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Item	Part #	Description	Wiring Item #	Item	Part #	Description	Wiring Item #
<b>FAN ASSEMBLIES AND THERMOSTATS</b>				<b>HEATERS</b>			
A.	<b>4W Standard</b>	Fan Assembly	(1)	E.	Heater, Ambient		
	0392457	Fan Motor, Evaporator (120V) (MO.4410101)			0460453	120V (HE.4850579)	(5)
	0409511	Fan Blade (120V) (FB.0409511) embossing toward motor			0461866	230V (HE.4850646)	(6)
	<b>4W Energy Efficient</b>	Fan Assembly	(1)	<b>LAMPS AND BALLASTS</b>			
	0477653	Fan Motor, Evaporator (120V) (MO.4410544)		F.	Ballast, Electronic		
	0409511	Fan Blade (120V) (FB.0409511) embossing toward motor			0355716	<b>2 lamps</b> (120V) (BA.0355716)	(7)
	<b>4W Export</b>	Fan Assembly	(1)		0355398	<b>3 lamps</b> (120V) (BA.4480118)	(8)
	0436517	Fan Motor, Evaporator (230V) (MO.4410105)			0440215	<b>2 lamps</b> (230V 50-60 Hz) (BA.4481267)	(7)
	0409512	Fan Blade (230V) (FB.0409512) embossing toward motor			0428652	<b>3 lamps</b> (230V 50-60 Hz) (BA.4480897)	(8)
B.	<b>15W Ambient</b>	Fan Assembly			0385104	Ballast Transformer (230V 50-60 Hz, per ballast) (TR.4481191)	
	0404551	120V (MO.0404551)	(2)	G.	Fluorescent Lamp		(9)
	0404552	230V (MO.4410590)			<i>Replace with like fixtures</i>		
C.	0382028	Standard Non-adjustable Defrost Thermostat (CT.0382028)	(3)				
D.	0353949	Optional Adjustable Refrigeration Thermostat (CT.4481087)	(4)				

Note: Rev B. adds energy efficient fans, page 1; updates Btu note on page 3, electrical data on page 4.



