



# LED Retrofit Kits

## for Luminaires and Signs

*With businesses and consumers looking for ways to cut their energy costs, the use of energy efficient light emitting diode (LED) technologies in new lighting equipment installations is on the rise. There is also a move underway to install LED retrofit kits in existing incandescent and fluorescent luminaires and signs as a less expensive alternative to installing new LED luminaires and signs.*

When Listed products are modified in the field, it is not possible for UL to confirm that the product continues to meet applicable certification safety requirements unless the field modifications are investigated by UL. However, an effective alternative to a UL field evaluation is the use of retrofit products and retrofit kits that are specifically investigated and certified by UL for field installation in previously Listed and installed luminaires and signs. As noted below, a number of different LED retrofit kits are currently certified.

### Luminaire retrofit kits

Luminaire retrofit kits are currently Classified under the Luminaire Conversions, Retrofit (IEUQ) product category. This category covers retrofit devices or kits intended for field installation in UL Listed luminaires, office furnishing luminaires or portable luminaires. These products have been investigated to determine that, when used in accordance with the manufacturer's instructions, they do not adversely affect the operation of the complete unit.

The IEUQ category includes reflector kit retrofits intended to replace reflectors in fluorescent luminaires. Installation may involve relocation, removal or replacement of wiring, lampholders and ballasts. Reflector kits are not intended to be installed on luminaires used as air-handling registers unless the accompanying installation instructions specify the kit is suitable for this use.

This category also includes retrofit kits intended to replace the luminaire's original light source, such as a fluorescent light. LED retrofit luminaire conversion kits are the most common and may be one of several types of LED retrofit kits. The kits either replace ballasts with an LED power supply or remove the ballast and wire the LED module or LED tubular lamp directly to the branch circuit wiring. LED module or light sources consist of a separately installed LED module or a replaceable tubular

LED lamp that may use the original fluorescent lamp holders or be provided with new lamp holders. A luminaire modified in accordance with the retrofit kit instructions to no longer accept the original replaceable lamp has a new label – provided by the retrofit kit manufacturer – affixed near the retrofit kit installer to indicate that the luminaire has been modified and can no longer operate the originally intended lamp(s).

In recognition of the continuous technological advances in LED lighting and the challenges associated with installation of LED retrofit kits with tubular LED lamps, UL has created new categories for LED retrofit kits. These categories cover permanent and portable luminaire conversions (IFAR) and luminaire conversions in commercial refrigerator and freezer lighting (IFAS). All certifications of LED retrofit luminaire conversion kits will be transitioned to these new categories during the next several months.





## LED Retrofit Kits (continued)

### Self-ballasted LED lamps

Self-ballasted LED lamps intended to be installed in Edison screw-type, GU24 and other ANSI lamp bases and connected directly to line voltage supplies are Listed under the Self-ballasted LED Type Lamp category (OOLV). These products may be used in Listed permanently connected and portable luminaires and electric signs. Unlike LED retrofit kits, the Listed self-ballasted LED lamps are intended for use only in luminaires that do not need to be modified or rewired to accommodate Listed self-ballasted LED lamps.

Self-ballasted LED lamps are generally for use in dry, indoor locations unless additionally investigated and marked for applications such as damp locations (not directly exposed to water). Products investigated and marked for wet locations may have additional restrictions regarding use or orientation.

Self-ballasted LED lamps have been investigated for use in the smaller of a 6- or 8-inch diameter totally enclosed recessed luminaire if they will physically fit, unless marked as not for use in a totally-enclosed luminaire. Products marked “Suitable for Use in Open Luminaires” are intended to replace tungsten-halogen lamps in applications where the luminaire is open and does not require an additional lamp containment barrier.

### Electric sign retrofit kits

LED retrofit kits used to convert non-LED type electric signs are Classified under the Sign Conversions, Retrofit (UYWU) product category. These products consist of a power source, LEDs and the mounting means necessary to change the type of illumination originally contained in the sign to LED illumination. The kit installation instructions specify the type of sign in which the kit is intended to be installed. The kits are also marked to specify use only with the electric signs of specific manufacturers.

### Exit sign retrofit kits

The Exit Sign Retrofit Kits (GGET) product category covers retrofit kits used to convert exit signs. Products covered under this category are intended for field installation in Listed Exit Fixtures (FWBO) or Listed Exit Lights (FTBR) using no more than two light sources. These devices have not been investigated as replacement light sources in edge-illuminated exit signs.

Exit sign retrofit kits are intended for use in indoor, dry locations unless marked as being suitable for wet locations, for indoor wet locations or for damp locations.

Types EFG (exit fixture general) and EFI (exit fixture independent) retrofit kits are intended for installation into UL Listed products with the product identity of “Exit Fixture” provided as part of the Listing Mark. Type EFG kits are intended for use only in single- or double-faced stencil exit fixtures having specific interior dimensions. Type EFI kits are self-contained assemblies that are independent of the original exit fixture except for mechanical support and electrical supply.

Type ELG (exit light general) and Type ELI (exit light independent) retrofit kits are intended for installation into UL Listed products with the product identity of “Emergency Lighting Equipment” provided as part of the Listing Mark. Type ELG and ELI kits are the same as Type EFG and EFI kits, respectively, except the kits are intended for use only in UL Listed exit lights that are energized by an AC power source in normal mode and by an internal or external DC power source in emergency mode.

### Installation considerations

When inspecting installations of LED retrofit kits, care should be taken to verify that kits bear appropriate UL Classification Marks and are installed in accordance with the manufacturer’s installation instructions. Markings on the kits should also be examined to verify they are being installed in appropriate applications.