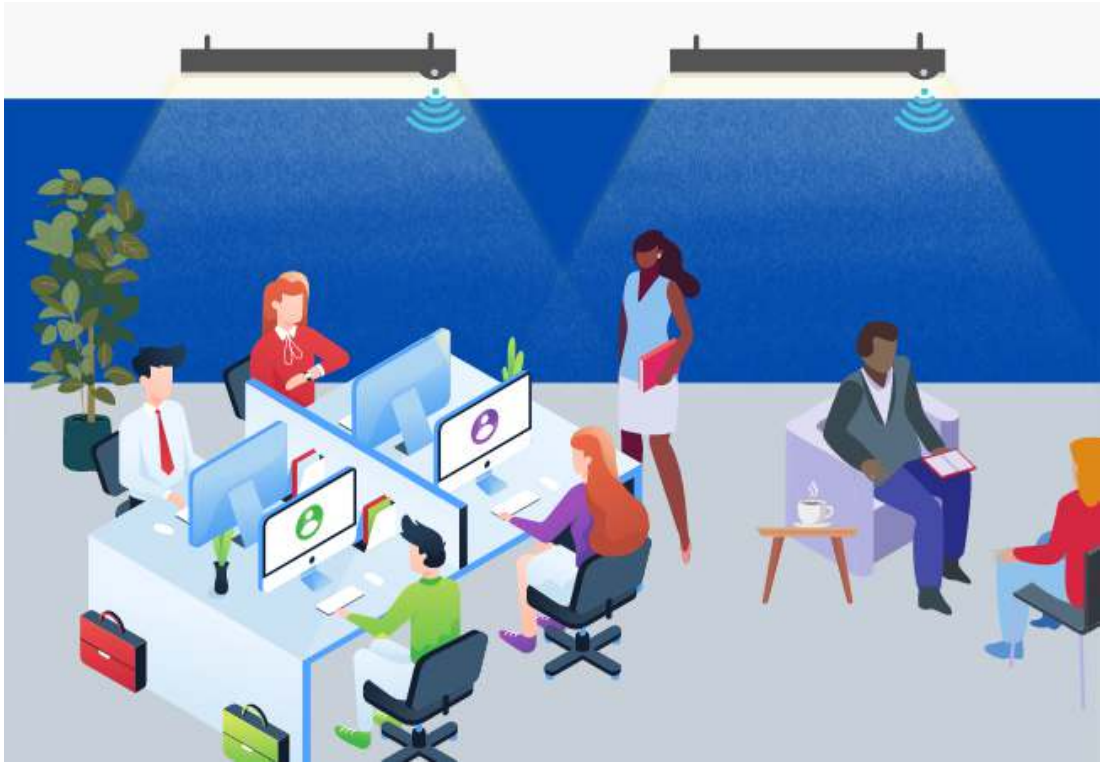
Member Guidance: Transitioning to SSL Technical Requirements V5.1

Commercial Lighting Programs Transitioning to SSL V5.1

Since LEDs installed now may run for a decade or more, installing products enabled with controllability can allow interoperability with other building systems and provide energy savings for years to come. SSL Technical Requirements V5.1 requires nearly all listed products to be controllable and addresses lighting quality concerns such as glare and inconsistent color performance that were identified as problematic in earlier generations of LED products.



Require SSL V5.1 Products for Rebate Eligibility

LED technology has come a long way, providing office buildings, schools, hospitals, retail, and other facilities with energy saving lighting options for a wide-variety of needs. However, in some instances, these energy savings have been achieved at the expense of the “quality of light”.

The DLC's SSL Technical Requirements V5.1 puts new emphasis on quality characteristics, while continuing to deliver energy savings. Building on the efficacy increases and controllability requirements in SSL V5.0, V5.1 captures advances in lighting quality characteristics such as color performance, light distribution and thresholds for glare, and increases the controls functionality to maximize energy savings and user satisfaction.

