ACE LEDS
WE BRING THE POWER

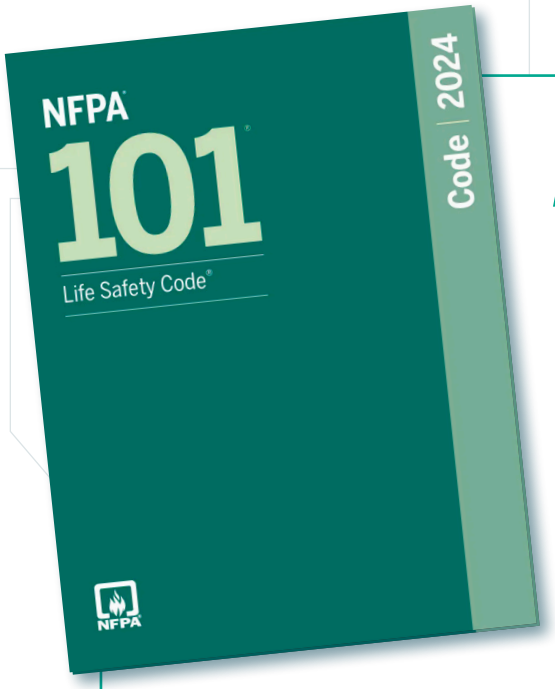
INNOVATION IN EMERGENCY LED LIGHTING CODE & COMPLIANCE

JANUARY 2024

www.aceleds.com

Emergency Lighting,
is Life Safety Equipment,
and is required for commercial,
institutional, government,
industrial, retail, educational,
and other buildings.

Emergency Lighting Codes are established by ***The National Fire Protection Association*** **(NFPA)**. The two primary codes are NFPA 101, the Life Safety Code, and NFPA 70, the National Electrical Code (NEC). NFPA 101, section 7.9 defines the requirements for emergency lighting for means of egress, including operational and performance requirements, minimum illumination levels, and the minimum illumination duration that the emergency lighting system must provide. NEC ensures the proper implementation of the NFPA 101 requirements for buildings including the application, installation, operation, and maintenance of emergency lighting systems & equipment. **Per NFPA 101, section 7.9, all emergency lighting equipment used for compliance fulfillment of the code must be listed to ANSI/UL 924, the Standard for Emergency Lighting and Power Equipment.**



Basic Code Requirements

- **Emergency illumination shall be provided for not less than 1 ½ hours in the event of failure of normal lighting.**
- **Emergency lighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 ft-candle and, at any point, not less than 0.1 ft-candle, measured along the path of egress at floor level.**
- **Illumination levels shall be permitted to decline to not less than an average of 0.6 ft-candle and, at any point, not less than 0.06 ft-candle at the end of the 1 ½ hours.**
- **A maximum-to-minimum illumination uniformity ratio of 40:1 shall not be exceeded.**

PERIODIC TESTING

In addition to the illumination levels and illumination duration requirements, periodic testing of the required emergency lighting systems shall be conducted in accordance with NFPA 101 section 7.9.3, dependent on the type of emergency lighting equipment provided. **Testing shall be conducted monthly for not less than 30 seconds, and annually for a minimum of 1.5 hours.** Emergency lighting systems must be tested corresponding to one of three options:

1. **Functionally (manually) tested and visually diagnosed.**
2. **Self-Testing/ Self-Diagnostic.**
3. **Computer-based, Self-Testing/ Self-Diagnostic.**

UL 924 REQUIREMENTS

The primary role of UL 924 is to validate compliance with emergency system functionality and performance expectations. UL 924 testing requirements are designed to ensure high reliability and high dependability of installed equipment as an effort to mitigate risks of failure of the life safety equipment.

ACE LEDS INNOVATION: New code-compliant products to meet market requirements

Emergency lighting is not only required by building codes, but is also an important part of the overall lighting system. As the proliferation of LED lighting continues, new and diverse solutions are required. Emergency lighting equipment must continue to adapt to the new requirements as well as ensure code compliance.

Some of the **new trends in lighting include improving energy efficiency, improving quality of light, reduced equipment costs and size, reduced installation costs, reduced operating costs, increasing equipment integration, a trend toward smart buildings, connected and networked systems, controls and automation. Additionally, there are trends toward new power distribution designs such as low-voltage DC lighting systems, and high-voltage AC lighting systems for high-ceiling buildings.**

