

DC and PoE Lighting: Key Questions

The DLC would like your input!

If you have ideas, comments, or suggestions for how to address these issues (or any others), please send a DLC Comment Form and supporting technical justification to info@designlights.org. These key questions apply to the **Draft Testing and Reporting Requirements for Direct-Current (DC) and Power-over-Ethernet (PoE) Lamps, Luminaires, and Retrofit Kits** released for stakeholder input on April 13, 2018:

- The DLC intends to list DC/PoE products on the SSL QPL based only on the luminous efficacy of the lamp, luminaire, or retrofit kit as measured at their DC power input, not including any DC remote power supply or line losses. The DLC has proposed this approach given the variation in system architectures, lack of consistent test procedures that can be applied to all power supplies, and unfeasibility of testing a whole system due to testing equipment limitations. To assist utility and efficiency program administrators in their need to determine system impacts, the DLC will provide basic guidance on how to calculate DC/PoE system efficiency, including losses at the DC Power Supply and the DC lines, to assist them in considering incentive applications. In combination with the DC/PoE QPL listings, this will allow efficiency program administrators to calculate system load impacts on a custom basis and provide financial incentives/rebates for DC/PoE technologies. The DLC seeks feedback on this overall approach and any suggestions for alternative approaches.
- The DLC is proposing a testing approach that requires DC and PoE-based lamps, luminaires, and retrofit kits to be LM-79 tested at their lowest, highest, and mean input voltage. These multiple test points are driven by a desire from utility and efficiency program administrators to understand the potential range of power usage of these products that they will then utilize to base energy savings calculations and financial incentives on. A clause has been included whereby if the mean or highest input voltage are not more than 5% greater than the lowest acceptable input voltage of the product, then the LM-79 test at the mean and highest input voltage may not be required. The DLC seeks feedback on this approach and any suggestions for alternative approaches that may reduce the testing burden while still providing utility and efficiency program administrators with the range of performance of these products.

- The DLC proposes to list DC and PoE lamps, luminaires, and retrofit kits on the same QPL as AC lamps, luminaires, and retrofit kits. A new field would be added that identifies the system type on the QPL as “AC”, “DC”, or “PoE”. The DLC seeks input on these fields and whether additional or more granular classifications should be used such as breaking down PoE Types, separating Class 1 DC and Class 2 DC, or adding a label for non-PoE technologies carrying signals on DC cables. If so, specifically what text fields should be used?
- Additionally, the DLC proposes a new field to be added to the QPL for “DC Efficacy” to differentiate from the “AC efficacy” of the currently listed AC products. The purpose of a separate field is to acknowledge the appearance of higher efficacies of DC/PoE products, as system losses are unaccounted for in the policy and to avoid improper direct comparison between AC and DC products. The DLC seeks feedback on this approach.