DC and PoE Lighting Discussion Session

August 3, 2016
Overview

• Current Policy and Rationale
• Key Challenges
• Key Questions
• Potential Specification Options
• Submitting Proposals
Traditional Lighting System

120-277V AC Wiring

AC to DC Driver

DLC Box
Distributed Low Voltage Lighting System
(including PoE)

- 120-277V AC or 380V DC Wiring
- Remote AC/DC Power Supply or PoE Switch
- Corresponding DLC Box
- Ethernet or other DC Cable
- DC to DC Driver
Key Challenges

• Efficiency of the system is most important for DLC Member programs
• Losses are dependent upon system parameters
  – Line losses – cable and length
  – Remote AC/DC power supply – loading conditions
• Information published in QPL could be misleading
  – Performance of DC luminaire only excludes system losses
  – AC luminaire performance is not comparable to DC performance if system efficiency is not included
• Ease of use for Member programs
  – Differing specifications between AC and DC products could require administrative challenges
Key Questions

• Should DLC require DC luminaires with remote power supplies and wiring/distribution?
• Should DLC evaluate typical or worst case system? And how do you define either?
• How does DLC evaluate performance at part load?
• What should be qualified? Luminaire or system?
Option: Test luminaire, ignore system

120-277V AC or 380V DC Wiring

Remote AC/DC Power Supply or PoE Switch

Ethernet or other DC Cable

DC to DC Driver

LM-79 test to meet current DLC requirements
Option: Test system

120-277V AC or 380V DC Wiring

Remote AC/DC Power Supply or PoE Switch

DC to DC Driver

Ethernet or other DC Cable

LM-79 test to meet current DLC requirements
Option: Test components

120-277V AC or 380V DC Wiring

Remote AC/DC Power Supply or PoE Switch

Separate test for efficiency

Calculate line losses

Ethernet or other DC Cable

LM-79 test of luminaire, adjust with tested power supply efficiency and calculated line loss

LM-79 test

DC to DC Driver
• DLC seeking proposals from stakeholders
• Send to info@designlights.org
• Strong proposals will:
  – Take into account and address challenges discussed today
  – Applicable to various systems (i.e. not limited to proprietary designs)
  – Ideally include supporting data to aide in review