



Horticultural Lighting Interim Application Period Guidance for V2.0

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Introduction

This document explains how the V2.0 Horticultural Technical Requirements will be implemented on an **interim basis** from April 2021 to June 2021 and offers information for manufacturers and submitters on how application submission will work during this time. The DLC recognizes the importance of being able to accept V2.0 applications beginning on March 31, so the DLC has developed a hybrid application process that will be in effect for approximately 60 days. During this period, **we will accept single product and family grouping applications**. Unfortunately, we will not be able to accept V1.2 update applications or private label applications during this time. Update and private label applications will be accepted at the end of the interim period.

Interim Period Implementation Timeline

Manufacturers may submit single product and family grouping applications during the interim period. We anticipate that review times may extend to 60 days during this time; therefore, we recommend that manufacturers who do not have a critical need to list products to wait until after the interim period to submit, as review timelines will be significantly improved. A high-level timeline of the V2.0 interim and regular application periods is shown below in **Table 1**.

Table 1: Summary of V2.0 Implementation Timeline

Milestone	Date
Final V2.0 Technical Requirements released	September 14, 2020
Deadline to submit V1.2 applications	March 30, 2021
V2.0 new product applications accepted (utilizing interim application process)	March 31, 2021
Deadline to submit V2.0 new product applications under the interim process	May 15, 2021
Application processing deadline for open V1.2 applications	May 31, 2021
V2.0 new product applications accepted (utilizing regular application process)	June 1, 2021
V2.0 private label applications accepted	June 1, 2021
V2.0 update applications for V1.2 listed products and products provisionally qualified for V2.0 accepted	June 1, 2021
Deadline to submit V2.0 update applications for V1.2 listed products	November 30, 2021
Products that do not meet V2.0 delisted	December 31, 2021

V1.2 applications will be accepted until 11:59pm ET on March 30, 2021. Any applications submitted after this time must be submitted using the V2.0 interim submission process described in this document.

V1.2 applications still undergoing DLC review by the March 30th deadline will continue to be processed under V1.2. If issues are unable to be resolved for V1.2 applications by May 31, 2021, the application

reviewer will notify the submitter that the V1.2 application will be closed, and a new application must be submitted under V2.0.

During the interim application period, the DLC cannot accept V1.2 to V2.0 update applications or V2.0 private label applications. Separate guidance materials describing the update application process and the private label application process will be made available as we approach the end of the interim application period.

If you do not plan to update your products or if your products are no longer available, submitters are encouraged to voluntarily delist products by sending a formal request to horticulture@designlights.org. Products that have been delisted will still be searchable using the “Show De-Listed Products” or “Show All Products” filter on the DLC Horticultural QPL search page.

Manufacturer Guidance for V2.0 During the Interim Period

V2.0 includes the following key updates. Any technical requirements not addressed explicitly within [Technical Requirements V2.0](#) will not change, and V1.2 requirements will apply. Please see the DLC website for the [complete set of V2.0 Technical Requirements](#).

1. Maintenance of the efficacy threshold with additional reporting options

To allow the market to continue to develop, the DLC will maintain a PPE threshold of $\geq 1.90 \mu\text{mol} \times \text{J}^{-1}$ under V2.0. The DLC's -5% tolerance on efficacy will not change under V2.0. Additionally, the DLC has introduced two new optional reporting measures intended to convey flux and efficacy performance information across 280-800nm, the range of electromagnetic radiation often associated with growth and development effects in plants. These measures are not required for DLC qualification, but can be listed on the QPL if desired by applicants.

2. Alignment with ASABE (S640) terminology

Under V2.0, the DLC has updated policy language to more clearly align with the American Society of Agricultural and Biological Engineers (ASABE) ANSI/ASABE S640: Quantities and Units of Electromagnetic Radiation for Plants (Photosynthetic Organisms).

3. Alignment with UL8800

Under V2.0, products are required to be certified by an OSHA NRTL or SCC recognized body to ANSI/UL 8800 (ANSI/CAN/UL/ULC 8800), which is applicable for horticultural lighting products by that safety organization.

4. Requirement of TM-33-18 reporting

Under V2.0, the DLC will require PPID and SQD information in the TM-33-18 document format. All new and update applications are required to provide spectral and spatial distribution information in an .xml file per ANSI/IES TM-33-18. Please refer to the V2.0 [Technical Requirements](#) for details on the provisional acceptance of .IES and .SPDX files under V2.0.

5. Introduction of family grouping

Under V2.0, the DLC will accept family grouping applications for the horticultural lighting program. This option is intended to reduce testing burden and minimize total application fees to list groups of products. By identifying the worst-case models within a family group, limited



testing may be provided if the worst-case models demonstrate compliance with the Technical Requirements.

