

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 #	Description	Wiring Item #	Item	Part #	Description	Wiring Item #
<b>FAN ASSEMBLIES</b>				<b>THERMOSTATS</b>			
<b>4 Ft, 8 Ft &amp; 12 Ft</b>				B. Optional Adjustable Refrigeration Thermostat (2)			
A.	<b>25W Standard</b>	Fan Assembly	(1)	<b>LAMPS AND BALLASTS</b>			
	0501486	Fan Motor, Evaporator (MO.4410702)		C.	Ballast, Electronic		(3)
	0501484	Fan Blade (FB.4780657)			0480130	2 lamps (BA.4481676)	
	<b>25W Energy Efficient</b>	Fan Assembly	(1)		0480131	3 lamps (BA.4481654)	
	0501485	Fan Motor, Evaporator (MO.4410701)			0480132	4 lamps (BA.4481677)	
	0501484	Fan Blade (FB.4780657)		D.	Fluorescent Lamp		(4)
					<i>Replace with like fixtures</i>		
<b>6 Ft Only</b>				<b>LED FIXTURES AND POWER SUPPLY</b>			
A.	<b>7W Standard</b>	Fan Assembly	(1)	E.	0501213	Power Supply (EP.4481861)	(5)
	0058698	Fan Motor, Evaporator (MO.4410102)		F.		LED Canopy Fixture	(6)
	0142780	Fan Blade (FB.0142780)			<i>Replace with like fixtures — See Page 5.</i>		
	<b>7W Energy Efficient</b>	Fan Assembly	(1)	G.		LED Shelf Fixture	(7)
	0477654	Fan Motor, Evaporator (MO.4410545)			<i>Replace with like fixtures — See Page 5.</i>		
	0142780	Fan Blade (FB.0142780)					

Note: Revision E adds EcoShine LED (page 4) and parts (page 5), and revises canopy wiring diagram (page 6). Other changes marked by bar, underline or circle.



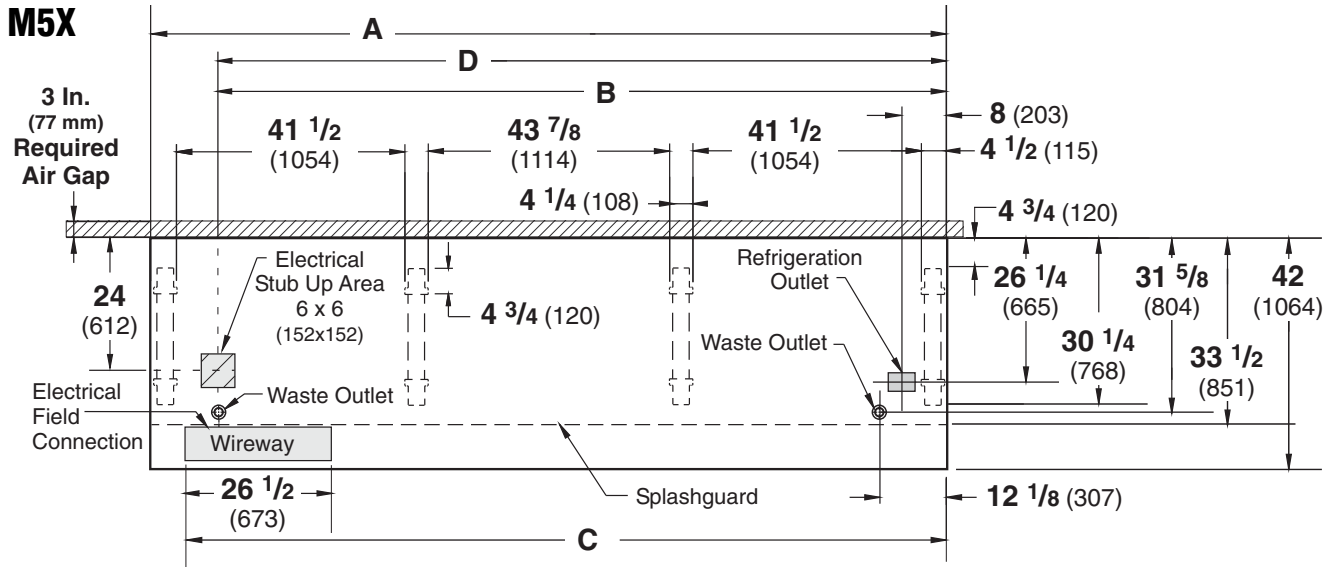
# Engineering Plan Views

**Meat and Produce**  
10-2004

## PHYSICAL DATA





Merchandiser Drip Pipe (in.)	1 1/4
Merchandiser Liquid Line (in.)	3/8
Merchandiser Suction Line (in.)	7/8

Dimensions shown as inches and (mm).

