



Understanding the Value of the DLC SSL QPL
Seattle, WA
July 11, 2011

- 10:00 Welcome and Introduction
- 10:30 Overview and Status of the DLC QPL
- 11:30 How the QPL is Currently Used and NW Potential
- 12:00 Lunch
- 1:00 What's in the Works for the Near Term
- 2:00 Break
- 2:15 Audience Discussion: The Future of SSL
- 3:00 Where Will We Go From Here?
- 3:45 Summary and Next Steps
- 4:00 Adjourn



NORTHEAST ENERGY EFFICIENCY PARTNERSHIPS
Accelerating Energy Efficiency

WELCOME AND INTRODUCTION

NORTHEAST ENERGY EFFICIENCY PARTNERSHIPS

www.neep.org



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REGIONAL INITIATIVES

PUBLIC POLICY

EM&V FORUM

NEEP SUMMIT

ABOUT NEEP



NEEP is a non-profit organization that facilitates regional partnerships to advance the efficient use of energy in homes, buildings and industry in the Northeast U.S. NEEP works to leverage knowledge, capability, learning and funding through regionally coordinated policies, programs and practices.

As a regional organization that collaborates with policy makers, energy efficient program administrators, and business, NEEP is a leader in the movement to build a cleaner environment and a more reliable and affordable energy system.

[\[More\]](#)



DLC HISTORY

- Began in 1998
- knowhow series design guides
- Guidance on lighting design, technology, and best practices
- HP T8 Project

COMBINING QUALITY DESIGN AND ENERGY EFFICIENCY FOR SMALL INDUSTRIAL FACILITIES

LOWBAY INDUSTRIAL LIGHTING

Basics of Quality Lighting
Economics of Energy Effective Lighting
General Industrial Workspace Lighting
Industrial Cleanrooms

Task Lighting for Manufacturing
Industrial Laboratories
Lighting Fixture Specifications
Lighting Controls for Industrial Buildings



LOWBAY INDUSTRIAL LIGHTING

knowhow

INTRODUCTION

Activities in industrial workplaces are becoming increasingly complex. During a typical day,

workers often shift from written material on desks, to mid range computer screens or digital displays at a distance. Lighting and control systems must support all of these activities. Workers perform best when the

effective way to meet lighting needs and contribute to employee sense of well being. Daylight issues are discussed in the *Warehouse Skylighting knowhow™* publication.

This guide gives specific information for energy-effective lighting in small industrial spaces that require medium to high light levels. Lowbay industrial workspaces have medium to low ceiling heights of less than 25 feet, with fixtures suspended up to 3 feet lower. Principles discussed in this guide apply as well to larger facilities with the same criteria.



Industrial spaces designed by our firm carefully balance issues of quality lighting, daylight integration, and long-term economy of



Photo courtesy of Ring-Lindquist

Demanding tasks in industrial spaces require well planned lighting systems and balanced brightness, as shown in this laboratory.

The **Quality Chart** below shows important criteria for various industrial tasks. In the following

Penny Wise and Pound Foolish
If poorly designed lighting

THE NEED FOR DLC

- Commercial-grade integral LED luminaires
 - Enter the market (2008)
 - Suddenly Become the New Next Big Thing!

Energy Savings **Longer Lifetimes**

Less Maintenance

Design Flexibility **Control Options**

- But... they were not covered by ENERGY STAR

THE NEED FOR DLC

- Are manufacturer claims valid?
- Is the product going to last?
- How comparable is the product to its conventional counterpart in terms of
 - Light output?
 - Color?
 - Light distribution?

THE NEED FOR DLC

- EE PAs were being urged to offer incentives
- They needed a way to distinguish quality, energy efficient products from the rest
- The DLC is reborn!



