DLC Solid-State Lighting QPL
Presenters

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*DLC*

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*D+R International*
Agenda

• What is the DLC?
  – What is the mission?
  – Who are the members?
  – What is industry’s role?

• How to qualify products
  – Overview
  – Application Process
  – Key details
  – Where to find more information

• DLC decision making
  – How to become envolved
The DLC® drives efficient lighting by defining quality, facilitating thought leadership, and delivering tools and resources to the lighting market through open dialogue and collaboration.
DLC is supported by 82 Members throughout the U.S. and Canada.
Solid State Lighting (SSL)

Driving Energy Savings through:

1. Periodically updating the technical requirements
2. Ensuring that lighting performance does not come at the expense of efficacy
3. Expanding product categories to facilitate new SSL product applications
4. Phasing out lower-performing, outdated products
5. Incentivizing innovation and identify market leaders by offering a premium-tier QPL designation
SSL QPL

Bringing efficiency to light.

The DLC® is a non-profit organization whose mission is to drive efficient lighting by defining quality, facilitating thought leadership, and delivering tools and resources to the lighting market through open dialogue and collaboration.

Learn more

www.designlights.org
Value to Utilities

- Validate savings and measure life
- Avoids time/expense of internal qualification product lists
- Connection to other utilities and industry stakeholders
- Easy access to SSL product information
Value to Manufacturers

- QPL facilitates access to energy efficiency markets
- Symbol of quality to differentiate products
- Reduces need to directly engage individual utilities for approval
- Increased credibility/reliability of energy savings estimates
- Opportunity to engage with industry stakeholders
Value to Others

**Lighting Designers**
- Starting point for rebate eligibility
- Product comparison

**Distributors**
- Use DLC qualification as mark of quality
- Product selection

**Government**
- Program partnerships
- Public procurement agencies cite QPL

**End Users**
- Verify product performance
- Ensure rebate eligibility
Industry Collaboration

- Policy development process
- Input from industry
- Industry Advisory Committee
- Stakeholder input process
Industry Participation

Members
- Drive DLC direction
- Member and customer needs
- Savings goals

Advisors
- Advise Members on key issues
- Key industry experts

Industry
- Provide industry input
- Technical expertise
- Market knowledge

SSL Technical Committee
NLC Committee
Digging Deeper

• You now know “the basics” of the DLC: why it exists, who runs it, who the Members are

• You want to be more involved

• How do I participate? How do I get my products qualified?

• How are DLC decisions made? How do they decide what categories are eligible, what the performance requirements will be, and other nuances?
I Sell LED Lighting: How Do I Qualify a Product?
How Do Products Get Qualified?

Product is tested at acceptable laboratory

Test data submitted to DLC for review

If product meets criteria, added to QPL
Testing and Reporting Requirements

- Photometric and Electrical Properties
  - IES LM-79 Electric and Photometric
    - Output and color: integrating sphere
    - Light distribution: goniophotometer
  - Lumen maintenance (Option 1)
    - LED package/module/array testing
      - IES LM-80 Lumen Maintenance
    - Luminaire-level testing
      - ISTMT (ANSI/UL1598)
    - \(L_{70}\) determination
      - IES TM-21 Projecting Lumen Maintenance
### DLC Technical Requirements Table

#### Luminaires

<table>
<thead>
<tr>
<th>Category</th>
<th>General Application</th>
<th>Minimum Light Output (lm)</th>
<th>DLC Standard</th>
<th>DLC Premium*</th>
<th>Primary Use**</th>
<th>Distribution</th>
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<tbody>
<tr>
<td>Outdoor</td>
<td>Low Output</td>
<td>200-6,000</td>
<td>90</td>
<td>6500</td>
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<tr>
<td>Data Lighting</td>
<td>100 µW/M²</td>
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#### Retrofit Kits

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#### Lamps

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<td>Two-Faced Linear Replacement Lamp</td>
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* DLC Premium: Minimum lumen, efficiency, and efficacy levels.
** Primary Use: Retrofit Kits.
*** Technical Requirements for Light Fixtures and Lamps.
Will DLC Accept My Test Reports?
What are DLC Lab Requirements?