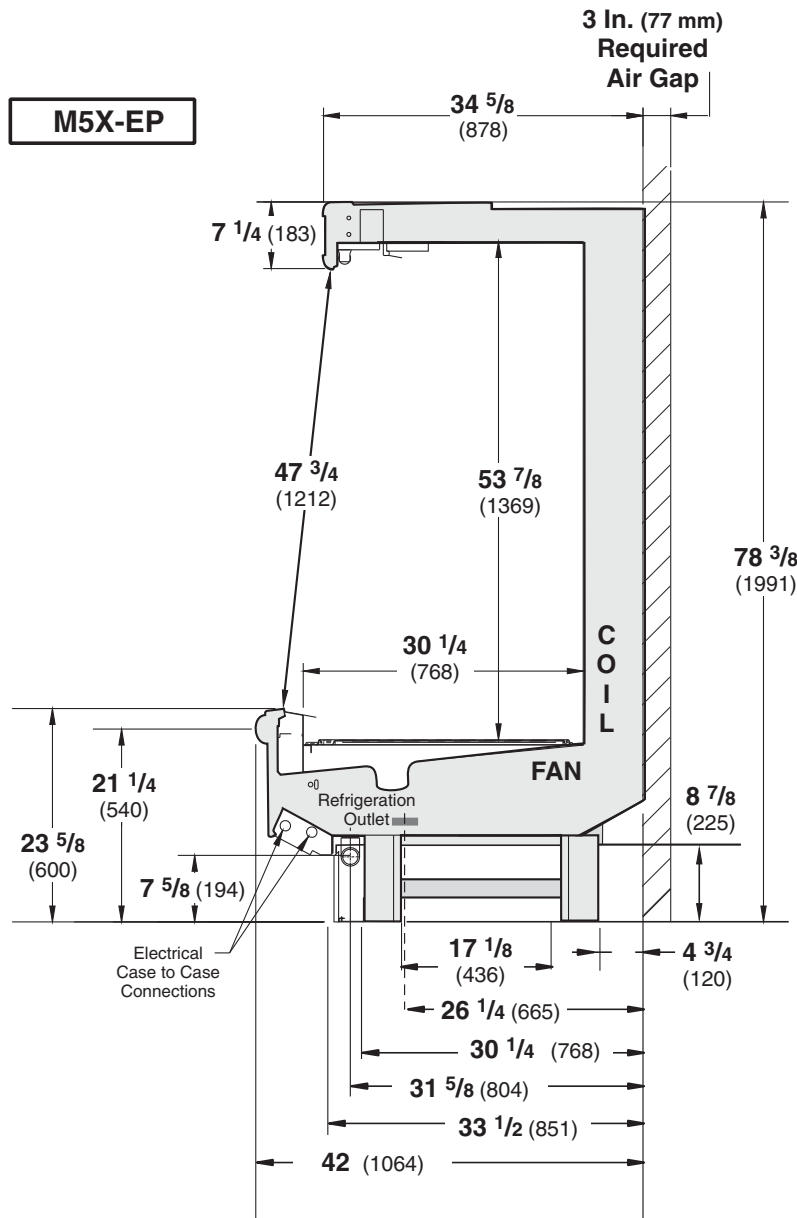


**NOTE: Case-to-Case Electrical Connections are made IN FRONT OF SPLASHGUARD.**

**FRONT**

	4 ft	6 ft	8 ft	12 ft
<b>General</b>				
<b>(A) Case Length (without ends or partitions)</b> <i>(Each end and insulated partition adds 1 1/2 in. (38 mm) to case line up.)</i>	48 3/8 (1229)	72 3/8 (1838)	96 3/8 (2448)	144 1/2 (3670)
Maximum O/S dimension of case back to front <i>(includes bumper)</i>	42 (1064)	42 (1064)	42 (1064)	42 (1064)
Back of case to front of splashguard	33 1/2 (851)	33 1/2 (851)	33 1/2 (851)	33 1/2 (851)
Back of case to O/S edge of front leg	30 1/4 (768)	30 1/4 (768)	30 1/4 (768)	30 1/4 (768)
Distance between edges of external legs and center legs	NA	29 1/2 (750)	41 1/2 (1054)	41 1/2 (1054)
Distance between edges of center legs	NA	NA	NA	43 7/8 (1114)
Distance between front legs and splashguard	2 3/4 (70)	2 3/4 (70)	2 3/4 (70)	2 3/4 (70)
<b>Electrical Service</b>  <i>(Electrical Field Wiring connection point)</i>				
<b>(B) RH End of case to center of stub up area</b>	36 1/4 (921)	60 1/4 (1530)	84 1/4 (2140)	132 3/8 (3363)
Back of case to center of stub up area	24 (612)	24 (612)	24 (612)	24 (612)
Length of electrical wireway 	26 1/2 (673)	26 1/2 (673)	26 1/2 (673)	26 1/2 (673)
<b>(C) RH End of case to LH end of wireway</b>	42 1/8 (1070)	66 1/8 (1680)	90 1/8 (2289)	138 1/4 (3511)
<b>Waste Outlets (One each end)</b> 				
<b>(D) RH End of case to the center of LH waste outlet</b>	36 1/4 (921)	60 1/4 (1530)	84 1/4 (2140)	132 3/8 (3363)
RH End of case to the center of RH waste outlet	12 1/8 (307)	12 1/8 (307)	12 1/8 (307)	12 1/8 (307)
Back O/S of case to center of waste outlets	31 5/8 (804)	31 5/8 (804)	31 5/8 (804)	31 5/8 (804)
Schedule 40 PVC drip pipe	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)
<b>Refrigeration Outlet</b> 				
Back of case to center of refrigeration outlet	26 1/4 (665)	26 1/4 (665)	26 1/4 (665)	26 1/4 (665)
RH end of case to center of refrigeration outlet	8 (203)	8 (203)	8 (203)	8 (203)

Dimensions shown as in. and (mm).



