

Connected Lighting and Lighting Controls are cornerstones of *Lighting & Homes for Tomorrow 2020*. For manufacturers interested in submitting connected lighting or lighting control products, a summary of eligibility and product requirements is provided below.

*Lighting & Homes for Tomorrow* (LHFT) is focused on delivering a positive consumer experience with efficient connected technology. In the past few years, there has been an influx of connected lighting products entering the market, and *Lighting & Homes for Tomorrow* sees an opportunity to ensure that residential products are delivering quality to consumers as well as considering energy saving and management capabilities.

## **Connected Lighting and Lighting Controls Category Scope**

This category of LHFT is intended to be inclusive of all residential connected lighting applications. Entries are not necessarily limited to standalone products such as smart or connected light bulbs or fixtures; they can also be lighting controls, systems, or system components. Products must be suitable for sale by retailers serving the residential new construction and major renovation markets in the United States and Canada. If an entry is comprised of components from more than one manufacturer, LHFT encourages collaboration in the submission of the entry. Categories include:

- Lamps
- Fixtures
- Dimmers and Switches
- Ceiling Fans
- Combination and Multi-function Devices
- Whole House Lighting Systems

The competition is open to products with primary applicability in the residential sector, or in residential-style applications such as hospitality and assisted living environments. Lighting and controls intended for indoor or outdoor applications are eligible to enter. All controls must be compatible with LED technology. Dimming controls must be able to dim LED lamps marked as “dimmable.”

The competition is intended to highlight lighting products that are available for purchase in 2020. As such, products available or planned for introduction to the market between January 1, 2018 and January 31, 2021 are eligible to enter in the competition.

If you are interested in submitting a product family or system, LHFT recommends that a manufacturer select one or two products as a representative for a product family and submit them individually

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along with a mention that the product is part of a larger family within the product description in the submission form. Manufacturers are also invited to submit images of other products within the family as well as marketing materials that show the product family.

If you are unsure whether your product falls within the competition scope or have additional questions, please reach out to Kim Katz at [info@lightingfortomorrow.com](mailto:info@lightingfortomorrow.com).

## Desired Capabilities

LHFT is seeking connected lighting devices to help customers manage their energy use. It is not expected that entries will include all of the following, but some qualities and capabilities that are desired include:

- Meet CEE Tier 1/ENERGY STAR® Program Requirements, if applicable. Products that meet CEE Tier 2 or 3 requirements may be awarded additional points.\*

	Initial Efficacy (lm/W) CRI ≥ 80	Initial Efficacy (lm/W) CRI ≥ 90	Correlated Color Temperature (K)	Rated Life (hours)	Power Factor	Dimming
<b>CEE Tier 1</b>						
Omnidirectional	≥ 80	≥ 70	≤ 6500	≥ 15,000	< 10W, ≥ 0.6 ≥ 10W, ≥ 0.7	Not required
Directional	≥ 70	≥ 61	≤ 6500	≥ 15,000	≥ 0.7	Not required
Decorative	≥ 65	≥ 65	≤ 6500	≥ 15,000	≥ 0.7	Not required
<b>CEE Tier 2</b>						
Omnidirectional	≥ 95	≥ 80	≤ 5000	≥ 25,000	≥ 0.7	≤ 20%
Directional	≥ 85	≥ 70	≤ 5000	≥ 25,000	≥ 0.7	≤ 20%
Decorative	≥ 80	≥ 70	≤ 5000	≥ 15,000	≥ 0.7	≤ 20%
<b>CEE Advanced Tier</b>						
Omnidirectional		≥ 90	≤ 5000	≥ 25,000	≥ 0.9	≤ 10%
Directional		≥ 80	≤ 5000	≥ 25,000	≥ 0.9	≤ 10%
Decorative		≥ 80	≤ 5000	≥ 25,000	≥ 0.9	≤ 10%

\* <https://library.cee1.org/content/cee-residential-lighting-initiative-october-1-2017/>.

