



DesignLights Consortium®
Manufacturer's Guide
September 10, 2013

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I. Updates in September 10, 2013 Version: LED Lighting Facts Information

Changes made to the [LED Lighting Facts](#) submission guidance to adapt to the new LED Lighting Facts website and submission process.

II. Purpose

This document is a technical guide for lighting equipment manufacturers seeking to place their products on the DesignLights Consortium® (DLC) Commercial LED luminaires Qualified Products List (QPL). This Manufacturer's Guide includes instructions and details on the following topics:

- application submissions
- approved testing laboratories and requirements
- frequently asked questions
- logo-use guidelines

Manufacturers should review and understand the entire document and linked files before submitting an application to the DLC. The content in this Guide is subject to change at any time. Manufacturers will be notified of any changes that occur. Changes will supersede the content of this Guide until an updated version is produced. Any changes will be posted under in the News section and at <http://www.designlights.org/Content/QPL/ProductSubmit>.

III. DesignLights Consortium Overview

A. About the DLC and the Commercial LED Luminaire Qualified Products List

The DesignLights Consortium (DLC) is a project of the [Northeast Energy Efficiency Partnerships](#) (NEEP), a regional non-profit founded in 1996, whose mission is to serve the Northeast and Mid-Atlantic region to accelerate energy efficiency in the building sector through public policy, program strategies, and education. The DLC promotes quality, performance, and energy-efficient commercial-sector lighting solutions through collaboration among its regional, state, utility, and energy efficiency program members; federal agencies, luminaire manufacturers; lighting designers; and other industry stakeholders throughout the United States and Canada.

Over its history, the DLC program has driven the lighting market toward innovation by providing information, education, tools, and technical expertise for cutting-edge commercial lighting technologies and best practices. Since 2010, the DLC has administered the Commercial LED Luminaire [Qualified Products List](#) (QPL), a leading resource that identifies quality, energy-efficient LED luminaires for the commercial sector. Today, the QPL sets the bar for efficiency program incentives across the United States and Canada, while informing manufacturer product development.

The DLC is supported by its members: regional, state, utility, and national energy efficiency programs throughout the United States and Canada.

B. Accepted Categories

The DLC currently accepts applications for 20 commercial LED luminaire categories, 11 retrofit categories, and 1 linear replacement lamp category. Category names and definitions are listed below. Please refer to the [Technical Requirements](#) for the most up-to-date information about each category.

1. Category Eligibility

Each product applying for inclusion on the DLC QPL must be intended for and marketed as at least one of the categories listed in the current Technical Requirements table. The DLC staff will review marketing material to determine eligibility and to ask for additional information if the intended application is not made clear by the marketing material. Additional information may include CAD drawings, installation photographs, installation videos, etc. At the request of the manufacturer, the DLC will review product specification sheets prior to an application submittal to determine eligibility for an existing category. Product specification sheets may be emailed to info@designlights.org with “Product Eligibility” in the subject line. Please note that the DLC cannot review any test data prior to submittal of the application fee, and a determination that a product is eligible in an existing category **does not** mean the product will qualify after the complete review.

2. The DLC and ENERGY STAR®

The DLC program began as a request from NEEP-region utility and energy efficiency programs to address LED lighting categories not covered by the ENERGY STAR® program. The DLC program focuses on commercial and industrial lighting categories, while ENERGY STAR remains a consumer market-focused program. If a product’s intended application is not represented by the DLC Technical Requirements, manufacturers should consult the ENERGY STAR program. The DLC and ENERGY STAR programs are separate entities, each with its own set of program requirements.

3. Category Definitions

1) Outdoor Pole/Arm-Mounted Area and Roadway Luminaires:

Typically, street lights, parking lot lights. Common shapes include shoebox and cobrahead.

2) Outdoor Pole/Arm-Mounted Decorative Luminaires: Decorative in-town street lights. Commonly acorn-, lantern-, or tear-drop shaped.

- 3) **Outdoor Wall-Mounted Area Luminaires:** Walkway or security lights, affixed to building wall. Typically box-shaped.
- 4) **Bollards:** Architectural outdoor luminaires comprising short, upright ground-mounted units, typically giving off light from the top or the sides, and used to illuminate walkways, steps, or pathways.
- 5) **Parking Garage Luminaires:** Ceiling-mounted luminaires for use outdoors or in locations open to the elements, such as multi-deck garages.
- 6) **Fuel Pump Canopy Luminaires:** Ceiling-mounted luminaires for use outdoors or in structures open to the elements, such as gas station canopies.
- 7) **Landscape/Accent Flood and Spot Luminaires:** Small, low-lumen, directional luminaires intended to highlight objects and areas in outdoor lighting. Manufacturers must follow NEMA guidelines for declaring beam spread.
- 8) **Architectural Flood and Spot Luminaires:** Directional luminaires intended to highlight objects and areas in outdoor lighting. Manufacturers must follow NEMA guidelines for declaring beam spread.
- 9) **Stairwell and Passageway Luminaires:** Corner or surface-mounted luminaires that provide lighting in stairwells and passageways. Must have integral controls that assure luminaires revert to lower-power, lower-light output state when there are no occupants in the vicinity.
- 10) **Wall-Wash Luminaires:** Luminaires designed to illuminate walls in interior spaces.
- 11) **Track or Mono-point Directional Luminaires:** Usually ceiling mounted tracks or fixed single-head luminaires. Adjustable aim “cans”. Complete LED luminaires (not replacement lamps in existing cans such as PAR 38 or MR16 lamps). **If your product does not meet this definition you may qualify under ENERGY STAR’s Recessed Downlight or Surface Mounted with Directional Head category.***
- 12) **Vertical Refrigerated Case Luminaires:** Strip lights in refrigerator cases, vertically mounted along refrigerator case door mullions. Category covers only complete luminaires, with all necessary components. Replacement lamps are not currently eligible under this category.

- 13) Horizontal Refrigerated Case Luminaires:** Strip lights in refrigerator cases, horizontally mounted along refrigerator case shelves or canopies. Category covers only complete luminaires, with all necessary components. Replacement lamps are not currently eligible under this category.
- 14) Display Case Luminaires:** Strip lights, usually mounted horizontally at frame edges of glass case. Replacement lamps such as MR16 or PAR 38 lamps are not eligible.
- 15, 16, & 17) 2x2, 1x4, 2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces:** Common recessed, suspended, or surface-mounted luminaires intended to provide ambient lighting in settings such as offices spaces, schools, retail stores, and other commercial environments. Products submitted in these categories must meet the stated form factors with a tolerance of ± 4 inches.
- 18) High-Bay Luminaires for Commercial and Industrial Buildings:** Pendant or surface-mounted luminaires, specific for indoor high ceiling spaces (intended for ceilings ≥ 25 feet).
- 19) Low-Bay Luminaires for Commercial and Industrial Buildings:** Pendant or surface-mounted luminaires, specific for indoor ceiling spaces (intended for ceilings < 25 feet).
- 20) High-Bay Aisle Luminaires:** Pendant or surface-mounted luminaires specific for indoor high ceiling spaces (intended for ceilings ≥ 25 feet), in settings that require the lighting of aisles.
- 21) Retrofit Kits for Outdoor Pole/Arm-Mounted Area and Roadway Luminaires:** Integrated-style kits that replace all reflectors and optical systems of existing luminaires. Not screw-in “lamps” intended as HID replacements.
- 22) Retrofit Kits for Outdoor Pole/Arm-Mounted Decorative Luminaires:** Integrated-style kits that replace all reflectors and optical systems of existing luminaire. Not screw-in “lamps” intended as HID replacements.
- 23) Retrofit Kits for Large Outdoor Pole/Arm-Mounted Area and Roadway Luminaires:** Integrated-style kits that replace all reflectors and optical systems of existing luminaires. Not screw-in “lamps” intended as HID replacements.