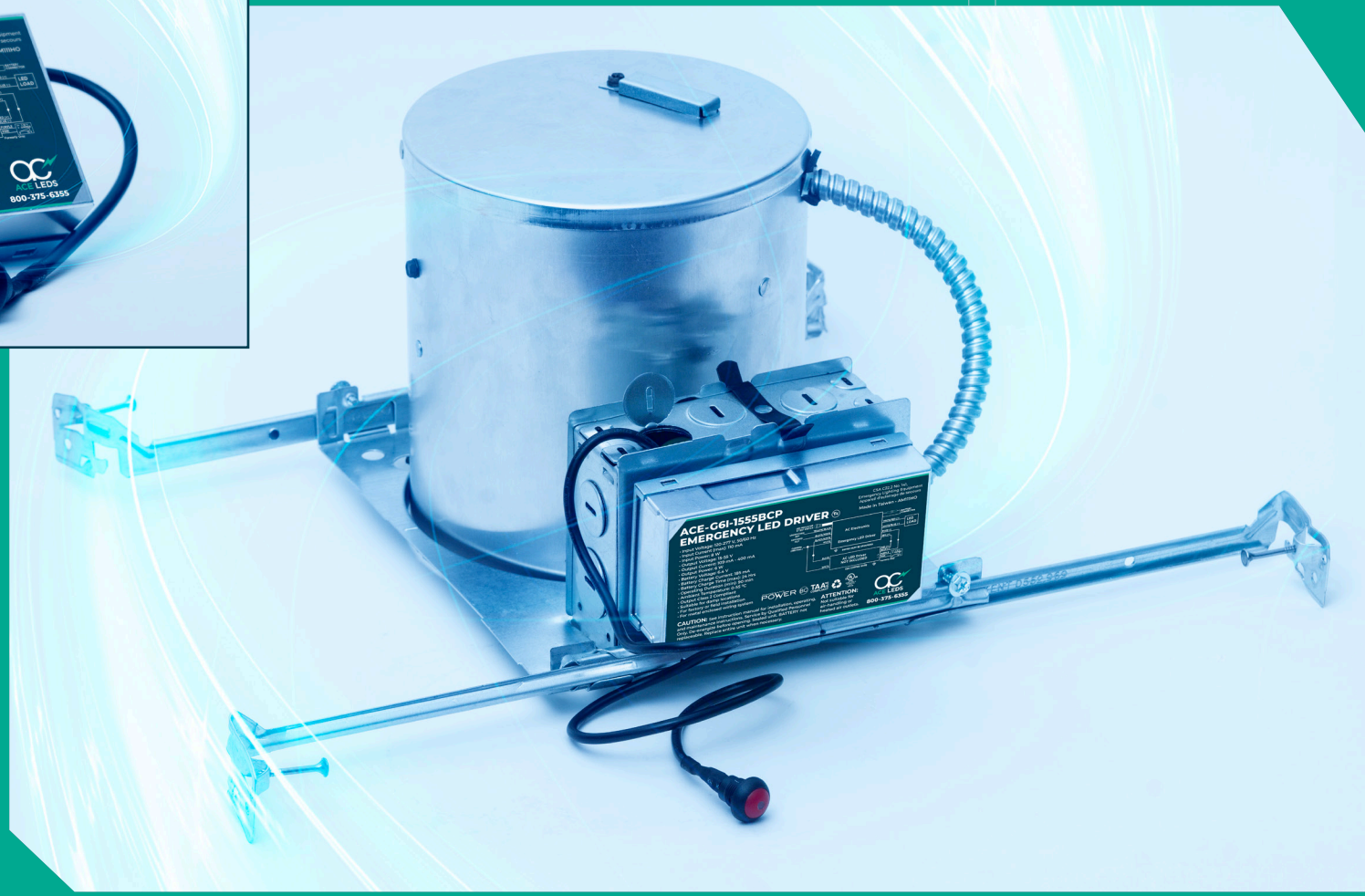
These trends pose new challenges for emergency lighting solutions, including reduced costs, reduced size, providing solutions for power distribution systems focused on centralizing the emergency source of power, integration, compatibility, and interoperability with smart, networked, connected, or automated controls and systems, plus products for high-voltage DC LED arrays, and new power distribution designs such as low-voltage DC lighting systems. ACE LEDs is committed to meeting these challenges while helping customers stay up to date with New Code Compliant Products.

As the proliferation of LED lighting continues, new and diverse solutions are required. Emergency lighting equipment must adapt to the new requirements to ensure code compliance.

New, Reduced-Sized Products:

As LED luminaires continue to shrink, less space is left for the Emergency LED Driver, however, the light output levels from the luminaire must meet code, and the emergency run-time must meet the minimum requirement of 90 minutes. Meeting code requires sufficient battery capacity. ACE LEDs now offers new, reduced-size emergency LED drivers that utilize the highest-capacity LiFePO4 batteries and new, high-efficiency circuitry. These drivers also feature Constant Power (CP) output to maintain constant light output levels.