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- Ceiling fans with built-in LED lighting or LED light kits are expected to meet ENERGY STAR Program Requirements.\*

Type	Size (diameter) (in.)	Minimum Efficiency (cfm/W)	Minimum High-Speed Airflow (cfm)
Ceiling Fan	$D \leq 36$ inches	$\geq 0.72 * D + 41.93$	$\geq 1767$
	36 inches < D < 78 inches	$\geq 2.63 * D - 26.83$	$\geq 250 * \pi * (D/24)^2$
	$D \geq 78$ inches	$\geq 2.63 * D - 26.83$	$\geq 8296$
Hugger Ceiling Fan	$D \leq 36$ inches	$\geq 0.31 * D + 36.84$	$\geq 1414$
	36 inches < D < 78 inches	$\geq 1.75 * D - 15$	$\geq 200 * \pi * (D/24)^2$
	$D \geq 78$ inches	$\geq 1.75 * D - 15$	$\geq 6637$

- Color tuning and dimming capabilities.
- Low standby power based on functionality provided (less than 0.5W preferred).
- Remote operation, such as through an app, online portal, or other interface.
- Continued functionality when cloud connection is lost.
- Ability to seamlessly operate with other connected devices, systems, and platforms within the home.
- Sensing capabilities to optimize lighting operation based on occupancy, light levels, geofencing, motion sensing, or infrared signal sensing.
- Programmable settings, such as vacation, away, or nighttime modes that reduce energy use.
- Ongoing, active management of settings through features like automatic scheduling or learning-based schedule creation based on consumer preferences and habits.
- Customizable consumer notifications for events like device status, system failures, power surges, or planned device shutdowns.
- Ability for users to access operational status and energy consumption information, including remote access via an app, website, or home energy management system.
- Data sharing with consumer-authorized third parties, including operational status and energy consumption reporting.
- The ability to receive and respond to a utility or third-party signal (i.e. pricing signal or curtailment signal).

Again, it is not expected that entries will include all of the above capabilities; rather, products should include measures that save energy and provide a positive consumer experience. Additional capabilities beyond this list will also be considered in the judging process. Products with greater functionality will receive more points (see judging criteria, below).

\* [https://www.energystar.gov/products/lighting\\_fans/ceiling\\_fans/ceiling\\_fans\\_key\\_product\\_criteria](https://www.energystar.gov/products/lighting_fans/ceiling_fans/ceiling_fans_key_product_criteria).

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## Entry Requirements

- Complete submission forms
- Entries selected for in-person judging:
  - Must share user interface information, such as the app or website and a demo login, if applicable.
  - Provide printed or digital marketing materials that demonstrate the value proposition to the customer (may include product packaging, point-of-purchase materials, advertisements, or other materials).
  - Printed or digital installation instructions.
  - Must ship products to the judging location. For more information, please see the [Shipping Instructions](#) document.
  - Product entries must be submitted in a format that demonstrates how they would work within a typical home, including if they are part of a larger system.
    - Multi-station, multi-component or whole-house systems submitted to *Lighting & Homes for Tomorrow* for consideration must provide a plug-and-play working sample of the system which includes the various components – similar to a portable demonstration that might be used for customer demonstrations or at a trade show.
    - Lighting control entries
      - Controls designed for wall-box mounting must be wired with a standard 3-prong 120 volt plug and cord on the input side and a standard 3-prong outlet on the output side.
      - Entrants must submit one working prototype or a production-quality control sample for judging. The entry must be a plug-and-play type working sample, similar to what you might use as a customer demo or at a trade show. If the entry is part of a larger system (e.g. a fan kit) provide the necessary component for the judges to see the product functioning in its intended application. For more information, please see the [Shipping Instructions](#) document.
        - A prototype is defined as a fully functional representative sample of the lighting control(s) intended to serve as the basis for user evaluation and demonstration.
        - A production-quality control is defined as a lighting control with the same composition and materials as controls currently in production.
      - Proposed lighting controls must be suitable for sale by lighting showrooms and other retailers serving the residential new construction DIY and major renovation markets.
  - The final submission form must include suggested retail price range information.