DLC TODAY

- Qualified Products List for commercial-grade integral LED luminaires
- Funded by utilities, regional EE organizations, and Canadian Federal Department of Energy
- NEEP has engaged D&R International as Project Manager of the DLC SSL Project

Today, DLC is the premier resource for high quality, energy-efficient, commercial lighting design and information!

www.designlights.org

DESIGNLIGHTS CONSORTIUM

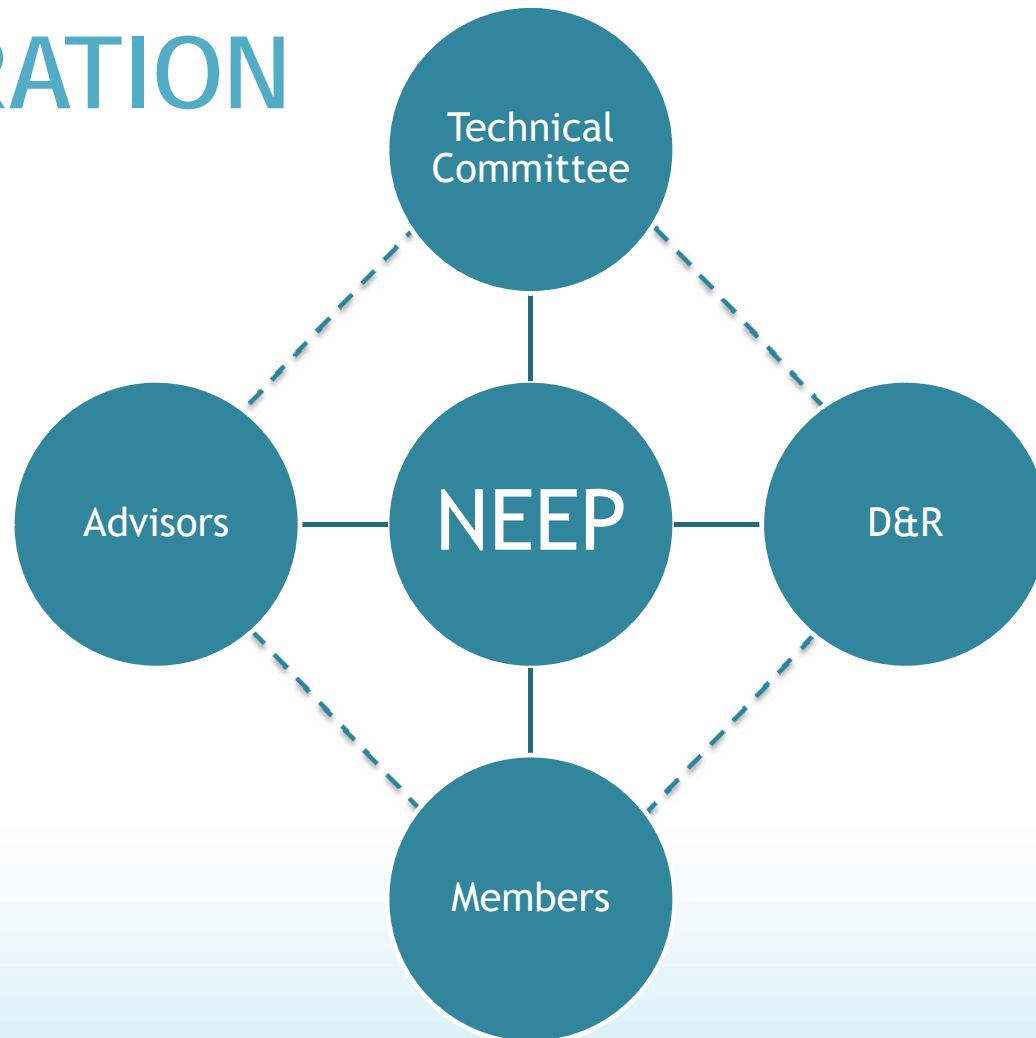
DLC MEMBERS



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DLC OPERATION



ROLES

- Technical Committee
 - Technical and procedural decisions
- NEEP
 - Coordination
 - Contractor management
- Contractor (D&R International)
 - Technical analysis
 - List maintenance

DLC DECISION-MAKING

NEEP	<ul style="list-style-type: none"> Coordinate and manage communication Engage Technical Committee
DLC Technical Committee	<ul style="list-style-type: none"> Set priorities Assign advisors, if necessary Review and discuss drafts Contribute to final decision
D&R and Advisors	<ul style="list-style-type: none"> Participate in discussions with TC Make recommendations within priorities set by TC
NEEP	<ul style="list-style-type: none"> Review input from TC, D&R, Advisors Make final decision



