Egress Lighting Solutions

CENTRALIZED EMERGENCY LIGHTING INVERTERS

Designed with a high Peak Overload Capability to accommodate inrush from LED fixtures / drivers!

UL 924 Listed:
“Emergency Lighting Equipment”
“Auxiliary Lighting & Power Equipment”

Meeting NFPA 101 & 111 Standards As “Life Safety Equipment”

In accordance with:
• ANSI / NFPA 101 Life Safety Code
• Article 700 of ANSI / NFPA 70, National Electric Code
• International Building Code
Controlled Power Company engineers and manufacturers the industry’s highest quality centralized emergency lighting inverters, capitalizing on over 40 years of expertise. We have an enviable reputation for quality, which is reflected in the design, workmanship, and performance of our products.


### 7.9.3 Periodic Testing Of Emergency Lighting Equipment

#### 7.9.3.1
Required emergency lighting systems shall be tested in accordance with one of the three options offered by 7.9.3.1.1, 7.9.3.1.2, or 7.9.3.1.3.

- **7.9.3.1.1**
  - Testing of the required emergency lighting systems shall be permitted to be conducted as follows:
    1. Functional testing shall be conducted monthly, with a minimum of 3 weeks and a maximum of 5 weeks between tests, for not less than 30 seconds, except as otherwise permitted by 7.9.3.1.1(2).
    2. The test interval shall be permitted to be extended beyond 30 days with the approval of the authority having jurisdiction.
    3. Functional testing shall be conducted annually for a minimum of 1.5 hours if the emergency lighting system is battery powered.
    4. The emergency lighting equipment shall be fully operational for the duration of the tests required by 7.9.3.1.1(1) and (3).
    5. Written records of visual inspections and tests shall be kept by the owner for inspection by the authority having jurisdiction.

- **7.9.3.1.2**
  - Testing of the required emergency lighting systems shall be permitted to be conducted as follows:
    1. Self-testing / self-diagnostic battery-operated emergency lighting equipment shall be provided.
    2. Not less than once every 30 days, self-testing / self-diagnostic battery-operated emergency lighting equipment shall automatically perform a test with a duration of a minimum of 30 seconds and a diagnostic routine.
    3. The emergency lighting equipment shall automatically perform annually, a test for a minimum of 1.5 hours.
    4. The emergency lighting equipment shall be fully operational for the duration of the tests required by 7.9.3.1.3(2) and (3).
    5. Written records of visual inspections and tests shall be kept by the owner for inspection by the authority having jurisdiction.

- **7.9.3.1.3**
  - Testing of the required emergency lighting systems shall be permitted to be conducted as follows:
    1. Computer-based, self-testing / self-diagnostic battery-operated emergency lighting equipment shall be provided.
    2. Not less than once every 30 days, emergency lighting equipment shall automatically perform a test with the duration of a minimum of 30 seconds and a diagnostic routine.
    3. The emergency lighting equipment shall automatically perform annually, a test for a minimum of 1.5 hours.
    4. The emergency lighting equipment shall be fully operational for the duration of the tests required by 7.9.3.1.3(2) and (3).
    5. The computer-based system shall be capable of providing a report of the history of the tests and failures at all times.


In terms of monitoring, testing, data recording, and recordkeeping, the following matrix illustrates the CPC centralized emergency lighting inverters that meet or exceed NFPA 101 (up through and including section 7.9.3.1.3).

Each of the models in this matrix use local basic monitoring with an RS232 connection... or the Intellistat (TS with touchscreen, or standard) monitor. The Intellistat performs an “Egress Lighting Integrity Test” which meets and exceeds NFPA 101 section 7.9.3.1.3 – see the back cover for details! In addition, the NetMinder™ provides remote communication of system status and test logs via Ethernet TCP/IP, MODBUS TCP, MODBUS RS485, BACnet/IP, or BACnet MS/TP.

#### LIGHTING INVERTERS COMPLIANCE

<table>
<thead>
<tr>
<th>Model</th>
<th>Monitoring Type</th>
<th>Local</th>
<th>Remote</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLITE Model ELN</td>
<td>Basic Standard Monitor</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>ELC 5.3kW-18kW</td>
<td>Intellistat Monitor</td>
<td>✔️</td>
<td>NetMinder</td>
</tr>
<tr>
<td>UltraLITE Model ELC 600W-2kW</td>
<td>Standard Monitor w/RS232</td>
<td>✔️</td>
<td>NetMinder</td>
</tr>
<tr>
<td>UltraLITE Model ELU 1.5kW-14kW</td>
<td>Standard Monitor w/RS232</td>
<td>Intellistat TS</td>
<td>✔️</td>
</tr>
<tr>
<td>EON Model EL3 10kW-55kW</td>
<td>Intellistat TS</td>
<td>✔️</td>
<td>NetMinder</td>
</tr>
</tbody>
</table>

**Note:** The “eLITE Model ELN” is provided with a basic standard monitor, and is compliant with only NFPA 101, 7.9.3.1.1.
All Controlled Power Company centralized emergency lighting inverters are UL 924 Listed as both “Emergency Lighting Equipment” and “Auxiliary Lighting and Power Equipment”. The following sections detail each of these UL Listings, as they relate to NFPA 101 compliance.

