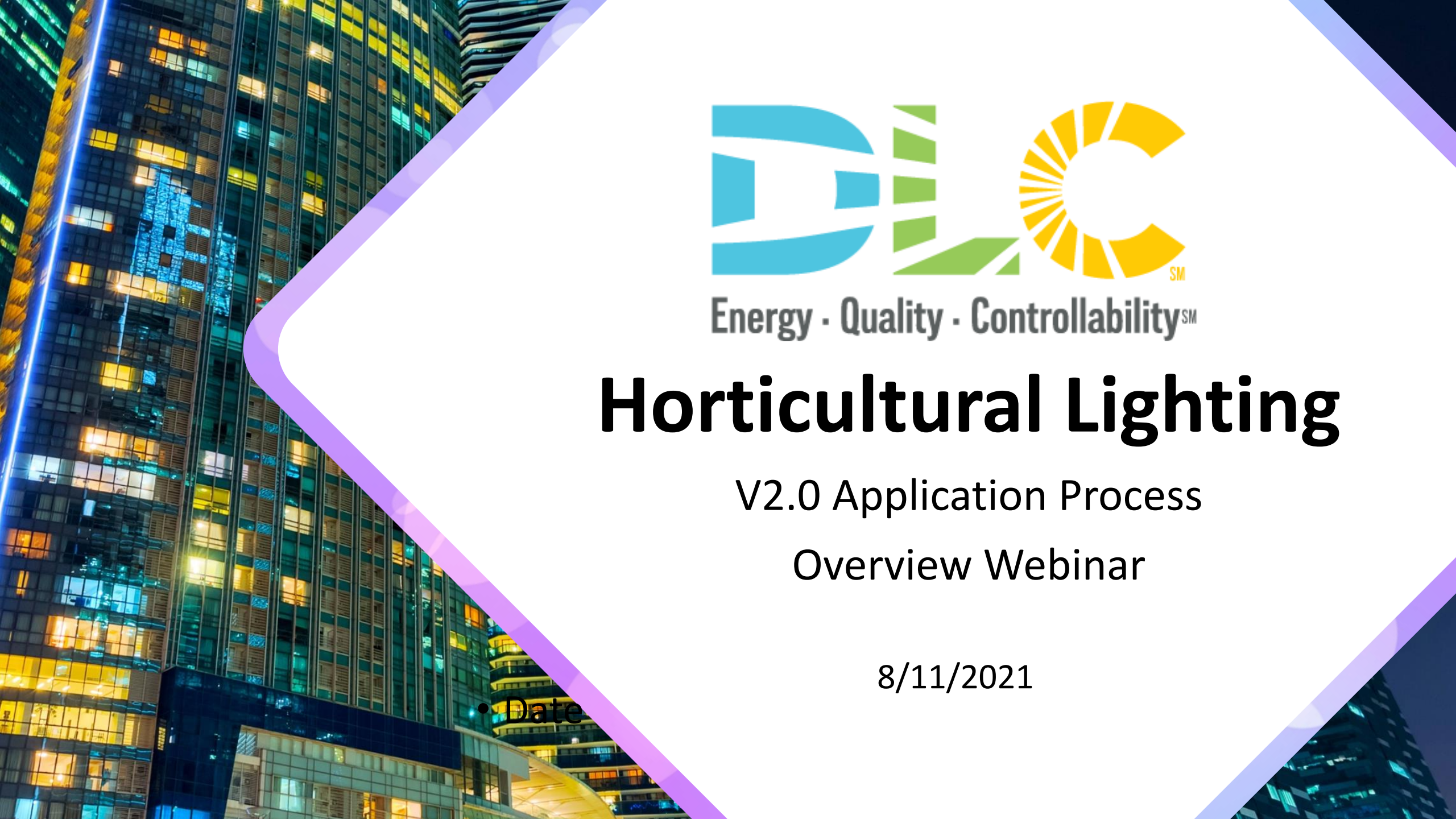

Energy · Quality · Controllability℠

Horticultural Lighting

V2.0 Application Process Overview Webinar

8/11/2021

- Date

Webinar Team

Bernadette Boudreaux

Associate Director of Operations

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Senior Technical Operations Analyst

Q&A
Moderators

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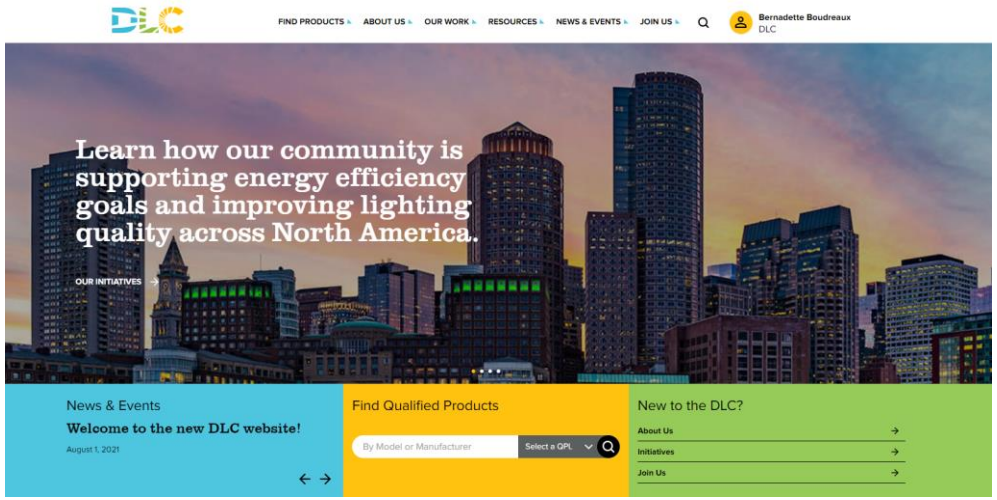
Technical Manager

Maddie Sligh
HORT Lead Reviewer

Webinar Logistics

- **Slides and recorded webinar will be posted** on the *DLC Website* www.designlights.org shortly after today's presentation
- All attendees are automatically muted
  - If you experience technical issues, please use the chat feature to let us know



Q&A

- Please place all questions in the Q&A chat box and will answer during the meeting
- In the Q&A session at the end of the presentation we will address a set of questions to the entire audience

Agenda

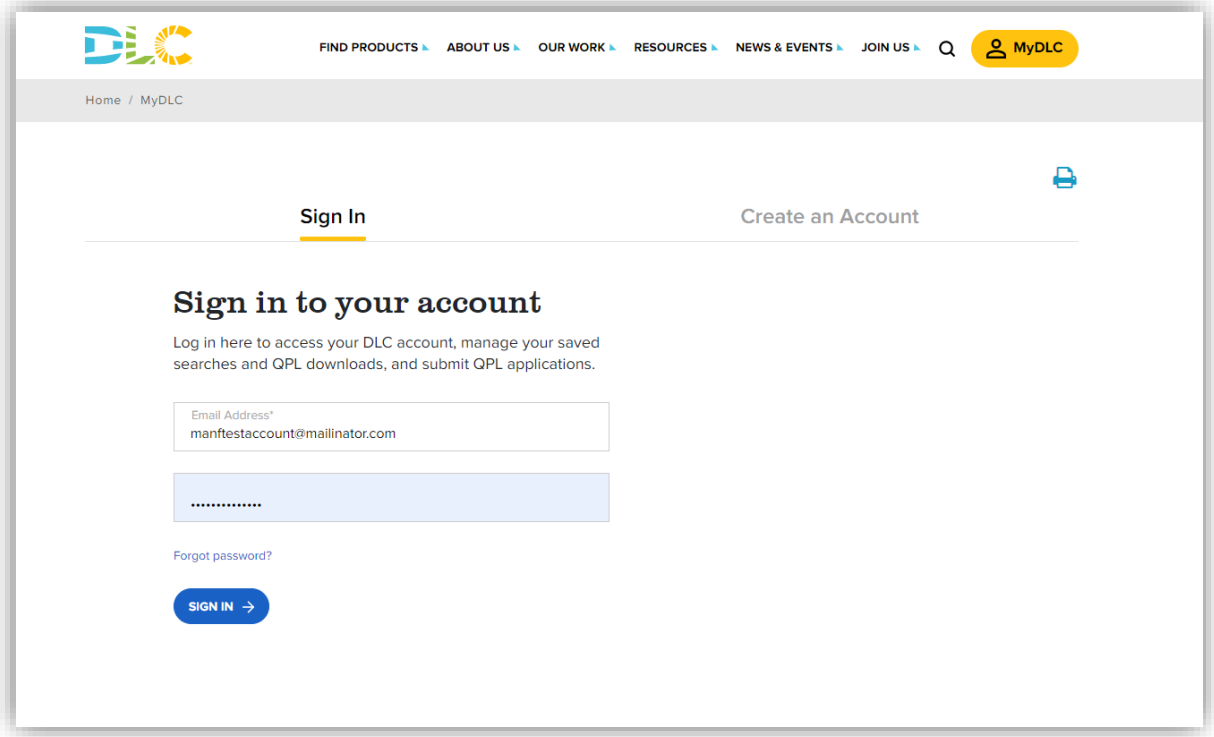
- Manufacturing Account
- New Types of Applications
- Application Process Changes
- Application Submission and Forms
- Testing and Reporting Requirements
  - HORT Single
  - HORT Private Label
  - HORT Family
- Review Timeframes
- Fees
- QPL
- Q&A

Manufacturer Accounts For All Programs

Manufacturer Account Sign In Existing Accounts

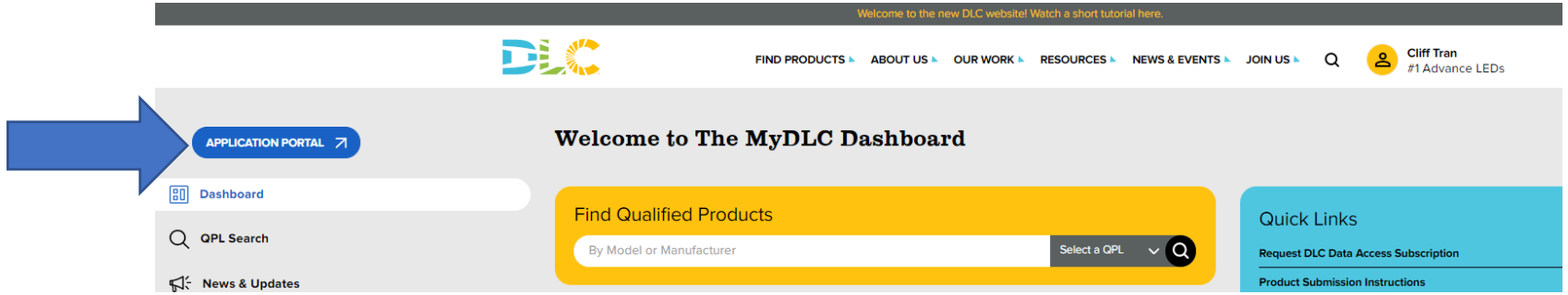
On the MyDLC home page, select the Sign In section to log in to an existing account