• Evolved based on Stakeholder Input 2012-2013
• LM-79: Recognized by DOE’s LED Lighting Facts
• LM-80: Recognized by EPA’s ENERGY STAR
• ISTMT
  – OSHA approved Nationally Recognized Test Lab (NRTL), or
  – Approved through OSHA NRTL data acceptance program or OSHA Satellite Notification and Acceptance Program (SNAP), or
  – Accredited by ILAC-MRA Accreditation Body for SSL thermal testing (ANSI/UL 1598 and/or CSA equivalent)
• LM-84 (Option 2): Recognized for LM-79 by DOE’s LED Lighting Facts and accreditation (by DOE LED Lighting Facts approved accreditation body) includes LM-84-14
Back to the Application Process
Manufacturer Application Process

Submit Supporting Documentation
- Conduct testing
- Gather required documents
- Review documents
- Upload to Application Portal

Initial Review
- DLC confirms eligibility and completeness
- Be prepared to answer reviewer questions
- DLC determines application fees

Invoice
- Pay application fees online
- Online system sends payment confirmation

Comprehensive Review
- DLC evaluates product performance
- Be prepared to answer reviewer questions
- DLC determines final application outcome
Application Types

• Single Product Application
  – Limited product groups allowed
    ▪ CCT variations
    ▪ Voltage variations
    ▪ Dimming variations

• Private Label Application
  – For listing of products already on the QPL under different names

• Family Grouping Application
  – Modular, scalable products with allowable variations beyond Standard Application
  – Additional testing requirements
  – Communication key!

• Update Application
  – Performance or marketing improvements to currently qualified products
# Application Review Timeframes

<table>
<thead>
<tr>
<th>Application Type</th>
<th>Initial Review</th>
<th>Comprehensive Review</th>
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<tbody>
<tr>
<td>Single Product</td>
<td>2 business days</td>
<td>10 business days</td>
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<tr>
<td>Family Grouping</td>
<td>5 business days</td>
<td>10 business days</td>
</tr>
<tr>
<td>Private Label</td>
<td>5 business days</td>
<td>5 business days</td>
</tr>
<tr>
<td>Update</td>
<td>5 business days</td>
<td>10 business days</td>
</tr>
</tbody>
</table>
Supporting Documentation

• Photometric and electrical testing
• Lumen maintenance information
• Excel Application Form
• Specification sheets for product and LED
• Warranty
• Safety certification
• Self-Certification Statement
Single and Family Application Form

1. Contact Information

2. Category Information

3. Product Information
   - Driver model number
   - LED package/array/module

4. Product Identifier Information
   - Full model number breakdown

5. Scaled Performance Table
   - Rated performance of each product submitted
Private Label Application Form

1. Contact Information

2. Model Number Information
   - Correlation to OEM models

3. Product Identifier Information
   - Full model number breakdown
Application Portal

• Online system launched June 26
• New interface and functionality
• Designed to
  – Improve application review timelines
  – Clarify application statuses
  – Provide more information about application history
  – Integrate all DLC website functions under one log-in for manufacturers
New Functionality

- Validated document checklist
- Messaging System
- Detailed application status history
Transition to Application Portal

New Application Portal
www.designlights.org

Old Manufacturer Portal
apps.designlights.org

• Available June 26th
• All new applications must be submitted through Application Portal
• Previously submitted applications will continue to be processed through Manufacturer Portal
Accessing the Application Portal

• Once logged in, you will be directed to your Dashboard

• Click ‘Applications’ to submit or view applications
  – Note: applications submitted through apps.designlights.org will eventually be transferred to the Application Portal, but will not be available June 26th
Documents

- Itemized document upload
- Questions are specific to the application type
Documents

• Questions grouped into Required and Optional sections
• Optional sections applicable to Premium applications and certain Primary Use Designations
Documents

- Some questions allow multiple files
- Click ‘Add File’ and then click ‘Choose File’
Messaging

• All application-specific communications must be conducted through ‘Messaging’ tab

• DLC reviewers will require you to resend any application-specific communication received outside of ‘Messaging’
Messaging

• All previous messages available
• Message status is shown – determined by the DLC reviewer
Submitting the Application

• Submit the application from ‘Documents’ section

• Click the green ‘Submit Application’ button
Submitting the Application

• Application Home will show Submitted status
Recommended Best Practices

• Read all instructions online
  – General instructions and category-specific requirements

• Review information before submitting
  – Ensure all documentation is provided
  – Ensure all documentation is consistent

• Be courteous when responding to DLC reviewer questions

• Check out this week’s Breakout Sessions for more information on product qualification and common stumbling blocks!
# Breakout Sessions