6. Introduction of private labeling

During the interim period, the DLC will not accept private label applications for the horticultural lighting program.

Qualifying New Products Under V1.2

Applications for products seeking qualification under the V1.2 Technical Requirements will be accepted until 11:59pm ET on March 30, 2021. Any applications submitted after March 30, 2021 must meet the V2.0 Technical Requirements. Submitters whose V1.2 applications are still under review as of March 30, 2021 will have until May 31, 2021 to resolve issues associated with the V1.2 application. If any V1.2 applications are still under review on May 31, 2021, reviewers will notify the submitter that the V1.2 application will be closed and a new V2.0 application must be submitted to qualify the product(s).

Qualifying New Products Under V2.0

Single Product Applications

During the interim application period, single product applications will be accepted through the DLC's application portal with no changes to current processes.

The required documentation for single product applications will remain the same under V2.0 as under V1.2 except for the following two items:

- TM-33-18 reporting is required to accompany all V2.0 single product applications by December 2021.
- Optional reporting requirements for Photon Flux (PF_{PBAR}) and Photon Efficacy (PE_{PBAR}) have been added under V2.0.

For the complete list of testing and reporting requirements for single product applications, please review the [V2.0 Requirements for Horticultural Lighting](#).

Family Grouping Applications

V2.0 introduces the option for applications to include multiple products that comply with the DLC's family grouping definition. Family grouping applications allow a pathway for a single application submission to cover a group of related products (product line). For the complete eligibility requirements for product families and for testing and reporting requirements for family grouping applications, please review the [Family Grouping Policy for Horticultural Lighting V2.0](#).

During the interim application period, submitters must compile all required documentation and send an email to horticulture@designlights.org with the documentation attached to begin a family grouping application.

Family Grouping applications are required to provide the following documentation:



- Completed family grouping application form, including reported (rated) data values for all performance metrics for all products within the group. Reported data estimates the performance of the luminaire as generally determined through means other than direct photometric testing and is provided by the manufacturer during application submission.
- Reported Data (or “Scaling”) Methodology that shows how reported performance was determined for all products in the group.
- Product specification sheet(s)
- Proof of safety certification documentation that demonstrates all products in group are certified to ANSI/CAN/UL 8800 by an OSHA NRTL or SCC-recognized body.
 - For additional information on safety certification requirements, please review the [V2.0 Requirements for Horticultural Lighting](#).
- Warranty document
- Testing for the following products in the group (please note that in some cases, a single test may suffice for multiple bullets):
 - LM-79 testing for the worst-case efficacy (lowest PPE) product within each spectral subgroup.
 - LM-79 testing for the worst-case light output (lowest PPF) product within each spectral subgroup.
 - *In-situ* Temperature Measurement Testing (ISTMT) for the worst-case thermal (hottest LED, driver, and fan (if applicable) operating temperature) product(s) in each group.
 - LM-79 testing for at least one product within each optical variation present in the overall family group.
 - Electrical testing on driver configurations of the family

Private Label Applications

The DLC will begin accepting private label applications for V2.0 listed products in June 2021.

Updating V1.2 Listed Products to V2.0

Update applications are on hold until the end of the interim application period. The DLC will begin accepting update applications for V1.2 listed products in June 2021.

Testing Products for V2.0

Single Product Applications

An example of the typical testing and reporting required under a V2.0 single product application is provided below in **Table 2**. Specific testing and reporting requirements for each of the Technical Requirements can be found in the corresponding sections of the V2.0 requirements.