**Impact *Excel* M5X-EP**  
**Meat & Delicatessen**

**REFRIGERATION DATA**

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

M5X-EP	UNLIT	LIT
Discharge Air °F	32	30
Evaporator °F	28	26
Unit Sizing °F	26	24

*Btu/hr/ft<sup>‡</sup> — Unlit Shelves<sup>‡‡</sup>*

M5X-EP	Parallel	Conventional
UNLIT	1370	1490

<sup>‡</sup>Optional energy efficient motors reduce the refrigeration load by 46 Btu/hr/ft.  
<sup>‡‡</sup> Add 10 Btu/hr/ft *per shelf row* for LED fixtures.  
 Add 20 Btu/hr/ft *per shelf row* for fluorescent lamps.

**DEFROST DATA**

Frequency Hr	6
Defrost Water (lb/ft/day)	10.5
(± 15% based on case configuration and product loading).	

OFFTIME	M5X-EP
Time (minutes)	30

**ELECTRIC OR GAS** Not Recommended

**CONVENTIONAL CONTROLS**

<b>Low Pressure Backup Control</b>	
CI/CO*	M5X-EP 19°F / 9°F

**Indoor Unit Only,**  
**Pressure Defrost Termination\*** 48°F

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

Estimated Charge**	M5X-EP	
<b>4ft</b>	1.9 lb	30 oz 0.9 kg
<b>6 ft</b>	2.5 lb	40 oz 1.1 kg
<b>8 ft</b>	3.7 lb	59 oz 1.7 kg
<b>12 ft</b>	5.1 lb	82 oz 2.3 kg

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

**NSF Certification**

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

# Impact *Excel* M5X-EP

## Meat & Delicatessen

### Electrical Data

	4 ft	6 ft	8 ft	12 ft
Number of Fans—25W	1	—	2	3
Number of Fans—7W	—	4	—	—

	Amperes				Watts			
	4 ft	6 ft	8 ft	12 ft	4 ft	6 ft	8 ft	12 ft
<b>Evaporator Fan</b>								
120V 60Hz Standard	1.23	2.00	2.46	3.69	90	156	180	270
120V 50Hz Standard	1.33	2.20	2.66	3.99	103	168	206	309
230V 60Hz Export	0.66	1.00	1.32	1.98	100	156	200	300
230V 50Hz Export	0.76	1.12	1.52	2.28	114	168	228	342
120V 60Hz Energy Efficient	0.60	0.76	1.20	1.80	36	56	72	108
230V 60Hz Energy Efficient	0.30	0.40	0.60	0.90	36	56	72	108

### Minimum Circuit Ampacity

120V 60Hz Standard	1.43	2.20	2.66	3.89
120V 50Hz Standard	1.53	2.40	2.86	4.19
230V 60Hz Export	0.86	1.20	1.52	2.18
230V 50Hz Export	0.96	1.32	1.72	2.48
120V 60Hz Energy Efficient	0.80	0.96	1.40	2.00
230V 60Hz Energy Efficient	0.50	0.60	0.80	1.10

