Troubleshooting

Emergency circuit does not work
1. Batteries are shipped uncharged and disconnected. Connect battery leads and charge 24 hours before testing.
2. Make sure the charger board and test button/light pipe are properly seated and aligned.
3. Check wiring connections.

Replacing The Battery
1. De-energize the AC power.
2. Disengage the housing cover from the backplate.
3. Disconnect the battery leads from the charger circuit board.
4. Remove the battery from the clips inside the cover.
5. Replace with a new battery (see unit model label for correct part number) and reconnect leads.
6. Reassemble cover to backplate.

Replacing LED Lamps
The LED lamps inside the unit are not replaceable or field serviceable. Please see dual-lite.com for further assistance.

Taking A Unit Out Of Service
If a unit is to be deliberately taken out of service for an extended period, the battery lead connector should be disconnected from the charger circuit board and insulated so that the battery will go into storage in a fully charged condition.

Maintenance
This emergency lighting unit should be tested and maintained in accordance with National Electrical Code and NFPA 101 Life Safety Code requirements. It is recommended that emergency light fixtures be tested for 30 seconds once a month and for 90 minutes once a year.

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This unit is designed to be mounted on a wall or ceiling. Provide standard units with a single switched supply from a 120VAC, 240VAC, or 277VAC branch circuit used for normal lighting in the area to be protected. For Spectron® self-testing/self-diagnostic units, provide unit with a 120VAC or 277VAC branch circuit.

The EV unit is equipped with intelligent wiring. Connect the black wire from the unit to the hot building wire (120-277VAC) and the white wire to the neutral building wire. (Exception: The EV2DI-24K, EV2DIB-24K, EV4DI-24K, and EV4DIB-24K models should be connected to 220-240VAC supplies only.)

### Wall or Ceiling Mount – Back Power Feed
1. Remove appropriate KO’s in backplate to mount backplate to junction box.
2. Remove center KO from backplate and feed supply leads through.
3. Secure backplate to junction box.
4. To help with wiring, attach cover to backplate with provided plastic hinge.
5. Connect wires from the unit to the building leads and secure with wire nuts.
6. Connect battery lead to circuit board header as shown.
7. For remote models, connect remote lighting lead to black(-) and red(+) pigtails from circuit board. When connecting leads for remote lighting loads, observe proper polarity to ensure proper operation.
8. Installer should now become familiar with the eyeball aimability and its limitations.

### Wall Mount – Surface Wiring (Top Power Feed Only)
1. Remove appropriate KO’s in backplate and mount backplate to wall.
2. Feed wires through and secure conduit to backplate.
3. Remove the breakout on top of the housing.
4. To help with wiring, attach cover to backplate with provided plastic hinge.
5. Connect wires from the unit to the building leads and secure with wire nuts.
6. Connect battery lead to circuit board header as shown.
7. For remote models, connect remote lighting load to black(-) and red(+) pigtails from circuit board. When connecting leads for remote lighting loads, observe proper polarity to ensure proper operation.
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### INSTALLATION

All EV units are shipped by default with the charger circuit board jumper in the "remote lampheads disabled" position, as shown in Figure 1. The jumper needs to be moved to the "remote lampheads enabled" position shown in Figure 2 if the model being installed is an EV4 (powering a remote unit).

Looking at the center of the circuit board:

- "AC ON" LED is illuminated when AC power is present.

**NOTE:** Batteries are often shipped in a discharged state – this is normal. The battery will require charging. Allow 24 hours of charging before testing the unit.

#### Operation

The Spectron optioned EV4DI requires a load learn process at installation. Press and hold the test button for more than 5 seconds to initiate the load learn.

- **LED Status Indicator**
  - A bicolor LED (green/red) is provided on the control panel of all models equipped with the Spectron® option.

- **Green Operating Status LED**
  - The green Operating Status LED serves as both an AC power and self-test indicator. During normal operation, the green Operating Status LED will be illuminated, indicating the presence of AC power. During all automatic or manual self-test cycles, the green Operating Status LED will blink twice every second.

- **Red Service Alert LED**
  - Under normal operating conditions, the red Service Alert LED indicator will remain off. If the Spectron® controller detects a malfunction, the red Service Alert LED will blink in the pattern listed in the following table:

<table>
<thead>
<tr>
<th>Red Status LED Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>One blink ON/pause</td>
<td>Battery disconnected</td>
</tr>
<tr>
<td>Two blinks ON/pause</td>
<td>Battery fault</td>
</tr>
<tr>
<td>Three blinks ON/pause</td>
<td>Charger fault</td>
</tr>
<tr>
<td>Four blinks ON/pause</td>
<td>LED Driver fault</td>
</tr>
<tr>
<td>Five blinks ON/pause</td>
<td>Lamp fault</td>
</tr>
<tr>
<td>Red/Green alternating</td>
<td>Load Learn in Process</td>
</tr>
</tbody>
</table>

#### Models with SPECTRON® Self-Testing/Self-Diagnostic Circuitry

Models equipped with the Spectron® self-testing/self-diagnostic electronics system provide:

- Visual indication of AC power status
- Visual indication of self-diagnostic test status and results
- Visual indication of any unit malfunctions include
- Battery Disconnected
- Battery Fault
- Charger Fault
- LED Driver Fault
- Lamp Fault

Spectron equipped units also include:

- Brownout protection: unit will automatically transfer to emergency operation upon detection of low AC power (approximately 80% of nominal line).
- Time Delay Rel-transfer: upon return of normal AC power, unit will remain in emergency mode for an additional 15 minutes to allow AC power to stabilize.

#### Automatic Tests

The unit will automatically initiate a self-test/self-diagnostic cycle based on the following table:

<table>
<thead>
<tr>
<th>Testing Period</th>
<th>Duration of Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once a month</td>
<td>1 minute</td>
</tr>
<tr>
<td>Once every 6 months</td>
<td>Alternating: 30 minutes or 60 minutes</td>
</tr>
</tbody>
</table>

**Note:** After clearing a 5 blink lamp fault by initiating a load learn test, a 60 second manual test must be initiated.

#### Manual Tests

Using the unit test switch, users can initiate different duration test cycles based on the following table:

<table>
<thead>
<tr>
<th>Initiating Action</th>
<th>Test Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press test switch</td>
<td>1 minute</td>
</tr>
<tr>
<td>Press test switch</td>
<td>90 minutes</td>
</tr>
</tbody>
</table>

Pressing the test switch any time after a 90 min. test cycle has begun cancels the remainder of the 90 min. test and returns the unit to normal operation.