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OVERVIEW AND STATUS OF QPL

D&R INTERNATIONAL

- Energy Efficiency Market Expert
 - 25 years working in energy efficiency
 - Federal Government, State, Manufacturer, Retailer, Utility, Nonprofit Clients
- 12-year History with energy efficient lighting
 - Primary contractor to DOE for ENERGY STAR, continue to support EPA (CFL, SSL, ILL)
 - DOE LightingFacts Program
 - DLC Qualified Products List

DLC QPL PRODUCT CATEGORIES

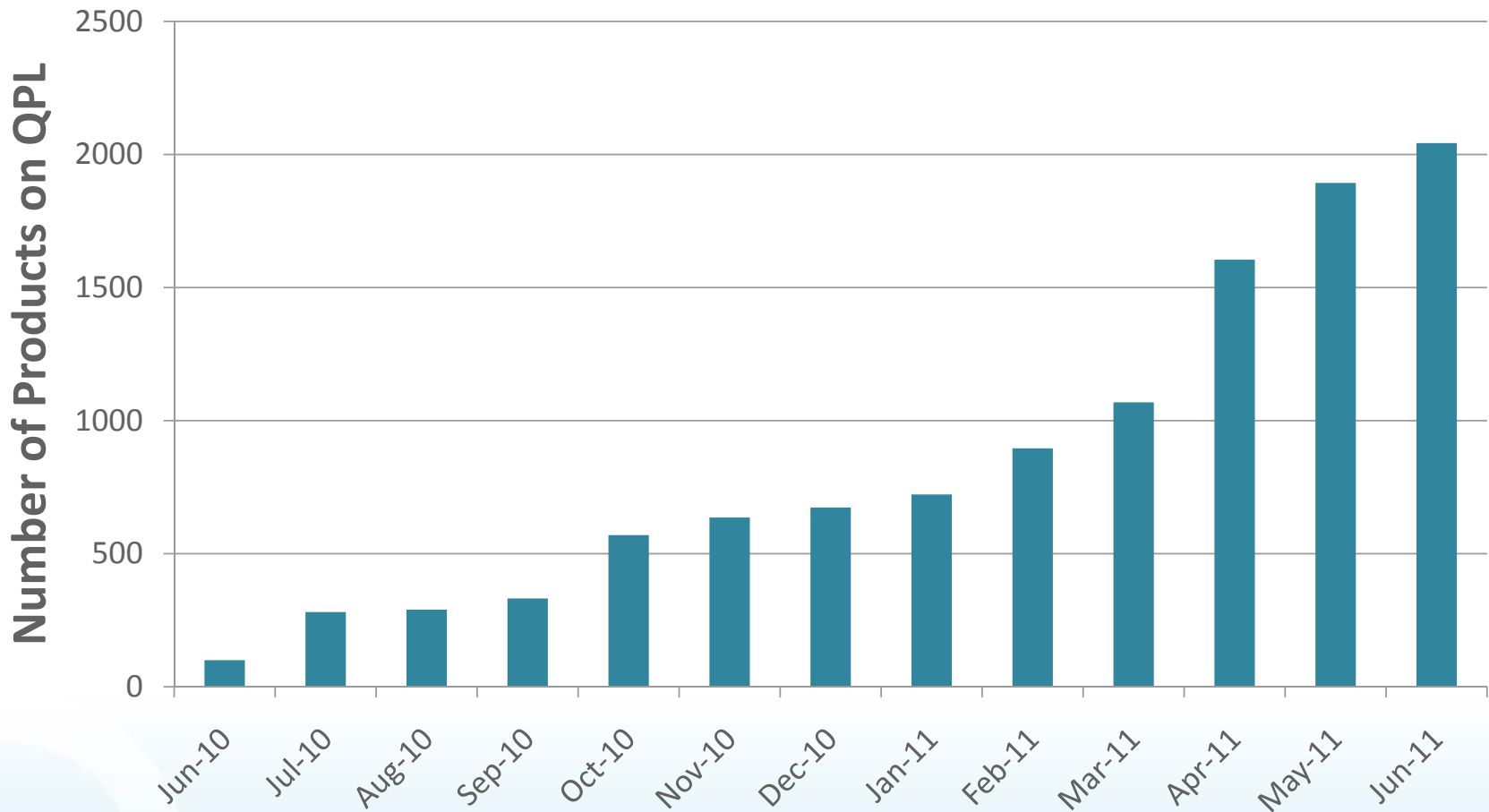
Product Category		Min Light Output	Zonal Lumen Requirements	Min Luminaire Efficacy	Allowable CCTs	Min CRI	Min LED Lumen Maintenance at 6000h	Min Luminaire Warranty
1	Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	1,000 lm	=100% 0-90° <10% 80-90°	50 lm/W	<6500K	50	95.8%	N/A
2	Outdoor Pole/Arm-Mounted Decorative Luminaires	1,000 lm	95% 0-90°	40 lm/W		50	95.8%	N/A
3	Outdoor Wall-Mounted Area Luminaires	300 lm	=100% 0-90° <10% 80-90°	40 lm/W		50	95.8%	N/A
4	Parking Garage Luminaires	2,000 lm	≥20% 60-70° ≥15% 70-80°	56 lm/W		50	95.8%	N/A
5	Fuel Pump Canopy	2,000 lm	≥40% 0-40° ≥40% 40-70°	56 lm/W		50	95.8%	N/A
6	Track or Mono-point Directional Lighting Fixture	250 lm	≥85% 0-90°	30 lm/W	2700K 3000K 3500K 4000K 4500K 5000K	75	95.8%	N/A
7	Refrigerated Case Lighting	≥50 lm/ft** ≥100 lm/ft*	≥95% 10-90°	35 lm/W		70	95.8%	5 years
8	Display Case Lighting	50 lm/ft**	≥95% 0-80°	35 lm/W		75	94.1%	3 years
9	Linear Panels (2x2 Troffers ONLY)	>3,000 lm	≥50% 30-60°	55 lm/W		80	94.1%	3 years
10	High-bay & Low-bay fixtures for Commercial and Industrial buildings	>10,000 lm	≥30% 20-50°	60 lm/W		70	94.1%	3 years
11	High-bay-Aisle Lighting	>10,000 lm	≥50% 20-50° ≥30% 0-20°	60 lm/W	70	94.1%	3 years	