Table 2: Summary of V2.0 Single Product Testing Requirements

Parameter/Attribute/Metric	Requirement	Requirement Type	Method of Measurement/Evaluation
Photosynthetic Photon Flux (Φ_p or PPF) ($\mu\text{mol} \times \text{s}^{-1}$)	n/a	Reported	(ANSI/IES LM-79) 400-700nm range, with 400-500nm, 500-600nm, and 600-700nm bins reported alongside the total
Far-Red Photon Flux ($\Phi_{p,fr}$ or PPF _{FR}) ($\mu\text{mol} \times \text{s}^{-1}$)	n/a	Reported	(ANSI/IES LM-79) 700-800nm range
Photon Flux (PF _{PBAR}) ($\mu\text{mol} \times \text{s}^{-1}$)	n/a	Reported (Optional)	(ANSI/IES LM-79) 280-800nm range
Spectral Quantum Distribution (SQD) ($\mu\text{mol} \times \text{s}^{-1} \times \text{nm}^{-1}$)	n/a	Reported	(ANSI/IES LM-79) (ANSI/IES TM-33-18) 400-800nm range
Photosynthetic Photon Intensity Distribution (I _p or PPID) ($\mu\text{mol} \times \text{s}^{-1} \times \text{sr}^{-1}$)	n/a	Reported	(ANSI/IES LM-79) (ANSI/IES TM-33-18) 400-700nm range
Photosynthetic Photon Efficacy (K _p or PPE) ($\mu\text{mol} \times \text{J}^{-1}$)	$\geq 1.90 \mu\text{mol} \times \text{J}^{-1}$	Required/Threshold	(ANSI/IES LM-79) 400-700nm range
Photon Efficacy (PE _{PBAR}) ($\mu\text{mol} \times \text{J}^{-1}$)	n/a	Reported (Optional)	(ANSI/IES LM-79) 280-800nm range
Photon Flux Maintenance, Photosynthetic (PFM _p)	Q ₉₀ $\geq 36,000$ hours	Required/Threshold	(ANSI/IES LM-80 / IES TM-21 or IES LM-84 / IES TM-28) 400-700nm range, fixture technical specification sheet, and <i>In-Situ Temperature Measurement Test</i> (ISTMT)

Parameter/Attribute/Metric	Requirement	Requirement Type	Method of Measurement/Evaluation
Photon Flux Maintenance, Far-Red (PFM_{FR})	Report time to Q ₉₀	Reported	(ANSI/IES LM-80 / IES TM-21 or IES LM-84 / IES TM-28) 700-800nm range
Driver Lifetime	≥50,000 hours	Required/Threshold	Driver technical specification sheet, fixture technical specification sheet, and <i>In-Situ Temperature Measurement Test</i> (ISTMT)
Fan Lifetime	≥50,000 hours	Required/Threshold	Fan technical specification sheet, fixture technical specification sheet
Warranty	5 years	Required/Threshold	Legal warranty terms & conditions
Power Factor (PF)	≥0.9	Required/Threshold	Benchtop electrical testing or ANSI/IES LM-79
Total Harmonic Distortion, Current (THDi)	≤20%	Required/Threshold	Benchtop electrical testing or ANSI/IES LM-79
Safety Certification	Horticultural Lighting designation by OSHA NRTL or SCC-recognized body	Required/Threshold	ANSI/UL 8800 (ANSI/CAN/UL 8800)

Family Grouping Applications

An example of the typical testing and reporting required under a V2.0 family grouping application is provided below in **Table 3**. Specific testing and reporting requirements for each of the Technical Requirements be found in the corresponding sections of the V2.0 requirements.

During the interim application period only, all parent products must provide complete testing data as shown below. In other words, the parent product tested for minimum PPF must also provide test data demonstrating that driver lifetime, power quality criterion, and flux maintenance thresholds are met. Similarly, a product tested for driver lifetime must also provide test data for photometric data, flux maintenance, and power quality criteria. ‘Normal’ family grouping testing requirements, as described in



the [Horticultural Family Grouping Policy](#), will be instated at the end of the interim application period in June 2021.

Additionally, during the interim application period, spectrally tunable products will not be accepted as family members to non-tunable variations (i.e., spectrally tunable products will require distinct applications from non-tunable variations).

Table 3: Summary of V2.0 Family Grouping Testing Requirements Under Interim Application Period

Criterion	Test Required
Minimum PPF	LM-79, including accompanying TM-33-18 document. <i>Note: A single LM-79 report may fulfill several criteria.</i>
Minimum Photosynthetic Photon Efficacy (PPE)	
Photosynthetic Photon Intensity Distribution (PPID)	
Minimum Q ₉₀ Photon Flux Maintenance, Photosynthetic (PFM _p)	ISTMT
	LM-80/LM-84
	TM-21/TM-28
Driver Lifetime	ISTMT
Fan Lifetime	ISTMT
Power Quality: Total Harmonic Distortion – Current (THDi) and Power Factor (PF)	Benchtop Electrical Testing or LM-79

Impact to Processing Timeframes

During the interim application period, review times (from initial email submission to invoice) will be about 60 days.

Application Fees

Application fees applicable during the interim application period are described in **Table 4**. These fees are effective March 31, 2021 for all applications invoiced on or after March 31, 2021.

Table 4: V2.0 Interim Application Period Fee Structure

Horticultural Fixture Feature	Fee
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

*A basic fixture does not include any additional features. An advanced product includes at least one of the following:

- More than one LED
- More than one driver
- Fans, and/or
- Spectral tuning abilities