

Minimum Efficacy Requirements

All replacement lamps must meet the [ENERGY STAR® Lamp Specification Version 2.0](#). For connected lamps, see the [separate guidance document](#).

- Omnidirectional
 - CRI \geq 90: 70 lumens/watt
 - CRI < 90: 80 lumens/watt
- Directional
 - CRI \geq 90: 61 lumens/watt
 - CRI < 90: 70 lumens/watt
- Decorative
 - 65 lumens/watt

Other Requirements

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

- Allowable CCTs: 2200 - 3500 K
- Allowable CRI (minimum): 80

ENERGY STAR® Qualification of Winners

All lamp entries that are selected as winners are required to become ENERGY STAR qualified within one year of award. If winners do not 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 lamp. Manufacturer data about CCT of the LED and OLED sources must be provided via LM-79-08 or LM-80-08 test reports.
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 lamp. Manufacturer data about CRI of the LED and OLED sources must be provided for indoor fixtures via LM-79-08 or LM-80-08 test reports. A CRI of 90 or greater is preferred.
Appropriate light output and distribution	Sufficient light output and the appropriate distribution of that light must be provided by the replacement lamp based upon the characteristics of the lamp the LED product is intended to replace. Evaluation of this criterion will be based on the judging panel's subjective evaluation of appearance of the lighted LED replacement lamp and, in the case of reflector lamps, the light distribution pattern when the beam of the lamp is directed toward a matte white surface at distances typically used for residential lighting products.

2017 LED Replacement Lamp Judging Process and Criteria

	Evaluations may also include measurement of light levels using a standard illuminance meter, with results compared to IES recommended practice (minimum illuminance values) for the intended application.
Lamp efficacy	The lamp must deliver the specified light output with lower wattage than comparable traditional light sources. 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.
Functionality	Evaluation of this criterion will be based on the judging panel's subjective evaluation of the aesthetic appearance of the installed lamp when both illuminated and off. Consideration will be given to whether the lamp will physically fit in the intended application.
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 lamp's innovative qualities.

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 acceptable).