- 24) Retrofit Kits for Outdoor Wall-Mounted Luminaires:** Integrated-style kits that replace all reflectors and optical systems of existing luminaires. Not screw-in “lamps” intended as HID replacements.
- 25) Retrofit Kits for Parking Garage Luminaires:** Integrated-style kits that replace all reflectors and optical systems of existing luminaires. Not screw-in “lamps” intended as HID replacements.
- 26) Retrofit Kits for Fuel Pump Canopy Luminaires:** Integrated-style kits that replace all reflectors and optical systems of existing luminaires. Not screw-in “lamps” intended as HID replacements.
- 27, 28, & 29) Retrofit Kits for 2x2, 1x4, 2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces:** Integrated-style kits that replace all reflectors and optical systems of existing luminaires. Tube-style retrofit kits must be submitted as Four-Foot Linear Replacement Lamps (see category 32, below).
- 30) Retrofit Kits for High-Bay Luminaires for Commercial and Industrial Buildings:** Integrated-style kits that replace all reflectors and optical systems of existing luminaires. Not screw-in “lamps” intended as HID replacements.
- 31) Retrofit Kits for Low-Bay Luminaires for Commercial and Industrial Buildings:** Integrated-style kits that replace all reflectors and optical systems of existing luminaires. Not screw-in “lamps” intended as HID replacements.
- 32) Four-Foot Linear Replacement Lamps:** Four-foot “tubes” designed to replace four-foot T12/T8/T5 fluorescent lamps. Note that the DLC considers all products with this form-factor that use existing lamp holders to fall under this category.

IV. Understanding Testing Principles

For all product categories, the DLC requires three main test reports to accompany an application: IES LM-79-08 (LM-79), In-situ Temperature Measurement Test (ISTMT), and IES LM-80. Each test reports must include a unique, relevant part number, as well as a test date and test location. Please note that the DLC follows the [ENERGY STAR Guidance](#) for lumen maintenance testing, including:

- IES LM-80 and ISTMT test procedures
- Content and application of IES LM-80 reports
- Successor devices

A. Photometric and Electric Testing (IES LM-79)

The *IES LM-79 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products* includes three sections: Section 9: Total Flux Measurements; Section 10: Luminous Intensity Measurements; and Section 12: Color Characteristics Measurements. Manufacturers must also submit the IES file containing Section 10 measurements to verify compliance with the zonal lumen density or spacing criteria requirements.

B. Lumen Maintenance (ISTMT, IES LM-80, IES TM-21)

1. In-situ Temperature Measurement Test (ISTMT)

The ISTMT is a test method derived from safety testing standards, such as ANSI/UL 1598, which measures the hottest LED package/module/array in the luminaire/retrofit/lamp system. The ISTMT must be conducted with the luminaire installed in its appropriate application, as defined in the appropriate safety standard.

a) Temperature Measurement Point

LED package/model/array manufacturers designate specific locations on the product as alternate points for measuring the junction temperature of the LED package/module/array. The alternate points for measuring the junction temperature are collectively referred to as the TMP_{LED} , and vary from manufacturer to manufacturer. For example, some manufacturers use the solder point (t_s), package case temperature (t_c), or board temperature (t_b). However, all TMP_{LED} locations serve the same purpose: to correlate an external temperature to the junction temperature, which is used to determine the LED lumen maintenance. To use the TMP_{LED} to determine LED lumen maintenance, the TMP_{LED} used during the ISTMT must match the TMP_{LED} used during the LM-80.

To verify that the TMP_{LED} was placed correctly and matches the TMP_{LED} used during the LM-80, all applications must include a photograph that clearly illustrates the thermocouple placement during the ISTMT, as well as a schematic diagram illustrating the LED package/module/array manufacturer's specified TMP_{LED} .

2. IES LM-80

The *IES LM-80 Approved Method: Measuring Lumen Maintenance of LED Light Sources* requires that LED packages/modules/arrays be operated for at least 6,000 hours, at a minimum of 3 case temperatures: 55 °C, 85 °C, and a third temperature determined by the manufacturer. Light output, forward voltage, and other performance metrics are measured and recorded at roughly every 1,000 hours for a minimum of 6,000 hours.

3. IES TM-21

IES TM-21 Projecting Long Term Lumen Maintenance of LED Light Sources is a standard that relates ISTMT results to LM-80 data to determine the long-term lumen maintenance of an LED light source. TM-21 applies an exponential least squares curve-fit through the average values provided in the LM-80. Luminous flux measurements may be projected to 5.5 or 6 times the LM-80 test length, depending on the number of samples reported in the LM-80. For 20 or more samples, projections may be 6 times the LM-80 test duration; for 10-19 samples, projections may be 5.5 times the LM-80 test duration. TM-21 does not apply to tests with fewer than samples.

4. Evaluating Lumen Maintenance

The DLC determines compliance with the 35,000-hour and 50,000-hour lumen maintenance requirements through either Option 1: Component Performance or Option 2: Luminaire Performance.

a) Option 1: Component Performance

Component Performance allows the manufacturer to demonstrate compliance with the lumen maintenance requirements by providing an ISTMT (described above), LM-80 report for the package/module/array used in the luminaire/retrofit/lamp system, and completed copy of the ENERGY STAR TM-21 calculator.

To evaluate Component Performance compliance, the following conditions must be met:

- (1) The highest measured temperature in the ISTMT must fall below the highest measured case temperature in the LM-80.
- (2) The TMP_{LED} location in the ISTMT must match the TMP_{LED} location in the LM-80 and the LED manufacturer's specified location.
- (3) The LED drive current in the luminaire/retrofit/lamp system must be less than or equal to the LED drive current measured in the LM-80.
- (4) The lumen maintenance at time (t) calculated in the ENERGY STAR TM-21 calculator must be greater than or equal to the corresponding lumen maintenance percentage at the projected end point listed in the table below.

Option 1 TM-21 Projected Lumen Maintenance Requirements		
Projected End Point	Required Lumen Maintenance for 35,000 Hour Products	Required Lumen Maintenance for 50,000 Hour Products
33,000	$\geq 71.44\%$	$\geq 79.03\%$
36,000	$L70 \geq 35,000$	$\geq 77.35\%$
38,500	$L70 \geq 35,000$	$\geq 75.98\%$
42,000	$L70 \geq 35,000$	$\geq 74.11\%$
44,000	$L70 \geq 35,000$	$\geq 73.06\%$
48,000	$L70 \geq 35,000$	$\geq 71.01\%$
49,500	$L70 \geq 35,000$	$\geq 70.25\%$
50,000	$L70 \geq 35,000$	$\geq 70.00\%$

b) Option 2: Luminaire Performance

In instances where Option 1: Component Performance is not applicable, as with products using secondary optics with remote phosphors or when LM-80 data is unavailable, manufacturers may demonstrate compliance with the lumen maintenance requirements through Luminaire Performance. Luminaire Performance requires 6,000 hours of LM-79 testing in the appropriate UL environment. The DLC evaluates LM-79 measurements at 0 hours and 6,000 hours to verify compliance with the lumen maintenance percentages listed below.

To evaluate compliance, the following conditions must be met:

- (1) Based on 6,000 hours of LM-79 testing, the light output at 6,000 hours divided by the light output at 0 hours multiplied by 100 must be greater than or equal to 94.1% for a 35,000-hour lumen maintenance requirement or greater than or equal to 95.8% for a 50,000-hour lumen maintenance requirement.
- (2) The luminaire/retrofit/lamp must be operated continuously in the appropriate UL environment for at least 6,000 hours, except when it is removed to perform the LM-79 measurements.

V. Category-Specific Testing Principles

In addition to the general testing principles outlined under Understanding Testing Principles above, the DLC also sets category-specific testing requirements.

A. Retrofit Kits

The DLC will accept QPL applications for SSL retrofit kits. The testing and reporting requirements described below are intended to subject the retrofit kits to conditions in typical fixtures to assure confidence in performance.

For testing purposes, the DLC specifies typical fixture housings in which retrofit products are to be tested. This is done to provide testing results under common conditions in which the retrofit kits would be installed. In providing this list of typical fixture housings, the DLC does not endorse or exclude any particular make or model frame for use in energy efficiency programs. Note that each recommended variation includes the statement, “or Pre-approved Equivalents.” In selecting a fixture for testing, the applicant should consider the range of fixture designs into which the retrofit kit may be installed.

