TILT LIGHTING TECHNOLOGY
BY LAUREN ILLUMINATION

INSTALLATION

SELF-TESTING EMERGENCY LED DRIVER

RATINGS:
Input: 100-277 VAC 50 or 60 Hz
Output: 7W @ 24V Max
Emergency Run Time: 90 minutes
Initial charge time: 48 hours

IMPORTANT SAFEGUARDS
READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. This product will source nominally 7W of emergency power and should be used in accordance with fixture manufacturers’ recommendations.
2. Ensure all connections comply with the National Electrical Code (NEC) or Canadian Electrical Code (CEC) as well as any regional or local regulations.
3. To reduce the risk of electric shock, disconnect all of the normal and emergency power connections and the battery disconnect switch before servicing.
4. This emergency driver is for factory or field installation either on, near, or remote from the LED fixture.
5. This product is suitable for use in dry or damp locations.
6. This product is suitable for use in ambient environments from 0 - 50 degrees C. (-32°F - 122°F)
7. This product has a standby power rating of 5 watts. Do not use standby rating to determine the suitability of the branch circuit.
8. This product is tested and UL Listed for use with TILT luminaires mounted at heights up to 12.6” (3.8m). Specify other heights per ANSI/NFPA emergency illumination requirements.
9. Do not use outdoors.
10. Do not mount near gas or electric heaters.
11. Do not attempt to service the battery. The device uses a sealed, maintenance-free battery which is not field replaceable.
12. Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
13. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
14. Do not use this equipment for other than intended use.

SAVE THESE INSTRUCTIONS

• THIS PRODUCT CONTAINS A RECHARGEABLE NICKEL-CADMIUM BATTERY.
• THE BATTERY MUST BE RECYCLED OR OTHERWISE DISPOSED OF PROPERLY.
• DO NOT DISPOSE OF THIS DEVICE IN THE TRASH.

CONTACT US

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LIMITED WARRANTY

Lauren Illumination, LLC (“Lauren”) warrants this LED luminaire and driver (“Product”) to be free from defects in material and workmanship for a period of 5 years from the date the Product leaves the factory where it was manufactured. This warranty does not cover defects or failures due to fire, power surges, abuse, vandalism, accident, or acts of God. This warranty only applies when Product is properly installed according to the included directions and is in installed in compliance with all local NEC and UL codes (ANSI and CSA in Canada). This warranty is voided if the Product is not used for the purpose for which it was manufactured. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE. Products that fail to meet this warranty shall be reported to Lauren within 60 days of the defect’s discovery, and sent to Lauren, freight prepaid, with receipt of purchase. Product defects not reported within 60 days of the initial discovery are not covered under this warranty. Upon receipt of Product, if the Product is found to be defective, the Product, at Lauren’s option, will be repaired or replaced with a similar or new product. Lauren reserves the right to inspect all Products and to be the sole judge as to whether the Product is defective and covered under the warranty. THE FOREGOING STATES BUYER’S EXCLUSIVE REMEDY FOR ANY BREACH OF THIS WARRANTY AND FOR ANY CLAIM, WHETHER SOUNDING IN CONTRACT, TORT OR NEGLIGENCE, FOR LOSS OR INJURY CAUSED BY THE SALE OR USE OF ANY PRODUCT AND, WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, LAUREN SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS OF BUSINESS OR PROFITS, DOWNTIME OR DELAY, LABOR, REPAIR OR MATERIAL COSTS OR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES INCURRED BY THE BUYER.
**INSTALLATION**

**SELF-TEST STANDARD INSTALLATION**

Follow these simple installation instructions (1-3) for installing the ‘Self-Test, Standard Installation’ configuration.