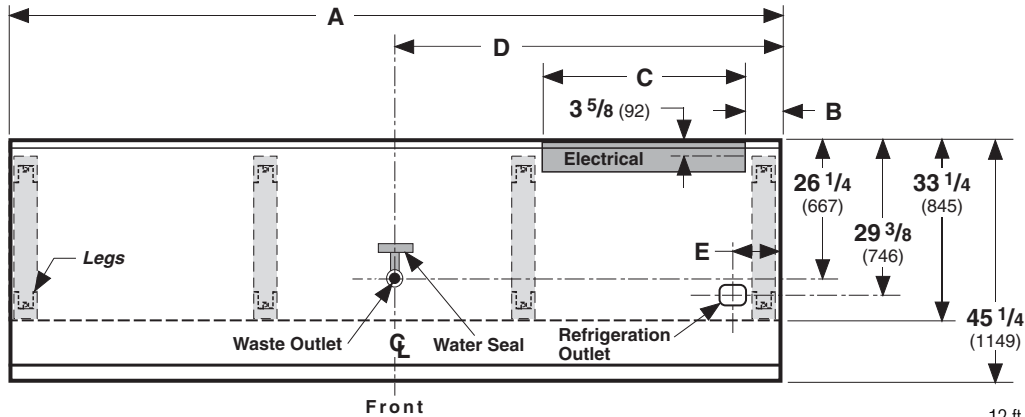
# Engineering Plan Views





## PHYSICAL DATA

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

## Meat & Delicatessen

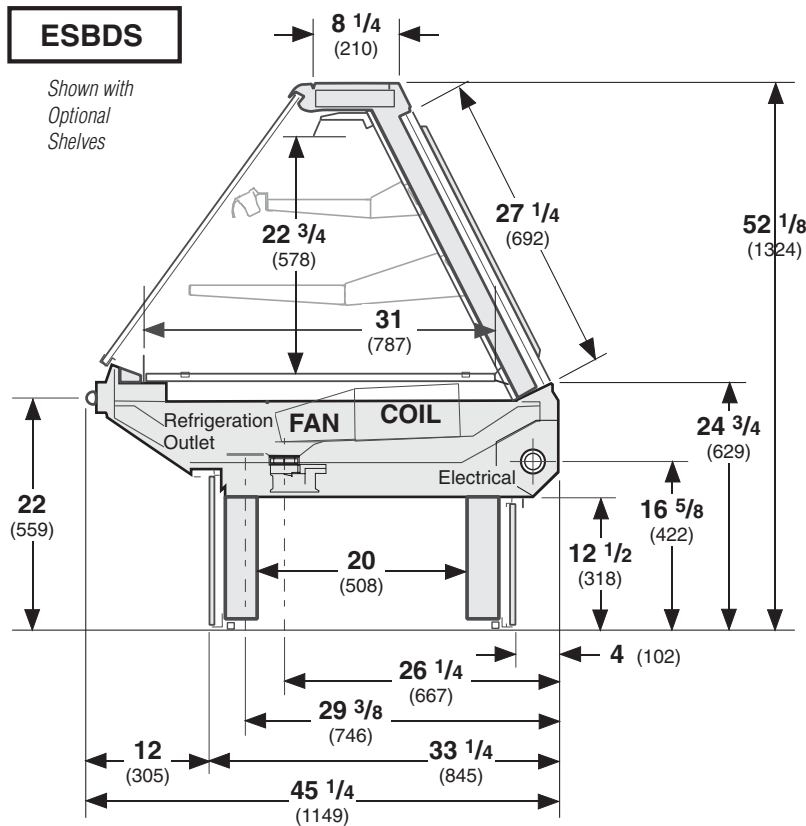
Dimensions shown as in. and (mm).



	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 1/4 (1835)	96 3/8 (2448)	144 1/2 (3670)
Maximum O/S dimension back to front (with bumper)	45 1/4 (1149)	45 1/4 (1149)	45 1/4 (1149)	45 1/4 (1149)
Back of case to front of front panel	33 1/4 (845)	33 1/4 (845)	33 1/4 (845)	33 1/4 (845)
RH end of case to outside edge of external support	1 5/8 (41)	1 5/8 (41)	1 5/8 (41)	1 5/8 (41)
Distance between edges of external support and center support	NA	28 1/2 (724)	40 5/8 (1032)	40 5/8 (1032)
Distance between edges of center supports	NA	NA	NA	44 (1118)
Distance between edges of external supports	37 (940)	NA	NA	NA
<b>Electrical Service</b>  <i>(Electrical Field Wiring connection point)</i>				
<b>(C)</b> Length of electrical raceway	38 3/4 (984)	29 5/8 (752)	41 3/4 (1060)	41 3/4 (1060)
RH End of case to center of farthest knockout	10 3/8 (264)	10 (254)	10 1/4 (260)	10 1/4 (260)
Back of case to center of end knockout	3 5/8 (92)	3 5/8 (92)	3 5/8 (92)	3 5/8 (92)
<b>(B)</b> RH End of case to RH end of raceway	5 (127)	5 (127)	5 (127)	5 (127)
<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	26 1/4 (667)	26 1/4 (667)	26 1/4 (667)	26 1/4 (667)
<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	29 3/8 (746)	29 3/8 (746)	29 3/8 (746)	29 3/8 (746)
<b>(E)</b> RH end of case to center of refrigeration outlet	8 1/4 (210)	8 1/4 (210)	8 1/4 (210)	8 1/4 (210)

**Impact Elite ESBDS**  
**Meat & Delicatessen**

Dimensions shown as in. and (mm).