1. Required Tests and Reports

All DLC QPL testing and reporting requirements that apply to new fixtures shall also apply to any retrofit kit application (e.g., LM-79, ISTMT, IES file, TM-21 projection). (Note that for lumen maintenance testing, the source manufacturer is responsible for the LM-80 test of the LED package, array, or module). Some product categories’ performance testing results must also be submitted to the U.S. Department of Energy’s (DOE) LED Lighting Facts® program; please see [LED Lighting Facts Information](#) for details.

2. Fixture Level Tests

LM-79, ISTMT, and Option 2 of LM-80 (if selected) shall be conducted in a fully functional reference fixture with the kit properly installed per manufacturer’s instructions.

Only one LM-79, one ISTMT, and one IES file are needed for the retrofit kit to be tested in **one** of the fixtures approved below. The option you choose to use for lumen maintenance compliance will determine how many tests you need. If you choose Option 1, you need one LM-80 report and TM-21 projection. If you choose Option 2, you need two LM-79 reports to test the retrofit kit for 0 hours and 6,000 hours in the fixture.

3. Pre-Approved Equivalents

The DLC does not endorse or exclude any particular make or model of reference fixture. Options are listed to illustrate common fixtures of that type. With approval from the DLC, manufacturers may test in alternative fixtures. Pre-approved fixtures must meet the following conditions:

- Alternative fixtures must be commonly used in the application category for which the manufacturer intends to apply. Documentation may be required to demonstrate a fixture’s appropriate use.

- Alternative fixtures must provide similar thermal environments to those listed and may not be significantly different in internal volume or construction materials.

4. Retrofit Kit Application Categories

The manufacturer shall select a fixture for testing based on the intended application of the retrofit kit.

- a) ***Category #21 Outdoor Pole/Arm-Mounted Area and Roadway Luminaires and Category #23 Large Outdoor Pole/Arm-Mounted Area and Roadway Luminaires***
 - If the kit is specific to shoe-box fixtures (not applicable to cobra-heads), choose a fixture from among those listed herein under shoe-box.
 - If the kit is specific to cobra-head fixtures (not applicable to shoe-boxes), choose a fixture from among those listed herein under cobra-head.
 - If the kit may be applied to both cobra-heads and shoe-box fixtures, choose a fixture from among those listed herein under either shoe-box or cobra-head.
 - Kits designed for larger housings must demonstrate that they do not fit in the smaller housing sizes by submitting a CAD file with the kit installed in the reference small cobra-head.

CAD Files:

[Combo_Small.SLDASM](#)

[Combo_Small.pdf](#)

Cobra-Head Fixtures Retrofit Kits:

American Electric Roadway Series 115 Fixture

GE M250R2 fixture

Kim Archetype SAR

Cooper OVH Series

Pre-approved equivalent

Shoe-Box Fixtures Retrofit Kits:

WideLite XL Excel-Lyte 400

Lithonia KAD Contour Series

Lumark TR Tribute

Kim Archetype SAR

Pre-approved equivalent

Retrofit Kits for Larger Size Housings:

American Electric Roadway Series 125 Fixture

Cooper RL Roadway Series
GE M400R2 fixture
Pre-approved equivalent

Note: Kits must replace all reflectors and optical systems of existing fixtures.

The DLC does not qualify as retrofit kits screw-base “lamps” intended as HID replacements as retrofit kits.

b) **Category #22 Outdoor Decorative Luminaires**

- Acorn, globe, etc. The kit shall be tested, fully and properly mounted in a glass or polymer globe with optics as similar as possible to the kit’s intended use.

King Luminaire K400 series
Lexalite Lindy Model 424
GE Patriarch Luminaire
Holophane GV Luminaires Washington PostLite
Pre-approved equivalent

Note: Kits must replace all reflectors and optical systems of existing fixtures.

The DLC does not qualify as retrofit kits screw-in “lamps” intended as HID replacements.

c) **Category #24 Outdoor Wall-Mounted Area Luminaires**

- The kit shall be tested, fully and properly mounted in a fixture as similar as possible to the kit’s intended use.

Lithonia TWF1 100S
Pre-approved equivalent

Note: Kits must replace all reflectors and optical systems of existing fixtures.

The DLC does not qualify as retrofit kits screw-in “lamps” intended as HID replacements.

d) **Category #25 Parking Garage and Category #26 Fuel Pump Canopy**

- The kit shall be tested, fully and properly mounted in a fixture as similar as possible to the kit’s intended use.

Lithonia VRC70ML 120/277 M6
Lithonia KACM Series Fixture
Cooper CL/CS Series Fixture

LSI Scottsdale Series Fixture
Pre-approved equivalent

Note: Kits must replace all reflectors and optical systems of existing fixtures.

At this time, the DLC does not qualify as retrofit kits screw-in “lamps” intended as HID replacements.

e) ***Category #27 2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces***

- The kit shall be tested, fully and properly mounted in a fixture as similar as possible to the kit’s intended use.

Lithonia 2GT8 lensed 2X2
Lithonia 2SP8 lensed 2X2
Lithonia 2PM3 9 cell 2x2 parabolic
Cooper Metalux 2GC8 lensed 2x2
Cooper MetalUx 2HP3 9 cell 2x2 parabolic
Columbia Lighting lensed 4PS22
Columbia Lighting P222 9 cell parabolic
Pre-approved equivalent

f) ***Category #28 1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces***

- The kit shall be tested, fully and properly mounted in a fixture as similar as possible to the kit’s intended use.

Lithonia GT8 lensed 1X4
Columbia Lighting lensed 4PS14
Pre-approved equivalent

g) ***Category #29 2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces***

- The kit shall be tested, fully and properly mounted in a fixture as similar as possible to the kit’s intended use.

Lithonia 2GT8 lensed 2X4
Lithonia 2PM3N 12 cell 2x4 parabolic
Cooper Metalux 2GC8 lensed 2x4
Cooper Metalux 2HP3 12 cell 2x4 parabolic
Columbia Lighting lensed 4PS24
Columbia Lighting P224 12 cell parabolic
Pre-approved equivalent

h) **Category #30 High-Bay Luminaires**

- The kit shall be tested, fully and properly mounted in a fixture as similar as possible to the kit's intended use.

Lithonia THD 400S A15 TB
Lithonia THR 400S PA22 TB
Pre-approved equivalent

Note: Kits must replace all reflectors and optical systems of existing fixture.

The DLC does not qualify as retrofit kits screw-in "lamps" intended as HID replacements.

i) **Category #31 Low-Bay Luminaires**

- The kit shall be tested, fully and properly mounted in a fixture as similar as possible to the kit's intended use.

Lithonia TXC 250S A23 TB
Lithonia TGR 175MP A125 TB SCWA
Pre-approved equivalent

Note: Kits must replace all reflectors and optical systems of existing fixture.

At this time, the DLC does not qualify as retrofit kits screw-in "lamps" intended as HID replacements.

B. Four-Foot Linear Replacement Lamps

The DLC puts ALL 4' tube-style LED products under the Four-Foot Linear Replacement Lamp category, though safety organizations classify them as retrofit kits due to the need to perform electrical or mechanical alternations to the existing fixture for proper installation.

For testing purposes, the DLC requires testing of the bare lamp and in one typical 2x4 troffer. These tests are intended to provide results of the most common applications in which these products are used, as well as representative thermal conditions in the fixtures in which the lamps are installed. In specifying these fixture housings, the DLC does not endorse or exclude any particular make or model frame for use in energy efficiency programs.

Applicants shall test and report performance under the following restrictions and conditions:

1. Lamp Level Tests

All lamps seeking qualification of the DLC must test the bare lamp according to LM-79.

Individual Lamp Criteria	
System Efficacy	$\geq 100 \text{ lm/w}$
Initial Light Output	$\geq 1,600 \text{ lm}$
Correlated Color Temperature (CCT)	$\leq 5000\text{K}$
Color Rendering Index (CRI)	≥ 80
Power Factor	≥ 0.90
Total Harmonic Distortion	$\leq 20\%$
Warranty	$\geq 5 \text{ years}$

2. Testing Notes

For integrating sphere testing, use the manufacturer's power supply or a standard 0.88 ballast factor instant start ballast (if the system uses the existing ballast).

