

Pacific Gas & Electric Qualifying Products Checklist for Light Emitting Diodes (LED) Products: Version 1.2A

LED Incentives: Ensuring Long-Term Energy Savings

As a strong proponent of energy efficient innovations, the Pacific Gas & Electric Company shares the growing enthusiasm for LED's and believes LED lighting has the potential to save customers a significant amount of energy. To encourage and stay abreast of the rapid advances in LED technology, PG&E is actively investigating LED lighting technologies. Our Emerging Technologies and Incentive Program staff have worked closely with the LED industry, Department of Energy (DOE), and Environmental Protection Agency, as well as with the standards and testing community to develop Qualifying Product Requirements for Non ENERGY STAR label products.

PG&E's Incentive Approach

PG&E's goal is to ensure customers a positive experience with all products eligible for incentives and to ensure that only high-quality, high-performance, tested and verified LED products will be eligible for rebates in our incentive programs. PG&E's wants to work with the LED community to avoid such problems so that LED lighting will become a widely used option that provides long-term energy savings.

This "PG&E SSL Product List Submission Form" is to be used by manufacturers who wish to submit their solid-state lighting products to be included in the PG&E Qualified LED Product List. The submission requires the manufacturer to provide 3rd party independent data for a series of parameters such as photometric data and lifetime data.

PG&E's approval process is limited to LED lighting applications and categories not yet recognized or in effect by ENERGY STAR. Luminaires that are recognized and listed by ENERGY STAR under the LED Commercial Lighting section do not need to submit to PG&E. If your product fits any of the ENERGY STAR categories, DO NOT submit data to be eligible for the PG&E Qualified Products List; rather proceed with the ENERGY STAR process. ENERGY STAR Guidelines are available at www.energystar.gov/led

The PG&E submission form can be downloaded from PG&E website at: www.pge.com/led

Complete the excel format submission form and package all attachments per instructions that follow. Requests received with out the submission form will be rejected.

Please submit your submission to this email address: led@pge.com or mail to:

Pacific Gas & Electric Co.
Customer Energy Efficiency
Attn: Dave Alexander ms N6G
245 Market Street, Rm 645d
San Francisco, CA 94105-1702
Ph (415) 973-3091
Fx (415) 973-4961

Table 1 Summary of PG&E Non Residential Technical Requirements

Non-Energy Star Applications – Submit Product Information and Testing Results to PG&E for qualification						
1. Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	1000 Lumens	100% 0-90°, <10 % 80-90° plus meet IES Type I, II, III, IV, or V	50 L/w	< 6500K	50 cri	50,000 hrs
2. Outdoor Pole/Arm-Mounted Decorative Luminaires	1000 Lumens	95% 0-90°	40 L/w	< 6500K	50 cri	50,000 hrs
3. Outdoor Wall-Mounted Area Luminaires	300 Lumens	100% 0-90°, <10 % 80-90°	40 L/w	< 6500K	50 cri	50,000 hrs
4. Parking Garage Luminaires	2000 Lumens	>20% 60-70°, >15% 70-80°	56 L/w	< 6500K	50 cri	50,000 hrs
5. Track or Mono-point Directional Lighting Fixtures	250 L	>85% 0-90°	30 L/w	2700K, 3000K, 3500K, 4000K, 5000K	75 cri	35,000 hrs

All street lighting luminaires must include a **Fixture Wattage Label** indentifying total input wattage
 Material: .002” heat-resistant polyester with permanent adhesive, White legend 1 1/2” high on Dark Green background, .001” clear UV-inhibiting Tedlar lamination, size 3” x 3”, slit liner for ease of installation.

Required Attachments

Item	Included Check
	<input checked="" type="checkbox"/>
1. Submission form	<input type="checkbox"/>
2. Product literature and warranty	<input type="checkbox"/>
3. LM 79 Test Report	<input type="checkbox"/>
4. LM 80 Test Report & Lifetime determination Statement	<input type="checkbox"/>
5. In-situ Temperature Test Report	<input type="checkbox"/>
6. IES File LM-63	<input type="checkbox"/>

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Submission Form instructions

The data submission form is divided into two main sections: Application Contact and Luminaire Data. Request to review products for qualification received without Submission form will be rejected and required to re-submit.

The **Application Contact** section asks for the product manufacturer's company name, the brand name which the product falls under (if applicable), and a contact name and contact information for the company representative submitting this form.