Users will be prompted to reset their password when first logging in to the new site for the first time

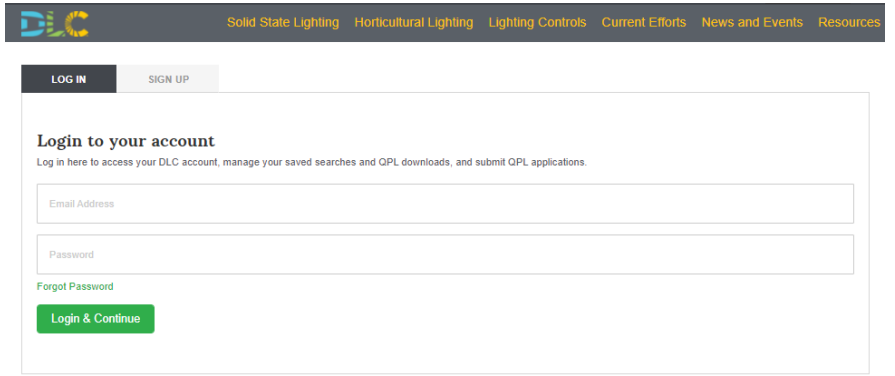


Link to Manufacturer Portal

- After logging into MYDLC, you will click the Application Portal link to be directed to the Application Portal where you will have to log in again



- The same log in info from the old website will be used to login to the Portal
  - The login info that you use in MYDLC will not be the same as the log in used in the application portal



All Manufacturer Account Management functionality for the Application Portal will still exist in its current form.

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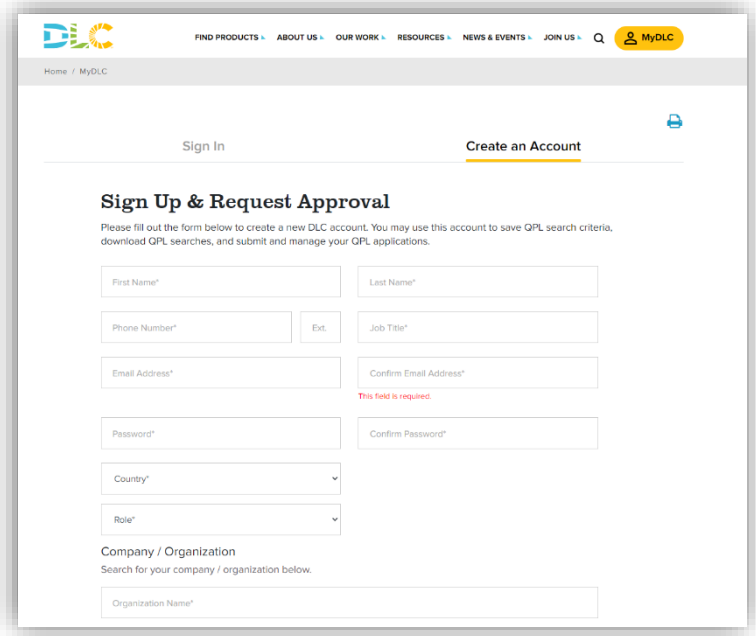
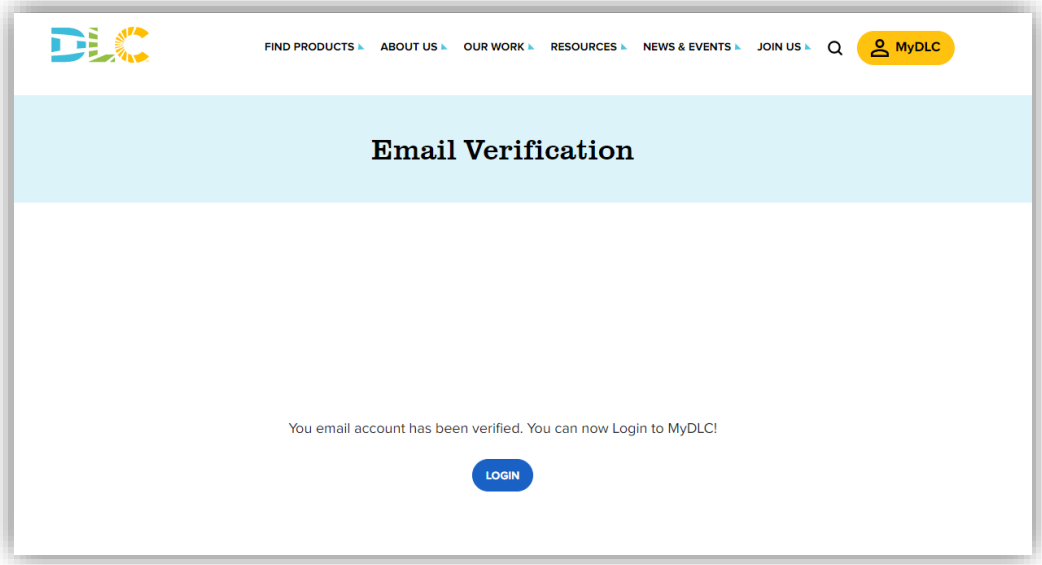
Manufacturer Account Creation



- On the MyDLC home page, select the Create an Account section to create a new account
- Fill in all required fields then select “Create Account”



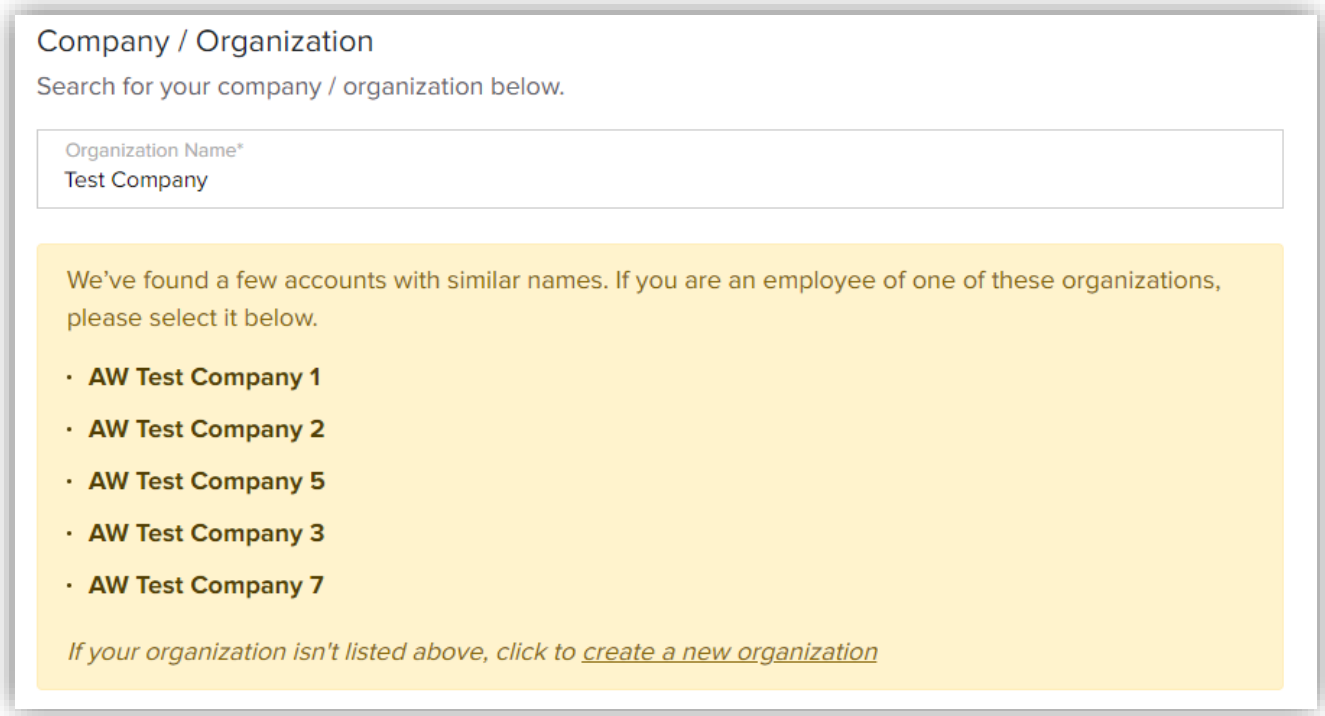
- The user will receive an email from DLC to verify the email address
- Once the email address is verified the user can log in to MyDLC

An Application Portal Account must be created and approved in order to submit applications

Existing **Company Association**

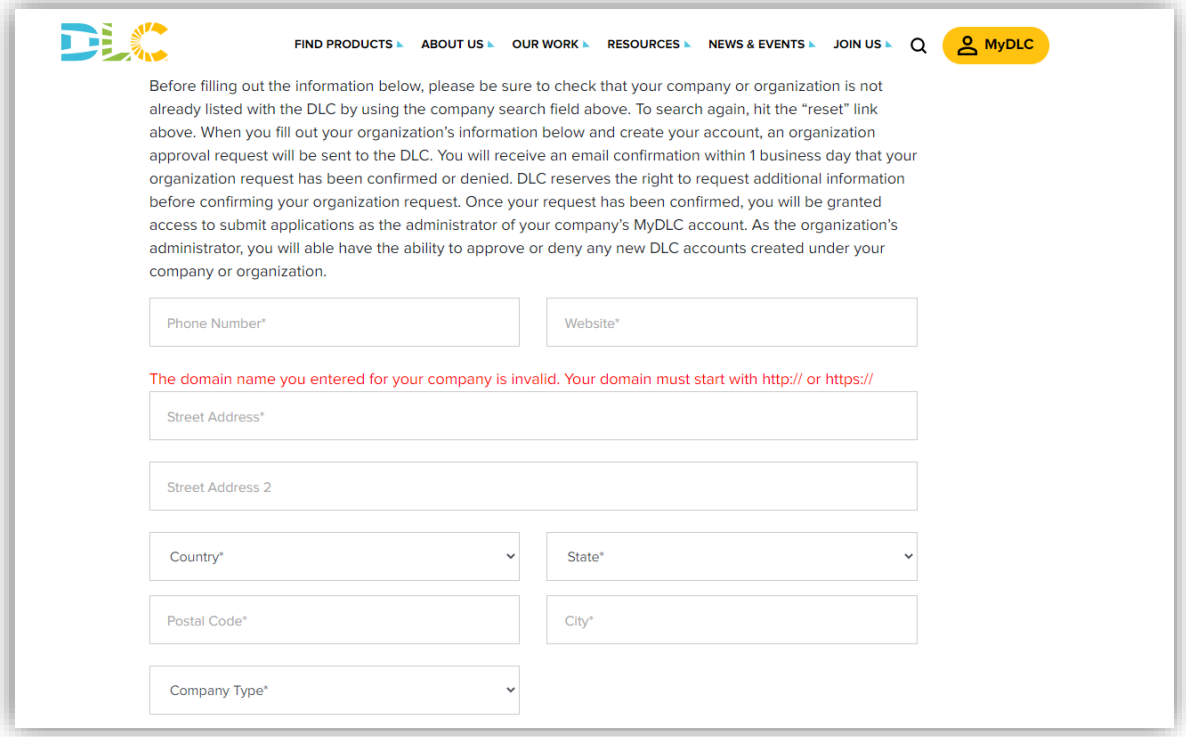
If the user creating a new account is associated with an existing company, they will be prompted to search and select the existing organization

