

Minimum Efficacy Requirements

All LED retrofit kit submissions must meet the [ENERGY STAR Luminaire Specification Version 2.0](#). For Connected Lighting - see the separate [guidance document](#) for this category.

- Downlight retrofits: 60 lm/W

Other Requirements

Two product samples are required for LED retrofit kits - one kit should be retrofitted into the intended fixture resulting in a working luminaire that can be ceiling or wall mounted. The other sample will be for the judges to evaluate in its uninstalled form.

Please note that these are minimum requirements and judges will award more points to higher performing products (such as products with higher efficacy and higher CRI). See the Judging Criteria below for more details.

- Allowable CCTs (indoor luminaires): 2700 – 3500 K
- Minimum allowable CRI (indoor luminaires):
 - $R_a \geq 80$
 - $R_9 > 0$

ENERGY STAR® Qualification of Winners

All retrofit kit entries that are selected as winners are required to become ENERGY STAR® qualified within one year of award. If winners fail to become qualified, they will be removed from the *Lighting for Tomorrow* website of winning products. If there are any products that the 2017 judging panel wishes to recognize that are unable to become ENERGY STAR® qualified, they will be evaluated on a case-by-case basis.

Judging Criteria

Judges will score each entry according to the following criteria:

Color appearance	Evaluation of this criterion will be based on the judging panel's subjective evaluation of the color appearance of the installed fixture. Manufacturer data about CCT of the LED and OLED sources must be provided. CCT of finalists will be verified through LM-79-08 or LM-80-08 testing as necessary.
Color rendering	Evaluation of this criterion will be based on the judging panel's subjective evaluation of the color appearance of objects illuminated by the installed fixture. Manufacturer data about CRI of the LED and OLED sources must be provided for indoor fixtures. CRI of finalists will be verified through LM-79-08 or LM-80-08 testing as necessary. A CRI of 90 or greater is preferred.
Appropriate light output and distribution	Luminaires must provide light output (lumens) sufficient for their intended applications as well as appropriate light distribution. Evaluation of this criterion will be based on the judging panel's subjective evaluation of the light levels and distribution provided by the fixture, and may also include measurement of light levels using a standard illuminance meter, with results compared to IES recommended practice (minimum illuminance values).
Application efficiency	The fixture must deliver appropriate light levels to the task with lower wattage than comparable traditional light sources for that task. Evaluation of this criterion will be based on assessment by the SSL judging panel and manufacturer data on efficacy, which may be provided through LM-79-08 or LM-80-08 test reports. More points will be awarded to higher efficacy products.
Value	Evaluation of this criterion will be based on the judging panel's subjective evaluation regarding the overall quality of the product and materials used in combination with the price range provided by the manufacturer.

2017 LED Retrofit Kits Judging Process and Criteria

Aesthetic appearance and style	Evaluation of this criterion will be based on the judging panel's subjective evaluation of the aesthetic appearance of the installed fixture when both illuminated and off. Consideration will be given to whether the materials and design are appropriate for residential use and will appeal to the current consumer market.
Ease of installation	This will be based on clarity of installation instructions, the simplicity of the tools required, as well as the actual installation. <i>Installation instructions required.</i>
Innovation: engineering and design	Entries that demonstrate innovation in taking advantage of the unique characteristics of LEDs (form factor, durability, weight, beam characteristics, ability to tune color appearance, etc.). Evaluation of this criterion will be based on the judging panel's subjective evaluation of the product's innovative qualities.
Universally applicable	Evaluation of this criterion will be based on the number and types of fixtures where the product could be installed.
Replaceable components	The ability of a fixture to allow a consumer to replace an LED component if it should fail. No points will be awarded to fixtures that must be discarded upon failure of one component.
Product rated life/warranty	

Potential Bonus Points

The judging panel may award bonus points for entries exhibiting desirable characteristics. Bonus points will be available for the attributes listed below; additional bonus points may be identified by the judges.

Senior friendly	Entries that demonstrate that they have been designed and can be marketed to meet the needs of the aging population or others who are sight challenged (for more information, please see the Senior Friendly Lighting document).
Sustainability	Made from recycled materials.
Ability to change color	Variable chromaticity (color tuning) capability.
Dimmability	Indoor entries capable of dimming continuously from 100% light output to at least 20% of full output. Judges will look for smooth transitions, no perceptible flicker at lower output levels, and no perceptible color shift toward cooler colors (warm color shift is alright).