

ENERGY STAR® Luminaire V2.0 and Lutron Drivers

What is ENERGY STAR®?

ENERGY STAR® is a voluntary program administered by the U.S. Environmental Protection Agency (EPA) designed to save consumers and businesses money and protect our climate through outstanding energy efficiency, while also incorporating certain minimum performance criteria to ensure customer satisfaction. Many utilities offer rebates to customers who purchase and install ENERGY STAR® certified products. A summary of those rebates can be found at www.energystar.gov/DIME.

How can I get my LED luminaire certified to ENERGY STAR® Luminaires 2.0?

EPA released ENERGY STAR® Luminaires V2.0 (ES L V2.0) on June 1, 2015 which expanded the scope of products to include surface-mount SSL retrofit products (wall sconce, ceiling-mount), an expanded outdoor category and made adjustments to performance criteria.

To bear the ENERGY STAR® mark, any luminaire manufactured after June 1, 2016 must be certified to ES L V2.0; products can no longer be certified to earlier versions of the standard. The ES L V2.0 standard, along with other relevant documents, can be found at https://www.energystar.gov/products/spec/luminaires_specification_version_2_0_pdf.

To qualify a new product, contact an EPA-recognized Certification Body (CB) to have the product’s performance certified. A list of EPA-recognized CBs, as well as an overview of the EPA’s third-party certification procedures, is available at www.energystar.gov/3rdpartycert. Please see “Important notes on ENERGY STAR® Luminaires V2.0 testing” before submitting a luminaire with a Lutron LED driver for certification.

How can Lutron LED drivers help me get my LED luminaire certified to ENERGY STAR® requirements?

ES L V2.0 applies to complete luminaires, but the LED driver is directly responsible for or heavily affects meeting many of the performance criteria.

Performance Criteria of ENERGY STAR® Luminaires V2.0 Directly Affected by the LED Driver					
Category	Start Time	Power Factor	Transient Protection	Standby Power Consumption	Operating Frequency
Performance Criteria	Non-connected driver ≤ 0.75 seconds Connected driver ≤ 1.0 seconds	PF ≥ 0.7 for total luminaire power ≥ 5 W	2.5 kV Category A operation per ANSI/IEEE C62.41.1-2002 and ANSI/IEEE C62.41.2-2002	Non-connected driver = 0 W Connected driver ≤ 0.5 W	≥ 120 Hz (IEEE PAR1789)

Many Lutron drivers meet these requirements, as shown below:

LED driver family	Case Type	ES L V1.1 or V1.2 compliant?	ES L V2.0 compliant?
Hi-lume® Premier 0.1% 3-wire voltage LED driver		No	Yes ⁽⁴⁾
Hi-lume® Premier 0.1% EcoSystem™ voltage LED driver with Soft-on, Fade-to-Black™		No	Yes ⁽⁴⁾
Hi-lume® 1% EcoSystem™ LED driver with Soft-on, Fade-to-Black™ (LDE1)	K-can	Yes ⁽¹⁾ V1.2	Yes ⁽²⁾⁽⁴⁾⁽⁸⁾
	M-can	No	Yes ⁽³⁾⁽⁴⁾⁽⁸⁾
Hi-lume® 1% 2-wire LED driver (120 V forward phase only) (LTE)	K-can, M-can	Yes V1.1	Available Q1 2017 ⁽⁵⁾⁽⁸⁾
Hi-lume® 1% 3-wire or EcoSystem™ LED driver (L3D)	K-can, M-can	Yes V1.1	No ⁽⁶⁾⁽⁸⁾
5-Series Ecosystem™ LED driver (LDE5)	K-can	No	No ⁽⁷⁾
	M-can	Yes V1.2	Yes ⁽³⁾⁽⁴⁾

⁽¹⁾ Portions of each bulk type. Consult Product Specification Submittal.

⁽²⁾ Models shipped after June 1, 2016 (manufactured after May 25, 2016) will be ES L V2.0 compliant. See “Reading Lutron LED driver manufacturing date codes” below to tell the date code of the LED driver.

⁽³⁾ Models shipped after July 1, 2016 (manufactured after June 27, 2016) will be ES L V2.0 compliant. See “Reading Lutron LED driver manufacturing date codes” below to tell the date code of the LED driver.

⁽⁴⁾ All products with EcoSystem™ are considered “connected” devices for ES L V2.0 certification. See “Lutron’s EcoSystem® control system allows LED drivers to be classified as “Connected” devices” below before submitting a luminaire with a Lutron LED driver for certification.

⁽⁵⁾ All LTE products are considered “non-connected” devices for ES L V2.0 certification.

⁽⁶⁾ Recommended substitute: Hi-lume® 1% EcoSystem™ LED driver with Soft-on, Fade-to-Black™ (LDE1).

⁽⁷⁾ Recommended substitute: Hi-lume® 1% EcoSystem™ LED driver with Soft-on, Fade-to-Black™ (LDE1).

⁽⁸⁾ LED driver needs to “learn” the LED array characteristics before performing certification testing. See “Important notes on ENERGY STAR® Luminaires V2.0 testing” below before submitting a luminaire with a Lutron LED driver for certification.

Important notes on ENERGY STAR® Luminaires V2.0 Testing

Some LED drivers must “learn” the load before start time measurements can be made

Some Lutron LED drivers need to “learn” the high-end operating voltage of the LED array before they will dim it properly. Until they do, start times will not meet the ES L V2.0 requirements. To get these LED drivers to learn the load, simply run the LED driver (with no dimming control) on the specific LED array for 20 seconds. This procedure should be repeated whenever a new LED array is used.

Lutron’s EcoSystem™ control system allows LED drivers to be classified as “Connected” devices

ES L V2.0 contains alternate performance criteria for “Start Time” and “Power Factor” for “Connected” devices. Lutron’s EcoSystem™ meets the definition for “Connected” control systems. For information on how to comply with the requirements for “Connected Devices”, an API is available at www.lutron.com/ENERGYSTARAPI

Reading Lutron LED driver manufacturing date codes

All Lutron LED drivers are date coded at the factory during production. This information is printed in dd/mm/yyyy format on the unit serial label.



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Lutron, EcoSystem and Hi-lume are registered trademarks and Soft-on, Fade-to-Black and EcoSystem are trademarks of Lutron Electronics Co., Inc.

ENERGY STAR is a registered trademark of the U.S. Environmental Protection Agency.

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