



# Testing and Reporting Requirements for Dimmable Products Including Field-Adjustable Light Output Products

*The DLC issued a new policy in March 2018 (as a part of Technical Requirements V4.3) that allowed products with field-adjustable light output capability to be qualified and listed on the SSL QPL. This beneficial product feature provides economies of scale opportunities for the supply chain, more flexibility for customers and installers, and additional energy-savings opportunities. In May 2018, the DLC suspended this policy in order to revise it to allow greater flexibility and clarity around the difference between field-adjustable and dimmable products and the associated testing requirements. With this V4.4 release, the DLC is issuing the revised policy. The revised policy simplifies the requirements and aligns testing requirements between dimmable and field-adjustable light output products.*

Products with field-adjustable light output are eligible to be listed on the DLC Solid-State Lighting Qualified Products List (SSL QPL) under an expansion of the DLC Dimmable Products Policy.

## Definition

Dimmable products, including field-adjustable light output products, are capable of being adjusted to increase and/or decrease lumen output and wattage from the default setting.

The default setting is defined as the setting at which the product emerges from production and is shipped with no adjustments to lumen output.

## Dimmable Eligibility

The following are eligibility rules for dimmable products.

- Dimmable products must meet all DLC Technical Requirements at the maximum light output setting.
- Dimmable products will only be classified as DLC Premium if they meet all [DLC Premium classification requirements](#) at the maximum light output settings.



- Dimmable products may also be capable of color-tuning, and thus are subject to both the Dimmable Products Testing and Reporting Requirements and the [Color-Tunable Products Testing and Reporting Requirements](#).

## Dimming Types and Definitions

Applicants should use the following definitions of “Dimming Types” when answering application questions as to whether the product is continuously dimmable and/or field-adjustable.

- **Continuous Dimming** is defined by an input that controls the lighting system with sufficient resolution, in output of one hundred or greater steps, to support light level changes perceived as smooth. In contrast, stepped dimming controls the lighting system at a small number of discrete levels.
- **Field-Adjustable Light Output** is defined as a dimming type where products are capable of being adjusted to decrease or increase lumen output and wattage from the default setting. The default setting is defined as the setting at which the product emerges from production and is shipped with no adjustments to lumen output. The field-adjustable set point is fixed by the manufacturer, distributor, installer, or commissioning agent before or during installation or commissioning, via a control that is made discrete to that purpose via a proprietary process or separate control (i.e. not part of a regular occupant- or sensor-facing control system). Typically, the field-adjustable light output settings are not intended to be occupant interfacing.

## Dimmable Products Testing and Reporting

DLC Single Product Applications may include dimmable products, including field-adjustable versions. Dimmable product submittals must include testing to demonstrate they meet DLC requirements at maximum light output. Additionally, the following information must be provided in the DLC application form (in the Reported Performance Table tab):

- Is the product capable of dimming? The applicant will indicate “yes” or “no”.
- If the product is capable of dimming, how does the product dim? The applicant will indicate “continuous” or “stepped” dimming.
- If the product is capable of continuous dimming, is the product capable of dimming to 10% or below from its full input power when installed in an appropriate system? The applicant will indicate “yes” or “no”.
- Does the product provide field-adjustable light output? The applicant will indicate “yes” or “no”.
- If the product is capable of dimming, what is the default light output of the product? The applicant will indicate the value in lumens.
- If the product is capable of dimming, what is the default wattage of the product? The applicant will indicate the value in watts.



- If the product is field-adjustable, what is the minimum wattage of the product? The applicant will indicate the value in watts.
- If the product is field-adjustable, what is the maximum light output of the product? The applicant will indicate the value in lumens.
- If the product is field-adjustable, what is the minimum light output of the product? The applicant will indicate the value in lumens.

## Verification of Dimming Type and Supporting Documentation

The DLC will evaluate manufacturers' claims of dimming capability by ensuring that the dimming claims are clearly published in the product specification sheet(s) and correspond with the unique model numbers submitted. The DLC will also evaluate the manufacturers' product installation instructions, including any supporting commissioning manuals, to determine eligibility. The installation instructions must be the same ones provided to customers and installers in the market. DLC reviewers may check web listings and other marketing materials and reserve the right to request additional information to demonstrate dimming capability if information in product specification sheets is not sufficient.

Note: Due to the lack of an industry standard testing methodology to verify dimming capability and performance under dimmed conditions, the DLC will not require testing be submitted to verify performance under dimmed conditions at this time.

## Listing on the QPL

Dimmable products will be identifiable on the QPL as "Continuous Above 10%", "Continuous Below  $\leq 10\%$ ", or "Stepped" within the existing fields: "Dimming Status" and "Dimming Type". If the dimmable products also have "Field-Adjustable Light Output" capability, they will be identified as such under the "Product Features" tab.

Dimmable products, including field-adjustable products, will be listed on the QPL at the maximum wattage setting, with the product performance characteristics from the LM-79 test: light output, power consumption, efficacy, THD, power factor, CRI, CCT, zonal lumens, spacing criteria. Additionally, field-adjustable products will list the reported default light output and default wattage, minimum and maximum reported light output, and minimum reported wattage. The maximum reported wattage field will not be used, as the regular reported wattage field is required to be at that maximum consumptive setting.

Products with distinct dimming types will be listed as separate entries on the QPL. For example, a product that is available in non-dimmable, continuously dimmable but not field-adjustable, and continuously dimmable AND field-adjustable versions will be evaluated and listed as three separate products.



## Updating Dimmable Product Information

To update products already on the QPL with dimming information, including updates to add field-adjustable capability, the DLC provides a separate fee schedule as listed at <https://www.designlights.org/solid-state-lighting/submit-a-product/application-fees/>. Please visit <https://www.designlights.org/solid-state-lighting/submit-a-product/updating-products/> for more information on updating existing product listings.