<table>
<thead>
<tr>
<th>Session</th>
<th>Date and Time</th>
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<tbody>
<tr>
<td><strong>Col-LAB-boration with Labs</strong></td>
<td>Tuesday, 1-2</td>
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<tr>
<td><strong>Beyond the Technical Requirements: DLC Program Compliance</strong></td>
<td>Wednesday, 1-2pm</td>
</tr>
<tr>
<td><strong>Supporting Documentation for SSL Applications</strong></td>
<td>Tuesday and Wednesday, 2-2:30</td>
</tr>
<tr>
<td><strong>Common SSL Application Questions</strong></td>
<td>Tuesday and Wednesday, 2-2:30</td>
</tr>
<tr>
<td><strong>DLC Website Updates and Searching the SSL QPL</strong></td>
<td>Tuesday and Wednesday 2:30-3</td>
</tr>
<tr>
<td><strong>V4.2 Category Nuances and Allowances</strong></td>
<td>Tuesday and Wednesday 2:30-3</td>
</tr>
</tbody>
</table>
How Do I Get More Involved?
General Approach

• You must understand the DLC mission as well as the needs of the Members
  – Comments and requests that demonstrate a lack of understanding are difficult to move forward

• Demonstrating significant energy savings can help
  – Reality: DLC is resource constrained like everyone else
  – Market research: what is the realistic energy savings potential?

• Specific suggestions can help
  – Reduces legwork/cost for program to develop from scratch

• Be friendly.
How Do I Get More Involved?

• Join us at the DLC Stakeholder Meeting (Welcome!)
  – Annual event
  – Understand program/Members; interact with other stakeholders; build coalitions

• Join our mailing list
  – Click the link at the bottom of the website – www.designlights.org
  – Industry Update comes out ~quarterly
  – Comment during Stakeholder Input Process
  – Monitor the DLC News on the DLC homepage

• Articulate interests to efficiency programs by **highlighting projects by their customers!**
  – Efficiency programs under many different sets of constraints
  – Often will have custom programs, when prescriptive programs not yet practical
Generalized Development Process

1. DLC receives requests from stakeholders
2. Prioritization process to identify items for development
3. Prioritized items are researched and drafts created
4. Drafts reviewed by Technical Committee and stakeholders
5. Drafts revised based on input
6. Finalize and publish policy
Stakeholder Input Process

- Identify issue for input – new spec, update to existing spec, change to DLC procedure, etc.
- Provide clear request to stakeholders for input
  - Sent to entire distribution list (manufacturer, testing labs, lighting designers, specifiers, members)
  - Sent via email, posted on website
  - Includes firm response date
- Use ad-hoc respondent committee to review input
- Discuss critical issues via conference call and create a “statement of input”
- Deliver input to DLC Technical Committee
What If There’s No Category?

• DLC can only qualify products that are intended for applications that have categories (Primary Uses) on the Technical Requirements Table

• DLC does not currently have categories for every possible lighting application

• Dozens of categories and policies outstanding on wish lists
  – Potential: Specialty Use Designation
What’s New in V4.2?

• New General Applications
  – T5
  – T5HO

• New safety requirement for “Specialty: Hazardous” products
  – UL 844

• Allowances to Efficacy
  – 3% for CCT ≤ 3000K
  – 5% for CCT ≤ 2700K
  – 5% for CRI ≥ 90
V4.2 Transition Timeline

- Finalized V4.2 TRT Announcement: April 28, 2017
- Cutoff for Submission under V4.1: May 19, 2017
  - Allows submission of products currently in process
- Delisting of products not meeting V4.2: July 28, 2017
Current Development Efforts

- Color Tunable Products
- Field Adjustable Products
- Horticultural Lighting
- New Lamp Categories
- DC/PoE Lighting
- Flicker
- Additional Allowances
Specification
Development/Revision History

V1.5
Sep 28, 2010
DLC begins!

V1.6
July 22, 2011
Modest efficacy revisions

V1.7
Nov 12, 2012
Additional categories

V2.0
April 5, 2013
Significant efficacy revisions

V2.1
July 18, 2014
Additional categories

V3.0
June 23, 2015
New structure

V3.1
Nov 20, 2015
Additional categories

V4.0
June 1, 2016
Substantial efficacy revisions

V4.1
Nov 1, 2016
Additional categories

V4.2
April 28, 2017
Additional categories, Allowances
Thank You!

Irina Rasputnis
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