ACE-G6I-1555BCP
EMERGENCY LED DRIVER
• Input Voltage: 120-277 V, 50/60 Hz
• Input Current (max): 110 mA
• Input Power: 6 W
• Output Voltage: 15-55 V
• Output Current: 109 mA - 400 mA
• Output Power: 6 W
• Battery Voltage: 6.4 V
• Battery Charge Current: 185 mA
• Battery Charge Time (max): 24 Hrs
• Operating Duration (min): 90 min
• Ambient Temperature: 0-55 °C
• Ambient Class 2 Compliant
• Output: Class 2 Compliant
• Suitable for damp locations
• For factory or field installation
• For metal enclosed wiring system
CAUTION: See instruction manual for installation, operating, and maintenance instructions. Service by Qualified Personnel Only. De-energize before opening. Sealed unit, BATTERY not replaceable. Replace entire unit when necessary.
CSA C22.2 No. 141
Emergency Lighting Equipment
Appareil d'eclairage de secours
Made in Taiwan - AMITIMO
AC Electronics
Emergency LED Driver
AC LED Driver
NOT INCLUDED
LED LOAD
POWER BY TAA COMPLIANT
ATTENTION:
Not suitable for air-handling or heated air outlets.
ACE LEDS
800-375-6355


ACE-G6I-1555BCP
EMERGENCY LED DRIVER
POWER BY TAA COMPLIANT
ATTENTION:
800-375-6355

Integration, Automated Controls, and Low-Voltage lighting:

Even with the increased use of automated controls for lighting, and the requirements for small-size and low-cost emergency lighting solutions, ACE LEDS is meeting these new challenges with innovative, code-compliant products that can be integrated within small luminaries.

The ACE-G.5-ELDCR is designed for normal lighting luminaries that are also used as emergency lighting luminaries powered by a remote back-up generator, or an inverter in emergency mode utilizing a dim-to-off LED driver. In these applications, the traditional on/off switch on the switched AC line has been eliminated, and the on/off function is achieved via the dimming function. The ACE-G.5-ELDCR is a UL 924 device that includes a relay which controls the dimming circuit of an LED driver in Emergency-mode so that it meets code, i.e., powers the luminaire to full-light-output. This device can control a 0-10 Vdc dimming circuit or a DALI dimming circuit. The ACE-G.5-ELDCR is especially *miniaturized* so that it can be mounted inside very small luminaries.

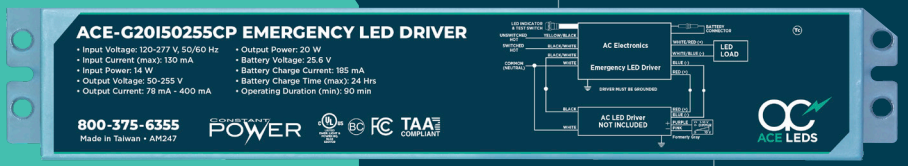
Low-voltage lighting, such as POE lighting, presents unique challenges for emergency lighting. The ALCR-G5-POE Automatic Load Control Relay is an emergency lighting control device which allows designated luminaires to be powered in emergency-mode by an emergency power source, such as a remote generator or inverter. The ALCR-G5-POE includes two separate relays. One relay is an AC power ALCR. A second relay is a DPDT DC rated relay. Under normal power conditions, the designated LED array is powered by a POE LED driver. When there is a loss of normal power, the ALCR-G5-POE senses the loss and performs two primary actions: (1) the ALCR-G5-POE disconnects the LED array from the POE LED driver and connects the LED array to the output of an AC LED driver, and (2) the ALCR-G5-POE serves as a ALCR connecting the emergency AC source of power to the AC LED driver load, which then powers the designated LED array in emergency mode.

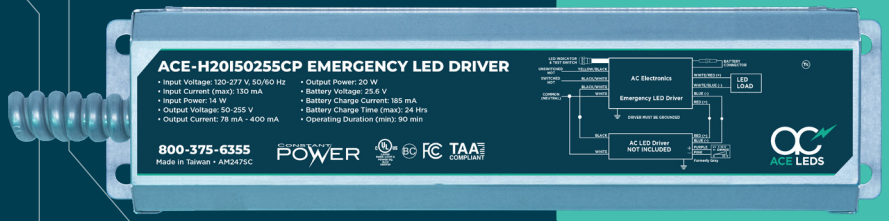
High-Voltage DC Output:

Some facilities require LED fixtures that have a high-voltage LED array. These LED arrays have a Non-Class 2 LED array forward voltage (Vf). ACE LEDs offers new, small size, UL Listed code compliant Emergency LED Drivers that feature an auto-adjusting output compatible with these high-voltage LED fixtures.