3. Fixture Level Tests

All lamps seeking qualification must be tested with two lamps inside in a reference troffer.

The reference troffer may be any of the following:

Lithonia 2GT8 lensed 2x4
 Lithonia 2PM3N 12 cell 2x4 parabolic
 Cooper Metalux 2GC8 lensed 2x4
 Cooper Metalux 2EP3 12 cell 2x4 parabolic
 Columbia Lighting lensed 4PS24
 Columbia Lighting P224 12 cell parabolic
 Pre-approved equivalent

4. Pre-Approved Equivalents

The DLC does not endorse or exclude any particular make or model of reference fixture. Options are listed to illustrate common fixtures of the appropriate type. Manufacturers may test in alternative fixtures with pre-approval from the DLC. Pre-approved fixtures must meet the following conditions:

- Alternative fixtures must be commonly used in the application category for which the manufacturer intends to apply. Documentation may be required to demonstrate fixtures appropriate use.
- Alternative fixtures must provide similar thermal environments to those listed, and they may not be significantly different in internal volume or construction materials.

In-situ Lamp Criteria	
Luminaire Efficacy (when 2 lamps are installed in reference troffer)	≥ 85 lm/w
Minimum Initial Luminaire Light Output (when 2 lamps are installed in reference troffer)	3,000 lm
Spacing Criteria	<u>Spacing Criteria:</u> 0-180° = 1.0 - 2.0 90-270° = 1.0 - 2.0 <u>Zonal Lumen Distribution:</u> 0-60° : $\geq 75\%$
Lumen Maintenance L ₇₀	50,000 hours

5. Lumen Maintenance

- LM-80 for the package/module/array (6,000 hours minimum)
- In-situ Temperature Measurement Test (ISTMT) in selected reference luminaire with two identical lamps (only one is required to have thermocouple(s) attached)
- TM-21 Calculator, completed appropriately (www.energystar.gov/tm21calculator)

VI. Laboratory Requirements

The DLC requires that product testing be conducted at a laboratory appropriate for the performance being evaluated.

Independent Testing Lab Requirements	
In-situ Temperature Measurement Test (ISTMT)	Similar to ENERGY STAR requirements prior to September 30, 2010, the DLC will accept ISTMT results from laboratories: • Approved by OSHA as National Recognized Testing Laboratories (NRTLs). • Accredited by NVLAP for the LM-79 test procedure. • Recognized through UL's Data Acceptance Program. (Referenced in the ENERGY STAR Manufacturer's Guide, pg. 7)
LM-79	Testing must be conducted at a laboratory listed in the LED Lighting Facts Approved Testing Laboratories List under LM-79 sections 9,10, and 12. Testing must be conducted within the laboratory's accreditation effective and expiration dates.
LM-80	The DLC will accept LED package in-house testing from the LED package/module/array manufacturer.

VII. Application Process Overview

A. Prequalification Activities

To begin the application process, please review this Guide and the resources on the DLC QPL section of the [DLC website](#).

Step 1: [Create Manufacturer Login](#)

Step 2: Make sure your product is eligible.

Review the available product categories and technical requirements. Your product must be marketed as and intended for an available category to be eligible for qualification. If you are unsure if your product is eligible, please review the [Category Eligibility](#) section.

Step 3: Read the Application Instructions

These instructions will guide you through the file uploading process and explain the details of the application form. Applications cannot be reviewed until all required documents are submitted to the DLC. Ensuring all application materials are uploaded the first time will result in the most efficient review of the documents. The DLC two-week turnaround applies only when the application submission is complete.

Step 4: Read the Lab Testing Requirements page

This page lists the testing laboratory requirements for the LM-79, ISTMT, and LM-80 reports necessary for each application.

Step 5: Read the FAQ page

If you have additional questions after reviewing the Application Instructions, please read the [FAQ page](#). FAQs are updated regularly to reflect the most current DLC policies.

Step 6: Determine the appropriate application type: Single Product or Product Family Group

See [Application Types](#) for an explanation of each application type.

B. Submitting an Application

Step 7A: Complete the Application

The QPL application requirements are analogous to those of ENERGY STAR. The requirements have five main parts: application contact information, model information, photometric and electrical data, lumen maintenance, and document checklist. Each section must be completed and supported by the submission of documents listed: IES LM-79 test reports, LM-80 reports, ISTMT reports, and full IES files. See [application instructions](#) for information about the necessary documents and their validity requirements.

Step 7B: Submit Products to LED Lighting Facts

As of July 5, 2012, the DLC requires that products be listed with the LED Lighting Facts program to be listed on the DLC QPL. For single product applications, please follow the instructions under [Single Product Applications](#). For product family group applications, please follow the instructions under [Product Family Applications](#).

Step 8: Upload the Application Materials

Application forms are completed offline, then uploaded through the manufacturer's password-protected account. If you do not have an account, you may create one at the [Manufacturer Login Page](#).

Step 9: Make Payment

After you submit the application materials, a DLC reviewer will determine if the application and supporting documentation are complete. You will then receive an email with instructions to pay the appropriate application fees. You may pay by credit card (preferred) or check. We accept VISA, MasterCard, American Express, and Discover.

Step 10: Receive Feedback from DLC Reviewer

In about 2 weeks, the reviewer will email you to let you know which of the following conditions applies to your application:

Condition 1: You are missing information, required information is insufficiently documented, there is an error on an independent lab test report, or the performance information shows the product does not meet the requirements. The reviewer will identify the specific areas in the application that need attention and allow you to fix problems and resubmit. An application showing product performance does not meet the category requirements may not be resubmitted; it must be submitted as a new application with updated application materials and the appropriate application fee.

Condition 2: You have completed the application properly and the product meets all DLC requirements. You will receive notification of qualification when the product is listed on the QPL. This application will then appear as complete in your account.

Step 11: Resubmit Application Materials

Applicants that fall under Condition 1 may make the appropriate changes to the offline form and submit the updated application materials to a DLC reviewer (note: this does not apply if the provided performance information shows the product does not meet the requirements).

Step 12: Receive Final Feedback

The reviewer will contact the manufacturer about the resubmitted application. If the manufacturer made all necessary corrections to the original application, the reviewer will provide notification of qualification (see Step 10, Condition 2).

C. Application Types

1. Single Product Applications

The DLC defines Single Product applications as any ONE of the following:

Condition 1: Applications with one unique model number

Condition 2: Applications with one base model number that includes variations that do not affect the performance of the product (e.g., housing color, cord length, battery back-up). Mounting options that **do not** affect the thermal environment or the intended application of the product may also be included.

Condition 3: Applications with multiple unique model numbers where the only variation among models is the Correlated Color Temperature (CCT)

achieved by different phosphor coatings of the same series of LED package/model/arrays.

The submitted model number must indicate all variations present during the LM-79 and ISTMT testing. The DLC reviewer will work with manufacturers to utilize placeholders in the model number for options that do not affect the performance, when applicable. If products fall under the Single Product definition, please follow the [Single Product Application Instructions](#).

Under condition 3, the product with the lowest CCT should be listed in the “Model Number” section of the application form, with additional CCTs listed in the “Family Models” section. LM-79 and ISTMT testing should be conducted on the lowest CCT. In addition, an LM-79 report that contains [section 12 measurements](#) on the highest CCT must be provided.

a) ***Single Product Application Fees***

The DLC requires a processing fee to accompany an application submittal. For an application pertaining to a single fixture, the fee is \$500.

2. Product Family Groups

Similar to other qualification programs, the DLC allows products that meet defined Product Family criteria to submit worst-case test data to qualify a group of products. The Product Family Grouping application process is intended to reduce testing costs by allowing manufacturers to determine the worst-case products within a group and demonstrate that the worst-case products meet the technical requirements. If the worst-case products meet the technical requirements, it can be assumed that all better-performing products within that group also meet them, and therefore additional testing on the better-performing products is not required. Product Family Groups must meet the conditions below to be eligible.

Condition 1a: Meet the Product Family Definition

- a) A family must utilize identical LED packages and identical drivers for all products within the family, with the following exception: LED packages may use different phosphors that result in different CCTs. Note that different LED drive currents are allowed only when the same driver is used, but set to provide different output currents.