PRODUCTS ON THE QPL

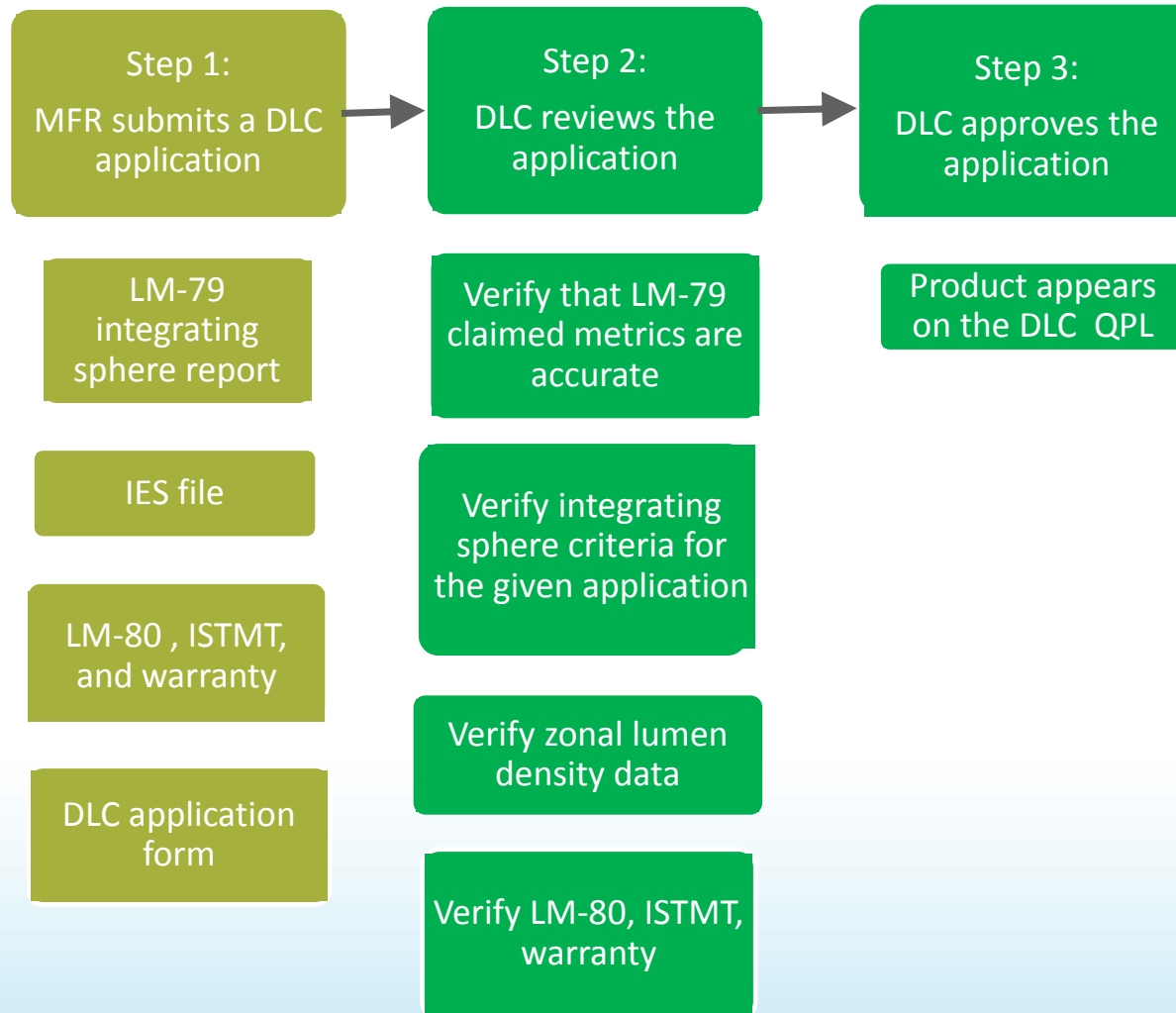
- As of 11/13/2010
 - 559 Products
 - 18 Manufacturers
- As of 7/1/2011
 - 2054 Products
 - 68 Manufacturers