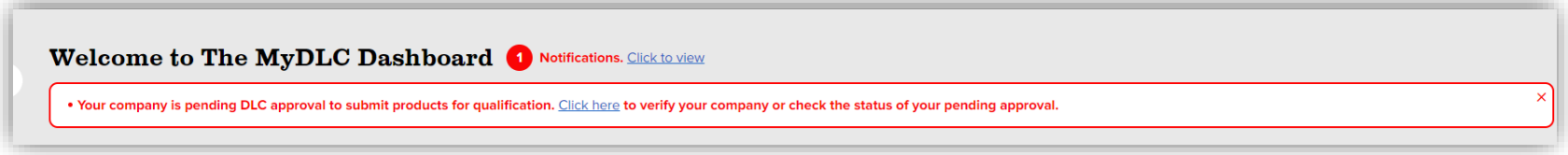
The existing company main contact will receive an email to approve the user



New Company Creation

- If the user creating a new account is also creating a new company, they will be prompted to confirm new company name and fill in additional organizational details
- The user will recieve a notification on their home page to provide additional company information in order to verify the company
- Once all required matieral is submitted and DLC approves the new company request, the user can begin submitting products for qualification

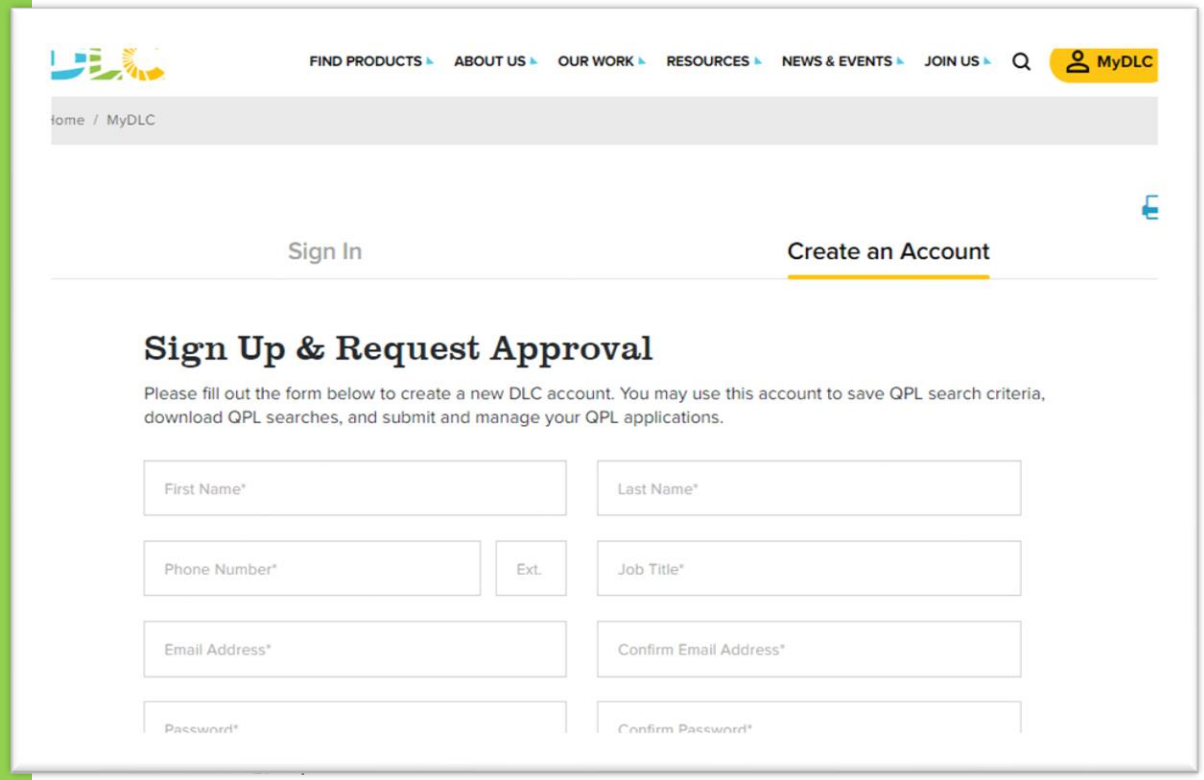




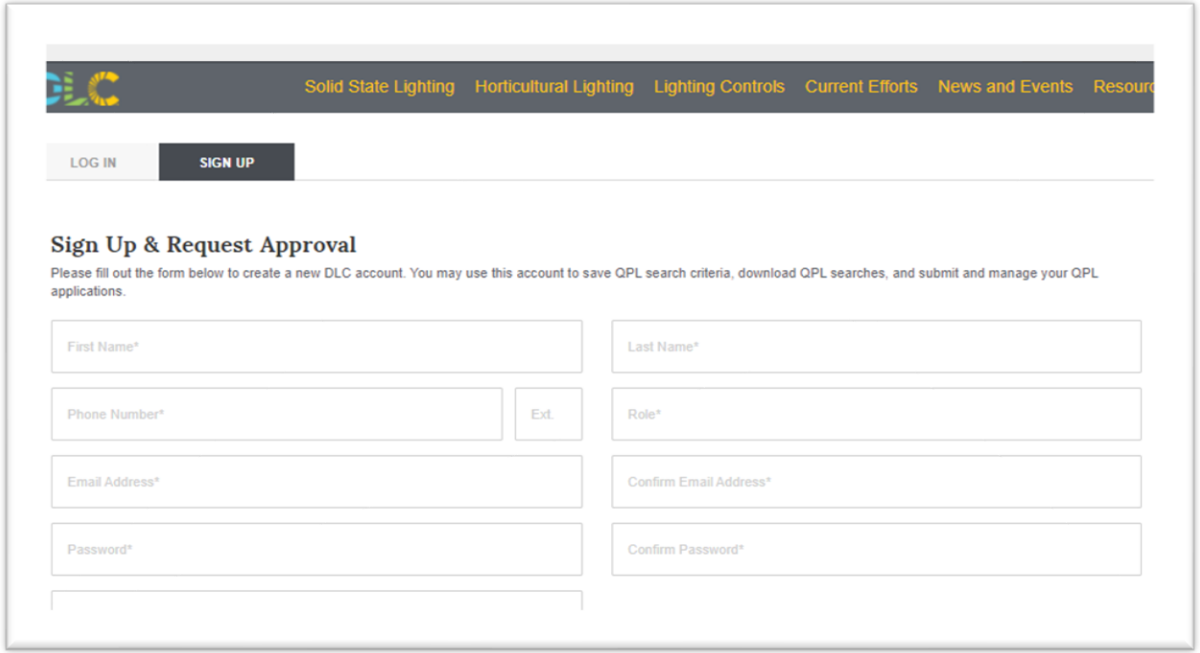
Approval of New Application Submission Accounts

- For new manufacturing accounts, a new MYDLC account must be created and approved before a new account in the AMS can be approved

STEP 1: MYDLC Create Account and Receive Approval



STEP 2: Create Account in Application Portal and Receive Approval after MYDLC Account is approved



V2.0

New Types of Applications

HORT 2.0 APPLICATION TYPES

Family

Single

Update

(Private Label, Single, Family)