### Maximum Over Current Protection 120V

Maximum Over Current Protection 120V	20	20	20	20
Maximum Over Current Protection 230V	15	15	15	15

### Standard Lighting (T-8 fluorescent)

1 Row Canopy	0.26	0.51	0.51	0.77	30	59	59	85
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### Optional Lighting (T-8 fluorescent)

Additional 1 Row Canopy	0.26	0.51	0.51	0.77	30	59	59	85
Additional 2 Row Canopy	0.51	1.02	1.02	1.54	59	118	118	170
Additional 3 Row Canopy	0.77	1.53	1.53	2.31	89	177	177	255
1 Row Rail Light	0.26	0.51	0.51	0.77	30	59	59	85
4 Rows of Shelves	1.02	2.04	2.04	3.08	118	236	236	340
5 Rows of Shelves	1.28	2.55	2.55	3.85	148	295	295	425

### EcoShine Multi-deck — Normal CRI—120VAC, 50/60Hz

2 Row Canopy (Front & Rear)	0.28	0.41	0.55	0.82	33	49	66	98
4 Rows of Shelves	0.39	0.58	0.78	1.17	47	70	93	140
5 Rows of Shelves	0.48	0.73	0.97	1.45	58	87	116	174

### EcoShine Multi-deck — High CRI — 120VAC, 50/60Hz

2 Row Canopy (Front & Rear)	0.32	0.47	0.63	0.93	38	56	75	112
4 Rows of Shelves	0.47	0.70	0.93	1.40	56	84	112	168
5 Rows of Shelves	0.58	0.88	1.17	1.75	70	105	140	210

### Always\*Bright Multi-deck Lighting — 120VAC, 50/60Hz

2 Row Canopy (Front & Rear)	0.38	0.55	0.71	1.08	45	66	85	130
4 Rows of Shelves	0.47	0.68	0.93	1.40	56	82	112	168
5 Rows of Shelves	0.57	0.83	1.13	1.69	68	99	136	203

120V Lighting Circuit Total = Standard Lighting + Total Optional Lighting + Optional Shelf Lighting

230V Lighting Circuit Total = Multiply 120V Lighting Circuit Total by 0.52

**Product Data**

<i>Recommended Usable Cube</i> <sup>1</sup> (Cu Ft/Ft)	6.97 ft <sup>3</sup> /ft (0.65 m <sup>3</sup> /m)
<i>AHRI Total Display Area</i> <sup>2</sup> (Sq Ft/Ft)	4.40 ft <sup>2</sup> /ft (1.34 m <sup>2</sup> /m)
<i>Shelf Area</i> <sup>3</sup> (Sq Ft/Ft)	8.38 ft <sup>2</sup> /ft (2.55 m <sup>2</sup> /m)

- <sup>2</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 (2) rows of 16-inch shelves and (2) rows of 18-inch shelves.

ESTIMATED SHIPPING WEIGHT <sup>4</sup>					
Case					Solid End
	4 ft	6 ft	8 ft	12 ft	(each)
<b>lb (kg)</b>	800 (363)	1000 (454)	1100 (499)	1500 (680)	100 (45)

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

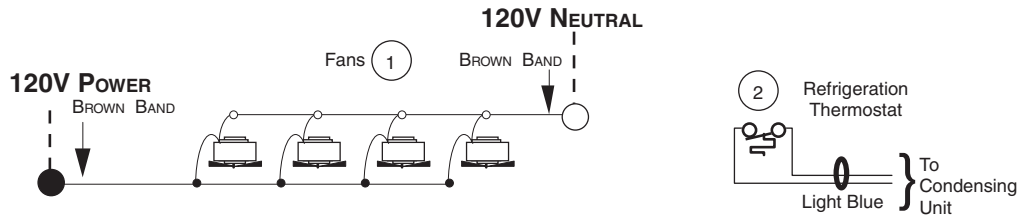
PARTS LIST (Continued from Page 1)							
Item	Part #	Description			Item	Part #	Description
<b>LED FIXTURES AND POWER SUPPLY</b>							
E.	0501213	Power Supply (EP.4481861)			(5)	F. (CONTINUED) <b>EcoShine LED Canopy Fixture</b>	
F.	<b>EcoShine LED Canopy Fixture</b>			(6)	4441713	Rear 36-inch	<b>2900K</b> HCRI
	4441720	Front 48-inch	<b>2900K</b> HCRI		4441715	Rear 36-inch	<b>3500K</b> HCRI
	4441722	Front 48-inch	<b>3500K</b> HCRI		4441717	Rear 36-inch	<b>3500K</b>
	4441724	Front 48-inch	<b>3500K</b>		4441719	Rear 36-inch	<b>4100K</b>
	4441726	Front 48-inch	<b>4100K</b>		G. <b>EcoShine LED Shelf Fixture</b>		(7)
	4441721	Rear 48-inch	<b>2900K</b> HCRI		4441590	48-inch	<b>2900K</b> HCRI
	4441723	Rear 48-inch	<b>3500K</b> HCRI		4441591	48-inch	<b>3500K</b> HCRI
	4441725	Rear 48-inch	<b>3500K</b>		4441592	48-inch	<b>3500K</b>
	4441727	Rear 48-inch	<b>4100K</b>		4441593	48-inch	<b>4100K</b>
	4441712	Front 36-inch	<b>2900K</b> HCRI		4441586	36-inch	<b>2900K</b> HCRI
	4441714	Front 36-inch	<b>3500K</b> HCRI		4441587	36-inch	<b>3500K</b> HCRI
	4441716	Front 36-inch	<b>3500K</b>		4441588	36-inch	<b>3500K</b>
	4441718	Front 36-inch	<b>4100K</b>		4441589	36-inch	<b>4100K</b>

