







Executive Summary

SSL Technical Requirements V5.0 & V5.1

Version 5.0 of the Solid-State Lighting (SSL) Technical Requirements is the first of two revisions (V5.0 and V5.1) designed to improve the quality and controllability of high performance, energy efficient commercial lighting products by establishing requirements and reporting standards for DLC listed products. V5.0 lays the groundwork to capture and promote continuing advances in energy-efficient technology so that maximum energy savings and user satisfaction are possible. V5.1 continues to encourage advances in lighting quality characteristics such as color performance, discomfort glare, and light distribution; and increases the controls functionality of installed energy efficient technology so that maximum energy savings and user benefits are realized.

The goals of these new SSL Technical Requirements include:

-  The efficacy of listed products increases across all product categories with the pace of technology, without compromising quality of light.
-  Virtually all listed products are dimmable, providing increased energy savings and user satisfaction.
-  New color quality requirements help provide lighting that has good color rendering and better consistency over time.
-  Lighting decision makers can use DLC Premium classification for more confidence in the glare performance of listed products.

Important Considerations for Version 5

The following points describe key aspects of the V5.0 and V5.1 Technical Requirements. Detailed information is provided in the policy documents and associated [V5.0 & V5.1 Manufacturer and Industry Guidance](#).

1. **The V5 Technical Requirements have been separated into two final policies: V5.0 and V5.1, released in tandem on February 14, 2020.** V5.0 contains new efficacy and dimmability requirements and V5.1 contains quality of light requirements, including spectral quality and glare, and the remaining controllability requirements. Flicker requirements are not included in the V5.0 or V5.1 Technical Requirements.
2. After working through the comments received on Draft 2 and meeting with the DLC members, it was determined appropriate to release the V5.0 efficacy and dimming requirements and V5.1 quality of light requirements at the same time, but with different effective dates. **V5.0 applications will be accepted on February 18, 2020, and V5.1 applications will be accepted on July 1, 2020.**

3. **Products currently listed under V4.4 that already meet the V5.0 requirements will be automatically updated to V5.0.** Manufacturers of qualified products that meet the V5.0 efficacy and dimming requirements with reported data do not need to take action to update those products to V5.0. Products that do not meet V5.0 requirements will remain listed under V4.4 until December 31, 2020. Child products with reported data that meets the V5.0 requirements will be updated to V5.0, even if the parent does not meet the V5.0 requirements.
4. **All products are required to meet V5.0 efficacy and dimming requirements by December 31, 2020.** Products that have not been updated from V4.4 will be delisted on this date. Similarly, all products must meet the V5.1 requirements by December 31, 2021; products that have not been updated to meet V5.1 will be delisted on this date.
5. **Application fee amounts will be modified and will become effective with V5.1 on July 1, 2020.**

Technical Requirements Overview

The DLC's requirements support additional energy savings while promoting better quality of light for people living and working in the built environment. The V5 program consists of a phased approach to incorporate quality of light metrics to ensure that high-quality products are listed, superior performing products can be differentiated, and additional energy savings are realized.

Technical Requirements V5.0

Topic	V5.0 Highlights
Efficacy	<ul style="list-style-type: none"> • DLC Standard minimum efficacy requirements increased • Allowances to efficacy are unchanged from V4.4
Controllability	<ul style="list-style-type: none"> • Continuous dimming is required for indoor luminaires and retrofit kits
DLC Premium	<ul style="list-style-type: none"> • Efficacy requirements are 15 lumens per watt over V5.0 Standard • All DLC Premium products must be capable of continuous dimming

Technical Requirements V5.1

Topic	V5.1 Highlights
Efficacy	<ul style="list-style-type: none"> • Allowances to efficacy are offered to products that demonstrate enhanced color and glare performance.
Spectral Quality	<ul style="list-style-type: none"> • New IES TM-30 metrics and qualification pathways are introduced to better characterize and ensure the color rendering performance of listed products. • New color maintenance requirements are introduced to ensure the color quality of products remains stable over the life of the product. • DLC Premium establishes a higher color performance requirement to ensure Premium products deliver both higher efficacy and improved quality of light.

Topic	V5.1 Highlights
Glare and Distribution	<ul style="list-style-type: none"> • Backlight, Uplight, Glare (BUG) ratings are introduced to characterize the performance of outdoor lighting products and help inform compliance with state and/or local lighting ordinances. • The Unified Glare Rating (UGR) metric is introduced and required for certain indoor DLC Premium products to help ensure good glare performance along with high efficacy.
Controllability	<ul style="list-style-type: none"> • Dimming is required for most products on the QPL. • All products must report integral control capability. Products with integral controls will include additional detail regarding the type of controls. • All products must report the control signal communication type and dimming protocol that the product accepts.
DLC Premium	<ul style="list-style-type: none"> • Tighter CCT range compared to DLC Standard. • Troffers, linear ambient, low-bay, and high-bay must meet UGR thresholds.
Other Topics	<ul style="list-style-type: none"> • Updates to Reference Housings policy.

For more detailed information on the changes to the Technical Requirements, please review the detailed [Version 5.0](#) and [Version 5.1](#) policies on the DLC website.

Energy Efficiency Administrators’ Programs Guidance

During the transition period, supporting guidance will be provided to energy efficiency program administrators to incorporate new measures and transition to new requirements under V5.0 and V5.1. These resources include program design guidance, outreach materials for trade allies and customers, and educational materials for new metrics.

Manufacturer and Industry Guidance

This policy release includes [manufacturer and industry guidance](#) that provides information on how V5.0 and V5.1 will impact the qualification process and new requirements for manufacturers and testing laboratories. Manufacturers who intend to update their product listings or others interested in how V5.0 and V5.1 will be implemented should consult this section for information on:

- Submitting product and private label applications under V5.0 and V5.1
- Required product testing under the V5.0 and V5.1 requirements
- Transition timelines and grace periods for V4.4 products
- Updating V4.4 products to qualify under V5.0 and V5.1
- Updating family groupings to meet V5.0 and V5.1

Important Dates

For a more detailed overview of implementation dates, please see the [V5.0 & V5.1 Manufacturer and Industry Guidance](#).