- b) The overall physical fixture housing and assembly must meet both of the following requirements:
 - Identical in all aspects for every model within the entire product grouping
 - Of identical material, construction, and shape, differing only in overall physical dimension for different models within the product grouping (see Subgroup definition)
- c) The products must demonstrate scalability or modularity using identical LED packages, module arrays, and electronics.
- d) Variations in fixture mounting systems do not change thermal management characteristics.

Condition 1b: Meet the Subgroup Family Definition (if applicable)

Within a Product Family Group, manufacturers may designate Subgroups, for which the overall physical fixture housing and assembly are of identical material, construction, and shape, but differ in overall physical dimension.

Condition 2: Comply with Product Family Group Testing Concepts

The DLC's intention is to assure quality and lifetime performance of all family members through testing and documentation rigorous enough to offer confidence in the affected products. Accordingly, Product Family Groups must provide worst-case testing for light output (LM-79), efficacy (LM-79), and lumen maintenance (ISTMT/LM-80/TM-21). IES files for each optical variation and worst-case power factor and THD measurements are also required, though this information may be represented by other worst-case test reports.

Condition 3: Provide Accurate Scaled Performance Information for All Models within the Group.

The manufacturer is responsible for designating the worst-case models in a group. The DLC requires that manufacturers provide scaled performance measurements for each product within a group to ensure the manufacturer has correctly designated the worst-case models. Acceptable sources for scaled performance measurements are:

- a) In-house laboratory test: In-house test reports from tests conducted in accordance with IES LM-79

b) **Calculated scaling:** Mathematical characterization of luminaire performance based on manufacturer-developed scaling methodology. The manufacturer must provide a description of the scaling methodology and the technical basis for its validity. The DLC reserves the right to accept or reject the methodology for use in qualifying products.

3. **Product Family Grouping Testing Guidance**

- **Worst-case light output:** The family member with the fewest LEDs and/or lowest drive current/wattage.
- **Worst-case efficacy:** The family member(s) with the lowest lm/w taking into consideration all options that can affect performance, such as optical variation. Worst-case efficacy measurements are required for each sub-group.
- **Worst-case thermal environment:** The family member(s) with the worst-case thermal environment (most LEDs, highest drive current/wattage), taking into consideration all options that can affect performance, such as optical variation. Worst-case thermal measurements are required for each sub-group
- **Worst-case power factor and THD:** The family member with the worst-case loading condition for the specified driver. See Universal Drivers [FAQ](#) for the DLC's expectation on universal driver performance.

a) ***Product Family Application Fees***

The DLC requires a processing fee to accompany an application submittal. (The fee is \$500 for an application pertaining to a single fixture.)

For a product family, the application fee is:

- \$500 per independent lab test required under the product group application procedure (LM-79 and ISTMT), plus
- \$25 per product family member listed through self-reported in-house testing.

If products fall under the Product Family definition, please follow the [Product Family Group Application Instructions](#).

VIII. Application Instructions

A. General Application Instructions

1. If you have not already done so, create a [Manufacturer Login](#). The DLC highly recommends that the application be filled out by a person with sufficient technical knowledge of lighting products and testing, such as a lighting engineer.
2. Download and complete the appropriate [Single Product](#) or [Family Grouping](#) application form.
3. If applicable, submit the product's LM-79 information to LED Lighting Facts. For more information about submitting products to LED Lighting Facts as part of the DLC application, please see [LED Lighting Facts Information](#).
4. Start a new application by clicking "Submit an Application" from the Manufacturer Home Page.
5. Fill in application information, including:
 - Contact name
 - Application name (a label that allows you to check the application's status easily from your manufacturer account)
 - Contact email address
 - Contact phone number
6. Upload required documentation
 - a) ***Completed Single Product Application Form or Product Family Application Form***
 The Single Product Application Form and Product Family Application Form include a sample of a completed form, which can be found on the second tab of the Excel document.
 - b) ***Manufacturer Product Specification Sheet***
 The manufacturer product specification sheet is the marketing document the manufacturer supplies to customers interested in purchasing the product. Product specification sheets often include images of the product, intended application(s), ordering codes and available variations, and rated performance. Product specification sheets may also be referred to as cut sheets, sell sheets, product brochures, or catalogs.

c) ***LED Package Specification Sheet***

The LED package specification sheet is the marketing document the LED package/module/array manufacturer supplies to customers interested in purchasing the product. The LED package specification sheet often includes images of the product, ordering codes, schematic diagrams, and rated performance. The LED package specification sheet can be obtained from the LED package/module/array manufacturer.

d) ***Power Quality Report or LM-79 with Worst-Case Power Factor and Total Harmonic Distortion (THD) Measurements***

The power quality report may be provided as a separate document or embedded in the LM-79 or ISTMT report. The power quality report must represent the product with the worst-case power factor and THD performance (applicable if submitting additional CCTs or a Product Family) measured at the driver's worst-case operating mode. See Universal Drivers [FAQ](#) for details.

e) ***LM-79 Report(s) Containing Sections 9, 10, and 12***

Sections 9, 10, and 12 may be combined in the same PDF report or provided separately. Unique, relevant part numbers matching the submitted model number in the Application Form must be listed on each report.

f) ***IES Photometric File***

The IES file has the file extension “.ies”. The IES file must include a unique, relevant part number, test lab name, and test date.

g) ***Warranty Document***

The warranty document is the legal warranty document explaining all warranty terms and conditions associated with the submitted product(s). See warranty [FAQ](#) for details.

h) ***Signed Self-Certification Statement.***

The self-certification statement must be signed, dated, and provided with each application.

i) ***Product Installation Instructions (for retrofit kits and replacement lamps only)***

Product installation instructions are required only for retrofit kits and four-foot linear replacement lamp applications (categories 21 through 32). Installation instructions must detail all necessary steps for installing the retrofit kit or replacement lamp. They should be the same instructions provided to the end-user.

j) ***Proof of Safety Certification (for retrofit kits and replacement lamps only)***

Proof of safety certification is required only for retrofit kit and four-foot linear replacement lamp applications. The safety certification must include a unique, relevant part number and must demonstrate that the part number listed in the report has received safety certification. The safety testing report is not sufficient to indicate that the product has received safety certification.

k) ***Lumen Maintenance Information:*** Select one of the two options and submit all of the corresponding required documents listed below:

(2) Option 1: Component Performance

- IES LM-80 test report
See [Understanding Testing Principles: Lumen Maintenance](#) and [Completing the Single Product Application Form](#) for details.
- In-situ temperature measurement test (ISTMT) report
See [Understanding Testing Principles: ISTMT](#) and [Completing the Single Product Application Form](#) for details.
- Schematic from LED package manufacturer that shows the specified TMP_{LED} .
See [Understanding Testing Principles: ISTMT](#) and [Completing the Single Product Application Form](#) for details.
- Photograph of thermocouple placement during ISTMT
- Saved copy of the completed ENERGY STAR TM-21 calculator worksheet.
(The ENERGY STAR TM-21 worksheet is available for download at www.energystar.gov/tm21calculator.)

(3) Option 2: Luminaire Performance

- IES LM-79 report at 0 hours
- IES LM-79 report at 6,000 hours
The LM-79 report must contain a unique, relevant part number and must clearly demonstrate continuous operation in the appropriate ANSI/UL thermal environment.
See [Understanding Testing Principles: Lumen Maintenance](#) and [Completing the Single Product Application Form](#) for details.

B. Single Product Application Instructions

The following information describes the process of completing the manufacturer application form for products that meet the [Single Product definition](#).

Completing the Single Product Application Form

Application Contact Information: Enter the contact information for the person completing the form. This information will be used to contact the manufacturer during the review, so please make sure it is up to date.

Luminaire Data: Model Information

Submitted Model Number: Enter the complete tested configuration of the model number you are submitting for qualification.

Select Intended Category: Choose from the drop down menu the intended application category of the model listed above. If you wish to apply under multiple categories, you must submit a separate application form for each category.

