



**INSTALLATION INSTRUCTIONS  
EMERGENCY FLUORESCENT BATTERY PACK  
QD MODELS**


**PS 300 MVOLT, PSQ500 MVOLT, PS600 MVOLT, PS1400 MVOLT  
Universal Voltage 120 to 277VAC Input**

READ AND FOLLOW THESE INSTRUCTIONS BEFORE INSTALLATION TO INSURE PROPER AND SAFE OPERATION

**SAVE THESE INSTRUCTIONS**

FIELD INSTALLABLE FLUORESCENT BATTERY PACK IS UNIVERSALLY COMPATIBLE WITH THE BALLASTS AND LAMP(S) AS SHOWN IN *LAMP COMPATIBILITY TABLE (PAGE 5)*

<b>READ AND FOLLOW ALL SAFETY INSTRUCTIONS</b>
<b>⚠WARNING</b>
<ul style="list-style-type: none"> <li>• Dual Power Supply - Risk of Shock Hazard Even if AC Power is OFF</li> <li>• Disconnect polarized Test Switch / Pilot Light connector before servicing fixture</li> <li>• DO NOT remove the wire harness connector when AC Power is ON</li> <li>• DO NOT mount near a gas or electric heater</li> <li>• Battery Pack Output Voltage is 1600VDC</li> </ul>
<b>⚠CAUTION</b>
<ul style="list-style-type: none"> <li>• Before wiring to power supply, turn off Electricity at fuse panel or circuit breaker</li> <li>• All servicing shall be performed by qualified personnel</li> <li>• DO NOT attempt to service the battery. It is not field replaceable</li> <li>• DO NOT use in hazardous locations</li> <li>• DO NOT use this product outdoors</li> <li>• DO NOT use this product in air handler heated outlets</li> <li>• DO NOT use accessory equipment not recommended by the manufacture</li> <li>• DO NOT use this equipment for other than its intended use</li> </ul>

<b>IMPORTANT SAFEGUARDS</b>
<ul style="list-style-type: none"> <li>• Consult your local building code for approved wiring or installation</li> <li>• The emergency battery pack must be connected to an un-switched AC power source of 120 to 277 Vac</li> <li>• This product is for use with indoor fixtures sealed or unsealed</li> <li>• Equipment should be mounted in a location and at heights where it will not be readily be subject to tampering by unauthorized personnel</li> <li>• Make sure that the branch circuits are derived from a common phase for both normal lighting ballast and Battery Pack <i>prior to</i> installation</li> <li>• The Battery Pack can be switched or un-switched (night) circuit. When used with a switched fixture, it is important that the power to the Battery Pack must be provided by an un-switched circuit.</li> <li>• Damage to the battery will occur if the Test Switch / Pilot Light connection is made for a prolonged period of time without AC power being provided.</li> <li>• Battery packs are <i>not</i> field serviceable</li> <li>• Allow Battery Packs to charge 24 hrs before initial and full discharge testing</li> <li>• Do not locate the Test Switch / Pilot Light or route cable within 1" of fixture lamps</li> <li>• Emergency lighting system should be tested per all of the required tests and as often as local codes require or at least quarterly to insure all components are operational.</li> </ul>
<p><b>CONTAINS NICKEL-CADMIUM RECHARGEABLE BATTERY. MUST BE RECYCLED OR DISPOSED OF PROPERLY.</b></p>
 <b>Ni-Cd</b>

# Installation Instructions for Power Sentry Emergency Battery Packs – QD MVOLT Series

## Battery Pack System Components

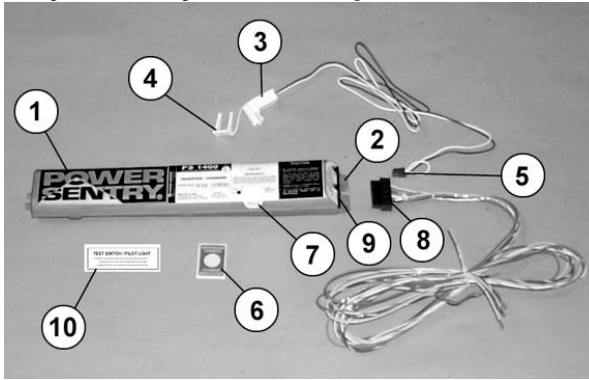


Figure 1

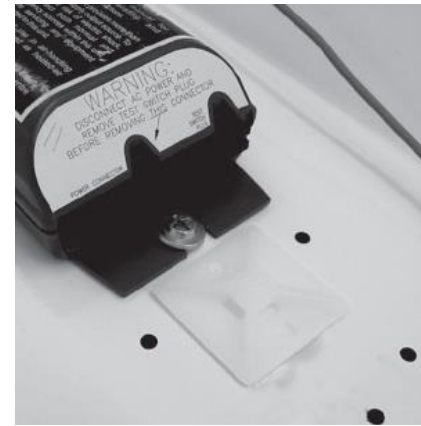


Figure 2

### Components Description

- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| ① Battery Pack Housing              | ⑦ Lamp Selector Switch (PS 1400 only) |
| ② Mounting Slots                    | ⑧ Quick Disconnect Wire Harness Plug  |
| ③ Test Switch / Pilot Light (TS/PL) | ⑨ Battery Pack Power Connector        |
| ④ TS/PL Mounting Clip               | ⑩ TS/PL Label                         |
| ⑤ TS/PL Connector                   |                                       |
| ⑥ Charge Indicator Sticker          |                                       |



Figure 3

### Installation

#### Step 1 – Install Battery Pack

1. Turn off all external power to the luminaire
2. Inspect Battery Pack and make sure the TSPL connector ⑤ is not connected. If so, disconnect it before installation of the Battery Pack.
3. Position the unit in the fixture wireway and fasten securely through the Mounting Slots ②. If necessary, drill holes and mount with sheet metal cutting screws (not provided)
4. Attach a flat wire tie holder as shown in Figure 2
5. Refer to the appropriate wiring diagram, Connect unit to the ballast, lamp(s) and AC input power as indicated in the wiring diagram.
6. Attach and fully engage the Quick Disconnect Wire Harness Plug ⑧ into the Battery Pack Power Connector ⑨. Inspect that the Wire Harness Plug is squarely seated against the Battery Pack Power Connector.
7. Insert a wire tie into the flat wire tie holder and pull the wire tie tight as shown in Figure 3
8. Inspect that the Wire Harness Plug is still squarely seated against the Battery Pack Power Connector.

