe — 15W</b>	2	4	4	6

Merchandiser	Amperes				Watts			
	4 ft	6 ft	8 ft	12 ft	4 ft	6 ft	8 ft	12 ft
<b>Fans</b>								
120V 60Hz Standard	0.31	0.62	0.62	0.93	24	48	48	72
120V 60Hz Energy Efficient	0.12	0.24	0.24	0.36	8	16	16	24
230V 50Hz Export	0.18	0.36	0.36	0.54	27	54	54	81
<b>Fans (Ambient Air Wipe)</b>								
120V 60Hz Two-pole Muffin Fan	0.52	1.04	1.04	1.56	45	90	90	135
120V 60Hz Energy Efficient	NA							
230V 50Hz Export	0.3	0.6	0.6	0.9	50	100	100	150
<b>Constant On Anti-sweat Heaters</b>	0.13	0.26	0.26	0.39	16	32	32	48
<b>Minimum Circuit Ampacity</b>								
120V 60Hz Standard Fans	1.16	2.12	2.12	3.08				
120V 60Hz Energy Efficient Fans	0.99	1.78	1.78	2.57				
230V 50Hz Export Fans	0.68	1.16	1.16	1.64				
<b>Maximum Over Current Protection</b>								
230V 50Hz Export	20	20	20	20				
	15	15	15	15				
<b>Standard Lighting</b>								
2 Rows Canopy	0.49	0.98	0.98	1.42	59	118	118	171
<b>Optional Lighting (T-8 fluorescent)</b>								
1 Row of Rail Lights	0.49	0.49	0.49	0.71	59	59	59	86
1 Row of Ledge Lights	0.49	0.49	0.49	0.71	59	59	59	86

115V Lighting Circuit Total = Standard Lighting + Total Optional Lighting + Optional Shelf Lighting

230V Lighting Circuit Total = Multiply 115V Lighting Circuit Total by 0.52

<b>Impact <i>Elite</i> ES1</b> <b>Delicatessen</b> <b>Precut &amp; Packaged Produce</b>
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**Product Data**

<i>Recommended Usable Cube</i> <sup>2</sup> (Cu Ft/Ft)	1.61 ft <sup>3</sup> /ft (0.15 m <sup>3</sup> /m)
<i>ARI Total Display Area</i> <sup>3</sup> (Sq Ft/Ft)	3.55 ft <sup>2</sup> /ft (1.08 m <sup>2</sup> /m)
<i>Shelf Area</i> <sup>4</sup> (Sq Ft/Ft)	2.76 ft <sup>2</sup> /ft (0.84 m <sup>2</sup> /m)

<sup>1</sup> ARI Refrigerated Volume less shelving and other unusable space: Refrigerated Volume/Unit of Length, ft<sup>3</sup>/ft [m<sup>3</sup>/m]

<sup>3</sup> Computed using ARI 1200 standard methodology: Total Display Area, ft<sup>2</sup> [m<sup>2</sup>]/Unit of Length, ft [m]

<sup>4</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 NONE.

**ESTIMATED SHIPPING WEIGHT <sup>4</sup>**

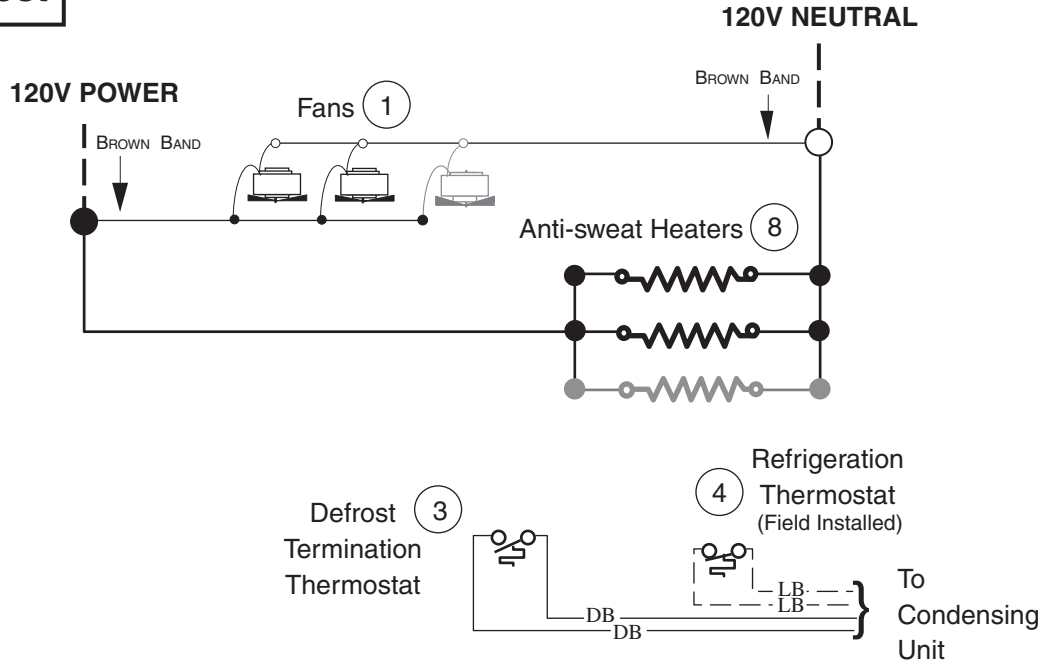
Case					Solid End
	<i>4 ft</i>	<i>6 ft</i>	<i>8 ft</i>	<i>12 ft</i>	<i>(each)</i>
<b>lb (kg)</b>	600 (272)	700 (318)	1100 (499)	1200 (545)	100 (45)