**NSF Certification**

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

**REFRIGERATION DATA**

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

	ESBDS
<b>Discharge Air (°F)</b>	25
<b>Evaporator (°F)</b>	20
<b>Unit Sizing (°F)</b>	18

<i>Btu/hr/ft</i>	ESBDS
<b>Parallel</b>	355
<b>Conventional</b>	380

‡ Optional energy efficient motors reduce the refrigeration load by 14 Btu/hr/ft.  
‡‡ Add 20 Btu/hr/ft *per shelf row* for fluorescent lamps.

**DEFROST DATA**

	ESBDS
<b>Frequency (hr)</b>	12
<b>Defrost Water (lb/ft/day)</b>	0.5

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

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

*ELECTRIC OR GAS* Not Recommended

**Standard Defrost Thermostat**

Close on rise: close 43°F — open 33°F

**CONVENTIONAL CONTROLS**

**Low Pressure Backup Control**

	ESBDS
<b>CI/CO (Temp °F)*</b>	13

**Indoor Unit Only, Pressure Defrost**

**Termination (Temp °F)\***

Not Recommended

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

**Estimated Charge (lb)\*\***

<b>4 ft</b>	0.8
<b>6 ft</b>	1.2
<b>8 ft</b>	1.5
<b>12 ft</b>	2.0

\*\*This is an average for all refrigerant types.

Actual refrigerant charge may vary by approximately half a pound.

# Impact Elite **ESBDS** Meat & Delicatessen

## Electrical Data

<b>Number of Fans</b>	<b>4 ft</b>	<b>6 ft</b>	<b>8 ft</b>	<b>12 ft</b>
<b>Refrigeration – 4W</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>3</b>
<b>Ambient Air Wipe – 15W</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>6</b>

<b>Merchandise</b>	<b>Amperes</b>				<b>Watts</b>			
	<b>4 ft</b>	<b>6 ft</b>	<b>8 ft</b>	<b>12 ft</b>	<b>4 ft</b>	<b>6 ft</b>	<b>8 ft</b>	<b>12 ft</b>
<b>Refrigeration 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	0.56	27	54	54	81
<b>Ambient Air Wipe Fans</b>								
120V 60Hz Standard	0.52	1.04	1.04	1.56	45	90	90	135
120V 60Hz Energy Efficient	NA							
230V 50Hz Export	0.30	0.60	0.60	0.90	50	100	100	150

### Constant-on Anti-Sweat Heaters (On/Off Switch Optional)

120V 60Hz Standard	3.34	6.68	6.68	10.02	400	800	800	1200
230V 50Hz Export	1.74	3.48	3.48	5.22	400	800	800	1200

### Minimum Circuit Ampacity

120V 60Hz Standard Fans	4.37	8.54	8.54	12.71
120V 60Hz Energy Efficient Fans	4.20	8.20	8.20	12.20
230V 50Hz Export Fans	2.42	4.64	4.64	6.88

**Maximum Over Circuit Protection 120V**    20      20      20      20

**Maximum Over Circuit Protection 230V**    15      15      15      15

<b>Standard Lighting*</b> (120V 60hz)	<b>4 ft</b>	<b>6 ft</b>	<b>8 ft</b>	<b>12 ft</b>	<b>4 ft</b>	<b>6 ft</b>	<b>8 ft</b>	<b>12 ft</b>
2 Row Canopy	0.49	0.98	0.98	1.42	59	118	118	171

### Optional Lighting (T-8 fluorescent)

1 Row Rail	0.49	0.49	0.49	0.71	59	59	59	86
1 Row Ledge	0.49	0.49	0.49	0.71	59	59	59	86
1 Row Shelves	0.49	0.49	0.49	0.71	59	59	59	86
2 Row Shelves	0.49	0.98	0.98	1.42	59	118	118	171

