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# SECOND DRAFT Testing and Reporting Requirements for Field-Adjustable Light Distribution Products

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Products with field-adjustable light distribution (FALD) are eligible to be listed on the DLC Solid-State Lighting Qualified Products List (SSL QPL).

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## Definition

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Field-Adjustable Light Distribution (FALD) products are lamps, luminaires, or retrofit kits whose light distribution can be altered from the default factory as-shipped configuration. FALD products may fall into one of three categories based on the method used to alter their light distribution:

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1. **Integral Field-Adjustable Light Distribution Products** – Products where the distribution can be altered by electrical or mechanical means without the addition, removal, or replacement of any parts or accessories. The adjustment is integral to the product. For example, a luminaire with rotatable light bars to aim the light at different angles would fall under this category.

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2. **Standard Accessory Field-Adjustable Light Distribution Products** – Products where the distribution is altered by adding or removing parts or components that are shipped as standard components with the product under a single model number. For example, a luminaire that is standard shipped with three reflectors under a single model number and the installer chooses one of the reflectors during the installation and stores or discards the other two reflectors, would fall under this category.

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3. **Optional Accessory Field-Adjustable Light Distribution Products** – Products where the distribution is altered by adding or removing optional parts or components. A customer must specify and order these optional components to be able to adjust the distribution of the luminaire. For example, a luminaire that is available with three different reflectors with unique model number variations for each reflector, and the customer chooses via the model number which reflector is shipped with the luminaire.



27 The testing and/or listing requirements are different based on each FALD category the product falls  
28 under as defined in the Eligibility and Listing sections below.

29 Products with light output that may be altered without changing the light distribution pattern—that is,  
30 without changing the intensity of light in one direction relative to any other direction—are defined as a  
31 type of dimmable products and must comply with the [Testing and Reporting Requirements for](#)  
32 [Dimmable and Field-Adjustable Light Output Products](#).

## 33 Eligibility

34 The following are eligibility rules for FALD products:

- 35 • **Integral FALD Products** must meet all DLC Technical Requirements for the category and Primary  
36 Use Designation (PUD) under which they are being submitted at one of the product’s light  
37 distribution settings.
- 38 • **Integral FALD products** must meet the PUD zonal lumen distribution (ZLD) requirements at the  
39 tested configurations even if the product does not meet the ZLD requirements at every possible  
40 light distribution setting.
- 41 • **Standard Accessory FALD Products** must meet all DLC Technical Requirements for the category  
42 and Primary Use Designation (PUD) under which they are being submitted at every combination  
43 of distribution altering parts that are standard shipped and included under a single model  
44 number.
- 45 • **Optional Accessory FALD Products** with optional light distribution adjustment components that  
46 must be ordered separately or as an option within a unique model number must be submitted  
47 with separate model numbers. In effect, these products are treated as traditional non-FALD  
48 products. As with non-FALD products, each unique model number must meet DLC Technical  
49 Requirements for the category and Primary Use Designation (PUD) under which they are being  
50 submitted. For this reason, qualification and listing of ‘Optional Accessory FALD products’ are  
51 not governed by this FALD policy.
- 52 • **Products that include both Integral FALD and Standard Accessory FALD** - An Integral FALD  
53 product that also includes Standard Accessories for further altering its light distribution may  
54 simultaneously be eligible as an Integral FALD product and a Standard Accessory FALD product.  
55 With each light distribution altering accessory installed, including the case without an accessory  
56 installed, such product must meet all DLC Technical Requirements for the category and PUD  
57 under which it is submitted at one light distribution setting adjusted using the integral means.  
58 The tested light distribution setting should be adjusted using the integral means to be suitable  
59 for the intended use of each light distribution altering accessory and need not be identical  
60 across all light distribution altering accessories.
- 61 • **Products that include both Integral FALD and Optional Accessory FALD** - An Integral FALD  
62 product may also have Optional Accessories that can be ordered separately or as an option  
63 within a unique model number for further adjusting its light distribution. Such product, paired



64 with each Optional Accessory, must be submitted with a separate model number, each of which  
65 is treated as an Integral FALD Product for the purpose of this policy.

- 66 • **Products that include both Standard Accessory FALD and Optional Accessory FALD - A**  
67 Standard Accessory FALD product may also have Optional Accessories that can be ordered  
68 separately or as an option within a unique model number for further adjusting its light  
69 distribution. Such product, paired with each Optional Accessory, must be submitted with a  
70 separate model number, each of which is treated as a Standard Accessory FALD Product for the  
71 purpose of this policy.
- 72 • As with non-field-adjustable products, any product that can meet Technical Requirements of  
73 multiple PUDs and would like to be qualified/listed under each PUD must submit the necessary  
74 testing and application materials for each PUD it is to be listed under. The products shall be  
75 tested in the configuration for which the light distribution setting is intended, and the  
76 manufacturer shall self-declare the intended setting in the application form. If multiple product  
77 tests are required—for example, in-housing and bare-lamp, or multiple chromaticities—the  
78 product shall be in the same light distribution configuration for all tests.
- 79 • FALD products will only be classified as DLC Premium if they meet all [DLC Premium classification](#)  
80 [requirements](#) for the category and PUD under which they are being submitted, at the light  
81 distribution setting(s) at which the product is tested.
- 82 • FALD products that fall under other DLC product category and Primary Use eligibility rules, such  
83 as [Color-Tunable](#) or [Dimmable](#) products, are additionally subject to those respective Testing and  
84 Reporting Requirements.