Note: Always\*Bright lamps will be replaced with the latest generation of EcoShine lamps.

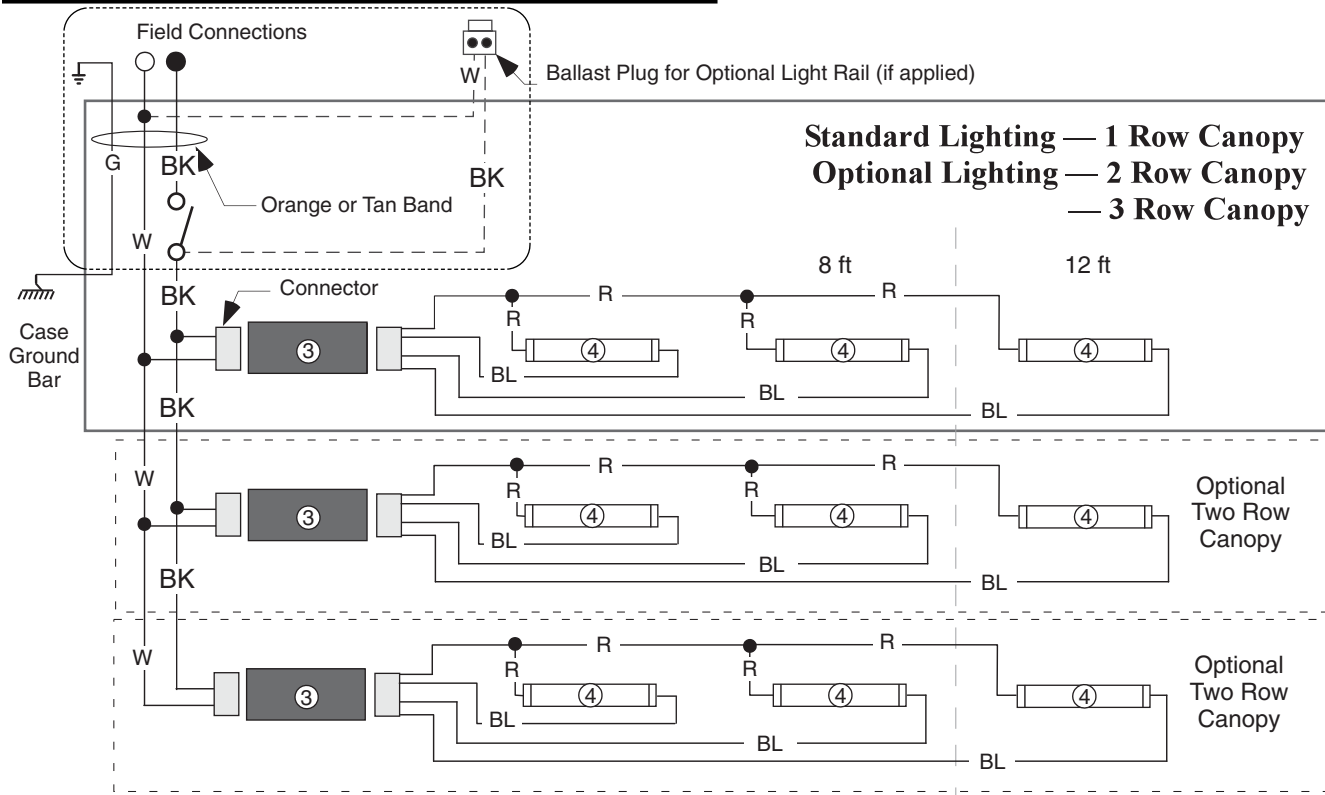
# Fan Wiring Offtime Defrost

## 1, 2, 3 & 4 Fans

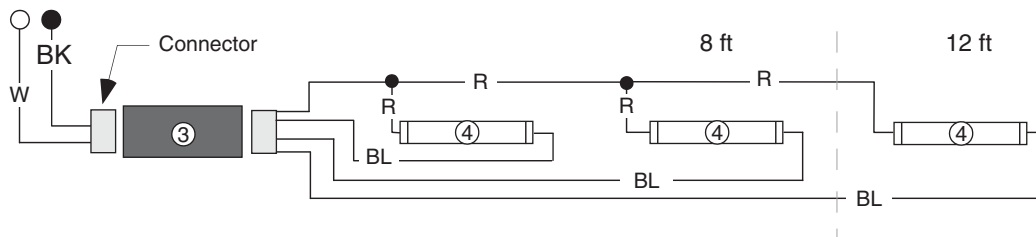
- 4 ft — 1 Fan
- 6 ft — 4 Fans