#### Step 2 – Install Test Switch / Pilot Light (TS/PL)

### ⚠ CAUTION

**Fixture contains live wires during portions of the installation. Use insulated tools and gloves.**

1. Locate a suitable location for the TS/PL and cable that is at least 1" from the fixture lamps and is visible outside the fixture lens
2. Drill or punch a 1/2" diameter hole in the fixture wall or wireway cover
3. Insert one side of TS/PL ③ into the hole from the inside of the fixture housing until it snaps in place.
4. Slide TS/PL Mounting Clip ④ firmly to lock and secure the TS/PL assembly
5. Mark the TS/PL location on the fixture with the TS/PL Label ⑩.
6. Apply continuous AC power to the battery pack
7. Connect and fully engage the TS/PL Connector ⑤ to the battery pack. Insure the TS/PL Connector latch is properly seated in the recess slot on the battery pack housing
8. Verify the TS/PL light is on.
9. Close fixture housing and insure no possibility of pinching any wire between housing channel and cover.



### Step 3 Installation Inspection

Prior to operation of the Battery Pack in normal service perform the following installation inspections. **Charge battery pack at least 1 hour before doing a functional test. Allow 24 Hrs for full rated performance of the Emergency Battery Pack.**

1. Check the equipment rating to be sure the fixture ballast will receive the proper line voltage
2. Be sure the TS/PL pilot lamp is on. If not see Troubleshooting Section
3. Press TS/PL test button. The pilot will turn off, within 5 seconds, One (all models) or two (PS 600 and PS1400 only) fluorescent lamps should be operating at a reduced light output.
4. Upon release of the TS/PL test button, after a short period, the fixture should return to normal operation
5. If all lamps in the fixture return to normal operation, the fixture is ready for normal and emergency service. If not, see Troubleshooting Section

### Normal Operation

During normal operation AC power is applied, the charging indicator light is illuminated indicating the battery is charging. When the power fails the Battery Pack automatically switches to emergency power from the internal NiCd battery that will operate one or two lamps for a minimum of 90 minutes. When the AC power is restored, the Battery Pack switches the fixture back to the normal mode in 3-5 seconds.

### Periodic Maintenance

Emergency lighting system should be tested per all of the required tests and as often as local codes require or at least quarterly to insure all components are operational

1. Periodically manually test the emergency lighting system by pressing the TS/PL test button
2. Insure the Red LED charging light is on when the AC power is on
3. Check the system lamps to insure they operate in both the with the normal AC and emergency modes
4. Lamps that have excessively black ends should be replaced
5. Lamps used for emergency lighting fixtures generally do not last as long as normally operated lamps. They will need to be replaced more frequently.

### Troubleshooting

Problem	Possible Cause
Emergency Lamp does not operate when TS/PL Button is pressed	<ol style="list-style-type: none"> <li>1. Wiring of the Battery pack to lamp(s)</li> <li>2. Lamps not inserted correctly</li> <li>3. Lamp is at end of life</li> <li>4. Battery not charged at least 1 hour</li> <li>5. TS/PL not inserted properly to Battery Pack</li> </ol>
TS/PL Charging LED not on	<ol style="list-style-type: none"> <li>1. AC Power is Off</li> <li>2. TS/PL not inserted properly to Battery Pack</li> <li>3. Wrong TS/PL</li> </ol>
Fixture does not operate in the Normal mode	<ol style="list-style-type: none"> <li>1. Wiring of the Battery pack to lamp(s) and normal ballast</li> <li>2. Lamps not inserted correctly</li> <li>3. Lamp is at end of life</li> <li>4. AC power off to the normal ballast (Uses remote fixture switch)</li> </ol>
Battery Pack does not operate lamps in the emergency mode for at least 90 minutes	<ol style="list-style-type: none"> <li>1. Battery not fully charged</li> <li>2. Wrong type or number of lamps connected</li> <li>3. Battery at end of life</li> </ol>



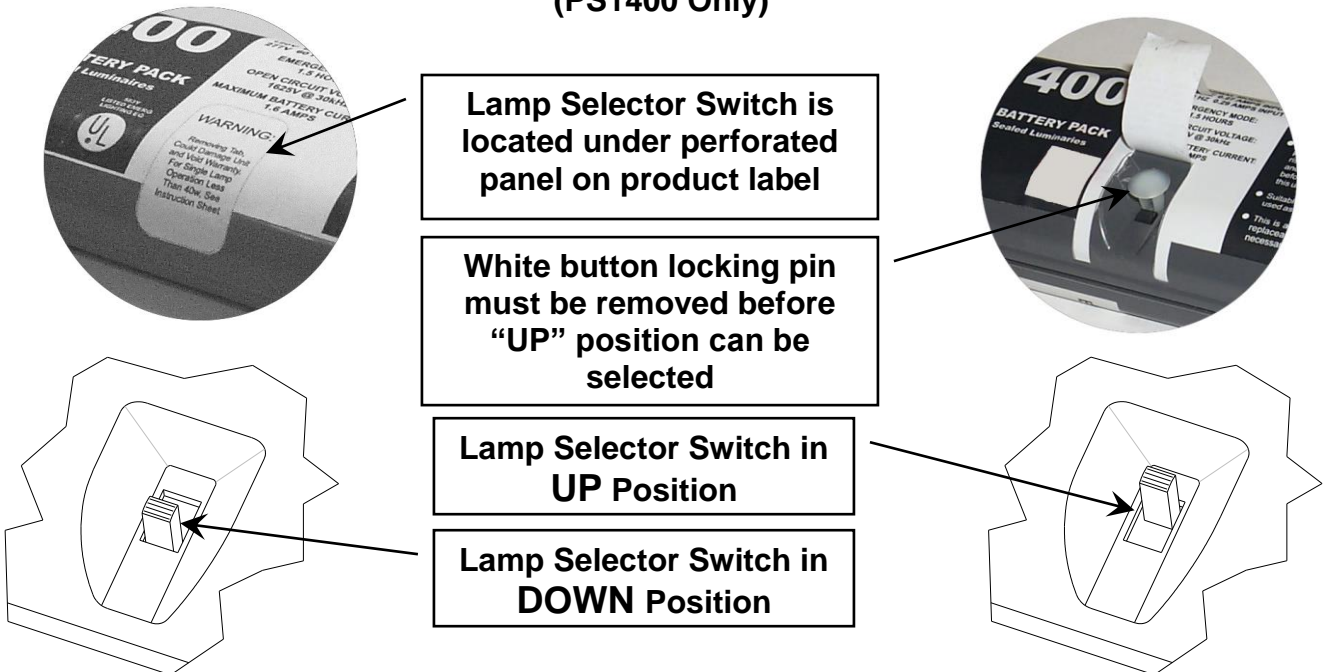
### Lamp Selector Table (PS1400 Only)

The PS1400 has a lamp selector switch that can be used to optimize the performance when placed in the “UP” position. However, based on your lamp configuration, the PS 1400 can only be placed in the “UP” position if designated in the lamp selector table. Battery Packs are shipped from the factory in the “DOWN” position.