Approved Housing Model Number and Description of Additional Accessories Used: If applicable, describe in detail what accessories (reflector, trim, diffuser, fixture housing) are used for this product model. All retrofit kit applications must include the Approved Housing Model Number in this section.

LED Drive Current: Enter the LED drive current (drive current to each LED within the luminaire system).

LED Package Part Number: Enter the LED package part number. Manufacturers should use an identifier or combination of identifiers that indicate a single LED package. This identifier or combination of identifiers should be used consistently within an application and in the LM-80 or lumen maintenance report. The identifier may include a model number, part number, product code, ordering code, or stock number.

Family Models: If submitting family models, enter the family model number, LED package part number, and the rated CCT in the provided spaces. Complete the Rated Performance Table (second tab). Note: The DLC expects that the product with the lowest CCT in a family will represent the worst-case performance. Please ensure that the “Submitted Model” and corresponding test data represent the worst-performing product of the group.

The applicant must also submit an LM-79 report containing at least section 12 measurements for the highest CCT variation included in the application.

Photometric and Electrical Data

Note: Cells that are shaded dark gray are NOT required to be filled out by the manufacturer. If the information is applicable to the relevant product category, it will be obtained through the LED Lighting Facts listing.

When applying to the DLC for certain product categories, manufacturers must also submit their products to the LED Lighting Facts program. The DLC will work with the LED Lighting Facts program to verify the LM-79 data.

Lumen Maintenance Data

Rated L_{70} (hours): The rated L_{70} you market to customers. The rated L_{70} must be included in the product specification sheet. Note that the rated L_{70} should be greater than or equal to the category requirements (35,000 or 50,000 hours).

L_{70} Lumen Maintenance Options: The manufacturer must choose one of the two options to support the application lumen maintenance data and provide the documents listed under the relevant option.

Option 1: Compliance Through Component Performance Using TM-21 Calculations

- A complete LM-80 report of the LED package used in the luminaire. The LED package part number of the submitted luminaire must appear on this report. A complete LM-80 test report includes the relative light output over time for at least 6,000 hours of continuous operation at three different temperatures measured at the LED package manufacturer-specified TMP. Following the IES LM-80 standard, the three TMP temperatures are 55°C, 85°C, and a third temperature selected by the manufacturer.
- The ISTMT report of the submitted luminaire, including the measured temperature at the TMP of the hottest LED in the luminaire. The luminaire must have been tested under requirements of the appropriate ANSI/UL safety standard (i.e. 1598 for most luminaires), and the report must indicate the same model number of the submitted luminaire. For track lighting systems, luminaires must be tested in compliance with ANSI/UL 1574.
- A photograph documenting the actual temperature measurement set up, such as a photograph of the luminaire with a thermocouple attached at the TMP point, and indicating the same model number as the submitted luminaire. This photograph may be incorporated into the ISTMT document.
- A document with a schematic or photograph from the LED package manufacturer showing the specified TMP location. This document

must indicate the same part number as the LED package used in the submitted luminaire.

- Saved copy of completed ENERGY STAR TM-21 Calculator in Microsoft Excel file format. Save the file, using the model number submitted to the DLC in the filename, before uploading with other supporting documentation for Lumen Maintenance Option 1. You can download the TM-21 calculator from the ENERGY STAR website at www.energystar.gov/TM-21calculator. Please be sure to download a new worksheet for each application. Instructions on how to use the calculator are included in the first page of the worksheet.

— OR —

Option 2: Compliance through Luminaire Performance

- An LM-79 test report at 0 hours of operation. In order for this document to be valid, the model number of the submitted luminaire must appear on this document.
- An LM-79 test report of the submitted luminaire after being continuously operated for a period of 6,000 hours under the appropriate ANSI/UL 1598 environment. This document must include the model number of the submitted luminaire. For track lighting systems, luminaires must be tested under the appropriate ANSI/UL 1574 environment.

C. Product Family Group Application Instructions

The following information describes the process of completing the manufacturer electronic application form for products that meet the [Product Family definition](#).

Completing the Family Grouping Application Form

Application Contact: Enter the contact information for the person completing the form. This information will be used to contact the manufacturer during the review, so please make sure contact information is up to date.

Define the Product Family Group:

Step 1 - Does the group meet the DLC Product Family Definition? If boxes are not selected to answer all relevant questions, the DLC reviewer will assume the group does not meet the Product Family definition and will return the application.

Step 2 - Does the family contain sub-groups because of multiple housing sizes? Use appropriate sections to enter each sub-group if the family contains multiple housing sizes. If all products in the group use the same housing size, list all products in rows 26 through 44. You may add or delete rows as necessary.

Scaled Performance Table: The DLC requires scaled performance information for all products in a group. Use Tab 3 to indicate the scaled performance. The DLC reviewer will return the application if Tab 3 is incomplete.

Scaling Methodology: Include an explanation of how you arrived at the scaled performance values listed in Tab 3. The DLC reviewer will verify that the methodology is appropriate for the group of products submitted. The DLC reviewer will return an application if the methodology is incomplete or needs further clarification.

Product Family Group Information: Select the DLC category from the drop-down menu. Products in DLC categories that require complete LM-79 testing (sections 9 and 12) must be submitted to LED Lighting Facts. Refer to the LED Lighting Facts submission info below.

LED Package Part Number: Enter the LED package part number. Use an identifier or combination of identifiers that indicate a single LED package consistently in an application and its associated LM-80 or lumen maintenance report. The identifier may include a model number, part number, product code, ordering code, stock number, etc.

LED Drive Current: Enter the LED drive current (drive current to each LED within the luminaire system).

Product Identifier Information: Explain the ordering code used by products in the group, following the format of the example. The DLC reviewer needs to understand what each field of the ordering code represents. This will also help reduce application fees by identifying areas of the ordering code that can be represented by a placeholder.

Supporting Documentation Checklist: Please complete the document checklist. This checklist will help you ensure all supporting documentation and test measurements are included in the application. The DLC reviewer will review the checklist to ensure application materials are complete.

D. LED Lighting Facts Information

As of July 5, 2012, the LM-79 portion of the DLC application review for certain categories will be conducted through the LED Lighting Facts program. The product categories requiring LED Lighting Facts submission are detailed below. Only products for which the DLC requires LM-79 data (e.g., the worst-case light output member of a Product Family) are required to be listed with LED Lighting Facts. Please refer to the instructions below on how to submit products to the LED Lighting Facts program.

The DLC and LED Lighting Facts have similar turnaround times for reviewing applications and product submissions. DLC recommends that the application for LED Lighting Facts listing be submitted at the same time as the DLC application.

1. Sign the Pledge

To become a partner with the LED Lighting Facts program, manufacturers must sign the [LED Lighting Facts pledge](#). Signing the pledge will allow the manufacturer to create an account and begin submitting products to the LED Lighting Facts program.

2. Submitting Products

Once logged into your account, create a submission for each unique model under the ‘Manage Your Products’ page. The model number submitted to the DLC must match the model number submitted to LED Lighting Facts and manufacturers must select the “exact values” option at the top of the LED Lighting Facts submission form. Enter the five main performance claims (lumens, efficacy, watts, CRI, CCT) as well as all optional LM-79 metrics as they appear in the test report. The only LED Lighting Facts metrics manufacturers are not required to claim for DLC are zonal lumen density (all four zones), dimming information, LED lumen maintenance, warranty, and the URL for additional product data. Upload the corresponding LM-79 report from an [Approved Laboratory](#) and product specification sheet for the submitted model. Once the product submission is approved by LED Lighting Facts, the DLC will use LED Lighting Facts tools to evaluate the LM-79 data against the appropriate DLC product category requirements. For more details on submitting products to the LED Lighting Facts program, please refer its [Library](#).

When submitting a product to LED Lighting Facts, it is important that you select the appropriate “Product Type” and “Product” that corresponds with a DLC category. Additionally, in the LED Lighting Facts submission form, you must select “Yes” for the checkbox “Are you submitting this product for DLC qualification?” This question will only appear for product categories that are eligible for DLC qualification. Refer to the table below when submitting to LED Lighting Facts. For DLC categories with multiple LED Lighting Facts “Product” designations, select the “Product” designation that best represents your product.