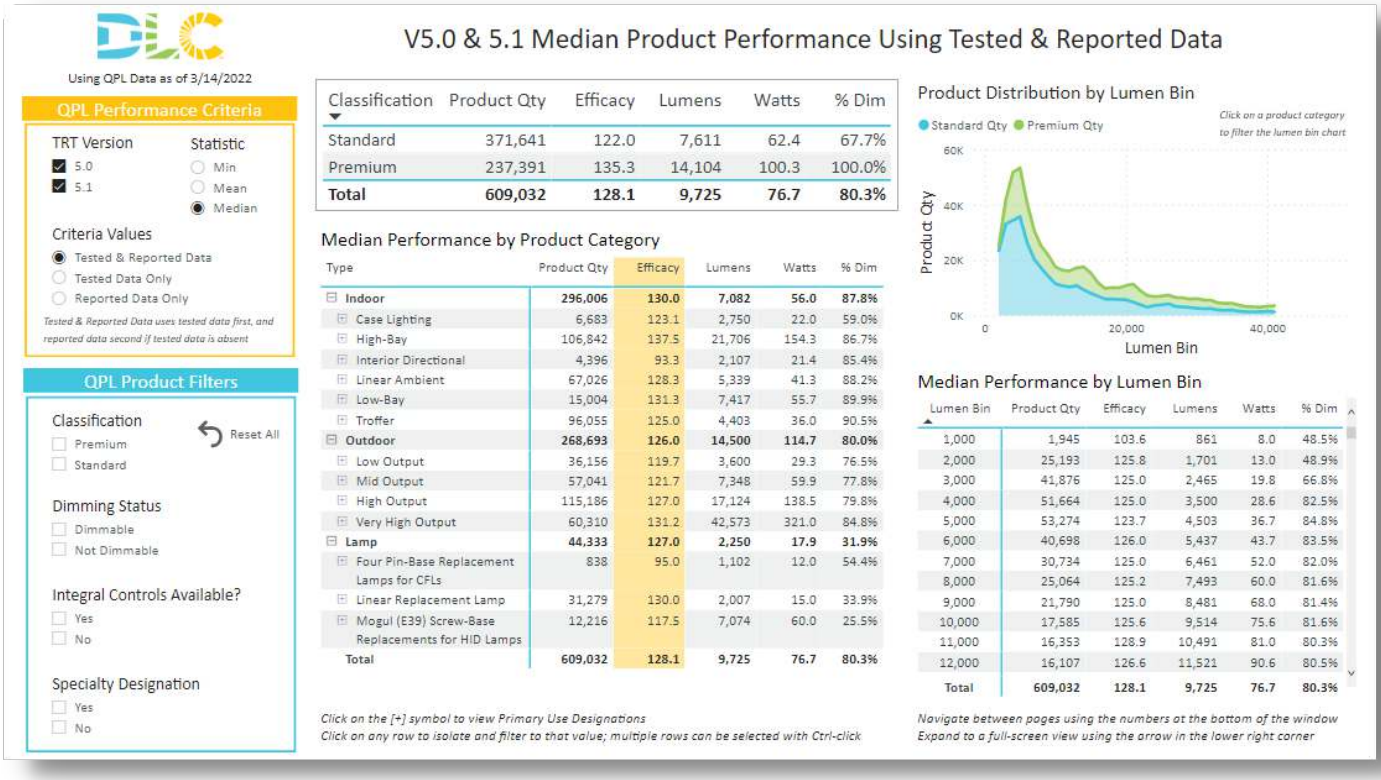
Update TRM Assumptions to Capture Savings

V5.0 introduced a new requirement for dimming for most indoor luminaire and retrofit kit products. In V5.1, the dimming requirement is extended to include all lamps and most outdoor products. With this new requirement and information available on the QPL, its the perfect time to capture additional savings from dimming.