## 85 Testing and Reporting

86 FALD products are only eligible to be submitted as “Family Grouping” DLC application types, and  
87 submittals must conform to the following testing rules in addition to the requirements of the family  
88 grouping policy.

89 For Integral FALD products, testing shall be conducted in the same chosen light distribution setting for  
90 each worst-case report required. For all Standard Accessory FALD products, testing shall be conducted at  
91 each combination of the included parts for each worst-case report required.

92 At the tested distribution setting, testing must be provided sufficient to bracket all products in the group  
93 per the DLC [family grouping requirements](#). This includes:

- 94 • LM-79 testing of the products that represent:
  - 95 ○ The worst-case efficacy product within the group
  - 96 ○ The worst-case lumen output product within the group
  - 97 ○ The worst-case power quality (THD, PF) product(s) within the group
  - 98 ○ Representative highest CCT
  - 99 ○ Representative lowest CRI



100                   ○ Photometric distribution data for all optical variations excluding variations due to the field-  
101                   adjustability.

102                   • In-Situ Temperature Measurement Test (ISTMT) on the LED package/module/array at the worst case  
103                   thermal condition.

104   Additionally, the following information must be provided in the DLC application form:

105                   • Is the product capable of field-adjustable light distribution? The applicant shall indicate “Integral  
106                   FALD”, “Accessory FALD”, “Integral and Accessory FALD”, or “No”.

107                   • If the product is capable of field-adjustable light distribution, describe in brief the adjustable setting  
108                   position that was used for testing.

## 109   **Supporting Documentation**

110   The DLC will evaluate manufacturer’s claims of FALD capability by ensuring that the adjustability claims  
111   are clearly published in the product specification sheet(s) and correspond with the unique model  
112   numbers submitted. The DLC will also evaluate the manufacturer’s product installation instructions,  
113   including any supporting commissioning manuals, to determine eligibility. Documentation must include  
114   instructions for altering light distribution, including any required device or software. The instructions  
115   must be the same ones provided to the intended market actors who will be making the light distribution  
116   adjustments. DLC reviewers may check web listings and other marketing materials, and reserve the right  
117   to request additional information to demonstrate capability if information in product specification  
118   sheets is not sufficient.

## 119   **Listing on the QPL**

120   Integral FALD and Standard Accessory FALD products will be identified as such under the “Product  
121   Features” tab on the SSL Qualified Products List (QPL). Optional Accessory FALD products will be listed in  
122   the same way as non-FALD products due to the eligibility and testing requirements described above, and  
123   FALD will not be identified as one of their product features for the purpose of listing.

124   **Integral FALD** products will be listed on the QPL at the tested light distribution setting, with the product  
125   performance characteristics from that LM-79 testing at that setting: light output, watts, efficacy, THD,  
126   power factor, CRI, CCT, zonal lumens, and spacing criteria.

127   **Standard Accessory FALD** products will be listed on the QPL at the tested light distribution configuration  
128   that produces the worst-case efficacy performance, with product performance characteristics from that  
129   test: light output, watts, efficacy, THD, power factor, CRI, CCT, zonal lumens, and spacing criteria.

130   A new text field, **Adjustable Distribution Setting**, will be added on the QPL for Integral FALD products to  
131   document the light distribution setting or configuration at which the product performance  
132   characteristics are tested and reported.



133 **Updating Listings**

134 Historically, some product features that now fall under this policy – such as aimable products – were  
135 considered eligible before the implementation of the field-adjustable light distribution policy. These  
136 products will remain listed on the QPL, and will default to **not** being noted as having field-adjustable  
137 light distribution (unless the existing listing is updated as noted below). Following the effective date of  
138 this policy, new submissions of products meeting the eligibility requirements of this policy will not be  
139 eligible for listing except under these field-adjustable provisions; the prior method for qualifying aimable  
140 products will not be available.

141 Manufacturers who desire to update their listings to reflect that their products are field-adjustable  
142 under the definitions in this new policy will be allowed to do so via an update application, requiring spec  
143 sheets, installation instructions, and a current application form. This update will be assessed an  
144 application fee per family group according to the update schedule to be detailed at  
145 <https://www.designlights.org/solid-state-lighting/submit-a-product/updating-products/>.

146 The DLC may, in a future revision to the Technical Requirements, mandate that products that qualified  
147 prior to adoption of this policy be updated to current listing requirements.

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