**UL 924 “Emergency Lighting Equipment”**


Emergency power equipment is intended to supply sufficient electrical energy for emergency luminaire operation, or to distribute and manage the electrical energy for emergency luminaires from a remote emergency supply source. Emergency power equipment with batteries has a test switch and visible or audible indicators to report the readiness of the emergency supply.

**UL 924 “Auxiliary Lighting & Power Equipment”**

This UL Listing covers equipment intended to be used in conjunction with a facility emergency lighting and power system. The equipment may consist of battery assemblies, unit equipment, remote light sources, illuminated signs, or related devices.

Such equipment has not been investigated for compliance with the performance criteria of Article 700 of the ANSI / NFPA 70 “National Electric Code”, the ANSI / NFPA 101 “Life Safety Code”, or the “Uniform Fire Code”.

This equipment is for use in unclassified locations; and is intended for indoor dry locations only, unless marked for damp or wet locations.

Note: These UL 924 sections are excerpts reprinted from the “Online Certifications Directory” with permission from UL, © 2015 UL LLC. Bold italics above have been used by Controlled Power Company for explanatory contrast between the two UL 924 listings. The UL 924 “Auxiliary Lighting & Power Equipment” section references equipment that “has not been investigated for compliance” for use as Emergency Lighting Equipment, meaning UL has not investigated this equipment.

---

**Engineered Life Safety**

Compare the following two Emergency Lighting Inverter topologies:

**Continuous System Performance Verification**

(Double Conversion, On-Line Design)

System performance is ensured, system continually self-checks 24 hours / day, 7 days / week. Provides clean, conditioned and regulated power to LED drivers and electronic ballasts that are being utilized for egress lighting.

**Periodic System Performance Verification**

(Standby, Off-Line Design)

System performance is verified under only two conditions: 1) if / when it is periodically tested, and 2) during an emergency. MAY NOT provide surge protection, and DOES NOT provide power conditioning or regulated voltage to LED drivers and electronic ballasts that are being utilized for egress lighting. Inverters promoting 98+ % efficiency are off-line or standby designs, or “operating” in a bypass / standby mode.
The following illustration depicts the NFPA 101 — 7.9.3.1.3 compliance of Controlled Power Company’s emergency lighting inverters; by providing an automatic, computer-based, self-diagnostic test of the inverter system electronics and batteries, and logging the results with a time and date stamped pass / fail indication. During this test, the Intellistat (TS or standard) monitor also performs an “Egress Lighting Integrity Test”, which exceeds the NFPA 101 — 7.9.3.1.3 requirements. Regardless of the emergency lighting design (illustrated below), the automatic NFPA-compliant test performed checks the inverter system and batteries, as well as the individual circuits leading to the emergency fixtures. The Intellistat compares power consumption during the test period with user-defined load capacity, and analyzes the data. If service is required, the Intellistat will provide a “low output VA” alarm.

This illustration reflects (4) different emergency lighting design scenarios. The “Always On” design is highlighted to illustrate two diagnostics taking place during the same test.

**LOCAL COMMUNICATIONS:** Intellistat TS initiates automatic or manual tests, periodic (and annual).

**REMOTE COMMUNICATIONS with NetMinder**

- BACnet TCP/IP
- BACnet MS/TP
- Ethernet TCP/IP
- MODBUS TCP
- MODBUS RS485

**Contact us and/or consult our website for additional details about this product and other Controlled Power Company emergency lighting inverters.**

www.controlledpwr.com/Emergency_Lighting_Inverters.html

---

**Note:** This illustration depicts automatic or manual periodic testing. In addition, the Inverter Electronics are monitored 24/7 with status displayed and communicated.

1 ZoneSaver-2 is a UL 924 Listed “Load Control Relay” used to bypass a local control device in the case of an emergency, to ensure full illumination of egress lighting.

2 SwitchLITE is a UL 1008 Listed “Automatic Transfer Switch” (ATS) used to transfer up to 8 circuits between normal and emergency power, allowing dimmable lighting fixtures to function as essential emergency lighting.