Private Label

HORT APPLICATION UPDATES

NEW APPLICATION TYPES

Family Grouping

- Family Grouping Interim Solution no longer active

Private Label

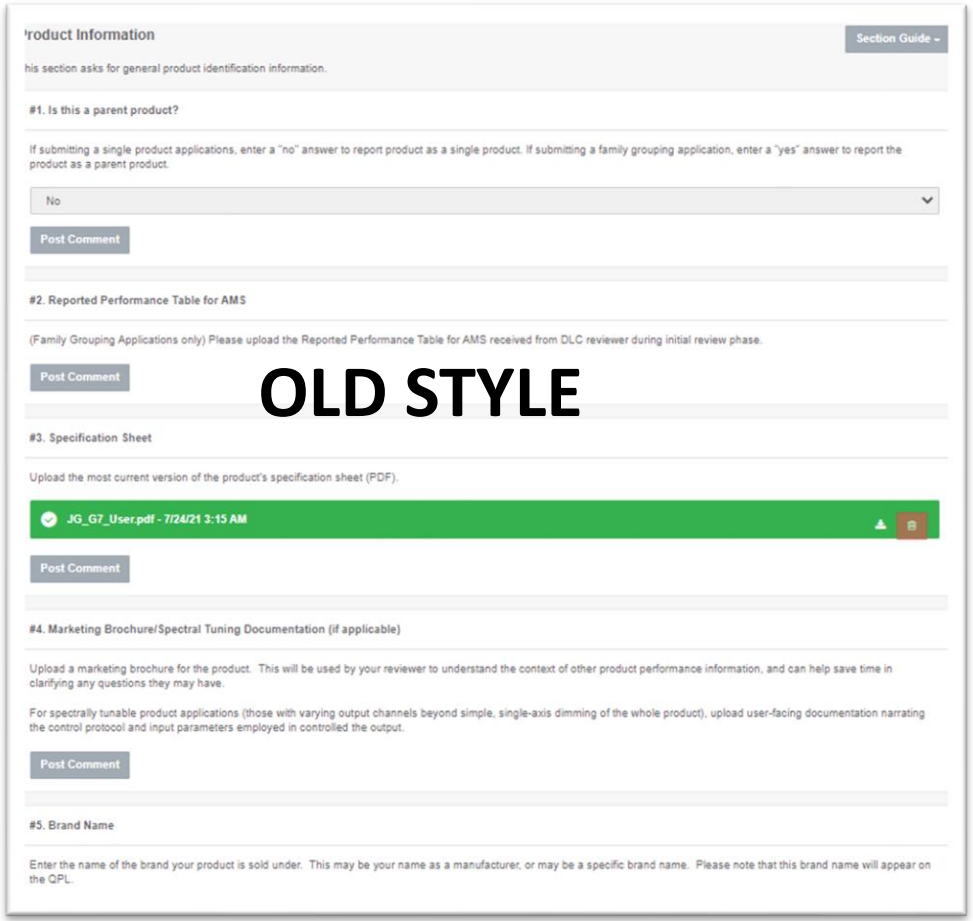
Update

APPLICATION CHANGES

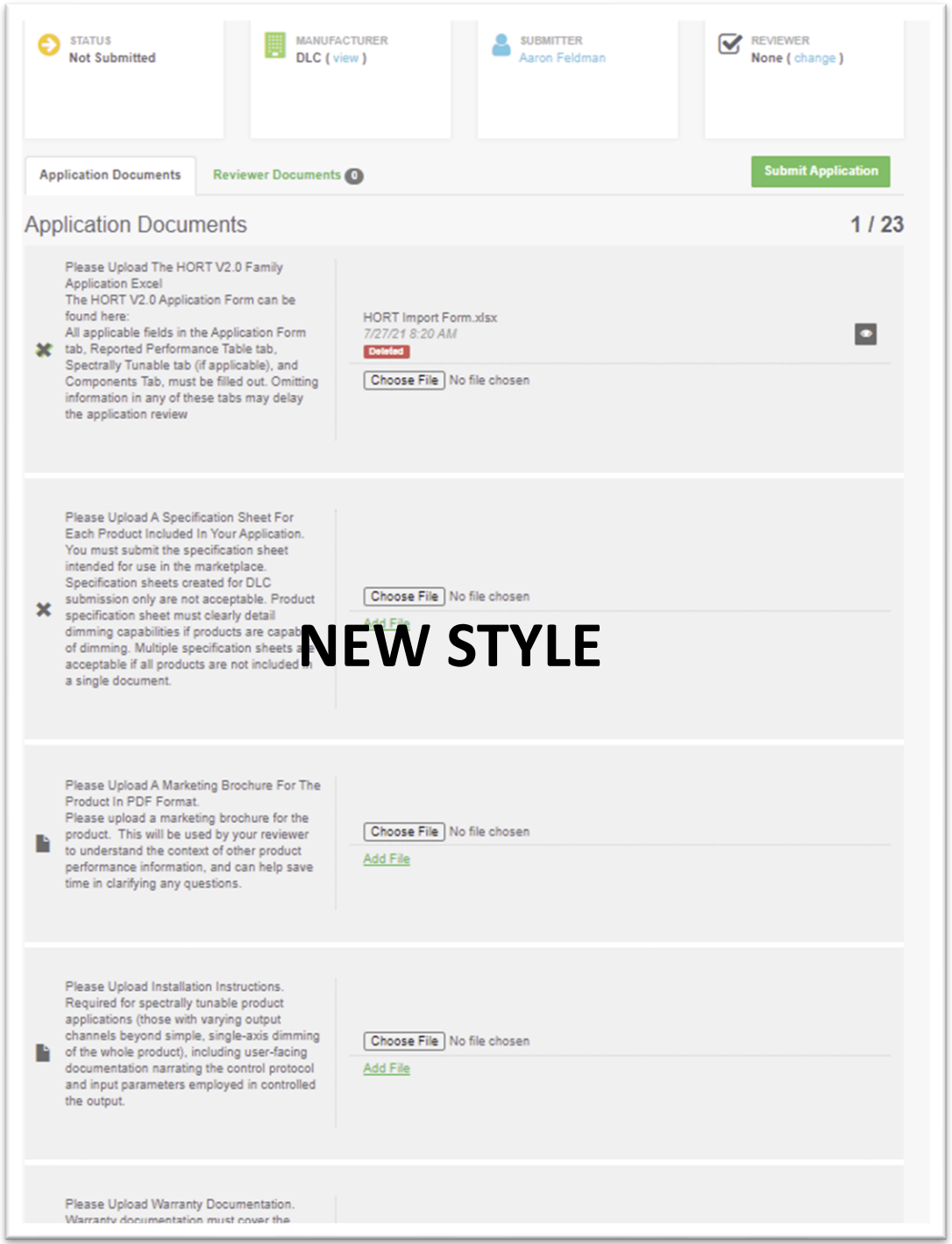
- Update applications can now be submitted
- Invoicing and Publishing of products to the QPL at a different stages
- Application Style for Single Product Applications Changes
- Reported Data is required

Submission process changes for All Applications

- Question Style format replaced with Application Excel form and upload of files
- Mimics SSL application process format



OLD STYLE



NEW STYLE

Family Grouping

- Compared to testing and listing all products individually
  - Reduce overall burden associated with listing multiple, similar product variations.
  - Reduce the total application fees.
- Familiarity with FG from SSL Program

Model	Wattage	Distribution	Spectrum	Voltage	
DLC	100	Distribution A	Spectrum A	120-277, 347, 480	Spectral Sub-Group
DLC	*100*	*Distribution B*	*Spectrum A*	*120-277, 347, 480*	
DLC	*200*	*Distribution A*	*Spectrum A*	*120-277, 347, 480*	
DLC	*200*	*Distribution B*	*Spectrum A*	*120-277, 347, 480*	
DLC	*300*	*Distribution A*	*Spectrum A*	*120-277, 347, 480*	
DLC	*300*	*Distribution B*	*Spectrum A*	*120-277, 347, 480*	
DLC	*400*	*Distribution A*	*Spectrum A*	*120-277, 347, 480*	
DLC	400	Distribution B	Spectrum A	120-277, 347, 480	
DLC	100	Distribution A	Spectrum B	120-277, 347, 480	Spectral Sub-Group
DLC	*100*	*Distribution B*	*Spectrum B*	*120-277, 347, 480*	
DLC	*200*	*Distribution A*	*Spectrum B*	*120-277, 347, 480*	
DLC	*200*	*Distribution B*	*Spectrum B*	*120-277, 347, 480*	
DLC	*300*	*Distribution A*	*Spectrum B*	*120-277, 347, 480*	
DLC	*300*	*Distribution B*	*Spectrum B*	*120-277, 347, 480*	
DLC	*400*	*Distribution A*	*Spectrum B*	*120-277, 347, 480*	
DLC	400	Distribution B	Spectrum B	120-277, 347, 480	
DLC	100	Distribution A	Spectrum C	120-277, 347, 480	Spectral Sub-Group
DLC	*100*	*Distribution B*	*Spectrum C*	*120-277, 347, 480*	
DLC	*200*	*Distribution A*	*Spectrum C*	*120-277, 347, 480*	
DLC	*200*	*Distribution B*	*Spectrum C*	*120-277, 347, 480*	
DLC	*300*	*Distribution A*	*Spectrum C*	*120-277, 347, 480*	
DLC	*300*	*Distribution B*	*Spectrum C*	*120-277, 347, 480*	
DLC	*400*	*Distribution A*	*Spectrum C*	*120-277, 347, 480*	
DLC	400	Distribution B	Spectrum C	120-277, 347, 480	
DLC	100	Distribution A	Spectrum D	120-277, 347, 480	Spectral Sub-Group
DLC	*100*	*Distribution B*	*Spectrum D*	*120-277, 347, 480*	
DLC	*200*	*Distribution A*	*Spectrum D*	*120-277, 347, 480*	
DLC	*200*	*Distribution B*	*Spectrum D*	*120-277, 347, 480*	
DLC	*300*	*Distribution A*	*Spectrum D*	*120-277, 347, 480*	
DLC	*300*	*Distribution B*	*Spectrum D*	*120-277, 347, 480*	
DLC	*400*	*Distribution A*	*Spectrum D*	*120-277, 347, 480*	
DLC	400	Distribution B	Spectrum D	120-277, 347, 480	

32 individually tested and listed on Hort QPL under V1.2

Summary of Testing Requirements

Criterion	Which Model(s)	Test Required
Minimum PPF	Worst-case photosynthetic photon flux output variation	LM-79, including accompanying TM-33-18 document. Note: A single LM-79 report may fulfill several criteria
Minimum Photosynthetic Photon Efficacy (PPE)	Worst-case efficacy	
Photosynthetic Photon Intensity Distribution (PPID)	Each unique optical and distribution pattern	
Minimum Q_{an} Photon Flux Maintenance, Photosynthetic (PFM_p)	ISTMT at worst-case thermal conditions for each unique LED type LM-80 for each LED package/module/array as required for flux maintenance projection	ISTMT
		LM-80/LM-84
		TM-21/TM-28
Driver Lifetime	Worst-case driver temperature for each non-relatable driver	ISTMT
Fan Lifetime	Worst-case fan temperature for each unique fan	ISTMT
Power Quality: Total Harmonic Distortion – Current (THDi) and Power Factor (PF)	Worst-case performing driver	Benchtop Electrical Testing or LM-79

Family Grouping

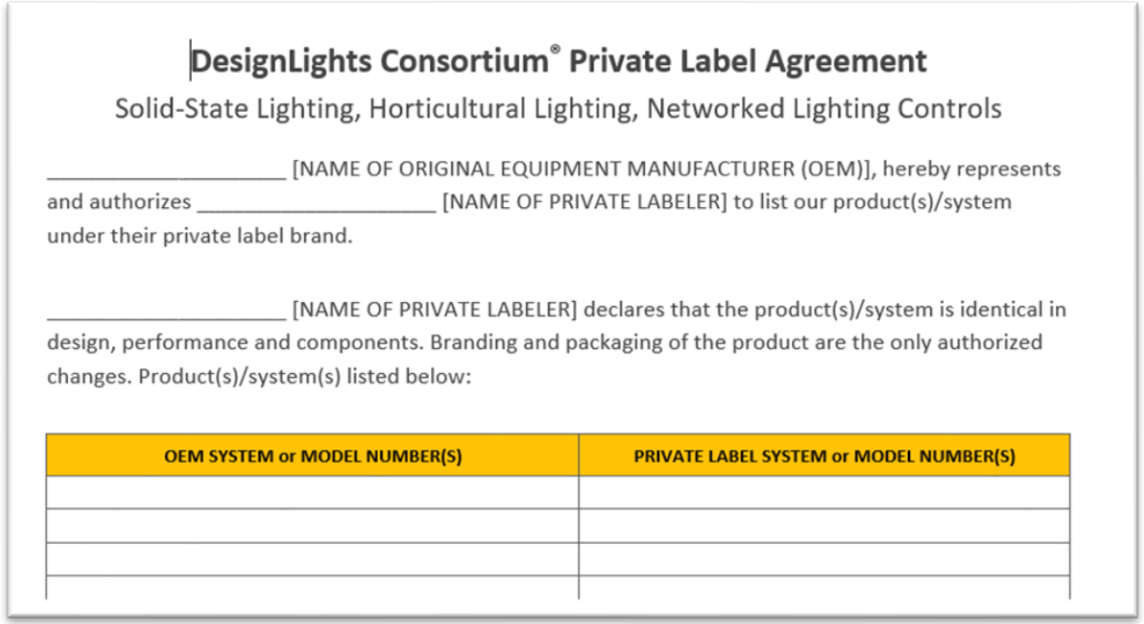
- Reduce overall burden and cost by reviewing **worst-case models** within a family.
  - **Parent products** demonstrate compliance with the Technical Requirements for *child products.*
  - **Parent products** rely on tested data, **child products** rely on reported data.
- Worst-case criterion reporting and threshold requirements per V2.0.