... and growing!!

QPL GROWTH



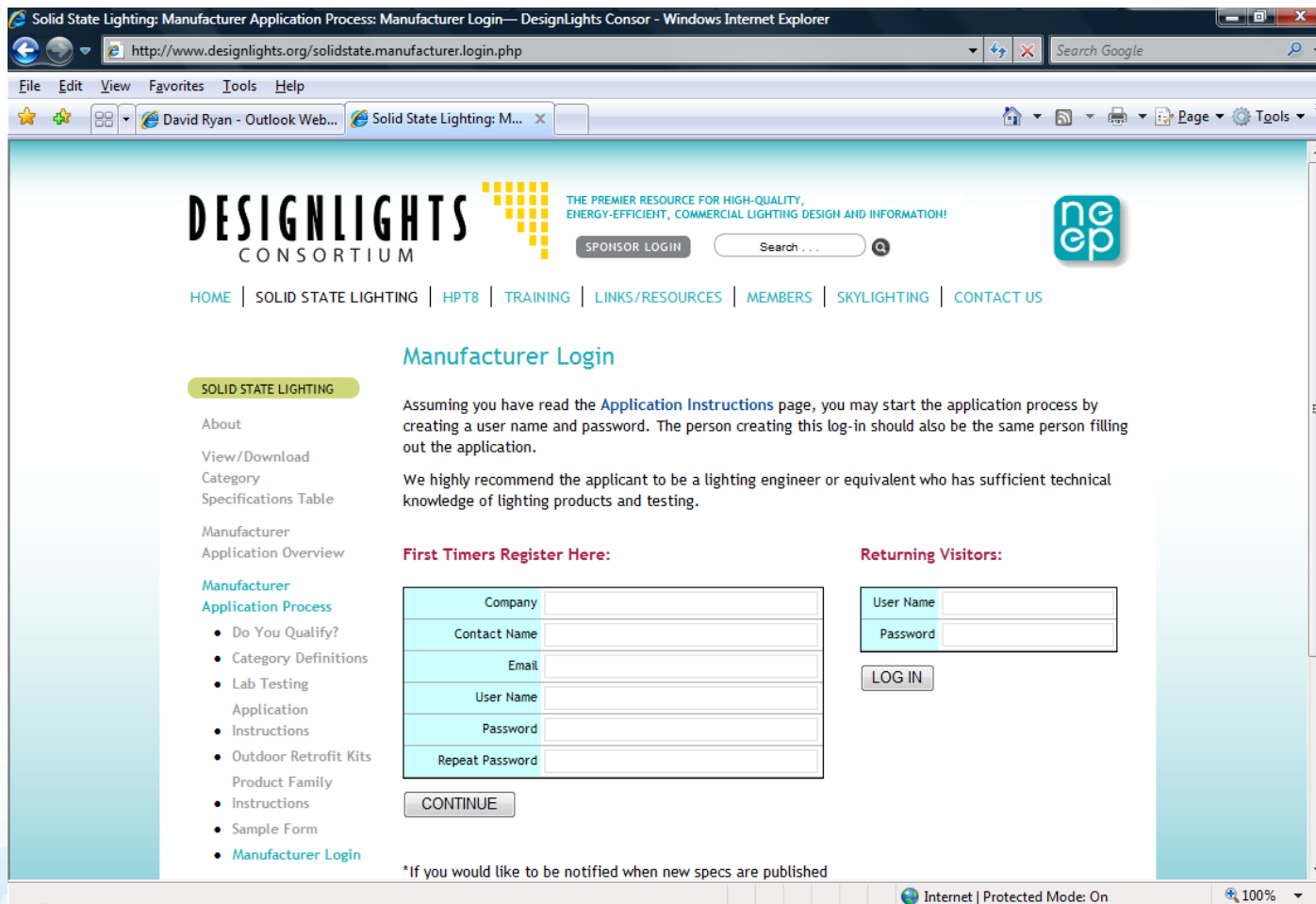
GETTING LISTED - STANDARD APPLICATIONS



GETTING LISTED - STANDARD APPLICATIONS

- www.designlights.org
- \$500 fee per application

GETTING LISTED - STANDARD APPLICATIONS



Solid State Lighting: Manufacturer Application Process: Manufacturer Login— DesignLights Consor - Windows Internet Explorer

http://www.designlights.org/solidstate.manufacturer.login.php

File Edit View Favorites Tools Help

David Ryan - Outlook Web... Solid State Lighting: M...

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SOLID STATE LIGHTING

About
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Category
Specifications Table
Manufacturer
Application Overview
Manufacturer Application Process

- Do You Qualify?
- Category Definitions
- Lab Testing
- Application
- Instructions
- Outdoor Retrofit Kits
- Product Family
- Instructions
- Sample Form
- Manufacturer Login

Manufacturer Login

Assuming you have read the [Application Instructions](#) page, you may start the application process by creating a user name and password. The person creating this log-in should also be the same person filling out the application.

We highly recommend the applicant to be a lighting engineer or equivalent who has sufficient technical knowledge of lighting products and testing.

First Timers Register Here:

Company	<input type="text"/>
Contact Name	<input type="text"/>
Email	<input type="text"/>
User Name	<input type="text"/>
Password	<input type="password"/>
Repeat Password	<input type="password"/>

Returning Visitors:

User Name	<input type="text"/>
Password	<input type="password"/>

*If you would like to be notified when new specs are published

Internet | Protected Mode: On 100%

GETTING LISTED - PRODUCT FAMILY GROUPS

- Intended for products which has scalable performance characteristics
- Testing sufficient to “bracket” group:
 - Scaled performance tables
 - LM-79s for lowest light output, lowest efficacy, additional CCTs
 - IES files for additional optics
 - LM-80 for LEDs
 - ISTMT for worst case thermals
- Fees calculated based on required testing (\$500/LM-79, ISTMT), and additional family members (\$20/product)

APPLICATION PROCESSING

- Analysis: Pass/Fail for required specifications
Two week turnaround time
- Passing results in posting on the QPL
- Failing applicants have one chance to resubmit
- Family Groupings Application for modular-based luminaires
- Successor Products Provision: 3000 hr provisional LM80




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HOW THE QPL IS CURRENTLY USED AND ITS POTENTIAL FOR THE NORTHWEST

CURRENT USE IN PROGRAMS

LED Eligible Products Guide

2011 Commercial 7/1/2011 – 12/31/2011



Efficiency Vermont

Efficiency Vermont rebates are available for high-performing LED products qualified through ENERGY STAR® or the DesignLights™ Consortium (DLC). Additionally, many more LED products are now eligible for rebates – those meeting the Efficiency Vermont performance criteria and listed with Lighting Facts®. **ENERGY STAR and DLC qualified products are eligible for a 25% rebate premium vs. products qualified through Lighting Facts.**