Lamp Type	Base Type	Lamp Wattage / Length	Number of Emergency Lamps	Lamp Selector Switch Position	
T5,T8,T12 (5/8”,1”,1 1/2”)	SINGLE or BIPIN	14-24W (2’-4’)	1	UP	
			2	DOWN	
	SINGLE or BIPIN	28-40W (2’-4’)	1	UP	
			2	DOWN	
			40-215W (5’-8’)	1	DOWN
	T5HO	BIPIN (G5)	24-54W (2’-4’)	1	DOWN
Long Compact PL	4 PIN (2G11)	18-39W	1	UP	
			2	DOWN	
		40-55W	1	DOWN	
Compact PL	4 PIN (G24, GX24)	13-26W (Quad Tube)	1	UP	
			2	DOWN	
	4 PIN (G24,GX24)	18-26W (Triple Tube)	1	UP	
			2	UP	
	4 PIN (G24,GX24)	32W (Triple Tube)	1	UP	
			2	DOWN	
	4 PIN (GX24)		42W (Triple Tube)	1	DOWN

**If the sum of the Emergency Lamp rated watts exceed 40 W the Selector Switch must be in the DOWN position**

### Lamp Selector Switch Location (PS1400 Only)





### Lamp Compatibility Table

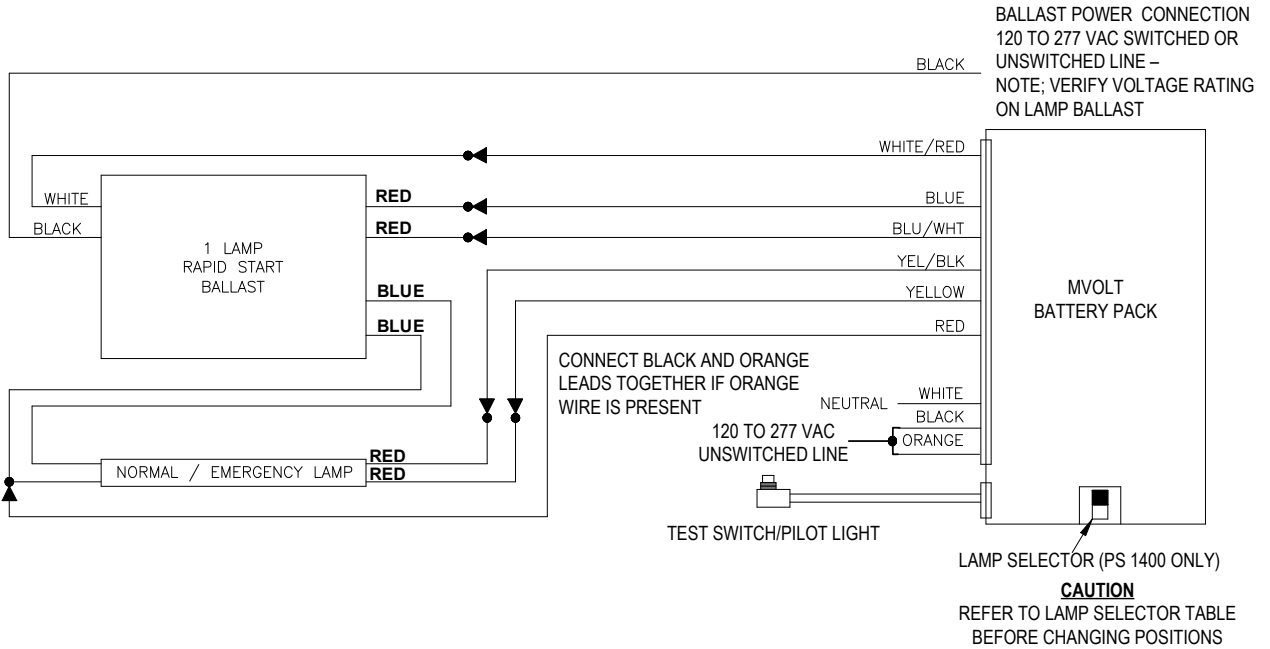
Lamp Type		Lamp Wattage	PS300 (300 Lumens)	PSQ500 (500 Lumens)	PS600 (600 Lumens)	PS1400 (1400 Lumens)
T5	2' - 4'	14 – 28W	-	-	1	1
		24 – 54W	-	-	1	1
T8	U LAMP	16 – 31W	1	1	1,2	1,2
	2' – 4'	17 – 32W	1	1	1,2	1,2
	5' – 8'	40 – 59W	-	-	1	1
	HO – 8'	86W	-	-	1	1
T9	CIRCLINE	20 – 40W	-	-	1	1,2
T12	U LAMP	34 – 40W	1	1	1,2	1,2
	2' – 4'	20 – 40W	1	1	1,2	1,2
	5' – 8'	50 – 75W	-	-	1	1
	HO 2' – 4'	35 – 60W	-	-	1	1
	HO 5' – 8'	70 – 110W	-	-	1	1
	VHO 2' – 4'	74 – 115W	-	-	1	1
	VHO 5' – 8'	135 – 215W	-	-	1	1
PL	Twin Tube (4 PIN)	9 – 13W	-	-	-	1
	Quad Tube (4 PIN)	13 – 26W	-	-	-	1,2
	Triple Tube (4 PIN)	18 – 32W	-	-	-	1,2
		42W	-	-	-	1
	Long Compact (2G11)	18 – 40W	1	1	1	-
50 – 55W		-	-	-	-	

1 = One lamp operation in emergency mode can be used  
 2 = Two lamp operation in emergency mode can be used