Model	Wattage	Distribution	Spectrum	Voltage	
DLC	**100**	**Distribution A**	**Spectrum A**	**120-277, 347, 480**	Spectral Sub-Group
DLC	*100*	*Distribution B*	*Spectrum A*	*120-277, 347, 480*	
DLC	*200*	*Distribution A*	*Spectrum A*	*120-277, 347, 480*	
DLC	*200*	*Distribution B*	*Spectrum A*	*120-277, 347, 480*	
DLC	*300*	*Distribution A*	*Spectrum A*	*120-277, 347, 480*	
DLC	*300*	*Distribution B*	*Spectrum A*	*120-277, 347, 480*	
DLC	*400*	*Distribution A*	*Spectrum A*	*120-277, 347, 480*	
DLC	**400**	**Distribution B**	**Spectrum A**	**120-277, 347, 480**	
DLC	**100**	**Distribution A**	**Spectrum B**	**120-277, 347, 480**	Spectral Sub-Group
DLC	*100*	*Distribution B*	*Spectrum B*	*120-277, 347, 480*	
DLC	*200*	*Distribution A*	*Spectrum B*	*120-277, 347, 480*	
DLC	*200*	*Distribution B*	*Spectrum B*	*120-277, 347, 480*	
DLC	*300*	*Distribution A*	*Spectrum B*	*120-277, 347, 480*	
DLC	*300*	*Distribution B*	*Spectrum B*	*120-277, 347, 480*	
DLC	*400*	*Distribution A*	*Spectrum B*	*120-277, 347, 480*	
DLC	**400**	**Distribution B**	**Spectrum B**	**120-277, 347, 480**	
DLC	**100**	**Distribution A**	**Spectrum C**	**120-277, 347, 480**	Spectral Sub-Group
DLC	*100*	*Distribution B*	*Spectrum C*	*120-277, 347, 480*	
DLC	*200*	*Distribution A*	*Spectrum C*	*120-277, 347, 480*	
DLC	*200*	*Distribution B*	*Spectrum C*	*120-277, 347, 480*	
DLC	*300*	*Distribution A*	*Spectrum C*	*120-277, 347, 480*	
DLC	*300*	*Distribution B*	*Spectrum C*	*120-277, 347, 480*	
DLC	*400*	*Distribution A*	*Spectrum C*	*120-277, 347, 480*	
DLC	**400**	**Distribution B**	**Spectrum C**	**120-277, 347, 480**	
DLC	**100**	**Distribution A**	**Spectrum D**	**120-277, 347, 480**	Spectral Sub-Group
DLC	*100*	*Distribution B*	*Spectrum D*	*120-277, 347, 480*	
DLC	*200*	*Distribution A*	*Spectrum D*	*120-277, 347, 480*	
DLC	*200*	*Distribution B*	*Spectrum D*	*120-277, 347, 480*	
DLC	*300*	*Distribution A*	*Spectrum D*	*120-277, 347, 480*	
DLC	*300*	*Distribution B*	*Spectrum D*	*120-277, 347, 480*	
DLC	*400*	*Distribution A*	*Spectrum D*	*120-277, 347, 480*	
DLC	**400**	**Distribution B**	**Spectrum D**	**120-277, 347, 480**	

8 individually tested, 32 listed on Hort QPL

Private Labeling

- V2.0 allows re-listing of products under multiple organizations and brands
  - Private Label products must be **exactly the same** as the OEM products
  - OEM products must already be listed on the Horticultural QPL
- Private Label products should not need to go through redundant testing
  - Overall, a **simplified application review process** for pre-approved products
  - Manufacturer and product relationships must be **clearly understood and documented**



DesignLights Consortium® Private Label Agreement

Solid-State Lighting, Horticultural Lighting, Networked Lighting Controls

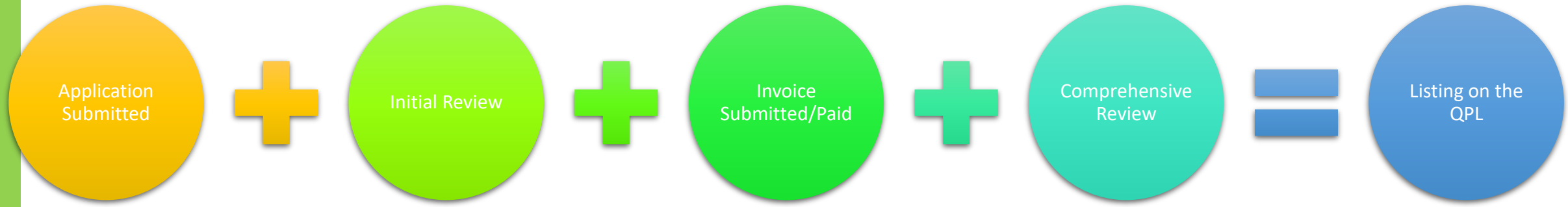
_____ [NAME OF ORIGINAL EQUIPMENT MANUFACTURER (OEM)], hereby represents and authorizes _____ [NAME OF PRIVATE LABELER] to list our product(s)/system under their private label brand.

_____ [NAME OF PRIVATE LABELER] declares that the product(s)/system is identical in design, performance and components. Branding and packaging of the product are the only authorized changes. Product(s)/system(s) listed below:

OEM SYSTEM or MODEL NUMBER(S)	PRIVATE LABEL SYSTEM or MODEL NUMBER(S)

Application Process Changes

New Application Process Overview (Mimics SSL)



Submitter will be notified that the application has been submitted and a reviewer will be assigned.

Reviewer will review application and supporting documentation to ensure it is complete and work with submitter to resolve any issues

Submitter will receive and invoice. Payment of this invoice starts the next step in the review process

Reviewer will review application and supporting documentation to ensure all Technical and Reporting Requirements are met and work with submitter to resolve any issues

Products will be published to the QPL after completion of Comprehensive Review

NOTE: Products no longer published after invoicing

V2.0 Application Submission

Excel Application Forms

Application Submission Instructions Single/Family

Complete Product Application Form (.xls) for all applicable tabs

Start New Application in Your Account

Create NEW Application with the correct application type on Applications Tab

Enter the required Application Details and Application Contact information.

- Upload ALL required application materials (examples below)
  - Completed Product Application Form (.xlsx)
  - Manufacturer product specification sheet
  - LED package/module/array specification sheet
  - IES LM-79 report(s)
  - ISTMT (Product Level Worst Case and Driver)
  - LM-80 and TM-21
  - TM-33
  - Supplemental power quality test report
  - Legal warranty document explaining warranty terms and conditions
  - Proof of safety certification from an appropriate safety certification body relevant in the US or Canada
  - Driver Specification sheet
  - Fan Specification sheet where applicable

Digitally sign the Application Agreement and submit the application.

Private Label Application Submission Instructions

Complete Product Application Form (.xls) for all applicable tabs

Start New Application in Your Account

Create NEW Application with the correct application type on Applications Tab

Enter the required Application Details and Application Contact information.

- Upload ALL required application materials (example below)
  - Completed Private Label Application Form (.xlsx)
  - A product specification sheet for any new model numbers being submitted
  - OEM product specification sheet for the model numbers being private labeled
  - Proof of safety certification under the private labeler's organization name
  - Proof of safety certification under the OEM's organization name and model number(s)
  - Multiple Listing Correlation Sheet issued by the approved safety organization which cross references the OEM model numbers with private label model numbers.
  - Signed Private Label Agreement form
  - Warranty document from the private labeler covering the private label models in the applications

Digitally sign the Application Agreement and submit the application.

HORT 2.0 APPLICATION EXCELS

Horticultural Single/Family Application

Family

Single

Horticultural Single/Family Application

- Horticultural Update Application (Single/Family)
- Horticultural Private Label Update Application

Update

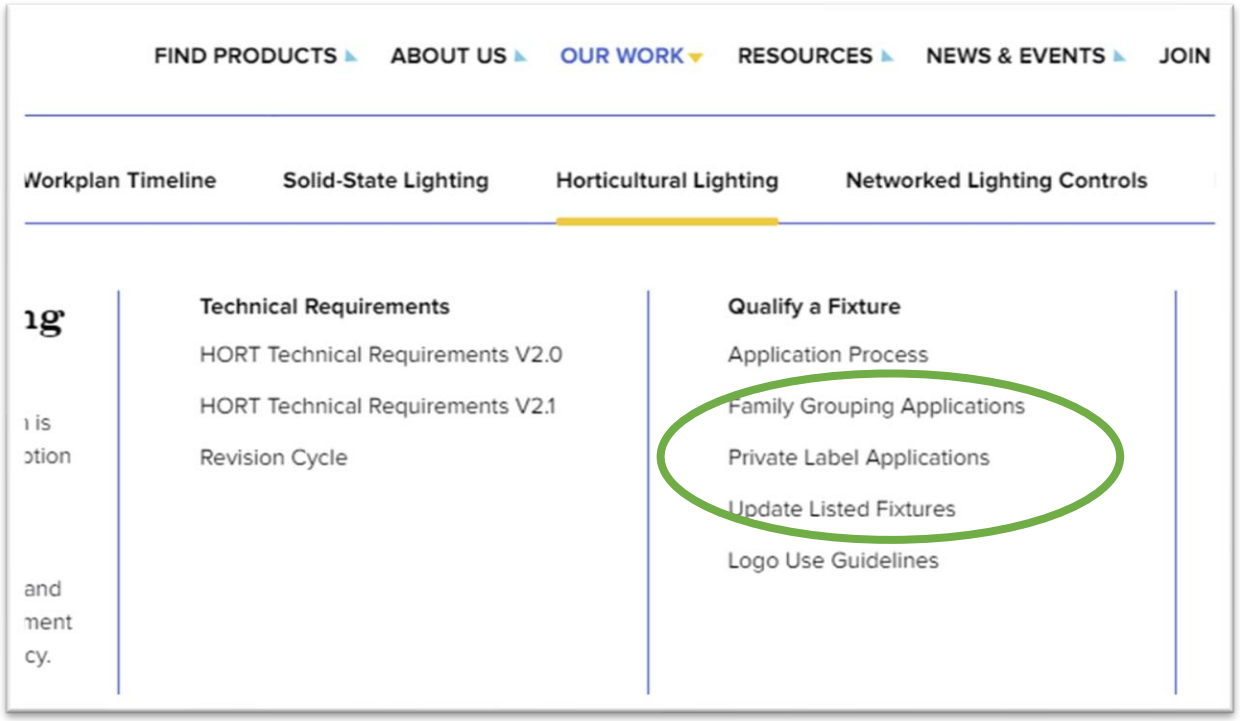
(Private Label, Single/Family)