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

## Fan Wiring Offtime Defrost

Fans

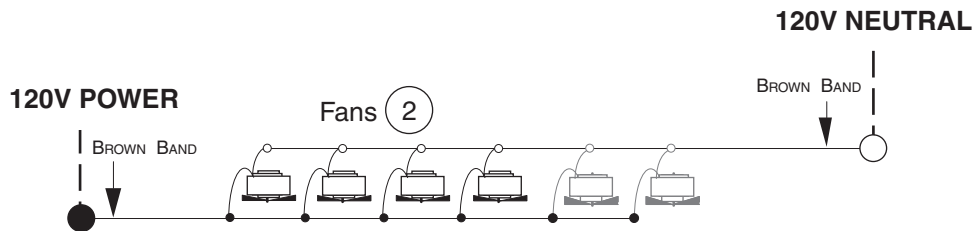
4 ft case has 1 Fan  
6 ft case has 2 Fans  
8 ft case has 2 Fans  
12 ft case has 3 Fans



## Ambient Fan Wiring Glass Air Wipe

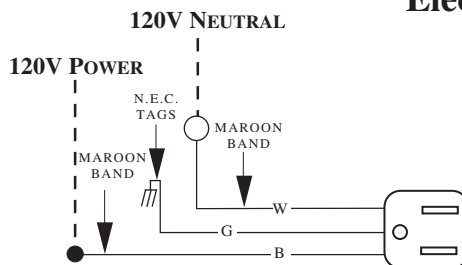
Fans

4 ft case has 2 Fans  
6 ft case has 3 Fans  
8 ft case has 4 Fans  
12 ft case has 6 Fans



## Receptacles

Electric Service Receptacle



### WARNING

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

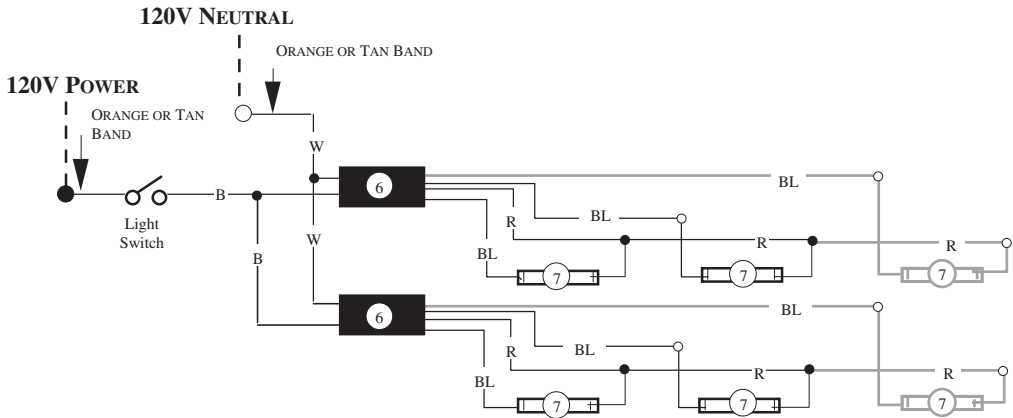
Circled Numbers = Parts List Item Numbers

Grayed components in 12 foot models only.

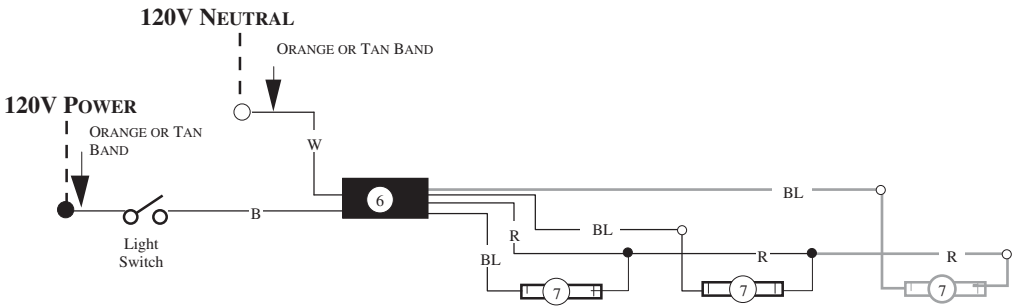
R = Red G = Green BL = Blue LB = Light Blue DB = Dark Blue B = Black W = White

● = 120V POWER ○ = 120V NEUTRAL ≡ = Field GROUND ≡ = Case GROUND

## Standard Lighting 2 Rows Canopy



## Optional Lighting: 1 Row Ledge or 1 Row Rail



### WARNING

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

CIRCLED NUMBERS = PARTS LIST ITEM NUMBERS

Grayed components in 12 foot models only.

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

● = 120V POWER ○ = 120V NEUTRAL