## Wiring Diagrams

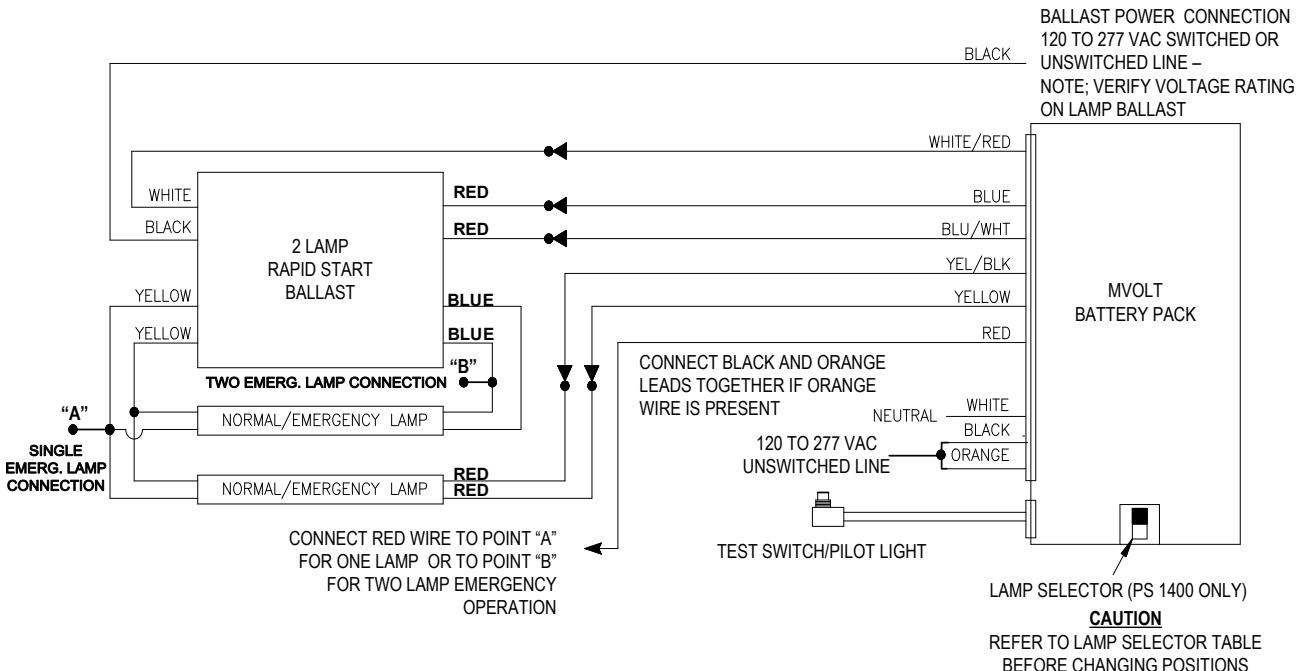
**READ ALL SAFETY INSTRUCTIONS AND IMPORTANT SAFEGUARDS PRIOR TO WIRING AND INSTALLATION**