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- If selected as a winner, entrants must:
  - Provide laboratory reports for energy performance.
  - Complete a cybersecurity questionnaire and interview.

## Competition Process

Evaluation of LHFT entries will take place in the following stages:

1. **Complete the Intent-to-Submit Form.** Entrants will be assigned entry number and receive access to the Final Submission Form.
2. **Complete the Final Submission Form** by June 5, 2020.
3. **Screening Entries.** The LHFT Steering Committee will screen entries by reviewing submissions to identify the most promising candidates for further assessment based on the evaluation criteria. All entrants will be notified of their results in late July 2020.
4. **Finalists must ship products and supporting materials** to the judging location to be evaluated by a panel of experts. Shipping instructions will be provided to finalists.
5. **Installation and verification of submissions** by UL staff to make sure all parts necessary to mount and operate the product in its intended application are included and that the controls function properly.
6. **In-person Judging.** The Judging Panel will review products, videos, and supporting documents and select winners according to the judging criteria (below).
7. **Notification of winners and verification** of energy performance and cybersecurity in July 2020.
8. **Public announcement** and promotion of winners at relevant industry events.

## Judging Criteria

Judges will score each entry according to the following criteria:

<b>Energy and Carbon Savings</b>	How much energy does the device consume? Does it meet ENERGY STAR or CEE efficiency criteria? How does it support energy savings and how large are those savings?
<b>Functionality</b>	What amenities are offered to consumer? Are energy and load management capabilities included?
<b>Interoperability</b>	How well does the product integrate with other devices and systems? What is the level of integration? With how many? What is the market share of compatible devices and systems?
<b>Data Sharing</b>	What data is shared with the consumer and authorized third parties? How does that data benefit the consumer?
<b>Cybersecurity*</b>	What steps have been taken to address cybersecurity risks?

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\* Cybersecurity measures will not be evaluated directly by the Judging Panel. Winners will have to demonstrate cybersecurity measures as part of a final verification process prior to receipt of award.

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<b>Reliability</b>	What functionality is maintained with the loss of internet connection? How does the device reconnect after loss of power, internet, or software update?
<b>Simplicity: Value Proposition</b>	Is the value proposition easily understood?
<b>Simplicity: Installation, set up, and use</b>	How easy is it to install, set up and use the device for a consumer and contractor, if required?
<b>Quality (Including Appearance and Style)</b>	Judges will use entrant provided performance data as an input when evaluating the in-person appearance of quality with respect to its intended application to inform their scoring. Performance metrics include light distribution, lumen output, diffusion, glare, color temperature, color rendering, and flicker.
<b>Value to Cost</b>	Is the price point commensurate with amenity and quality of the device?
<b>Innovation in Design / Form Factor</b>	Is the design unique or innovative? Does it look new and exciting?
<b>Innovation in Engineering</b>	Are there innovative technical elements?
<b>Future Proofing</b>	Does the entrant have plans and infrastructure to support contingencies such as new protocols and platforms entering the market, cyber-attack, or company changes?

## Additional Points

The 2020 Judging Panel may award bonus points for entries exhibiting other desirable characteristics such as resiliency and niche applications like senior-friendly products, as determined by consensus of the Judging Panel.

## Awards for Connected Lighting, Lighting Controls, and Ceiling Fans

Product awards will likely be announced at the ALA Conference, September 13-15, 2020, subject to change due to COVID-19. Winners will also be promoted through press releases to both consumer and trade publications and among CEE members, the *Lighting & Homes for Tomorrow* website, CEE Industry Partners Meeting, and materials at key industry events in 2021. In addition, CEE member efficiency program administrators may choose to recommend winning entries to their customers.

## Additional Questions?

Check out the FAQ at <http://lightingfortomorrow.com/competition/> or contact Kim Katz at [info@lightingfortomorrow.com](mailto:info@lightingfortomorrow.com) with any questions.