Research conducted by the DLC revealed that dimming is already available for many linear replacement lamp (TLED) products in the market, and can enable TLEDs to work with networked lighting controls. Free ridership is expected to increase during the coming years, eroding the savings potential from standard TLEDs. Dimmable (and especially networked) TLEDs can potentially offset some of the attribution impacts and allow TLEDs to remain in C&I portfolios longer.

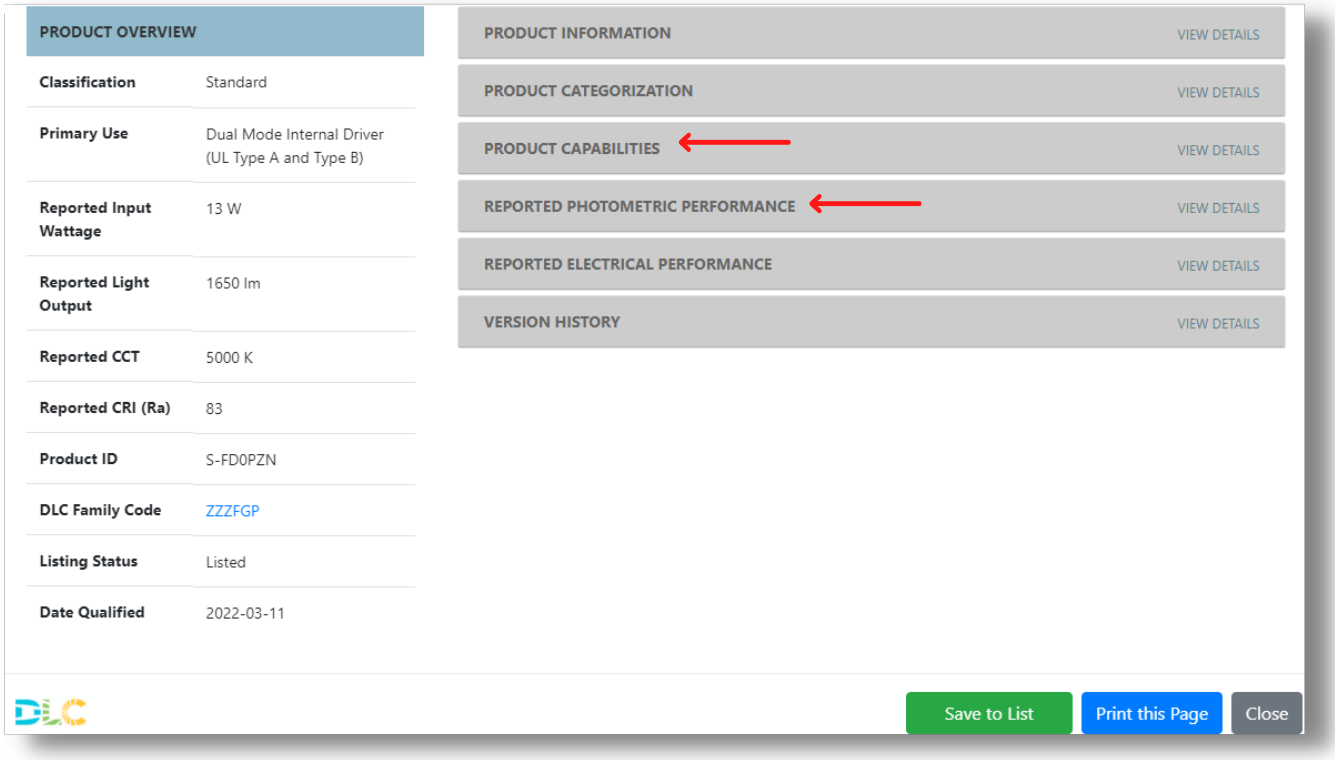
Need Help Estimating New Savings Assumptions?

- The DLC QPL Analysis Tool will help you quickly evaluate key performance statistics for QPL products to assist with program planning and updating TRM assumptions with V5.0 values.
- The Cost Effectiveness Analysis Tool will allow you to easily evaluate the cost effectiveness of replacing early generation LEDS with new LEDs and controls.
- TLED Dimming FAQ Document provides all the background information on the new V5.1 TLED dimming requirement including energy efficiency program support.