PREMIUM Tier LED Products	STANDARD Tier LED Products
<ul style="list-style-type: none"> ENERGY STAR® qualified, or DesignLights™ Consortium (DLC) approved <p>Premium tier LED products are eligible for a 25% Premium over standard rebates, as shown below.</p>	<ul style="list-style-type: none"> Lighting Facts® registered products that meet the criteria shown in the Photometric Performance Requirements Table on page 4. <p>Standard tier LED products are eligible for the standard rebates shown below.</p>



CURRENT USE IN PROGRAMS

STEP 1: Identify the Product Category		STEP 2: Determine the Applicable Rebate → Select the Link to View Eligible Products ←		STEP 3: Complete Your Project and Submit a Rebate Request
		PREMIUM	STANDARD	
REFRIGERATED CASE Light Fixtures (horizontal or vertical)	\$25 per foot DesignLights Consortium	\$20 per foot Lighting Facts	Rebate Form Section 5.12	
DISPLAY CASE Light Fixtures	\$15 per foot DesignLights Consortium	\$12 per foot Lighting Facts	Custom – Contact Efficiency Vermont	
2x2 RECESSED Panel Fixtures	\$75 DesignLights Consortium	\$60 Lighting Facts	Custom – Contact Efficiency Vermont	
2x4 RECESSED Panel Fixtures	N/A	\$60 Lighting Facts	Custom – Contact Efficiency Vermont	
1x4 RECESSED Panel Fixtures	N/A	\$60 Lighting Facts	Custom – Contact Efficiency Vermont	
HIGH- & LOW-BAY Fixtures	\$150 DesignLights Consortium	\$120 Lighting Facts	Custom – Contact Efficiency Vermont	
Outdoor PARKING or ROADWAY Fixtures	DesignLights Consortium	Lighting Facts	Rebate Form Section 5.7	
Outdoor DECORATIVE PARKING or ROADWAY Fixtures			Rebate Form Section 5.8	
PARKING GARAGE or CANOPY Fixtures			Rebate Form Section 5.9	
	< 30 watts: \$100	\$80		
	30 - 75 watts: \$200	\$160		
	> 75 watts: \$300	\$240		
	< 30 watts: \$100	\$80		

VALUE of DLC QPL

- **Program Administrators:** No need to create own specification criteria for SSL to claim energy savings and bring high quality, efficient products to market
- **Manufacturers:** Submit one application for easy access to utility incentives
- **Designers and Specifiers:** Determine which products best suit your needs and are energy efficient
- **Distributors and Installers:** Learn which products will be in high demand due to utility incentives
- **Customers:** Assurance of quality and performance



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WHAT'S IN THE WORKS FOR THE NEAR TERM

FEEDBACK FROM RI WORKSHOP

- Improve readability of QPL
- Streamline application process
- Engage manufacturers, designers, specifiers, and industry groups
- Allow opportunities for co-branding
- Develop www.designlights.org website as a web resource for designers, installers, and manufacturers

SPEC DEVELOPMENT - REVISIONS

- Evaluating all 11 current categories, may adjust minimum required efficacy
 - Any changes would take effect 270 days after announcement
- Considering Zonal Lumen Density requirements for Retrofit Kits in Outdoor Decorative Applications, and Parking Garage Luminaires
- Considering Lumen Output Levels for High/Low Bay applications

SPEC DEVELOPMENT - NEW CATEGORIES

- T8 Replacement Lamps
- 2 x 4 and 1 x 4 troffers/ceiling panels
- Flood Lights
- Horizontal Refrigerated Case Lighting

- DLC Responds to needs of members
- Technical Committee considers and provides input on all Specification Revisions

WHAT ELSE?





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AUDIENCE DISCUSSION: FUTURE OF SSL

DISCUSSION TOPICS

Utilities

- Which products are currently popular/cost effective?
- Which products will become popular/cost effective in 2014?
- What % of your savings do you get from SSL?
- What % of your savings do you plan to get from SSL in 2014?

Manufacturers

- What % of your product line is SSL?
- What % of your product line will be SSL in 2014?
- Where do you see technology going?

Everyone

- What are the main challenges to success?



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WHERE WILL WE GO FROM HERE?

Thank You!

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