### ONE LAMP RAPID START BALLAST



**Figure A**

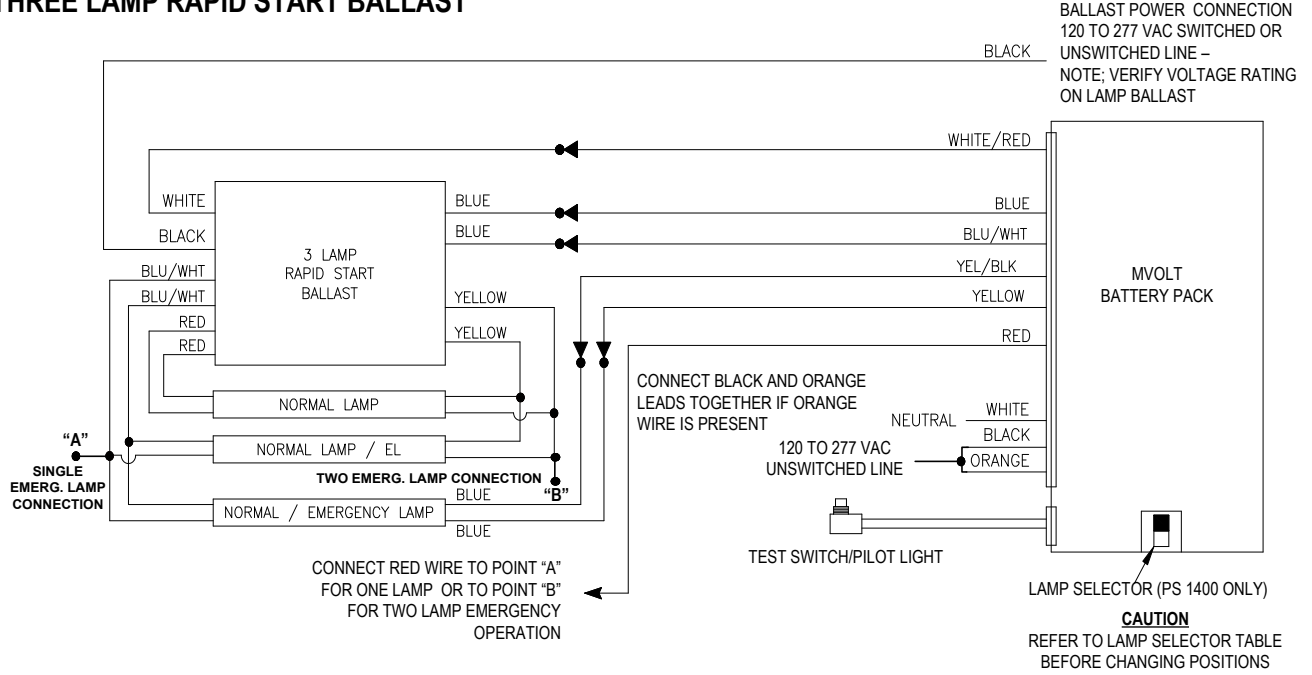
### TWO LAMP RAPID START BALLAST



**FIGURE B**

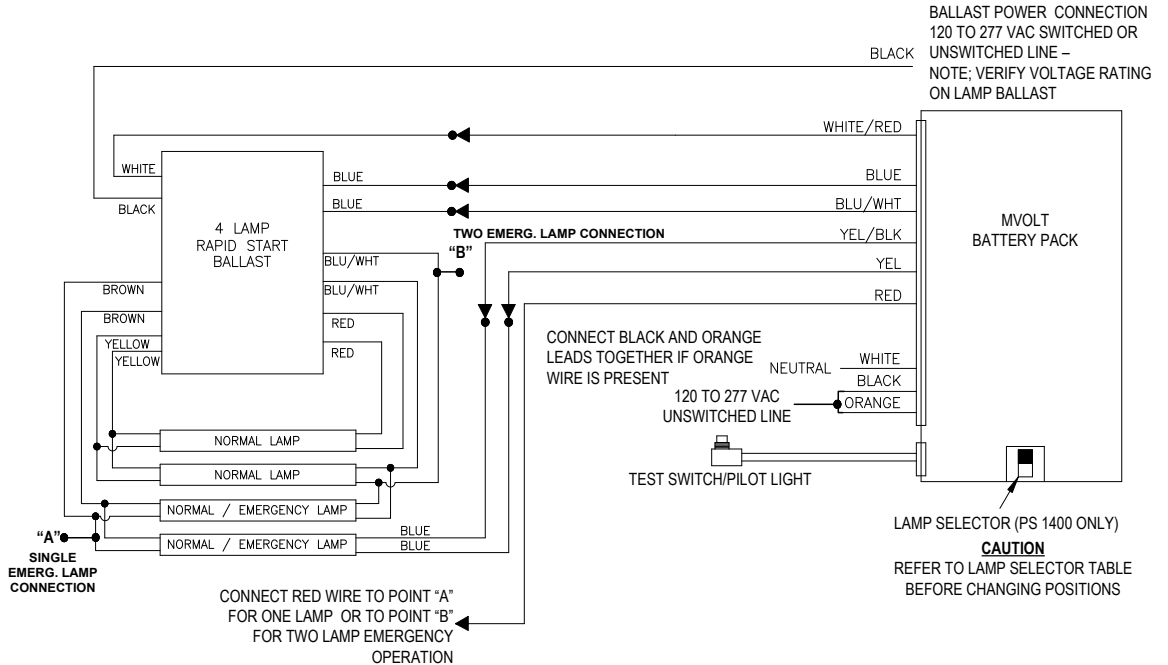


**THREE LAMP RAPID START BALLAST**



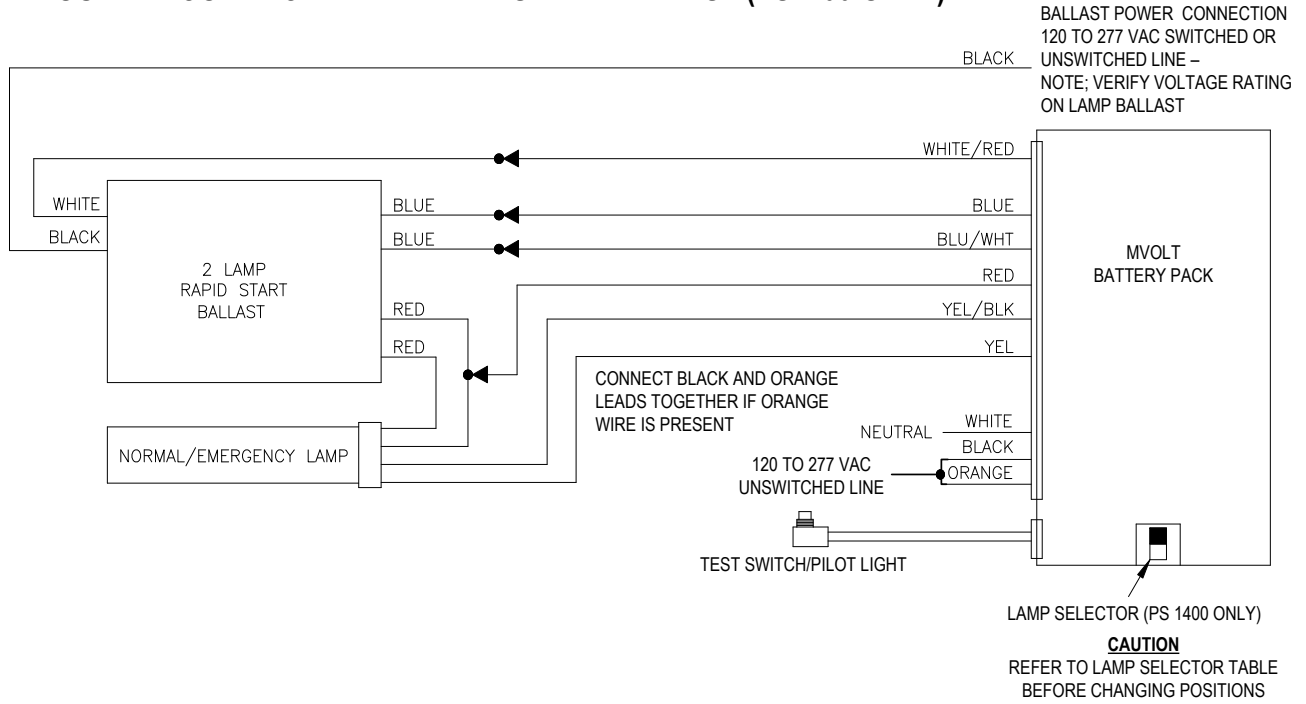
**Figure C**

**FOUR LAMP RAPID START BALLAST**



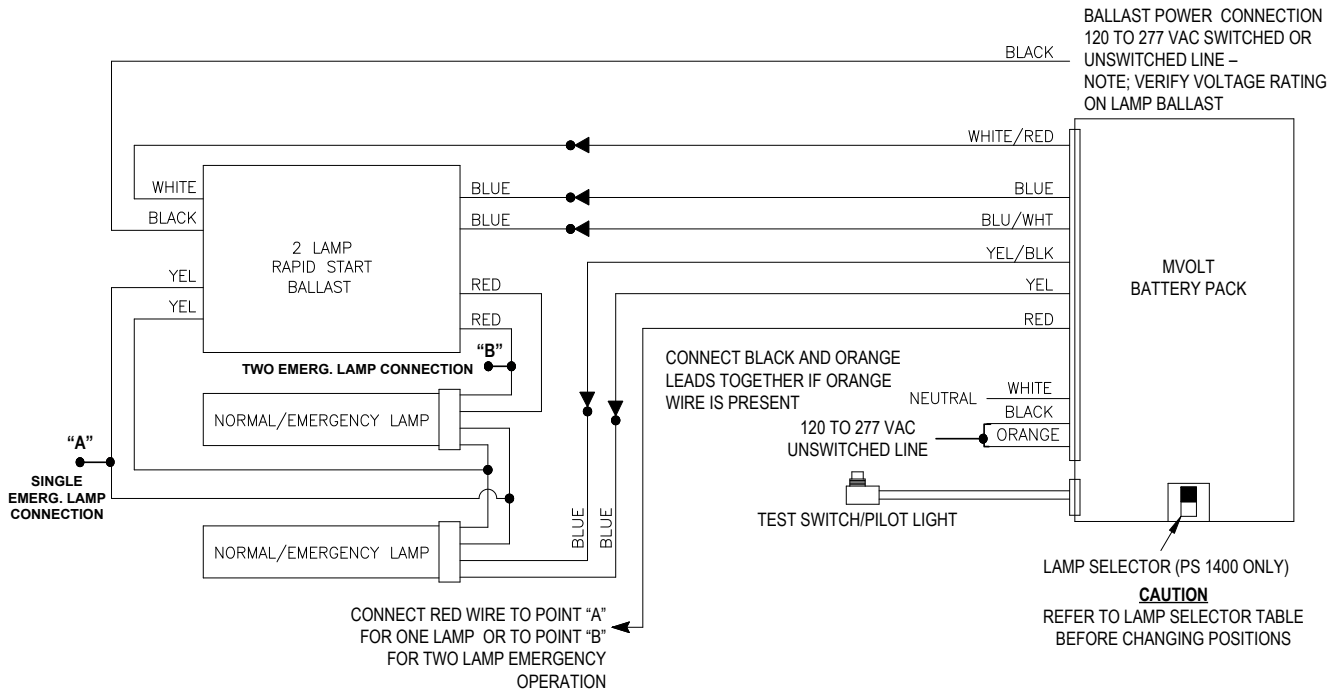