The **Luminaire Data** section has five sub-sections:

1. Model Information

Model number, accessories, and intended applications: Manufacturer should describe in detail what accessories (reflector, trim, or diffuser) are used for this product model.

When submitting a luminaire family, luminaires that use different LED module(s)/array(s) or different power supplies that intend to produce different CCT or total light output may not be included in a single product family. For more information please go to ENERGY STAR® "[Manufacturer's Guidelines for submitting SSL Luminaires](#) Version 2.0".

If submitting a luminaire family, describe what other options or accessories are included in the family, and make sure all test reports are based on the product variation of the family that is the most difficult to meet the technical criteria, for example, the one that produces the least light output with the greatest input power. As a guide to estimate relative light output, typically a certain luminaire with a certain distribution produces more light output than the same luminaire with another distribution type, or a Post Top luminaire with architectural banding that produces less light output than one without banding.

At this time, the intended applications can be one of the following:

- Outdoor pole-mounted area and roadway luminaire
- Outdoor pole-mounted decorative luminaire
- Outdoor wall-mounted area luminaire
- Parking garage luminaire
- Track or mono-point directional luminaire.

2. Photometric and Electrical Data

The manufacturer needs to report both the rated and measured data and indicate which attached file acts as the data source of the rated or measured data. For example, rated data is from the product sheet and measured data is from the LM-79 report.

Luminaire's LM-79 reports consists of two test reports

1. LM-79 report for intensity distribution
2. LM-79 report for light output and color measurement
3. LM-63 IES Photometric file format

3. Lifetime Statement

The manufacturer needs to report rated life (in hours) to L_{70} and state how this rated lifetime was determined. Since LM-80 data may not be available in some cases, manufacturers are allowed to

submit alternative data to justify their L₇₀ lifetime. This should include LED Chip Manufacturer, Chip Model number and Chip manufacture date used in luminaire.

4. LM-80 Data and In-Situ Temperature Measurement Test Compliance options

The Luminaire manufacturer can choose either Option 1 or Option 2.

Option 1 is compliance through component performance. The manufacturer may submit LM-80 data along with results of an in-situ temperature measurement test (ISTMT) to verify the temperature of the LED package(s)/array(s)/module(s) when operated in the LED luminaire. LED temperature is measured at the manufacturer-designated temperature measurement point (TMP). If the LM-80 data is consistent with the ISTMT and demonstrates the required L70 lifetime, the LED Luminaire is eligible for approval.

Option 2 is compliance through luminaire performance based on 6,000 hours of temperature testing.

For complete guidelines on the LM-80 & In-Situ reporting requirements please refer to ENERGY STAR “[Manufacturer’s Guidelines for submitting SSL Luminaires](#) Version 2.0”.

5. Product Sheet and Test Reports Checklist

This is a checklist for the manufacturer to include all information as supporting materials for this submission form.

How to Submit the Form and Attachment Files

Typically, the submission e-mail should include at least these documents with the following file names:

Document	File Naming Convention
1 Submission form (Excel file)	1a_Manufacturer_SubmissionForm.xls
2 Product Sheet	2a_ProductSheet.pdf
3 Luminaire’s LM-79 reports <ul style="list-style-type: none"> a. LM-79 report for intensity distribution b. LM-79 report for light output and color measurement 	3a_LM79_Intensity.pdf 3b_LM79_Color.pdf <ul style="list-style-type: none"> • If more LM-79 reports are attached, use 3c_LM79.pdf, 3d_LM79.pdf, etc.
4 LED chip’s LM-80 report showing lumen maintenance data at different case temperatures <ul style="list-style-type: none"> • If LM-80 data are not available, please provide alternative test reports to show lumen maintenance data. 	4a_LM80.pdf <ul style="list-style-type: none"> • If LM-80 data are not available, use 4a_LumenMaintenance.pdf, and if providing more lumen maintenance reports, use 4b_LumenMaintenance.pdf, 4c_LumenMaintenance.pdf, etc.
5 UL 1598 or UL 153 report for in-situ case temperature measurement	5a_UL.pdf
6 IES file according to LM-63 format	6a_IES.ies

Please note: When filling the submission form, please do not change the Excel form itself (such as adding rows or columns).

Please note: Naming of the attached files needs to follow the rules set forth above to help us identify the files and process them as quickly as possible.