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

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

**Product Data**

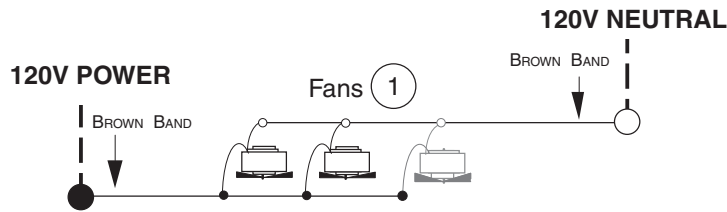
<i>Recommended Usable Cube</i> <sup>1</sup> (Cu Ft/Ft)	2.55 ft <sup>3</sup> /ft (0.24 m <sup>3</sup> /m)
<i>ARI Total Display Area</i> <sup>2</sup> (Sq Ft/Ft)	4.82 ft <sup>2</sup> /ft (1.47 m <sup>2</sup> /m)
<i>Shelf Area</i> <sup>3</sup> (Sq Ft/Ft)	4.42 ft <sup>2</sup> /ft (1.35 m <sup>2</sup> /m)

- <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>2</sup> Computed using ARI 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 NONE. Optional shelving complement is two rows: 1 row of 10-inch shelves and 1 row of 12-inch shelves.

<b>ESTIMATED SHIPPING WEIGHT <sup>4</sup></b>					
<b>Case</b>	<i>4 ft</i>	<i>6 ft</i>	<i>8 ft</i>	<i>12 ft</i>	<b>Solid End</b>
					<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.					

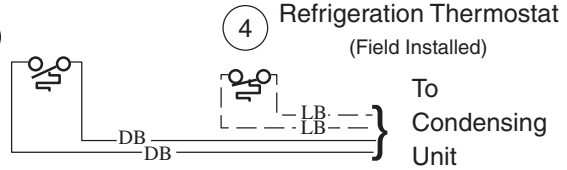
## Fans

### Fan Wiring Offtime Defrost



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

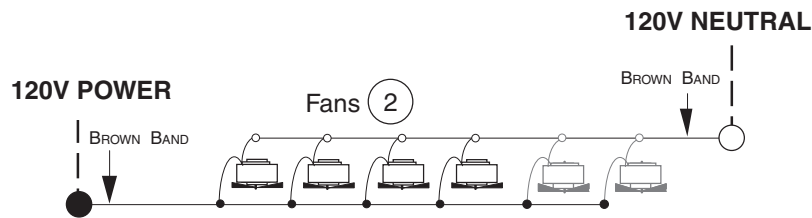
Defrost (3)  
Termination  
Thermostat



## Fans

### Ambient Fan Wiring Glass Air Wipe

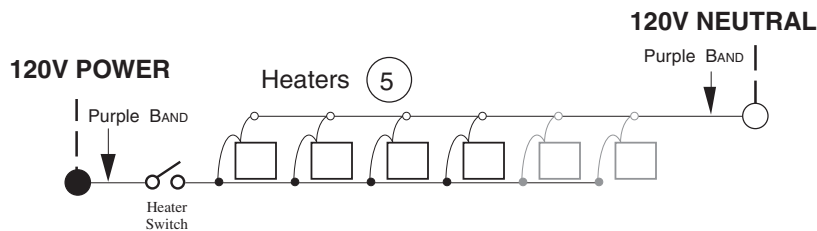
- 4 ft case has 2 Fans
- 6 ft case has 4 Fans
- 8 ft case has 4 Fans
- 12 ft case has 6 Fans



## Heaters

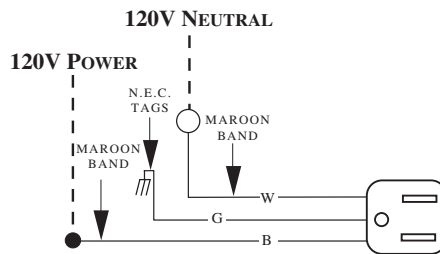
### Ambient Heater Wiring

- 4 ft case has 2 Heaters
- 6 ft case has 4 Heaters
- 8 ft case has 4 Heaters
- 12 ft case has 6 Heaters