1. **CONNECT LINE VOLTAGE TO EMERGENCY LED DRIVER** (see No. 1 below)
2. **CONNECT FIXTURE TO EMERGENCY LED DRIVER** (see No. 2 below)
3. **ACTIVATE BATTERY** (Toggle Battery Switch to ‘ON’ position - see No. 3 below)

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**OPTIONAL MANUAL TEST AND EXTERNAL INDICATOR CONNECTIONS**

**JUNCTION BOX**

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<thead>
<tr>
<th>SWITCHED 100 - 277VAC</th>
<th>UNSWITCHED 100 - 277VAC</th>
</tr>
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<tr>
<td>(BLACK) LINE</td>
<td>(WHITE/BLACK)</td>
</tr>
<tr>
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<td>(RED/GROUND)</td>
</tr>
<tr>
<td>LINE (RED)</td>
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</tr>
</tbody>
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**BATTERY BACKUP INDICATOR OPTIONS**

Two indicator options (self-tests auto-run if manual tests are not performed within 21 days):

- Option A1 - Optional: Remote Status Indicator
- Option A2 - Optional: Remote Status / Test Switch

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**NOTE: FOR ADDITIONAL SET-UP OPTIONS, SEE WIRING DIAGRAMS ON PAGES 6-9**

- Emergency luminaire illuminates during power outages. In this STANDARD INSTALLATION configuration, during normal operation, power from the AC circuit charges the battery.
- The emergency driver performs brief self-tests at least monthly and a full discharge test at least yearly.
- If a need for service is detected during these tests, this is indicated using one of these methods:
  - Local STATUS indicator on LDE7P and one of the following:
    - Connected LED fixture
    - Optional Remote Status / Test Indicator

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**INSTALLATION**

**OPTIONAL MANUAL TEST AND EXTERNAL INDICATOR CONNECTIONS**

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**BATTERY BACKUP INDICATOR OPTIONS**

Two indicator options (self-tests auto-run if manual tests are not performed within 21 days):

- Option A1 - Optional: Remote Status Indicator
- Option A2 - Optional: Remote Status / Test Switch
DIAGNOSTICS

Diagnostic information will be indicated on the local STATUS LED in the Emergency LED Driver and on ONE of these two places:

1. The connected luminaire, 2. An external LED Indicator (if connected), but not both. See wiring diagrams on pages 6-9 for complete schematic information.

STATUS INDICATIONS

This Emergency LED Driver performs a 90-second self-test routine monthly and a 90 minute self-test routine annually. There are two options for confirming that the unit is operating normally. Option A (recommended) uses the connected luminaire to notify space occupants of an error condition. Option B uses an external LED indicator that should be inspected by maintenance personnel.

Flash Pattern

<table>
<thead>
<tr>
<th>LED Luminaire</th>
<th>Status LED</th>
<th>Indicates</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responds to wall switches/controls as expected</td>
<td>On, not blinking</td>
<td>Normal operation, battery charging</td>
<td>None</td>
</tr>
<tr>
<td>ON at low level during power outage</td>
<td>On, not blinking</td>
<td>AC power outage, emergency battery operation</td>
<td>Restore AC power</td>
</tr>
<tr>
<td>Does not respond to wall switch controls</td>
<td>3 blinks, pause, repeat</td>
<td>LED fixture or connection failure</td>
<td>Check fixture &amp; wiring</td>
</tr>
<tr>
<td>Number of blinks when power switched ON and at 1 hr intervals, ON at low level</td>
<td>Number of blinks, pause, repeated</td>
<td>Diagnostic code</td>
<td>See diagnostic code table</td>
</tr>
</tbody>
</table>

DIAGNOSTIC CODE TABLE

If emergency lighting system needs service, the connected Status LED will blink the diagnostic code constantly. Otherwise, the fixture will blink a diagnostic code upon turn on, then stay at emergency lighting level and blink diagnostic code at least every hour and anytime the switched power toggles on or off.