- 8 ft — 2 Fans
- 12 ft — 3 Fans



# Light Circuits — Fluorescent Fixtures



## Optional Lighting — 1 Row Rail



### WARNING

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

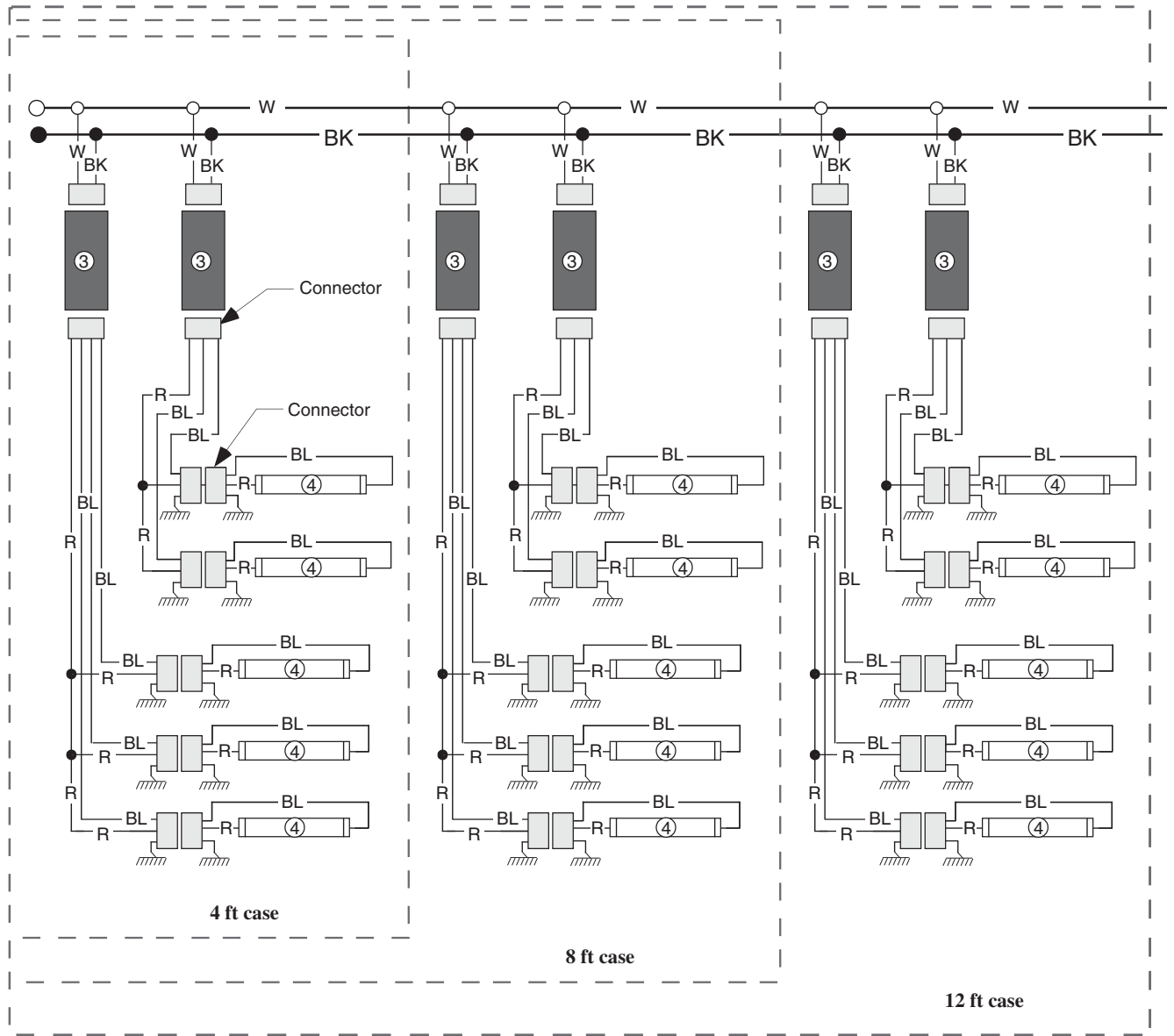
CIRCLED NUMBERS = PARTS LIST ITEM NUMBERS