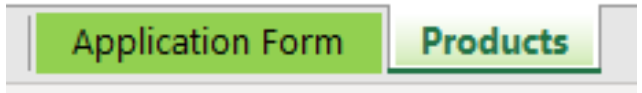
Private Label

Horticultural Private Label Application

Application Form Excel

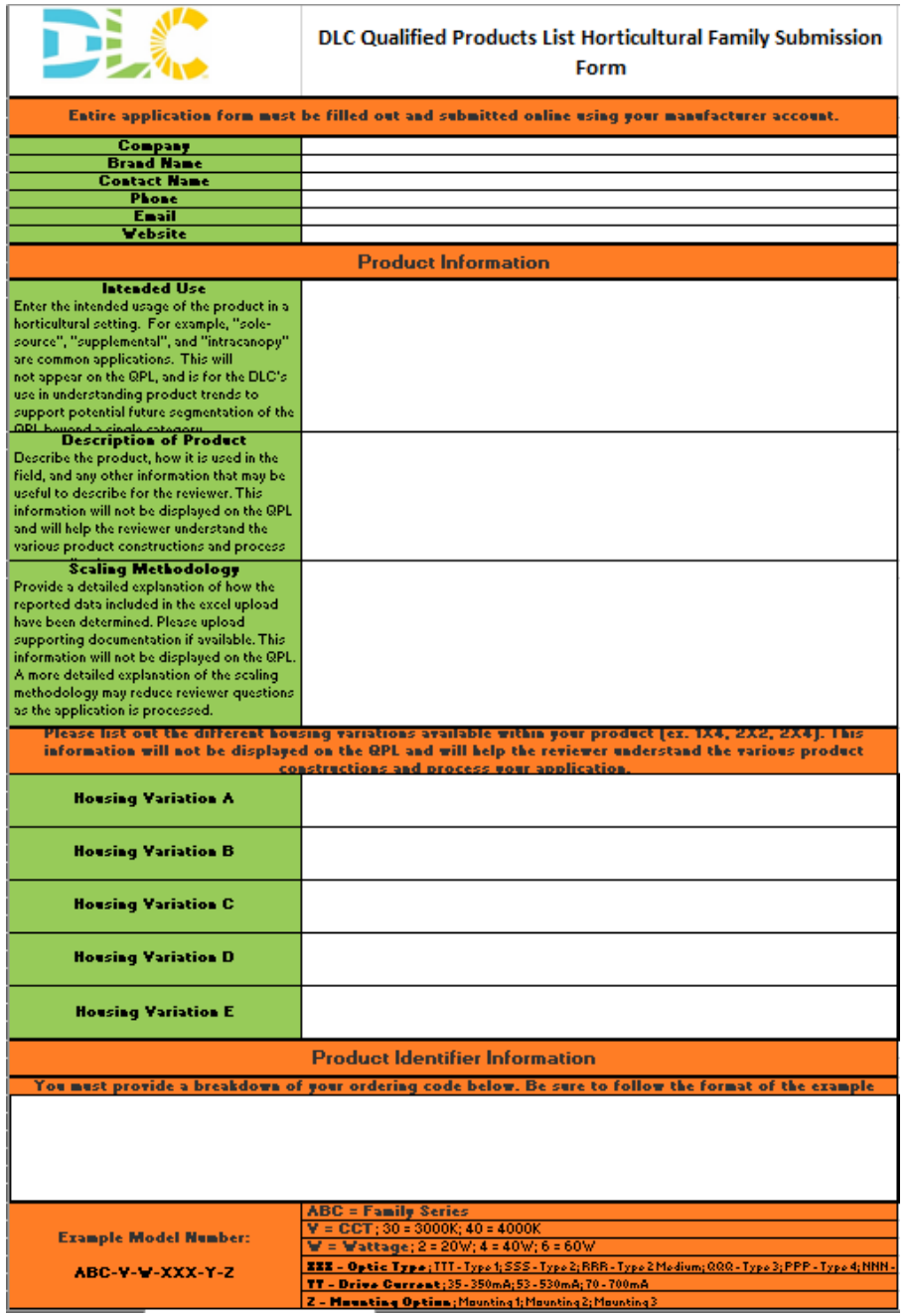
- Location of Excel Forms on DLC Website
- All tabs in the excel that are to be filled out by the Submitter





Application Form Tab

- Includes General Application/Product Info
  - Company, Brand Name, Contact Info
- Includes General Product Info
  - Intended Use/Product Description,
  - Product Model Number Breakdown
  - Scaling Methodology
  - Housing Variation



DLC Qualified Products List Horticultural Family Submission Form

Entire application form must be filled out and submitted online using your manufacturer account.

Company	
Brand Name	
Contact Name	
Phone	
Email	
Website	

Product Information

Intended Use Enter the intended usage of the product in a horticultural setting. For example, "sole-source", "supplemental", and "intracanopy" are common applications. This will not appear on the QPL, and is for the DLC's use in understanding product trends to support potential future segmentation of the QPL beyond a single category.	
Description of Product Describe the product, how it is used in the field, and any other information that may be useful to describe for the reviewer. This information will not be displayed on the QPL and will help the reviewer understand the various product constructions and process	
Scaling Methodology Provide a detailed explanation of how the reported data included in the excel upload have been determined. Please upload supporting documentation if available. This information will not be displayed on the QPL. A more detailed explanation of the scaling methodology may reduce reviewer questions as the application is processed.	

Please list out the different housing variations available within your product (ex. 1X4, 2X2, 2X4). This information will not be displayed on the QPL and will help the reviewer understand the various product constructions and process your application.

Housing Variation A	
Housing Variation B	
Housing Variation C	
Housing Variation D	
Housing Variation E	

Product Identifier Information

You must provide a breakdown of your ordering code below. Be sure to follow the format of the example

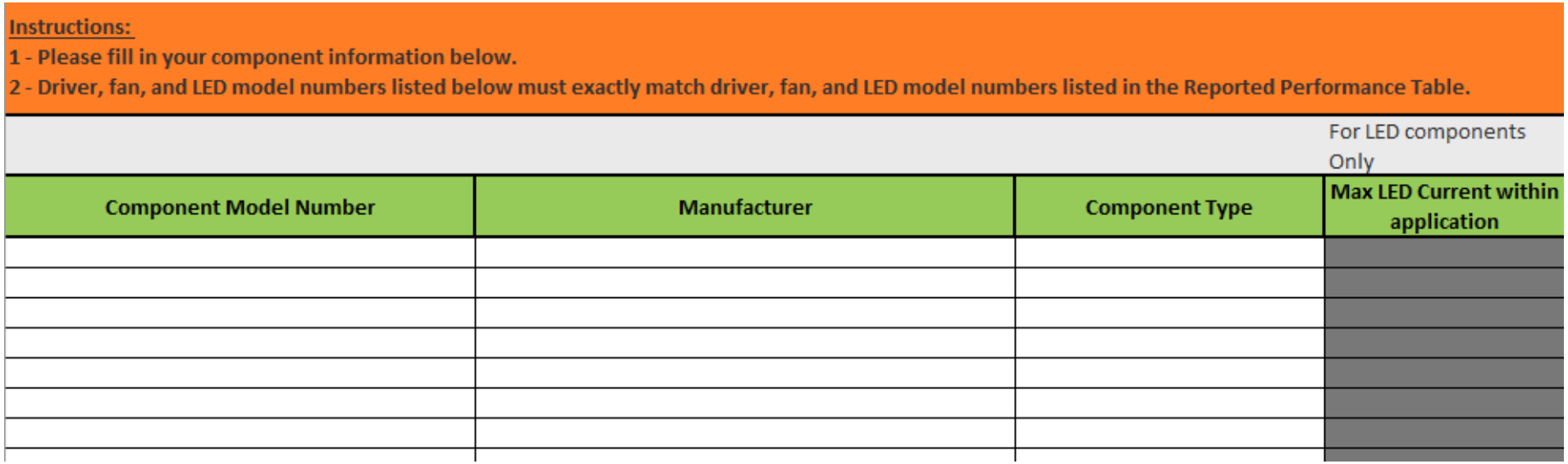
Example Model Number: ABC-V-W-XXX-Y-Z	ABC = Family Series V = CCT; 30 = 3000K; 40 = 4000K W = Wattage; 2 = 20W; 4 = 40W; 6 = 60W XXX - Optic Type; TTT - Type 1; SSS - Type 2; RRR - Type 2 Medium; QQQ - Type 3; PPP - Type 4; NNN - YY - Drive Current; 35 - 350mA; 53 - 530mA; 70 - 700mA Z - Mounting Option; Mounting 1; Mounting 2; Mounting 3

Reported Performance Table

- **<u>Reported data is reported performance data</u>** from the manufacturer that describes the expected performance of the product(s)
- This data is **<u>derived by the luminaire manufacturer</u>** and these claims are entered into the application excel form
- The DLC evaluates reported performance claims based on the information manufacturers choose to report in their **<u>product specification sheets and/or other marketing materials.</u>**
  - If the performance claims reported in specification sheets and/or other marketing material are below the Technical Requirements, the DLC reviewer will reject the application as marketing material cannot indicate that the product's marketed performance is below any of the Technical Requirements.
  - To avoid delays in review, please review all marketing material prior to submitting an application to ensure it accurately reflects the product submitted, and does not contain outdated or incorrect information, or typographical errors.

Reported Minimum Input Voltage	Reported Maximum Input Voltage	Reported Photosynthetic Photon Flux (µmol/s) (400-700nm)	Reported Photon Flux Blue (µmol/s) (400-500nm)	Reported Photon Flux Green (µmol/s) (500-600nm)	Reported Photon Flux Red (µmol/s) (600-700nm)

Component Tab



Instructions:
1 - Please fill in your component information below.
2 - Driver, fan, and LED model numbers listed below must exactly match driver, fan, and LED model numbers listed in the Reported Performance Table.

			For LED components Only
Component Model Number	**Manufacturer**	**Component Type**	**Max LED Current within application**

- Enter LED, Driver and Fan Information
  - Driver, fan, and LED model numbers listed below must **exactly match** driver, fan, and LED model numbers listed in the Reported Performance Table.
  - Component model numbers especially LED must be the complete model number not a series designation or partial model numbers.