Flash Pattern

<table>
<thead>
<tr>
<th>Diagnostic Code</th>
<th>Indicates</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 blinks</td>
<td>Unswitched AC circuit outage while normal power is available</td>
<td>Confirm unswitched power is connected and in service</td>
</tr>
<tr>
<td>3 blinks</td>
<td>No fixture detected</td>
<td>Confirm fixture is connected</td>
</tr>
<tr>
<td>4 blinks</td>
<td>Short circuit on DC wiring detected</td>
<td>Check for short-circuit</td>
</tr>
<tr>
<td>5 blinks</td>
<td>Battery issue: fault, dead or battery Switch in OFF position</td>
<td>Confirm battery switch is in OFF position</td>
</tr>
<tr>
<td>6 blinks</td>
<td>Internal system failure</td>
<td>Replace the Emergency Driver</td>
</tr>
</tbody>
</table>

WIRING DIAGRAMS

EMERGENCY LED DRIVER WITH 1-10V DIMMER CONTROL
All LDE7P units come with a built-in Status Indicator LED and a Test Switch that can be used to manually conduct both the 90 second and 90 minute discharge tests.

**OPTIONAL - REMOTE STATUS / TEST INDICATOR**

Typical installations of the LDE7P DO NOT require either remote status indicators or manual test buttons. However, all LDE7P units come with built-in Connectors for an (optional) external remote test/status indicator that can be used to manually conduct both the 90 second and 90 minute discharge tests. (for wiring diagrams, refer to Optional Manual Test and External Indicator Connection.

### OPTIONS DIAGRAMS

#### OPTION 1: REMOTE STATUS / TEST INDICATOR

1. Manual test button can be used to perform 90 second and 90 minute tests (see manual test operation above)

   **NOTE:** Connection utilizes Remote Status / Test Indicator LED as the indicator and disables the use of the Luminaire as the indicator (self-test mode)

2. Indicator displays status and diagnostic flash patterns (see “diagnostic table on page 3”)

#### OPTION 2: REMOTE STATUS INDICATOR

1. Indicator displays status and diagnostic flash patterns (see diagnostic code table on page 3)

   **NOTE:** Connection utilizes local LED as the indicator and disables the use of the Luminaire as the indicator. Self-test mode is still active, the luminaire indication is deactivated.
## SELFTESTING GUIDE

### OPERATION

During normal operation, power from the AC circuit charges the battery. The emergency driver performs brief self-tests monthly and a full discharge test yearly. If a need for service is detected during these tests, this is indicated using the connected LED fixture or an optional external status LED.

### AUTOMATIC SELFTEST OPERATION

The emergency driver performs a brief 90-second discharge test monthly and a full 90-minute test annually. The driver attempts to perform these tests at times that are less likely to disturb the occupants, such as when the lights have been off for an extended period of time. The battery and the LED panel are monitored during these tests and any abnormal conditions are detected and communicated through the attached LED fixture or external indicator LED (if installed). If the abnormal condition is corrected and a subsequent test passes, the error condition is cleared and the emergency driver returns to normal operation.

### OVERRIDE PROCEDURE

To delay a test in progress change the state of the wall switch, that normally controls the lights, wait 15 seconds. Then, change back. The emergency driver will delay the test for about 24 hrs only if fewer than 28 days have passed since the last test. On the 28th day, a test will be initiated and cannot be cancelled.

### AUTOMATIC SELF-TESTING

<table>
<thead>
<tr>
<th>TEST SCHEDULE</th>
<th>TEST PERFORMED</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 DAYS</td>
<td>90 Second Test</td>
</tr>
<tr>
<td>365 DAYS</td>
<td>90 Minute Test</td>
</tr>
</tbody>
</table>

### DAY 21 - 27

To delay test that is in progress change the state of the wall switch that controls the emergency luminaire, wait 15 seconds then change it back.*

*Test in progress cannot be cancelled if more than 28 days have passed since the last test performed

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### WIRING DIAGRAMS

#### SELF-TEST AND FIXTURE INDICATOR STANDARD INSTALLATION

![](wiring_diagram.png)

**LUMINAIRE**

- **DC IN**
- **DC IN**

**JUNCTION BOX**

- Switched 100 - 277VAC (Black/Red/White)
- Unswitched 100 - 277VAC (White/Black)
- Neutral (White/Neutral)
- Ground (White/Green/Blue)
- Remote + Remote -
- Battery

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TECHNICAL SPECIFICATIONS 2014

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