Inform Internal Staff How to Find Information on the QPL

To save your staff valuable time, show them where to find the QPL fields they need to verify certain V5.1 characteristics. The product detail page displays general product information as well as the V5.1 control and color quality fields. To save the listing information, rebate processing staff may print or screen shot the data.



Product Capabilities Accordion

- Dimming
  - Dimming capability (continuous, stepped, none)
  - Range of continuous dimming (if applicable) (Below 10%, Above 10%)
- Integral Controls
  - Integral control sensors
  - Integral control capabilities
  - LLLC model name (if applicable)
- Control Communication
  - Wired Communication Protocols
  - Wireless Communication Protocols

Reported Photometric Performance Accordion

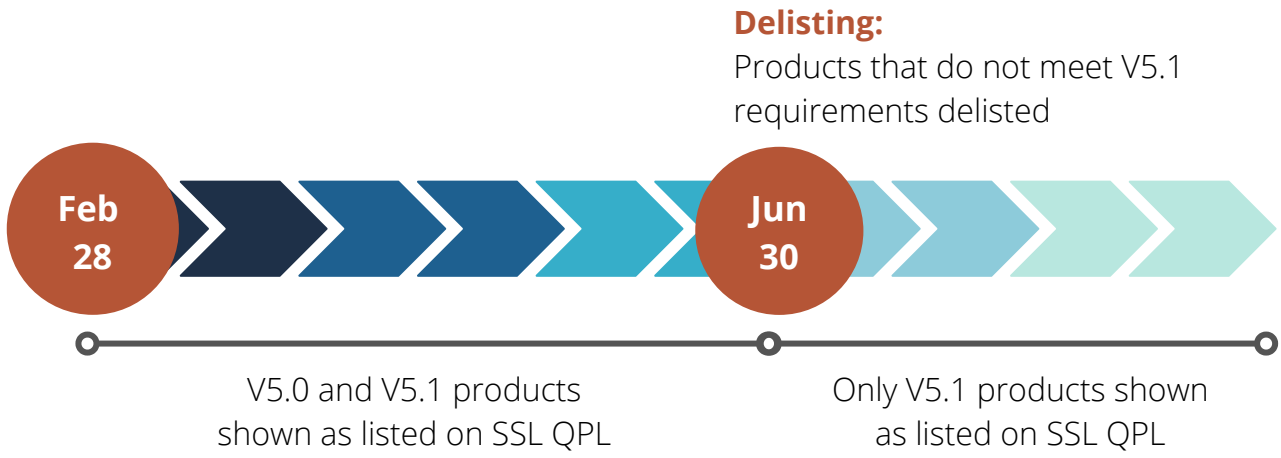
- Chromaticity (CCT & Duv)
- Color rendition (Ra, R9, Rf, Rg, Rcs,h1)
- Beam Angle (TLEDs only)
- BUG field (outdoor only)

Communicate with Trade Allies and Distributors

Products that are currently listed under V5.0 may not meet SSL V5.1 Technical Requirements and may be delisted at the end of June. Before trade allies or distributors purchase or stock products they should verify which Technical Requirements version the product is listed under to ensure they will be eligible for rebates. This can be done by checking the DLC's SSL Qualified Products List (QPL) or contacting the manufacturer directly.

V5.1 Timeline

Both SSL V5.0 and V5.1 products are shown as listed on the QPL today. However, beginning July 1, 2022, only SSL V5.1 products will be shown as listed on the QPL.



Communicate SSL V5.1 Product Benefits with Your Customers

The table below outlines the key V5.1 characteristics with a short summary of the policy updates from the Technical Requirements and benefits.