Spectral Tuning Products

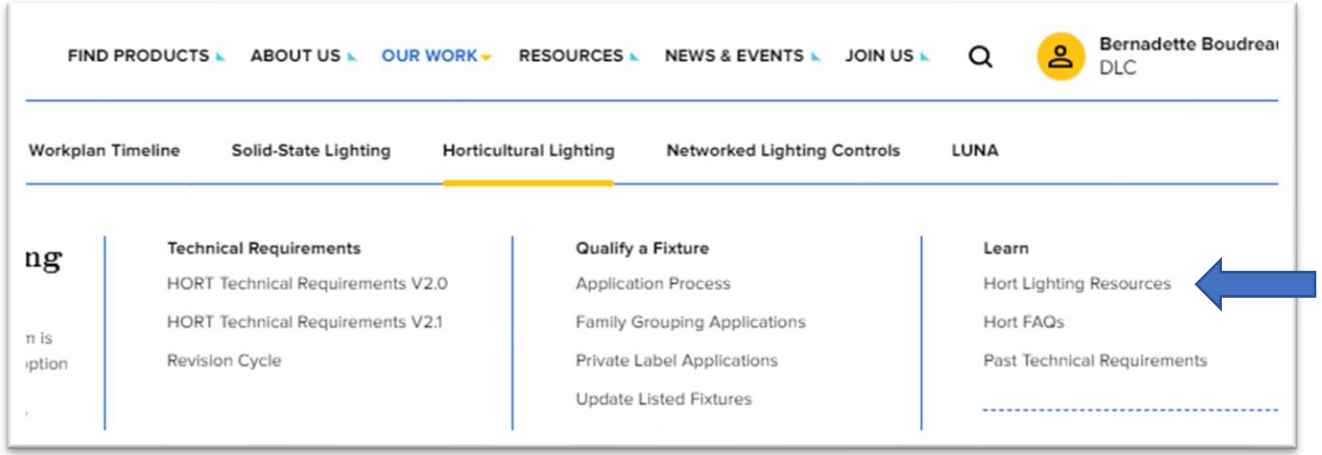
- If product has spectral tuning capabilities for each model number, please enter spectral tuning performance at each isolated channel to the right.
- Each Spectral Channel has unique information to be entered

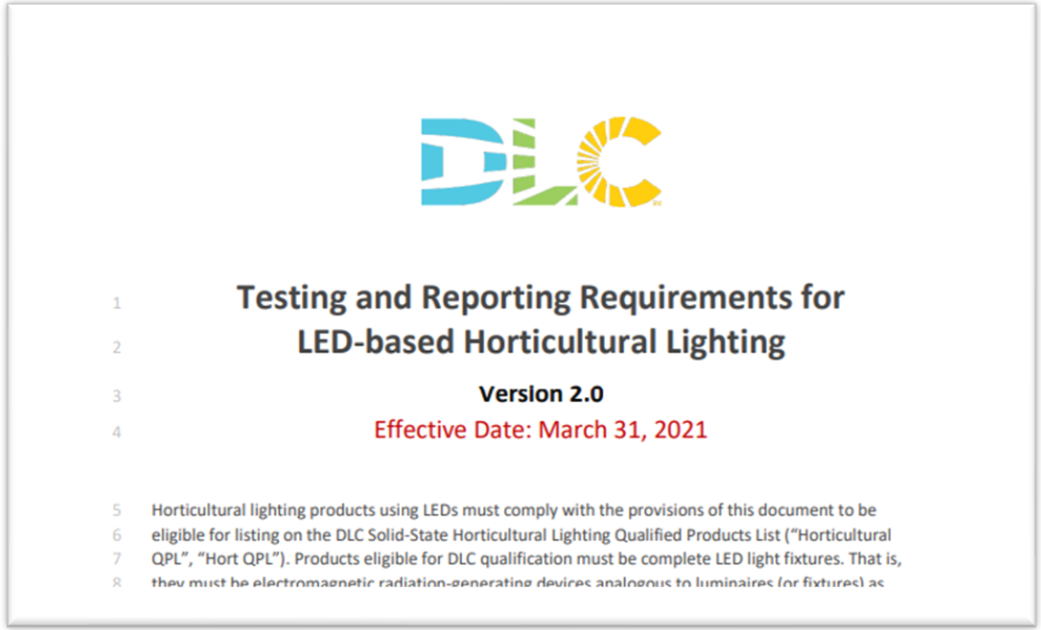
Instructions:
If product has spectral tuning capabilities for each model number, please enter spectral tuning performance at each isolated channel to the right. Please enter channel 1 information below.

Model number	Spectral Channel 1						
	Spectral Channel Name 1	Reported Photosynthetic Photon Flux (µmol/s) (400-700nm) Channel 1	Reported Photon Flux Blue (µmol/s) (400-500nm) Channel 1	Reported Photon Flux Green (µmol/s) (500-600nm) Channel 1	Reported Photon Flux Red (µmol/s) (600-700nm) Channel 1	Reported Photon Flux Far Red (µmol/s) (700-800nm) Channel 1	Reported Photon Flux (µmol/s) (280-800nm) Channel 1

Resources Available

Resources are available on the website that give more detail to testing and reporting requirements





Testing and Reporting Requirements for LED-based Horticultural Lighting

Version 2.0

Effective Date: March 31, 2021

Horticultural lighting products using LEDs must comply with the provisions of this document to be eligible for listing on the DLC Solid-State Horticultural Lighting Qualified Products List ("Horticultural QPL", "Hort QPL"). Products eligible for DLC qualification must be complete LED light fixtures. That is, they must be electromagnetic radiation-generating devices analogous to luminaires (or fixtures) as

Private Label Application Requirements for LED-based Horticultural Lighting

Version 2.0

Effective Date: March 31, 2021

Note: The DLC will begin accepting private label applications for horticultural fixtures in June 2021. Please reference the Interim Application Period Guidance for V2.0 for details.

Timelines

New Review Timelines

Application Type	Initial Review	Comprehensive Review
Single Product *Including Advanced Products*	9 Business Days	7 Business Days
Family Grouping	9 Business Days	10 Business Days
Private Label	6 Business Days	6 Business Days
Product Updates	9 Business Days	10 Business Days

Fees

New Product Application Fees

Horticultural Fixture Feature	Price
Single Product and/or Parent Product(s)	
Basic fixture*, with one LED type, one driver, no fan, and no spectral tuning	$750
Additional LED type included in fixture (Q_{90} verification)	$115
Additional driver available in fixture (lifetime & efficiency verification)	$105
Internal fan included in fixture (lifetime verification)	$45
Spectral tuning (per channel flux verification)	$125
Child Product	
Each additional family member (child) after the parent	$30
Private Label Product	
Private Label Application	$500
Each additional family member (child) after the parent	$30

Horticultural Update Application (Including Private Label Updates)	Price
Performance-affecting updates	$500
Non-radiometric and/or non-worst-case performance affecting updates	$375
Nomenclature updates	$0

QPL

NEW QPL

Search the DLC Qualified Products Lists

The DLC Qualified Products Lists are the largest verified lists of high performing and energy saving LED lighting solutions in the world. Qualified products undergo thorough vetting and review by DLC experts to ensure they meet our rigorous energy and quality requirements. Choose between solid-state lighting products, horticultural lighting products, or networked lighting controls systems below to begin your search for energy efficient lighting solutions.

Solid-State Lighting

Search over 80 categories of indoor and outdoor commercial LED luminaires, retrofit kits, and replacement lamps.

Browse Qualified Products

Horticultural Lighting

Browse the greenest horticultural lighting fixtures on the market to capture energy and cost savings for your facility.

Browse Qualified Products

Networked Lighting Controls

Find out what networked lighting controls can do for your facility while saving up to 50% more energy than LED lighting alone.

Browse Qualified Products

The DLC QPLs will have an improved look and feel, but with the same great features you're used to:

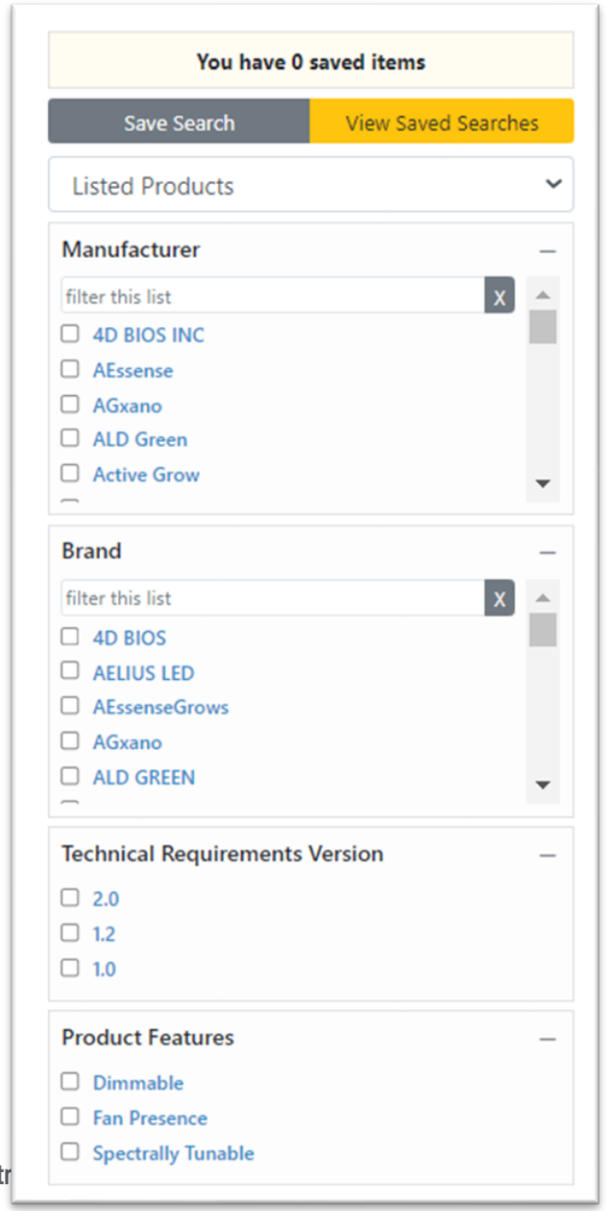
- Search for specific model or Product IDs
- Narrow your search by using all the same product filters you're familiar with
- Download specific groups of products and save searches for easy product verification

NEW features:

