Photography by Ryan Dravitz

DESIGNLIGHTS CONSORTIUM

2016

STAKEHOLDER MEETING

August 2–3 • Denver, CO

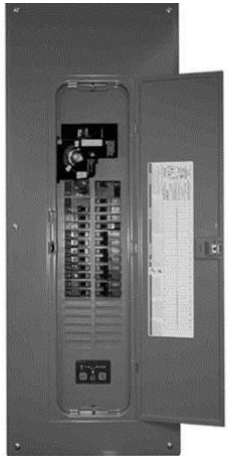
DC and PoE Lighting Discussion Session

August 3, 2016

Overview

- Current Policy and Rationale
- Key Challenges
- Key Questions
- Potential Specification Options
- Submitting Proposals

Traditional Lighting System

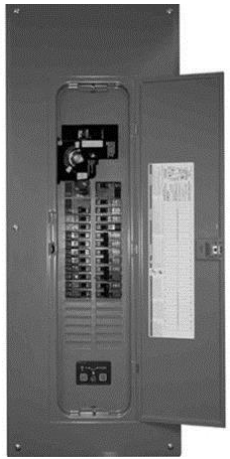


120-277V AC
Wiring

AC to DC Driver

DLC Box

Distributed Low Voltage Lighting System (including PoE)



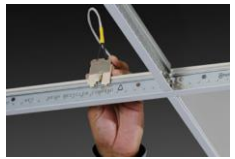
120-277V AC
or 380V DC
Wiring

Corresponding DLC Box

Remote AC/DC
Power Supply
or PoE Switch

Ethernet
or other
DC Cable

DC to DC Driver



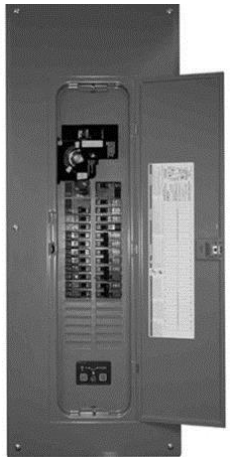
Key Challenges

- 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



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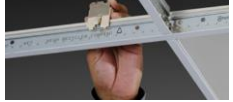
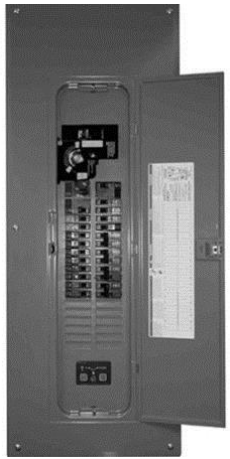


DC to DC Driver

LM-79 test to meet current DLC requirements

Option: Test system



120-277V AC
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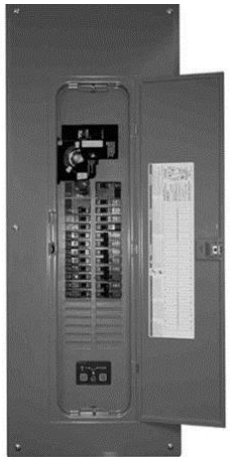
DC to DC Driver

LM-79 test to meet current DLC requirements

Option: Test components



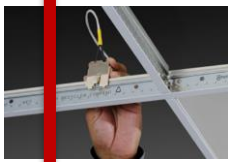
120-277V AC or 380V DC Wiring

Separate test for efficiency

Remote AC/DC Power Supply or PoE Switch

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