DLC Category	LED Lighting Facts “Product Type”	LED Lighting Facts “Product”
1) Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	Luminaire	Area/Roadway
2) Outdoor Pole/Arm-Mounted Decorative Luminaires	Luminaire	Area/Roadway
	Luminaire	Decorative
3) Outdoor Wall-Mounted Area Luminaires	Luminaire	Area/Roadway
4) Bollards	Luminaire	Bollard
5) Parking Garage Luminaires	Luminaire	Parking Garage
6) Fuel Pump Canopy Luminaires	Luminaire	Canopy
7) Landscape/Accent Flood and Spot Luminaires	Luminaire	Directional
8) Architectural Flood and Spot Luminaires	Luminaire	Directional
9) Stairwell and Passageway Luminaires	Luminaire	Other
10) Wall-Wash Luminaires	Luminaire	Wallwash
11) Track or Mono-Point Directional Luminaires	Luminaire	Directional
12) Vertical Refrigerated Case Luminaires	<i>see special cases</i>	<i>see special cases</i>
13) Horizontal Refrigerated Case Luminaires	<i>see special cases</i>	<i>see special cases</i>
14) Display Case Luminaires	<i>see special cases</i>	<i>see special cases</i>
15) 2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces	Luminaire	Troffer/Grid Ceiling

	Luminaire	Linear
16) 1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces	Luminaire	Troffer/Grid Ceiling
	Luminaire	Linear
17) 2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces	Luminaire	Troffer/Grid Ceiling
	Luminaire	Linear
18) High-Bay Luminaires for Commercial and Industrial Buildings	Luminaire	Industrial
	Luminaire	Linear
	Luminaire	Other
19) Low-Bay Luminaires for Commercial and Industrial Building	Luminaire	Industrial
	Luminaire	Linear
	Luminaire	Other
20) High-Bay Aisle Luminaires	Luminaire	Industrial
	Luminaire	Linear
	Luminaire	Other
21) Retrofit Kits for Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	<i>see special cases</i>	<i>see special cases</i>
22) Retrofit Kits for Outdoor Pole/Arm-Mounted Decorative Luminaires	<i>see special cases</i>	<i>see special cases</i>
23) Retrofit Kits for Large Outdoor Area and Roadway Luminaires	<i>see special cases</i>	<i>see special cases</i>

24) Retrofit Kits for Outdoor Wall-Mounted Area Luminaires	<i>see special cases</i>	<i>see special cases</i>
25) Retrofit Kits for Parking Garage Luminaires	<i>see special cases</i>	<i>see special cases</i>
26) Retrofit Kits for Fuel Pump Canopy Luminaires	<i>see special cases</i>	<i>see special cases</i>
27) Retrofit Kits for 2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces	<i>see special cases</i>	<i>see special cases</i>
28) Retrofit Kits for 1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces	<i>see special cases</i>	<i>see special cases</i>
29) Retrofit Kits for 2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces	<i>see special cases</i>	<i>see special cases</i>
30) Retrofit Kits for High-Bay Luminaires for Commercial and Industrial Building	<i>see special cases</i>	<i>see special cases</i>
31) Retrofit Kits for Low-Bay Luminaires for Commercial and Industrial Building	<i>see special cases</i>	<i>see special cases</i>
32) Four-Foot Linear Replacement Lamps (Bare Lamp Only)	Lamp	Linear

a) ***LED Lighting Facts Optional Metrics***

To ensure maximum usefulness for its members, the DLC requires manufacturers to include in their product listing with the LED Lighting Facts program all data in the submitted LM-79 report. This data will allow a product to be eligible for more programs, which may require that information. The DLC notes that some metrics that LED Lighting Facts lists as “optional” must be submitted to the LED Lighting Facts listing for purposes of evaluating DLC qualification, based on product application category. To view the optional metrics the DLC needs to evaluate a particular product category, click [here](#).

b) ***Special Cases Not Required to Submit to LED Lighting Facts***

Some DLC testing policies for certain product categories do not align with LED Lighting Facts requirements. For DLC Retrofit Kit, Four-Foot Linear Replacement Lamp, Vertical Refrigerated Case Luminaire, Horizontal Refrigerated Case Luminaire, and Display Case Luminaire applications, please refer to the following:

(1) Retrofit Kits:

The DLC requires retrofit kits to be tested to LM-79 in specific reference fixtures listed under [Retrofit Kits](#). LED Lighting Facts lists the performance of the retrofit kit alone, without a reference fixture. DLC Retrofit Kit applications are not required to submit to LED Lighting Facts. Upload the LM-79 photometric file in the additional files section of the DLC file upload form.

(2) Four-Foot Linear Replacement Lamps:

The DLC requires four-foot linear replacement lamps to be tested as bare lamps and when installed in a reference troffer, according to the [Four-Foot Linear Replacement Lamps](#) policy. LED Lighting Facts lists the performance of the bare lamp only. The bare lamp LM-79 photometric file must be submitted to LED Lighting Facts, but the LM-79s for the lamps installed in the parabolic and prismatic reference troffers should not be submitted to LED Lighting Facts. These LM-79 reports should be uploaded in the additional files section of the DLC file upload form.

(3) Vertical/Horizontal Refrigerated Case Luminaires and Display Case Luminaires:

Refrigerated and Display Case luminaires are different from other DLC categories in that the “luminaire” is made up of several individual units connected to one power supply. DLC lists each of these individual units in the QPL, but the units often exhibit different performance as individuals than when installed in the system. The DLC recommends that Vertical and Horizontal Refrigerated Case Luminaires and Display Case Luminaires be tested according to the guidance described in the Vertical/Horizontal Refrigerated Case Luminaires [FAQ](#) to obtain a combination of unit- and system-level data. These products may not be listed with LED Lighting Facts when tested according to this guidance. Vertical Refrigerated Case Luminaires, Horizontal Refrigerated Case Luminaires, and Display Case Luminaires are not required to submit to LED Lighting Facts.

IX. Private Labeling

A. DLC Private Labeling Policy

The Private Labeling Policy is intended to allow manufacturers the option to list qualified products under alternate brand names without submitting duplicate applications or paying the associated application fees. The DLC requires the following supporting documentation, which should be sufficient for

the majority of private labeling partnerships and multiple listing scenarios. Organizations submitting information for multiple brands should provide this information and the applicable fees with the original application. Organizations submitting information to private label an original equipment manufacturer's (OEM) products should provide this documentation after the OEM products have been qualified. Private labeling applications can be sent via email to info@designlights.org.

B. Required Documentation

- A statement briefly explaining the relationship among the organizations or brands and certifying that the products to be listed are exactly the same in design and performance. The statement must be signed by representatives of all organizations involved. If one organization is listing products under different brand names, the signature of a representative of the parent organization is sufficient.
- A list of all model numbers submitted for qualification, showing the association of a base brand model number to the cross-listed model number(s).
- Product specification sheet(s) of the private labeler that represents the product(s) submitted for qualification.

C. Fees

The Private Labeling application fee is \$50 for each \$500 charged through the original application. For Product Family Grouping applications, the fee for additional family members is \$25 for each additional family member.

Note: This policy applies when multiple companies are involved in the cross-listing of products. Products listed under multiple brands of the *same company* are treated as product family members of the original product.

D. Submitting a Private Label Application

Private Label applications may be sent to info@designlights.org. To expedite payment, please have the manufacturer responsible for the application fees submit the required documentation.

X. Frequently Asked Questions

The FAQs address common questions and note technical interpretations followed by the DLC program. FAQs are updated weekly to reflect the most up-to-date policies used to review an application. Manufacturers should read the FAQ page prior to each submission to ensure they are familiar with current policies. To access the FAQ page, click [here](#).

XI. DLC Qualified Products List

When a product or group of products passes DLC qualification, the product(s) are added to the DLC Qualified Products List (QPL). The QPL provides a centralized list of high-performing, verified, and tested LED products. The QPL helps DLC members determine which products may be eligible for incentive or rebate programs. While its members pledge to use the DLC QPL to make informed decisions about eligibility for rebates and incentives, the DLC does not have control over the rebate and incentive distributions; these decisions are at the sole discretion of the members. A product listed on the DLC QPL will not automatically receive rebates or incentives.