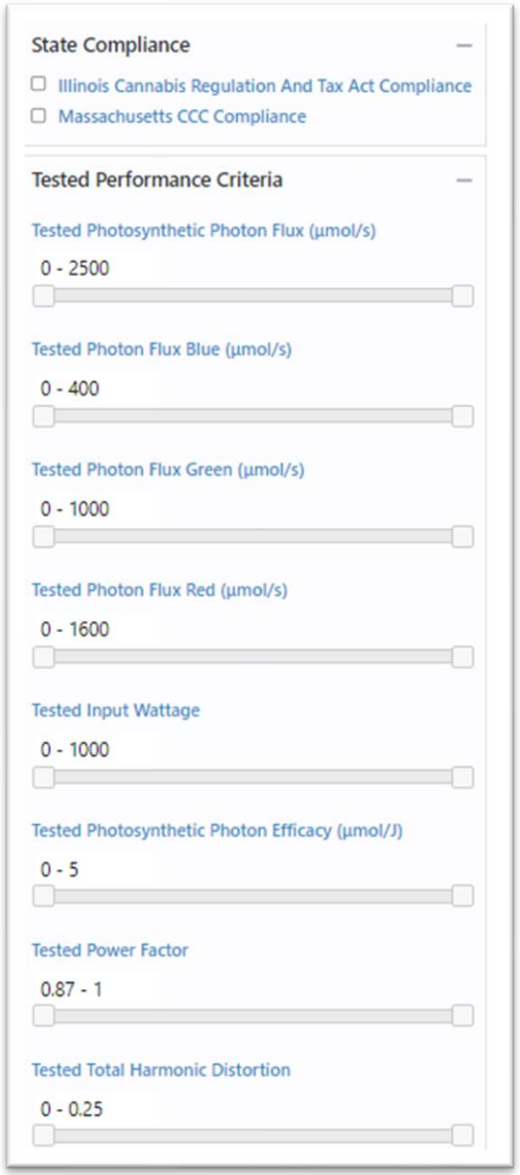
- Search products by Brand
- Print detailed product listings
- Add specific products to lists to download or go back and access later
- View improved product listings with more detailed product or system data

HORT QPL Searches/Filters

Product Info

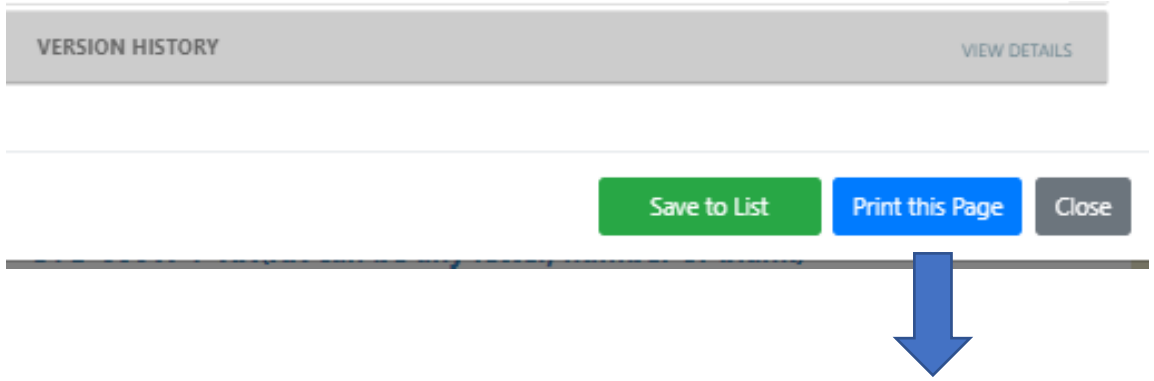


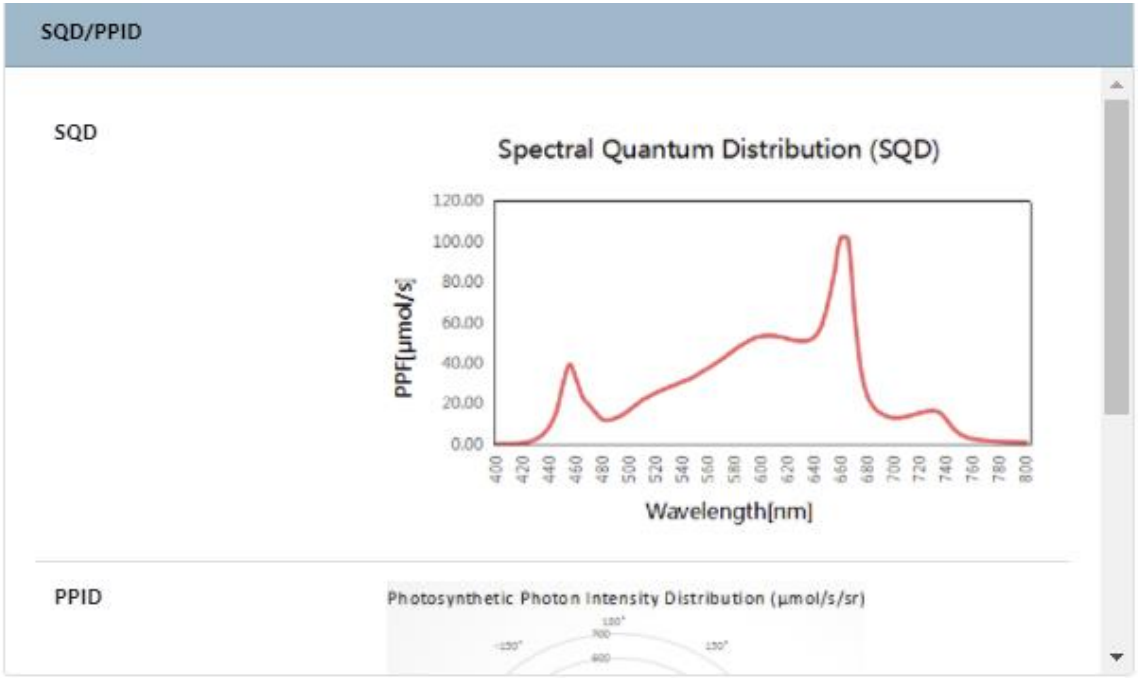
Performance Data

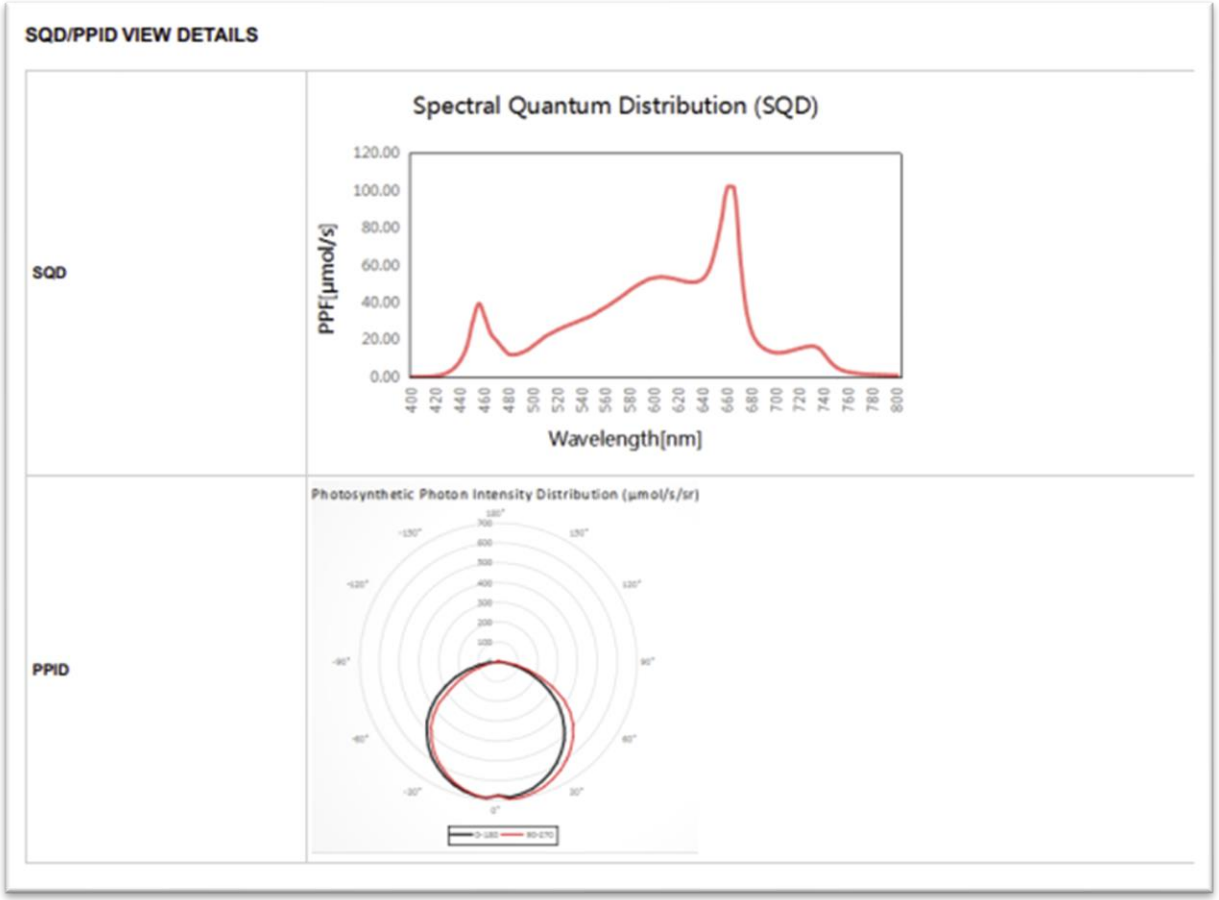


SQD and PPID Images

Images can be viewed on the QPL or the Print feature can be used to save and download these images

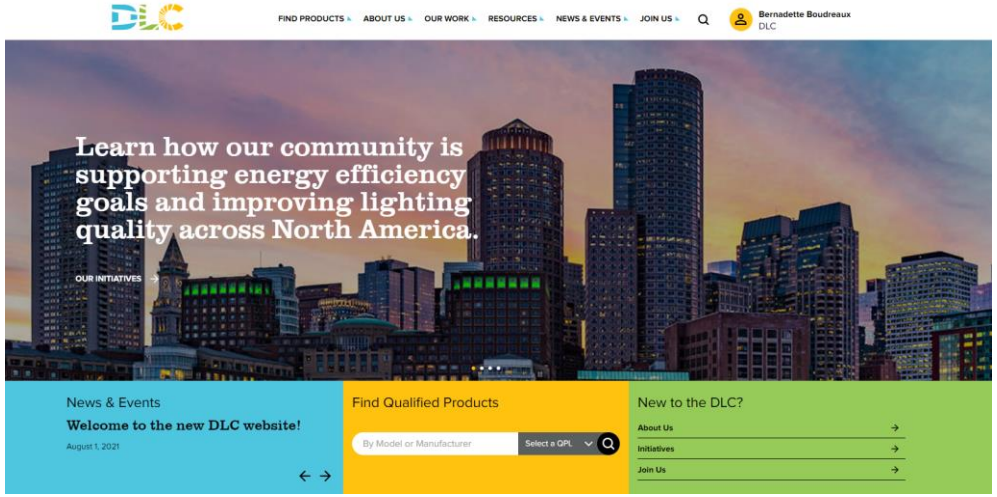






Webinar Logistics

- **Slides and recorded webinar will be posted** on the *DLC Website* www.designlights.org shortly after today's presentation



Thank you!

- For additional questions on the horticultural program or applications specifics please reach out to:

  Horticulture@designlights.org

- If you'd like to reach out to us directly our emails are:

  bboudreaux@designlights.org

  afeldman@designlights.org


Q
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