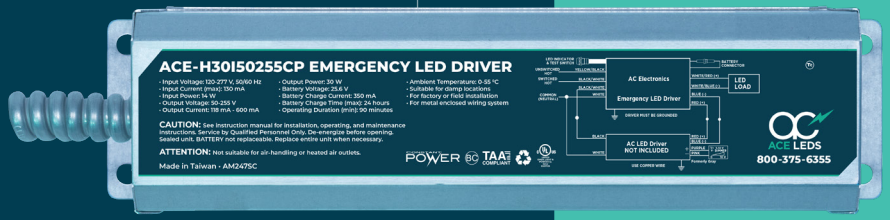
The ACE-G10I30130CP has a universal input from 120 - 277 Vac, an output voltage range from 30 Vdc to 130 Vdc, and delivers a constant power of 10 W to the LED array in emergency mode for a minimum of 90 minutes.

The ACE-G20I50255CP has a universal input from 120 to 277 Vac, an output voltage range from 50 Vdc to 255 Vdc, and delivers a constant power of 20 W to the LED array in emergency mode for a minimum of 90 minutes.





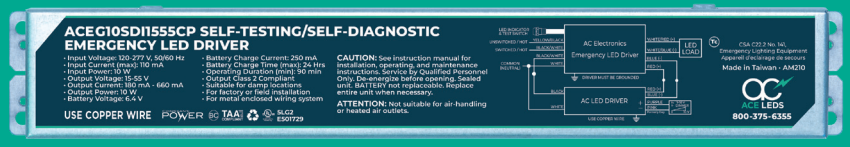
The ACE-H20I50255CP (Flex conduit model) has a universal input from 120 to 277 Vac, an output voltage range from 50 Vdc to 255 Vdc, and delivers a constant power of 20 W to the LED array in emergency mode for a minimum of 90 minutes.



The ACE-H30I50255CP (Flex conduit model) has a universal input from 120 to 277 Vac, an output voltage range from 50 Vdc to 255 Vdc, and delivers a constant power of 30 W to the LED array in emergency mode for a minimum of 90 minutes.

Self-Test/Self-Diagnostic Emergency LED Drivers:

Automated periodic testing and small size requirements are uniquely achieved with ACE's new line of UL924 Listed Self-Test/Self Diagnostic Emergency LED Drivers, designed for compliance with NFPA 101 section 7.9.3.1.2 (Self-testing/self-diagnostic battery-operated emergency lighting equipment).



The ACEG10SDI1555CP is a UL-listed Self-Test/Self Diagnostic Emergency LED Driver which features automated monthly and annual self-testing and self-diagnostics functionality. The ACEG10SDI1555CP has a universal input from 120 to 277 Vac, an output voltage range from 15 Vdc to 55 Vdc, delivers a constant power of 10 W to the LED array in emergency mode for a minimum of 90 minutes, and features a low-profile and narrow-width metal enclosure with dimensions of 11.97 in L x 1.7 in W x 1.14 in H.

The ACEG10LSD1555CP is a UL-listed Self-Test/Self Diagnostic Emergency LED Driver which features automated monthly and annual self-testing and self-diagnostics functionality. The ACEG10LSD1555CP has a universal input from 120 to 277 Vac, an output voltage range from 15 Vdc to 55 Vdc, delivers a constant power of 10 W to the LED array in emergency mode for a minimum of 90 minutes, and features a low-profile and narrow-width metal enclosure with dimensions of 16.53” L x 1.2” W x 1.1” H.

The ACEG20SDI1555CP is a UL-listed Self-Test/Self Diagnostic Emergency LED Driver which features automated monthly and annual self-testing and self-diagnostics functionality. The ACEG20SDI1555CP has a universal input from 120 to 277 Vac, an output voltage range from 15 Vdc to 55 Vdc, delivers a constant power of 20 W to the LED array in emergency mode for a minimum of 90 minutes, and features a narrow-width metal enclosure with dimensions of 15.35” L x 2.24” W x 1.3” H.

The ACEH20SDI1555CP is a UL-listed Self-Test/Self Diagnostic Emergency LED Driver which features automated monthly and annual self-testing and self-diagnostics functionality. The ACEH20SDI1555CP has a universal input from 120 to 277 Vac, an output voltage range from 15 Vdc to 55 Vdc, delivers a constant power of 20 W to the LED array in emergency mode for a minimum of 90 minutes, and features a narrow-width metal enclosure with flex metal conduit and dimensions of 15.35” L x 2.24” W x 1.3” H.

We Bring The Power

As the proliferation of LED lighting continues, and new diverse solutions are required, emergency lighting equipment must also continue to adapt to the new requirements and ensure code compliance. ACE LEDS is committed to meeting these challenges with new innovative products and help customers achieve code compliance.

Visit aceleds.com to learn more about our latest innovations

3401 Avenue D, Arlington, TX 76011

For questions or to place an order contact us at oemsales@aceleds.com or 800-375-6355
or your local WPG Americans Sales representative at inquiry@wpgamericas.com or 888-WPG8881

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