

Connected Windows and Window Attachments is a category of *Lighting & Homes for Tomorrow 2020*. For manufacturers interested in submitting connected windows and attachments, 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 devices and systems entering the market, and LHFT sees an opportunity to ensure that residential products are delivering quality to customers as well as considering energy saving and management capabilities.

Connected Window and Window Attachments Scope

The connected windows and window attachments category of LHFT is open to products with primary applicability in the residential sector, or in residential-style applications such as hospitality and assisted living environments. 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:

- Applied Films, such as electrochromic and photochromic films
- Awnings
- Blinds
- Cellular Shades
- Louvered Shutters
- Pleated Shades
- Roman Shades
- Roller Shutters
- Connected Fenestration, such as dynamic glazing and internal shading

The competition is intended to highlight the connected attachments products that are available for purchase in 2020. As such, products in the market, introduced (or planned for introduction) to the market between January 1, 2018 and January 31, 2021 are eligible to participate 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 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 if your product falls within the competition scope or have additional questions, please reach out to Kim Katz at info@lightingfortomorrow.com to discuss further.

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Desired Capabilities

LHFT is seeking connected fenestration and attachments that demonstrate energy savings. It is not expected that entries will include all of the following, but some qualities and capabilities that are desired include:

- Low wattage products based on functionality provided.
- Sensing capabilities to optimize shading operation based on occupancy, indoor/outdoor temperature, light levels, geofencing, motion sensing, or infrared signal sensing.
- Customization, such as the ability for consumers to input preferences and parameters related to product operation.
- Ongoing, active management of settings through features like automatic scheduling or learning-based schedule creation based on consumer preferences and habits.
- Ability to seamlessly operate with other connected devices, systems, and platforms within the home.
- Continued functionality when cloud connectivity is lost.
- Ability for users to access product status, including remote access via an app, website, or home energy management system.
- Data sharing with consumer-authorized third parties.
- Customizable consumer notifications for events like system failures or power surges.
- Programmable settings, such as vacation, away, or nighttime modes that reduce energy use.
- Windows should meet ENERGY STAR® Most Efficient Criteria for 2020:^{*}

Climate Zone	U-factor	SHGC	NAFS Performance Grade
Northern	≤ 0.20	≥ 0.20	≥ 15
North-Central	≤ 0.20	≤ 0.40	≥ 15
South-Central and Southern	≤ 0.20	≤ 0.25	≥ 15

- AERC certification is preferred for connected attachments, if applicable.
- NFRC rating is preferred for connected windows.

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 generally receive more points (see judging criteria, below).

Entry Requirements

- Complete submission forms (see the [Sample Submission Form](#)).
- Finalists selected for in-person judging:
 - Must ship products to the judging location. For more information, please see the [Shipping Instructions](#) document.
 - Multi-station, multi-component or whole-house systems submitted to LHFT for consideration must provide a plug-and-play working sample of the system

^{*} https://www.energystar.gov/products/spec/energy_star_most_efficient_2020_criteria_development_pd.

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which includes the various components – similar to a portable demonstration that might be used for customer demonstrations or at a trade show.

- Controls 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.
- Finalists should mount the window or attachment in a frame, similar to a portable demonstration that might be used at a trade show, for ease of installation.
- Must 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).
- Must provide printed or digital installation instructions.
- If selected as a winner, entrants must:
 - Provide laboratory reports for energy performance (NFRC/AERC rating is preferred, but not required).
 - 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.
8. **Public announcement** and promotion of winners at relevant industry events.

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Judging Criteria

Judges will score each entry according to the following criteria:

Energy and Carbon Savings	How much energy does the device consume? Does it meet ENERGY STAR criteria, if applicable? How does it support energy savings and how large are those savings?
Functionality	What amenities are offered to consumer? Are energy and load management capabilities included?
Interoperability	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?
Data Sharing	What data is shared with the consumer and authorized third parties? How does that data benefit the consumer?
Cybersecurity*	What steps have been taken to address cybersecurity risks?
Reliability	What functionality is maintained with the loss of internet connection? How does the device reconnect after loss of power, internet, or software update?
Simplicity: Value Proposition	Is the value proposition easily understood?
Simplicity: Installation, set up, and use	How easy is it to install, set up and use the device for a consumer (or contractor, if required)?
Quality	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. Judges will also consider the appearance, materials used, and experience of using the product.
Value to Cost	Is the price point commensurate with amenity and quality of the device?
Innovation in Design / Form Factor	Is the design unique or innovative? Does it look new and exciting?
Innovation in Engineering	Are there innovative technical elements?
Future Proofing	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 such as resiliency and niche applications like senior-friendly products, as determined by consensus of the Judging Panel.

* 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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Awards for Windows and Window Attachments

Product awards are currently planned to be presented at the 2020 Attachments Energy Rating Council (AERC) Fall Meeting, subject to changes due to COVID-19 impacts. 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 with any questions.