**Figure D**

**ONE FOUR-PIN COMPACT LAMP RAPID START BALLAST (PS1400 ONLY)**



**Figure E**

**TWO FOUR-PIN COMPACT LAMP RAPID START BALLAST (PS1400 ONLY)**



**Figure F**



### ONE LAMP INSTANT START BALLAST

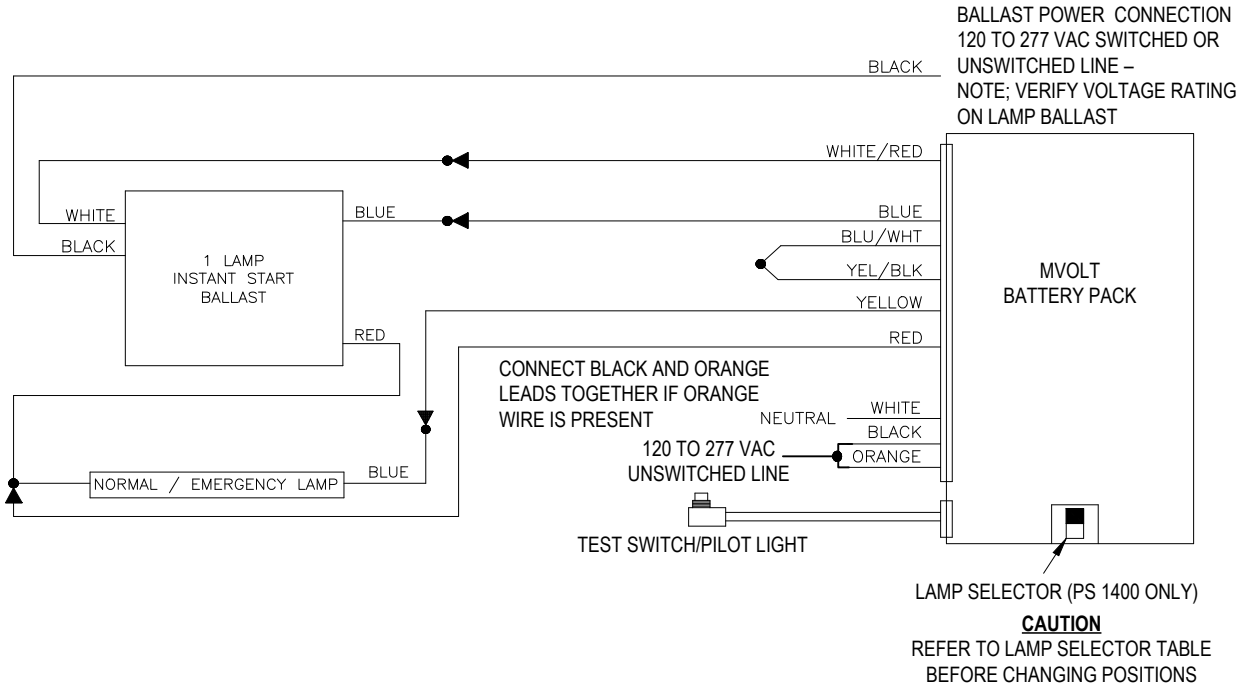


Figure G