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

● = 120V POWER ○ = 120V NEUTRAL ⊥ = FIELD GROUND ≡ = CASE GROUND

# Optional Shelf Lighting Fluorescent Fixtures

## Optional Shelf Harness and Light Circuits for Five Rows of Shelves



### WARNING

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

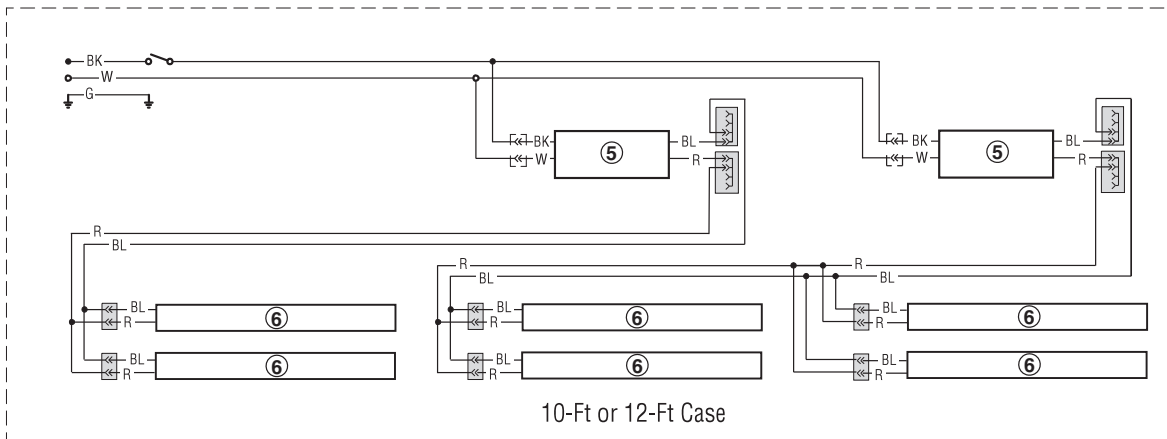
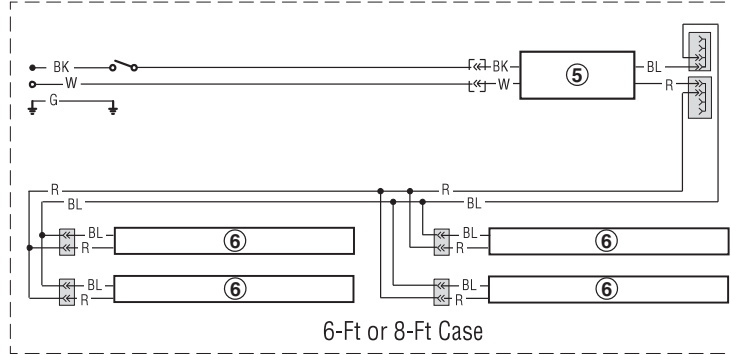
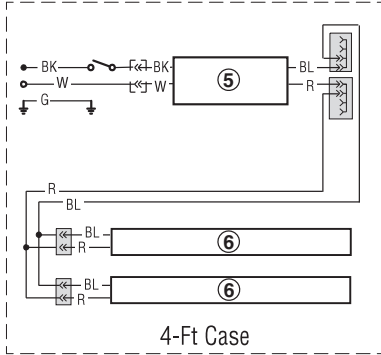
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R = Red   Y = Yellow   G = Green   BL = Blue   BK = Black   W = White

