SSL Technical Requirements V5.1

Guidance for Using Allowances

Why allowances?

The DLC grants allowances to its efficacy requirements to offset potential efficacy tradeoffs due to features that contribute to the overall quality of light produced by the listed product. These allowances are applicable to both tested and reported performance values. When allowances are used to qualify products to the QPL, those products are noted on the QPL Excel download as using the allowance.

This resource provides examples of the testing required to qualify products using allowances and how those allowances may affect the product's QPL listing. The specific requirements for allowances can be found in the Technical Requirements.

Example scenarios

The four scenarios in this resource describe how the CCT allowance is applied. When utilizing allowances, the model with the lowest reported efficacy must be tested and a full LM-79/color report must be provided, as described in the Additional Reporting Requirements section of the Technical Requirements.

The following applies to each example scenario:

- The examples focus on the -5% efficacy allowance for products with a CCT ≤ 2700K only, and a primary use designation with a minimum LPW requirement of 105 (99.8 LPW with allowance). However, similar logic applies for any allowances.
- Other allowances for high color rendition and enhanced discomfort glare control follow the same process with different threshold criteria for those metrics. Please see the allowance section of the technical requirements for details on the various allowances and how they can be utilized independently (up to a maximum of 15%, total).
- The following examples show only the full LM-79/color reports and model numbers required to be tested for minimum efficacy. They do not include tested model numbers required for other metrics such as highest CCT or lowest light output. Please note that in real applications, additional testing is required to cover various other metrics.
- The process to determine allowances applies to all efficacy thresholds within an application. For example, there are different efficacy thresholds for Standard or Premium classification, and for different general applications.
- For simplicity, the following examples disregard DLC efficacy tolerances.
- In each example scenario, tested model numbers are highlighted in yellow.

Scenario 1:

All models in the application are eligible for the CCT allowance, and the submitter wants to minimize testing.

In this scenario, testing is only provided on the lowest reported efficacy model, and all models in the application are noted as using an allowance. Even though Models F through I do not require an allowance to meet the efficacy threshold, testing has only been provided on a model that does require the use of an allowance, so F through I are marked as qualified using the allowance.

Table 1: Test plan with minimal testing conducted; all models allowance eligible

Model number	CCT	Efficacy (LPW)	CCT allowance needed to meet efficacy threshold	Marked as using the allowance	Testing provided for min. LPW
A	2700	99.8	Yes	Yes	Yes, required for qualification
B	2700	99.9	Yes	Yes	No
C	2700	100	Yes	Yes	No
D	2700	100.5	Yes	Yes	No
E	2700	101	Yes	Yes	No
F	2700	105	No	Yes	No
G	2700	106	No	Yes	No
H	2700	107	No	Yes	No
I	2700	108	No	Yes	No

Scenario 2:

All models in the application are eligible for the CCT allowance, and the submitter wants to minimize models that are noted as using an allowance.

In this scenario, an additional test (relative to scenario 1) must be provided on the lowest efficacy model that does not require the use of the allowance to meet the efficacy threshold. All models that require the allowance will be noted as using the allowance; all models that do not **will not** be noted as using the allowance. This test is not strictly required to qualify products to the QPL, but it is necessary if the applicant wishes to minimize products noted as using the allowance.

Table 2: Test plan to minimize models noted as using an allowance; all models allowance eligible

Model number	CCT	Efficacy (LPW)	CCT allowance needed to meet efficacy threshold	Marked as using the allowance	Testing provided for min. LPW
A	2700	99.8	Yes	Yes	Yes, required for qualification
B	2700	99.9	Yes	Yes	No
C	2700	100	Yes	Yes	No
D	2700	100.5	Yes	Yes	No
E	2700	101	Yes	Yes	No
F	2700	105	No	No	Yes
G	2700	106	No	No	No
H	2700	107	No	No	No
I	2700	108	No	No	No

Scenario 3:

Some models in the application are eligible for the CCT allowance, while others are not. A test is necessary to bracket the products that are not eligible for the allowance and applicant chooses to test the worst-case model not eligible for the allowance.

In this scenario, in addition to the lowest overall reported efficacy model test, a test must be provided on a minimum reported efficacy model that does not utilize the CCT allowance. This additional test must, at a minimum, be worst-case to all products that are not eligible to take the CCT allowance.

This scenario shows testing where the submitter opts to test the minimum reported efficacy model that is not eligible for the CCT allowance (that is, the worst-case model among products that are not 2700K in this group; Model J).

Models eligible for the allowance that have a reported efficacy greater than the lowest reported efficacy model (Model A) and less than the lowest reported efficacy model that does not utilize the CCT allowance (Model J), will be noted as using the allowance on the QPL, as shown for Model F through Model I. Models that have reported efficacy greater than Model J **will not** be noted as taking the allowance, even if they would be eligible to do so (Model K).

Table 3: Test plan for a family with some models that meet allowance requirements and some that do not

Model Number	CCT	Efficacy (LPW)	CCT allowance eligible?	CCT allowance needed to meet efficacy threshold	Marked as using the allowance	Testing provided for min. LPW
A	2700	99.8	Yes	Yes	Yes	Yes, required for qualification
B	2700	99.9	Yes	Yes	Yes	No
C	2700	100	Yes	Yes	Yes	No
D	2700	100.5	Yes	Yes	Yes	No
E	2700	101	Yes	Yes	Yes	No
F	2700	105	Yes	No	Yes	No
G	2700	106	Yes	No	Yes	No
H	2700	107	Yes	No	Yes	No
I	2700	108	Yes	No	Yes	No
J	3000	109	No	No	No	Yes, required for qualification, although specific model may differ
K	2700	110	Yes	No	No	No
L	3000	111	No	No	No	No
M	3000	112	No	No	No	No
N	3000	113	No	No	No	No

Scenario 4:

Some models in the application are eligible for the CCT allowance, while others are not. Applicant chooses to test the worst-case model that does not require the allowance to pass the baseline efficacy requirement, even if that product would be eligible to take the allowance, to minimize models that are noted as using an allowance.

The submitter in this scenario opts to test the worst-case model that has a minimum reported efficacy that does not require the use of the allowance (Model F). Although Model F is eligible to take the allowance, by testing this model, the submitter minimizes the number of products that are noted as taking the allowance on the QPL. Note that this results in the same number of tests as scenario 3.

Table 4: Test plan to minimize models noted as using an allowance for a family with some models that meet allowance requirements and some that do not

Model number	CCT	Efficacy (LPW)	CCT allowance eligible?	CCT allowance needed to meet efficacy threshold	Marked as using the allowance	Testing provided for min. LPW
A	2700	99.8	Yes	Yes	Yes	Yes, required for qualification
B	2700	99.9	Yes	Yes	Yes	No
C	2700	100	Yes	Yes	Yes	No
D	2700	100.5	Yes	Yes	Yes	No
E	2700	101	Yes	Yes	Yes	No
F	2700	105	Yes	No	No	Yes, required for qualification, although specific model may differ
G	2700	106	Yes	No	No	No
H	2700	107	Yes	No	No	No
I	2700	108	Yes	No	No	No
J	3000	109	No	No	No	No
K	2700	110	Yes	No	No	No
L	3000	111	No	No	No	No
M	3000	112	No	No	No	No
N	3000	113	No	No	No	No

Please email applications@designlights.org for questions on how applications are reviewed and published per the allowance policy or to discuss specific applications and submission methods.