# Application Guide: LED-BP & LED-BP-SLIM SERIES Battery Packs for LED Emergency Lighting

**There are several important design considerations when selecting an LED Battery Pack for your emergency lighting applications.**

## Performance/Light Output:

LED battery pack light output is calculated as follows:

Emergency Lumen Output =
(Battery Pack Wattage) X (Luminaire Efficancy)

For example, consider the 1x4 fixture shown to the right used with a 15W LED battery pack such as LVS LED-BP-15W


Emergency Lumen Output =
15W X (125 Lumen Per Watt) = **1875 Lumens**

**LVS offers seven popular wattages for LED battery packs:**
***4.5W, 5W, 9W, 13.5W, 15W, 18W and 25W***

## UL Approval Type

A battery pack must be installed according to its UL approval type.
There are three UL924 marks for LED battery packs:

UL Recognized battery packs are approved only for factory installation. NOT approved for field installation.

UL Classified battery packs are approved for factory or field installation with specific luminaires which UL has tested and approved them with.

UL Listed battery packs can be factory or field installed with any LED luminaire, provided they conform to the parameters set forth in the installation instructions. LVS battery packs are UL LISTED, ensuring they are ready for use in all your projects.

**All products in the LVS LED-BP series are UL Listed for factory or field installation**
**This enables maximum flexibility in the installation and specification process.**

LVS, Inc. 15007 Wicks Blvd, San Leandro, CA 94577
Phone: 510-352-9600 1-800-982-4587 Fax: 510-352-6707
www.lvscontrols.com

## Monthly Testing

NFPA101 requires monthly testing of emergency lighting equipment. Many LED battery packs accomplish this by providing a small remote test button. However, in larger facilities with dozens or hundreds of battery packs, the time spent installing and testing via a remote test button can be cost prohibitive. As a result, the battery packs are not regularly tested. Consider selecting a battery pack with automatic diagnostics capability to ensure your emergency lighting system is tested regularly.

**Automatic Diagnostics come standard with the LVS LED-BP & LED-BP-SLIM series. A remote test button with indicator light is provided to alert occupants if the automatic testing routine detects a problem.**

## Compatibility

When selecting an LED battery pack, it is critical to ensure compatibility

**Driver Example**
**20-52V**

#1) Confirm that the LED luminaire has an accessible driver to connect with the battery pack . While virtually all troffers, linears and highbays have accessible drivers, there are certain downlights that do not have accessible drivers. Screw-in LED lamps, and LED tubes do **not** have accessible drivers.

#2) Confirm that the output voltage of the battery pack matches that of the luminaire/driver it is being paired with. This information is sometimes found on the luminaire datasheet, but it can always be found on the LED driver itself or by contacting the manufacturer of the luminaire.

#3) In order to prevent overdriving the LED luminaire, ensure that the wattage of the battery pack is lower than the wattage of the luminaire.

**The LVS LED-BP series automatically detects and provides 10V-60VDC Class 2 output[1]. This covers the most popular commercial, indoor LED luminaires, including any luminaire with a Class 2 Listed LED driver.**

## Special Cases

In some cases, such as large high bay LED luminaires (often have drivers with 100-200VDC output) or screw-in replacement LED lamps (do not have an accessible driver) , it can be difficult or impossible to find a compatible battery pack. The best option is to use a UL924 listed inverter. LVS Inverters provide pure sine-wave line voltage (120 or 277V) output, and are compatible with virtually any LED luminaire.

Other popular choices in lieu of a battery pack are the CEPS-25W, the CEPS-36W and the CEPS-50W. These are micro inverters which feature automatic 0-10V dimming capability. This capability allows the units to provide backup power to any 0-10V dimmable LED luminaire up to 5x its output power. They can also back up non-dimmable LED luminaires. Please see http://www.lvscontrols.com/ceps.php for further details or contact us at 1-800-982-4587.

[1] Class 2 Output is only available on the **LED-BP SERIES**. The **LED-BP-SLIM SERIES** does not provide Class 2 output.

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