● = 120V POWER   ○ = 120V NEUTRAL   ⚡ = FIELD GROUND   ≡ = CASE GROUND

# Optional Canopy Lighting LED Fixtures

## Standard LED Canopy Lighting — 2 Row Canopy



### WARNING

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

CIRCLED NUMBERS = PARTS LIST ITEM NUMBERS

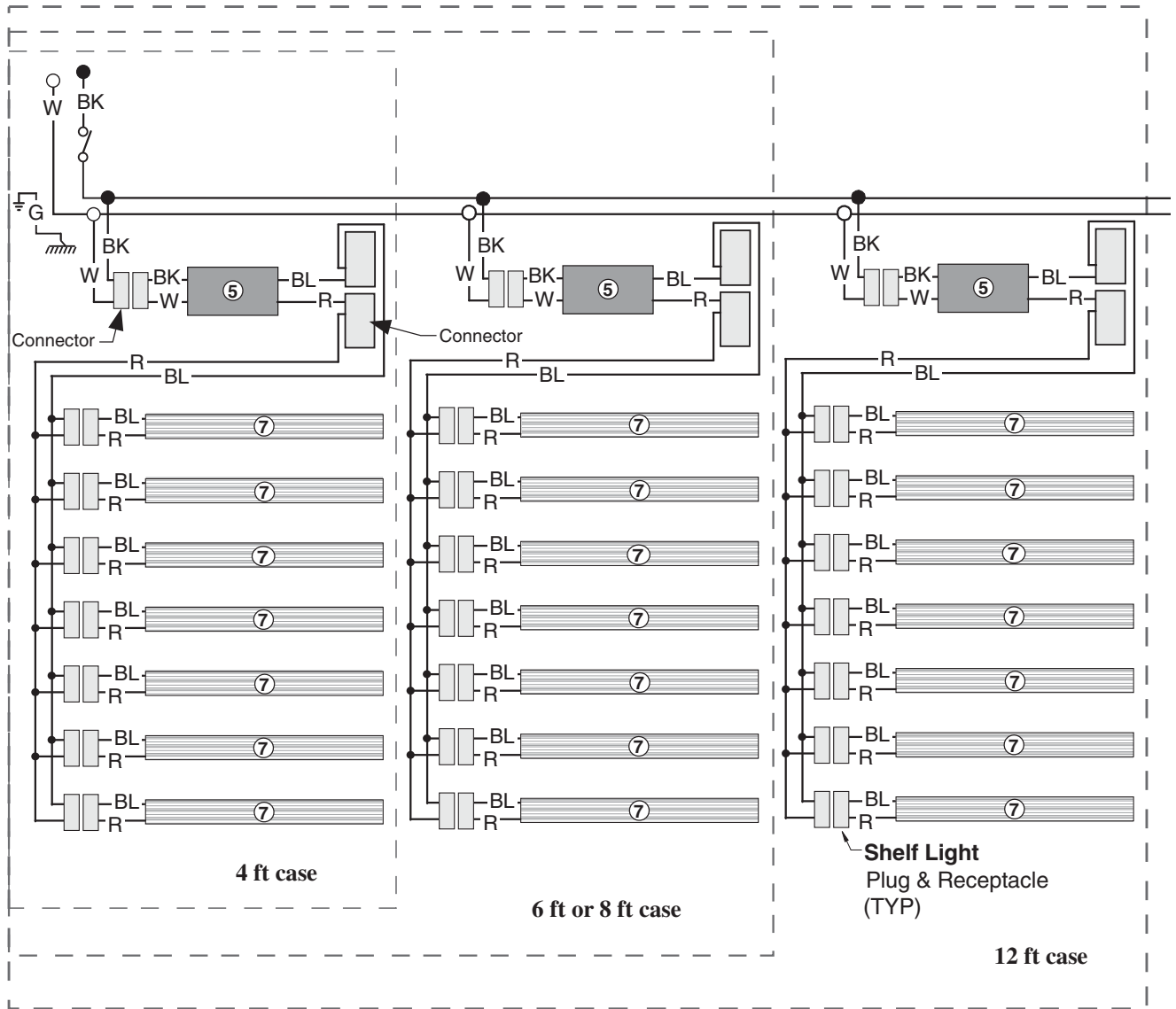
R = Red Y = Yellow G = Green BL = Blue BK = Black W = White

● = 120V POWER ○ = 120V NEUTRAL ⊥ = FIELD GROUND  $\overline{\text{m}}$  = CASE GROUND



# Optional Shelf Lighting LED Fixtures

## Optional Shelf Harness and LED Light Circuits for 3, 4, 5, 6 & 7 Rows of Shelves



### WARNING

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

CIRCLED NUMBERS = PARTS LIST ITEM NUMBERS

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

● = 120V POWER      ○ = 120V NEUTRAL      ⚡ = FIELD GROUND      mmm = CASE GROUND