

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

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 the product's rated data and measured data for a series of parameters such as photometric data and lifetime data.

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

Typically, the submission e-mail should include at least these documents. Complete the excel format submission form and package all attachments per instructions that follow.

Attachments

Item	Included Check <input checked="" type="checkbox"/>
1. Submission form	<input checked="" 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	<input type="checkbox"/>

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	2,300 L <i>under review</i>	100% 0-90°, <10 % 80-90° plus meet IES Type I, II, III, IV, or V	50 L/w	< 6500K	70	50,000 hrs
2. Outdoor Pole/Arm-Mounted Decorative Luminaires	2,300 L <i>under review</i>	95% 0-90°	50 L/w	< 6500K	70	50,000 hrs
3. Outdoor Wall-Mounted Area Luminaires	1,300 L	100% 0-90°, <10 % 80-90°	50 L/w	< 6500K	70	50,000 hrs
4. Parking Garage Luminaires	4,000 L	>20% 60-70°, >15% 70-80°	50 L/w	< 6500K	70	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	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 ½" 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"/>
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Submission Form instructions

The data submission form is divided into two main sections: Application Contact and Luminaire Data.

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 Guide for SSL Luminaires](#)".

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. 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 L_{70} lifetime. This should include LED Chip Manufacturer, Chip Model number and Chip manufacture date used in luminaire.

4. LM-80 Data and Compliance options

If LM-80 data are used, the Luminaire manufacturer can choose either Option 1 or Option 2. Option 1 is compliance through component performance, and Option 2 is compliance through luminaire performance

If LM-80 data are not available, please provide alternative test reports to show lumen maintenance data at temperatures higher than the in-situ LED temperature.

If no LM-80 type test reports are available provide a narrative explaining applicant's determination of product lifetime.

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 <ol style="list-style-type: none">LM-79 report for intensity distributionLM-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.