Efficacy	
Policy: • V5.0 increased minimum efficacy thresholds (by 12% on average) for all product categories. DLC Premium efficacy is 15 lumens per watt higher than DLC Standard. • V5.1 does not further increase efficacy but includes an update to the High-Bay PUD and adds a new General Application for Low-Bay. • Find additional information starting on pg 5 of Technical Requirements.	Benefits: • Customers and energy efficiency programs can realize additional energy savings through higher efficacy products. • Energy efficiency programs can designate rebates for low-bay products separate from high-bay, if desired.

Dimming

Policy:

- V5.0 requires continuous dimming for all DLC Premium products.
- V5.1 extends the dimming requirement to all lamps and most indoor and outdoor luminaires and retrofit kits. Products in outdoor primary uses can be stepped or continuously dimmable.
- Find additional information starting on pg 19 of Technical Requirements.

Benefits:

- Dimming is a strategy that can achieve additional energy savings alone or as part of a control solution that includes daylight dimming and high-end trim.
- If controls aren't installed initially, dimmable products allow the functionality to be added later.
- Dimming can improve occupant satisfaction and mitigate issues with over-lighting and glare.

Color of Light

Policy:

- V5.1 expands the range of acceptable CCT values (up to 6500 K) and introduces a color maintenance requirement. Additionally, V5.1 Premium products will be required to meet tighter CCT tolerances.
- Find additional information starting on pg 9 of Technical Requirements.

Benefits:

- Customers and specifiers will have a wider range of CCT selection, and products will deliver color appearance that is less likely to shift over time.
- DLC Premium products will exhibit more consistent color from one product to the next within the same model and across all manufacturers.

Color Rendition

Policy:

- V5.1 requires all products to report CIE 13.3 (CRI) and IES TM-30 color rendition measures and allows products to qualify using either set of color rendition measures. The CRI requirement for outdoor products increases from 65 to 70 and red rendition thresholds will be set for all products.
- Find additional information starting on pg 9 of Technical Requirements.

Benefits:

- Customers and specifiers can gain more information on product color rendition and superior color performance from the QPL using both CRI and TM-30 metrics.
- Outdoor products will be required to achieve modestly higher color rendition performance.

Light Distribution

Policy:

- V5.1 introduces a beam angle requirement for linear replacement lamps (TLEDs) in place of testing in a reference fixture. Outdoor luminaires are required to report BUG (backlight, uplight, glare) ratings.
- Find additional information starting on pg 12 of Technical Requirements

Benefits:

- Customers and specifiers can identify TLED beam angles to better inform product selection.
- Customers and specifiers can identify outdoor luminaire BUG ratings, which are required by many codes and ordinances.

Discomfort Glare	
Policy: • V5.1 introduces discomfort glare thresholds, based on the unified glare rating (UGR), for DLC Premium troffers, linear ambient, low-bay, and high-bay luminaires and retrofit kits. Also, products that exhibit more stringent glare control can access efficacy allowances. • Find additional information starting on pg 12 of Technical Requirements	Benefits: • DLC Premium products will be less likely to produce discomfort glare while achieving higher efficacy performance. • Efficacy allowances will encourage manufacturers to design and produce products that can achieve stricter glare performance.
Integral Controls	
Policy: • V5.1 requires all products report on specific integral control sensor types and capabilities such as occupancy, daylight, LLLC, and energy monitoring. • Find additional information starting on pg 22 of Technical Requirements.	Benefits: • Customers, specifiers, and energy efficiency programs can identify products that can achieve additional energy savings through integral control sensors and capabilities.
Control Communication	
Policy: • V5.1 requires all products report on the type of communication (wired, wireless) and the availability of specific communication protocols. • Find additional information starting on pg 22 of Technical Requirements.	Benefits: • Customers and specifiers can identify products that may be compatible with various lighting control systems based on the communication type (wired, wireless) and protocol.

Need Additional Support?

If you have any questions about the SSL V5.1 transition or need additional support please contact Lani Malapan, Manager of Member Services, at emalapan@designlights.org.