### Receptacles

### Electric Service Receptacle



### WARNING

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

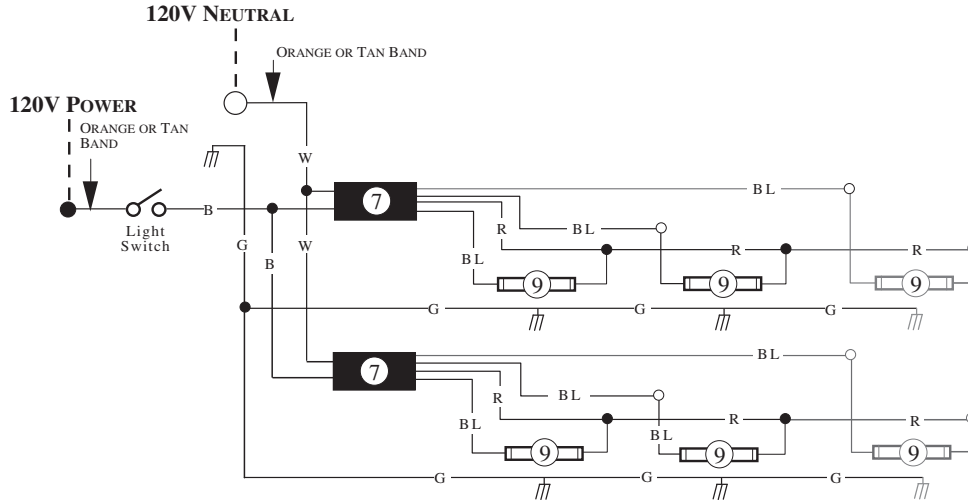
Circled Numbers = Parts List Item Numbers

Grayed components in 12 foot models only.

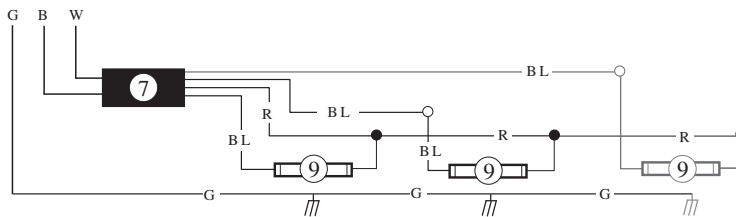
R = Red G = Green BL = Blue LB = Light Blue DB = Dark Blue B = Black W = White

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

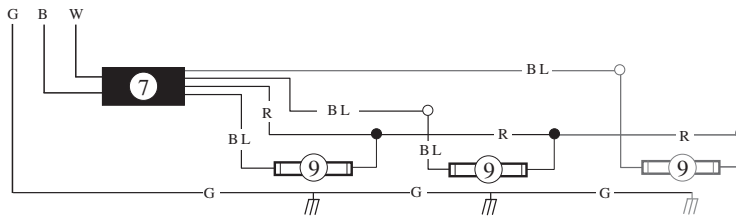
## Standard Lighting 2 Row Canopy



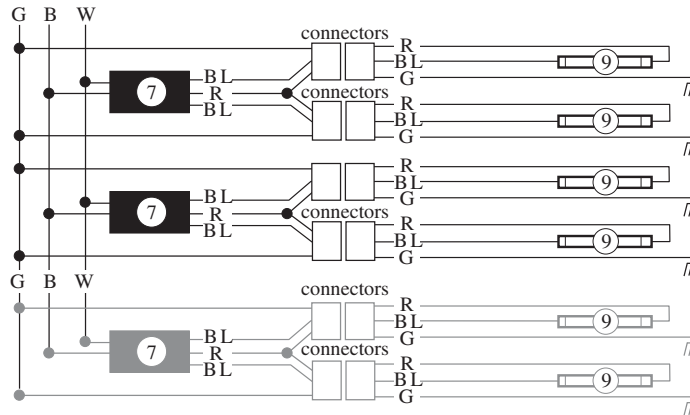
### Optional Rail Light Circuit



### Optional Ledge Light Circuit



### Optional Shelf Harness and Light Circuits



### 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    B = Black    W = White

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