### TWO LAMP INSTANT START BALLAST

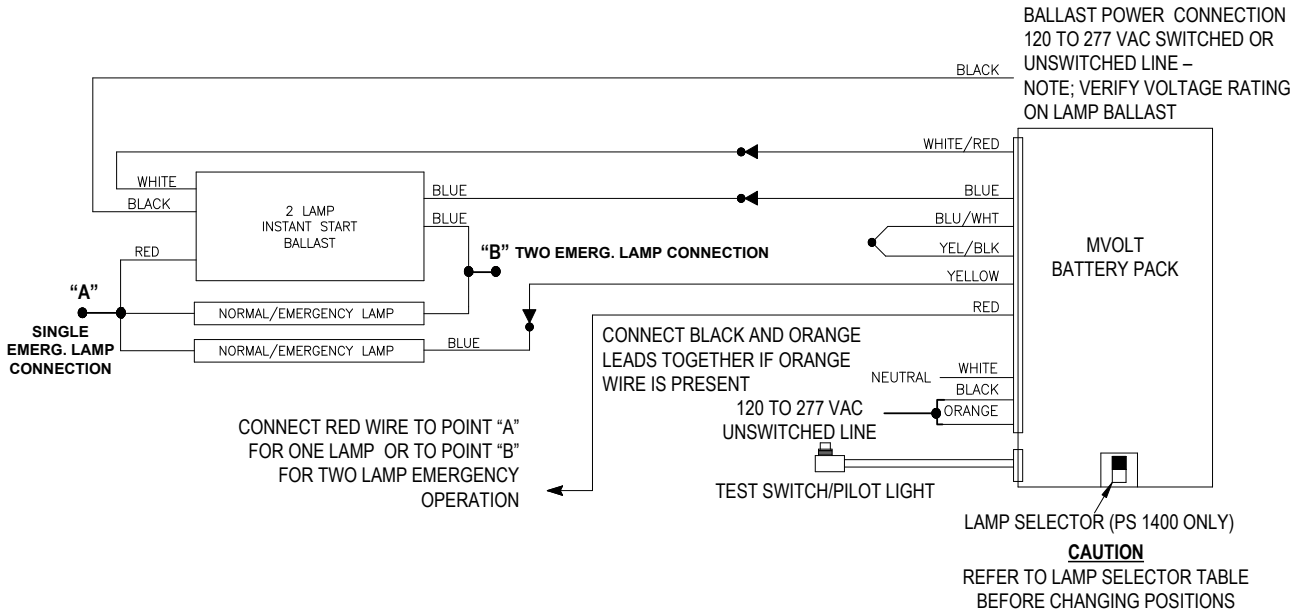


Figure H

### THREE LAMP INSTANT START BALLAST

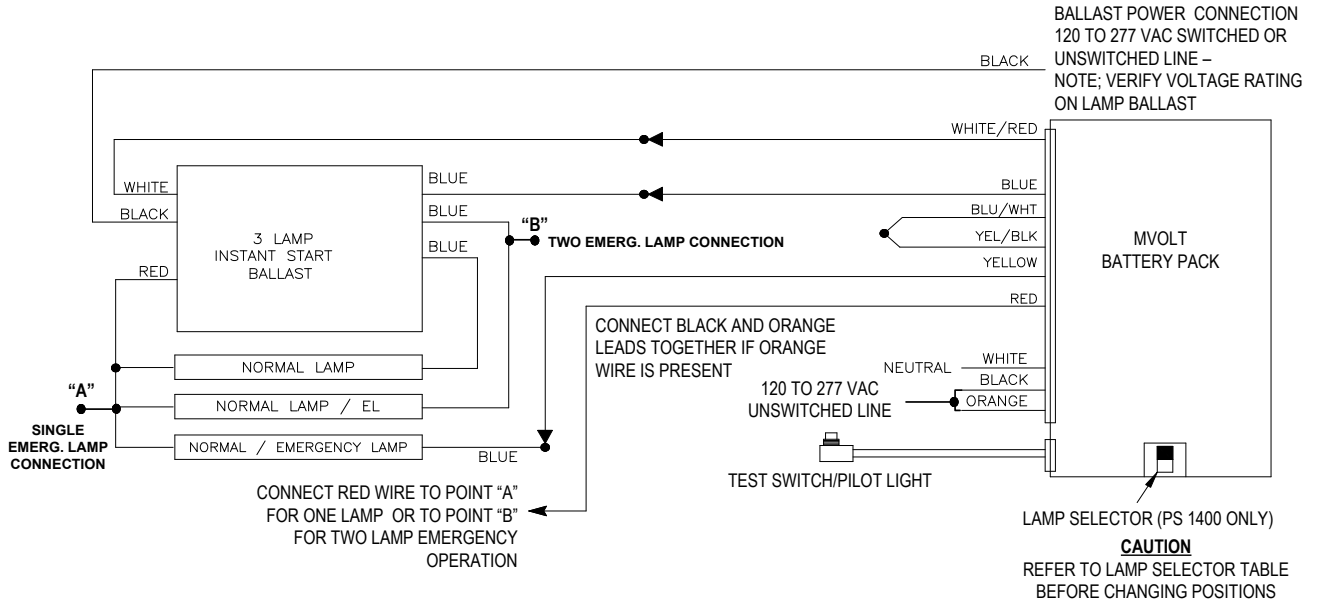


Figure I

### FOUR LAMP INSTANT START BALLAST

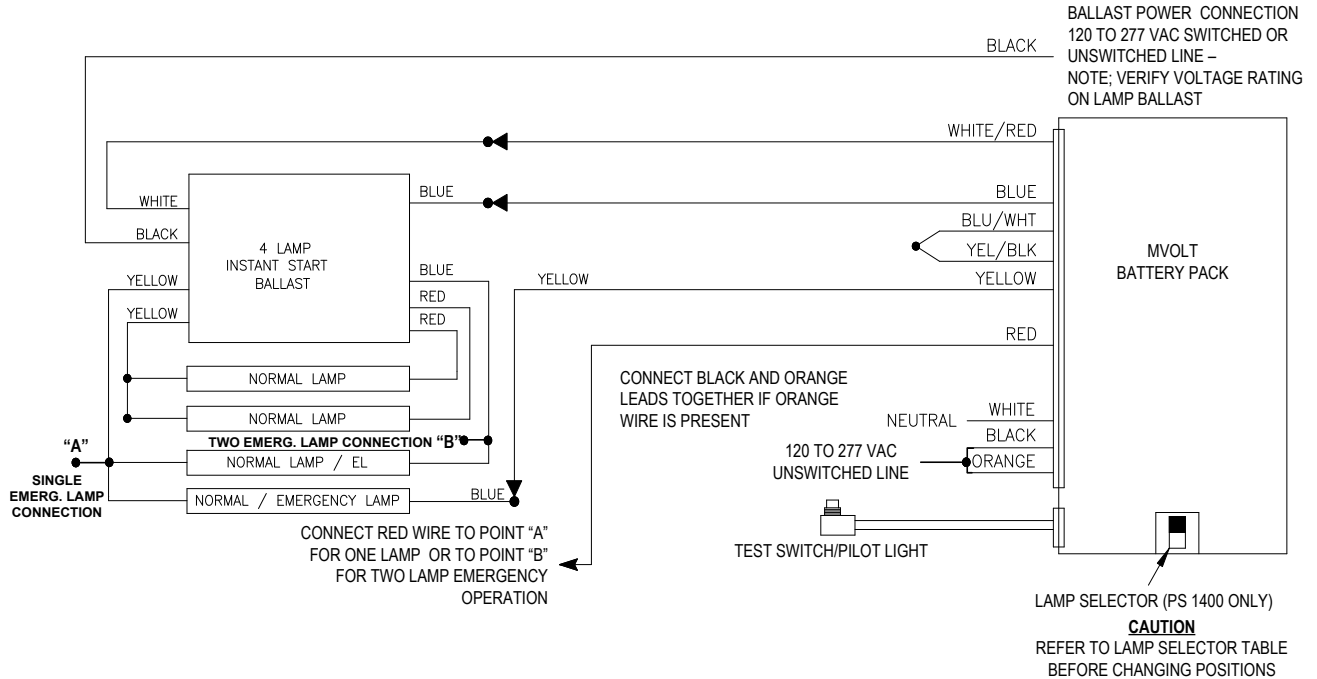


Figure J



### ONE LAMP CIRCLINE BALLAST

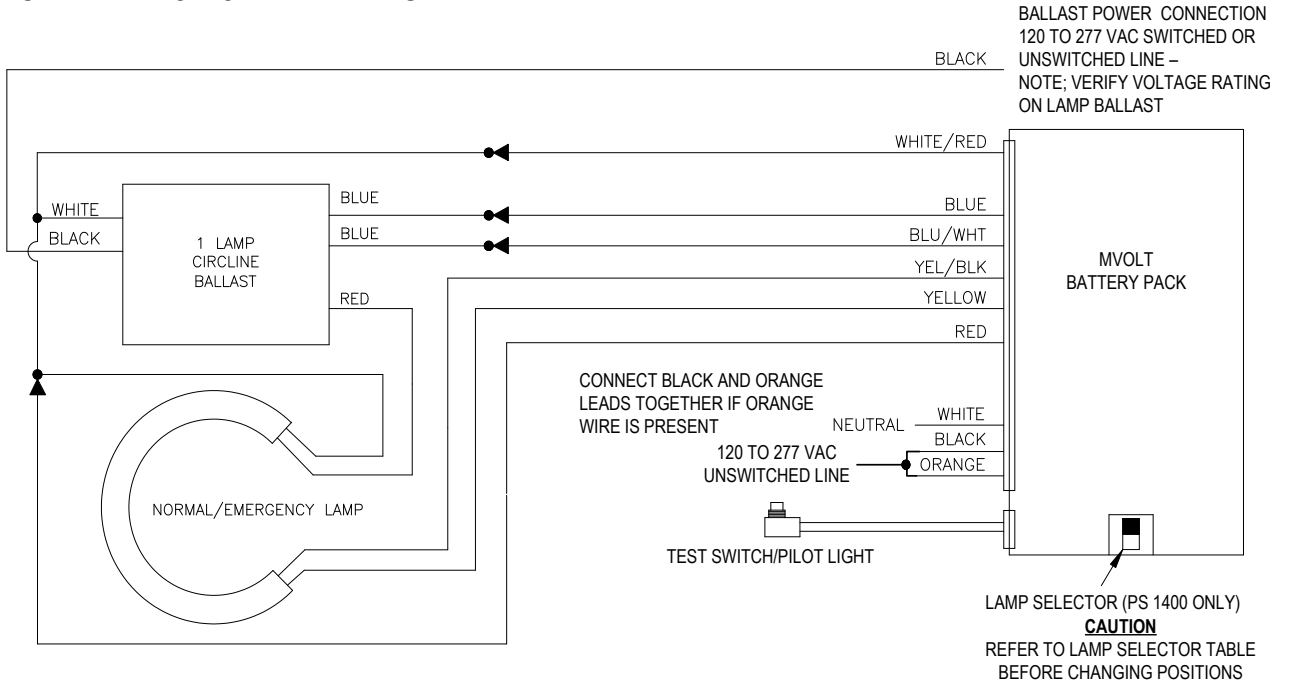