The QPL lists pertinent information, including manufacturer name, brand name, model number, family model numbers, measured values, warranty, date qualified, and rated values. The measured values are taken directly from submitted test reports, while the rated values are taken from the manufacturer's product specification sheet.

The QPL is a database that is automatically updated each time a product is entered. Users of the QPL should be aware that only model numbers found in the database are considered DLC qualified. Please contact the DLC inbox at info@designlights.org if you cannot find on the QPL a product that you believe has been qualified.

A. De-Listed Products

As the DLC goes through specification revision processes, currently qualified products are required to be compliant with the effective Technical Requirements at the end of the designated grace periods. Products that are removed from the QPL due to no longer meeting the Technical Requirements are still searchable through the database. Users will have the option to select a check-box to include de-listed products in a product search.

XII. Logo Guidelines

Once a product or group of products is qualified, manufacturers may market that specific product or group of products as DLC qualified. Before including reference to DLC qualification in any marketing materials, please review the following DLC Logo Guidelines.

The DesignLights Consortium identity is a valuable asset, and like any asset with appreciable value, it must be properly used and protected. The DesignLights Consortium marks, as well as the phrase "DesignLights Consortium" are registered trademarks with the US Patent and Trademark Office.

Stakeholders should be mindful of how they use the DesignLights Consortium marks in all communication and outreach materials. Ensuring that the marks are properly used protects every DesignLights Consortium partner's investment in the program—and

consumer confidence in the DesignLights Consortium brand. There are two DLC marks to be mindful of:

A. DLC Program Logo



The DLC Program Logo is intended for use by:

- **DLC members:** To indicate their membership on web pages of their energy efficiency programs.
- **Lighting Testing Laboratories:** To indicate available product testing services necessary for manufacturers to submit an application. **NOTE:** Laboratories must meet the DLC accreditation requirements to display the logo. The DesignLights Consortium name and marks may not be used in a manner that implies NEEP or DLC endorsement of a laboratory or its services, only that those services are provided to manufacturers.
- **Other:** Additional uses of the DLC program logo will be assessed on a case by case basis. Please contact designlights@neep.org.

B. DLC QPL Product Logo



The DLC QPL Product Logo is intended for use by:

- Luminaire Manufacturers: To indicate that their products are listed on the QPL.

C. Key Trademark Guidelines

- Neither the marks nor the DesignLights Consortium name may be used in any other company name, product name, service name, domain name, or Web site title.
- The DesignLights Consortium name should always appear as two words - DesignLights with the D and the L capitalized and Consortium with the C capitalized. There should not be a space between Design and Lights or a dash between DesignLights and Consortium.
- The registration symbol ® must be used the first time the words "DesignLights Consortium" appear in material and:
 - a) The ® symbol should always be in superscript;
 - b) There shall be no space between the words "DesignLights Consortium" and the ® symbol;
 - c) The ® symbol shall be repeated in a document for each chapter title or Web page.
- When writing about DesignLights Consortium, it is correct to state that a product is a "DesignLights Consortium qualified" product or a product is "Listed on the DLC QPL." For example, it is acceptable to write either "DesignLights Consortium qualified luminaire" or "a luminaire that is listed on the DesignLights Consortium Qualified Product List."
- Any mark that is not an official and trademarked mark of NEEP and the DesignLights Consortium may not be used to indicate affiliation with NEEP or the DesignLights Consortium program or DesignLights Consortium qualification of a product.
- The DesignLights Consortium name and marks may never be used in any manner that would imply NEEP or DLC endorsement of a company, its products, or its services.

D. Key Guidelines for the DLC Program Logo

- The marks may not be altered, cut apart, separated, or otherwise distorted in perspective or appearance. This includes removing the words DesignLights Consortium from the mark.

- The preferred color for the DesignLights Consortium mark is black for the text and yellow for the graphic. Alternate versions reversed out to white with yellow graphic are allowed.
- The mark may not be reproduced smaller in width than 1.72 inches for print. Lettering legibility inside the mark must be maintained on the Web.
- The logo should also be clear within “C” space of logo elements from all sides. Logo mark size should never be under 1.72 inches wide and .45 inches high to maintain legibility.



E. Key Guidelines for the DLC QPL Product Logo

- The marks may never be associated with products that have not been verified to meet the technical requirements of the DesignLights Consortium, or which do not appear on the DLC Solid State Lighting Qualified Product List. The name and marks may only be used to refer to those specific products that are qualified and listed on the Qualified Products List. Qualification of a particular product does not give a manufacturer the right to use the name and marks in connection with other products produced or marketed by the same manufacturer or under the same brand name.
- The DesignLights Consortium name or mark may be used to identify a product as listed on the DesignLights Consortium Qualified Products List. Sufficient information about the product must be provided to the reader to allow the reader, without aid, to locate the product on the most current version of the DesignLights Consortium Qualified Products List. The DesignLights Consortium mark may not be displayed without directly referencing DesignLights Consortium listed products.
- If your company does not manufacture products listed on the DesignLights Consortium Solid State Lighting Qualified Product List but offers DesignLights Consortium qualified products, you must include the name of the manufacturer near the DesignLights Consortium mark.
- Products must be listed on the DesignLights Consortium Qualified Products List under any and all brand names under which they are marketed and sold. To ease the process of re-listing qualified products under alternate brand names, please consult the Private Labeling/Multiple Listing Policy. The DesignLights Consortium name and mark shall only be used to refer to those product brands that are listed on the DesignLights Consortium Qualified Products List.
- Products which have not yet been qualified should, under no circumstances, display the DesignLights Consortium Marks. For practical purposes, this means that products applying for qualification should

refrain from adding the marks to specification sheets and other marketing materials until after the product has been qualified. Submissions received with the DLC mark already on them will be held until the logo use is corrected.

Please refer to [this document](#) for the DLC QPL product logo style guide and proper use of the DLC QPL product logo.

F. Consequences for Violation

- Unauthorized use of the marks is likely to cause confusion among members of the public, result in a tarnishing of the marks and their significance, and may constitute trademark infringement, trademark dilution, fraud, false advertising, fraud and/or other violations of law.
- DesignLights Consortium actively monitors proper use of the DesignLights Consortium name and marks. To report a trademark violation or to ask for a review of materials, please contact designlights@neep.org.
- First offense: Upon the first discovery of a logo violation, the DesignLights Consortium will notify the manufacturer of the violation via email, and provide specific information on how to rectify the situation. The manufacturer must promptly respond to the notification from the DLC, and adhere to the commands from the DLC. The manufacturer will be given a reasonable amount of time to correct the errors.
- If the manufacturer fails to respond to the first notification, the DLC will send a warning letter via email dictating the deadline to rectify the issue. Failure to make the appropriate changes will result in further consequences (see below). The DLC will follow-up with the manufacturer to ensure that the error(s) has been corrected.
- Second offense: If the manufacturer fails to address the violation within a reasonable time after receiving the warning letters, or repeats a violation a second time, the following actions will ensue:
 - a) NEEP reserves the right to suspend the manufacturer's program privileges for a period of up to 18 months. This may include a suspension of all currently qualified products, as well as an inability to qualify additional products during the suspension. NEEP will notify the manufacturer of the violation and consequences.
 - b) If the manufacturer continues to misuse the DLC logo: the issue will be sent to the NEEP Legal Counsel for further legal action.

G. Access to the DLC Logos

To gain access to the official DLC logo files, please contact designlights@neep.org.

H. Notes about the DLC QPL Product Logo

The DLC QPL Product logo will be introduced for use on July 23, 2013. Following that will be a transition period during which manufacturers are able to change marketing materials and adjust to the new logo that is to be used to identify qualified products

that are listed on the QPL. **The transition period will end on January 1, 2014.** After this date, the DLC QPL Product logo will serve as the only mark that can be used to identify DLC qualified products.

The logo shown here includes the trademark symbol ([™]), symbolizing the organization's intent to register the mark with the USPTO. When such trademark registration is completed and issued, all applications of the logo should immediately begin to use the version with the registered trademark symbol (®) in place of the version shown here.