Figure K

### TWO LAMP CIRCLINE BALLAST

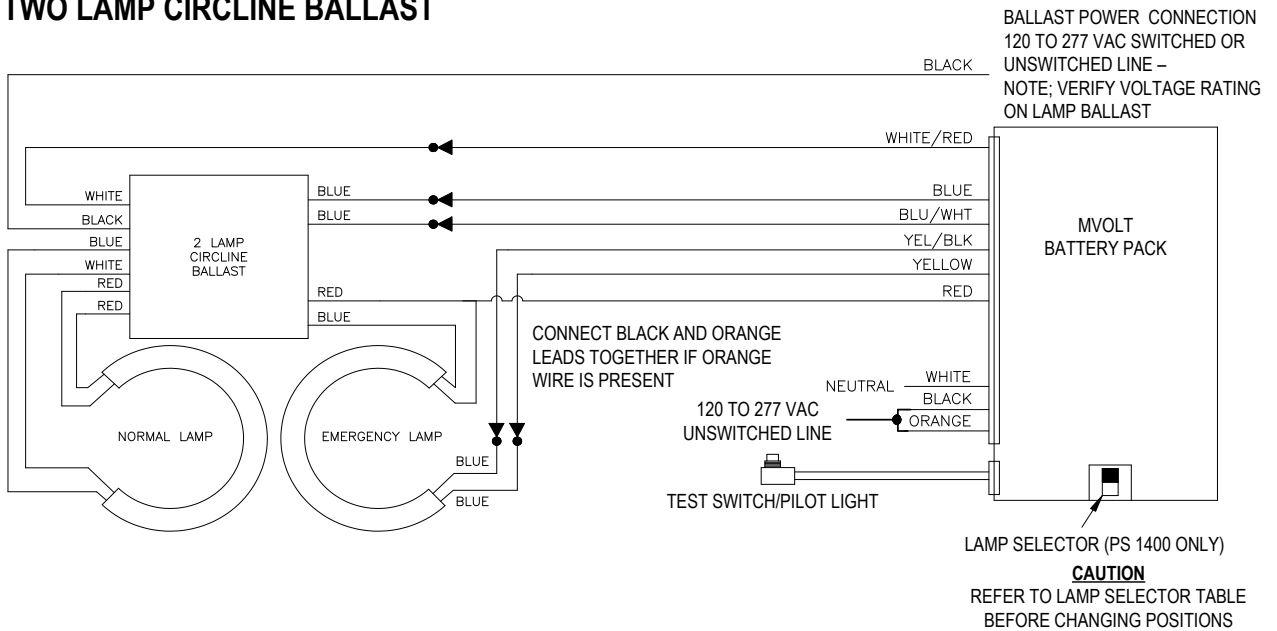
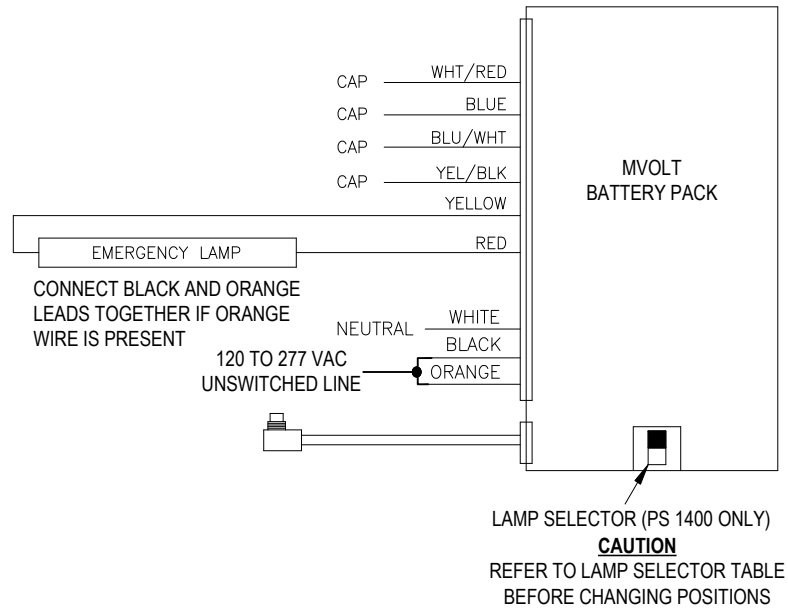


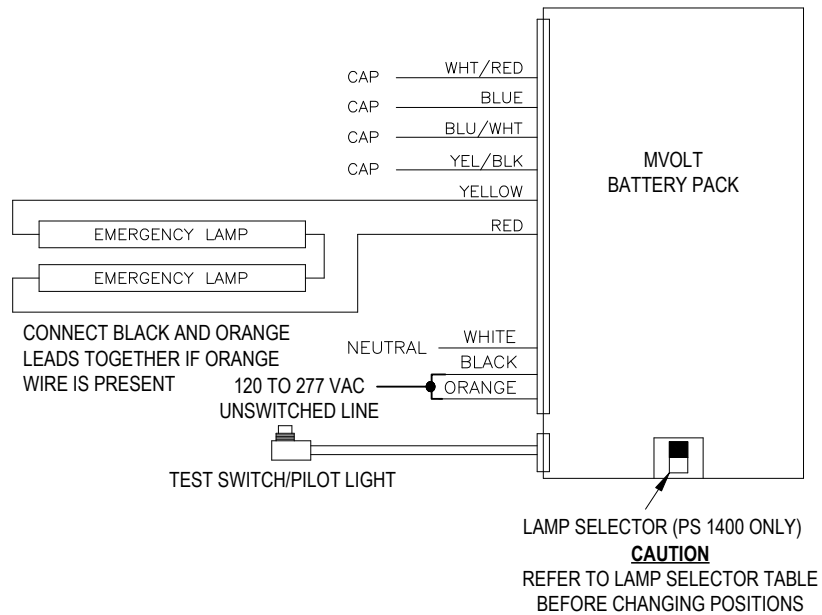
Figure L

### ONE LAMP WITHOUT AC BALLAST



**Figure M**

### TWO LAMP WITHOUT AC BALLAST



**Figure N**



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