2019 DLC

April 1 - 3 • St. Louis, MO

STAKEHOLDER MEETING

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Discussion Session:
Controllability

Objectives and Desired Outcomes

Session Objectives:

- Shared understanding of the Controllability policy draft
- Shared understanding of the main comment themes and outstanding items
- Discuss feedback and ways to address main comment themes and outstanding items

Desired Outcome:

- Actionable feedback to inform Draft 2

Agenda

- Welcome and Introduction
- Introduction: Problems and Proposed Solutions
  - What we're trying to do
  - How we're trying to do it
  - How we're going to work together today
- Topic Reviews
- Wrap up, reflection, and review of next steps in the policy development process

Technical Team:

Damon Bosetti
DLC

Dan Mellinger
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Facilitation Team:

Axel Pearson
DLC

Liesel Whitney-Schulte
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Notes and Records Team:

Brady Nemeth
DLC

Lani Malapan
DLC

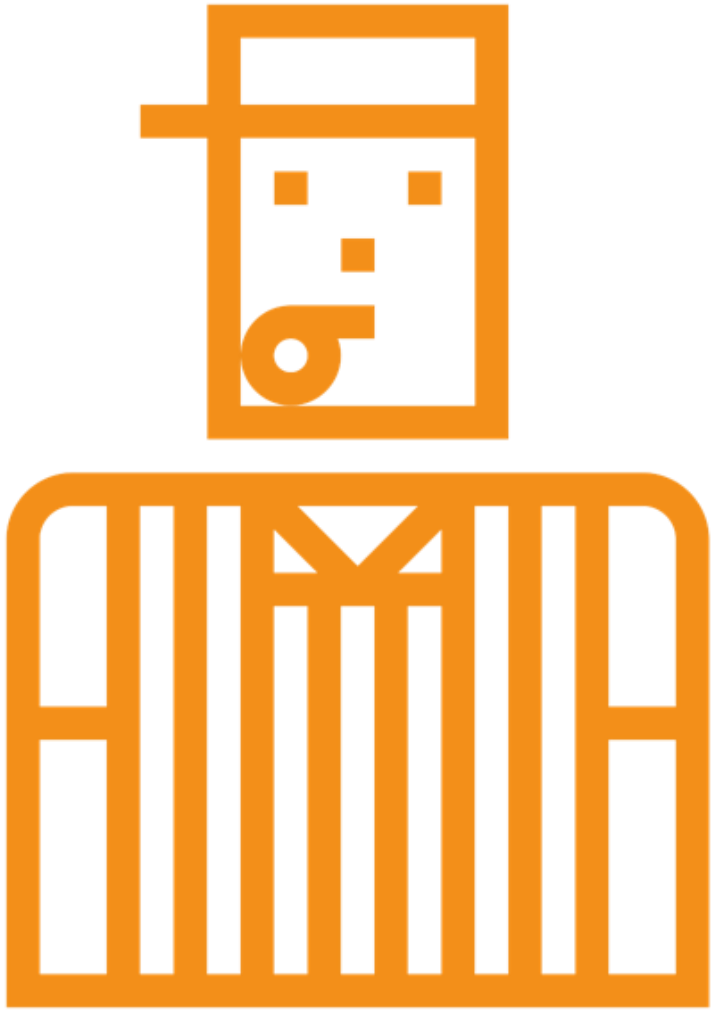
Audience

- Different stakeholder groups provided different feedback

- Who we have in this room?
  - Manufacturers
  - Researchers
  - Specifiers
  - Labs
  - Utilities
  - Distributors
  - Others

Ground Rules

- Speak up
- Let's hear from everyone
- Be respectful
- Facilitators are the referees!



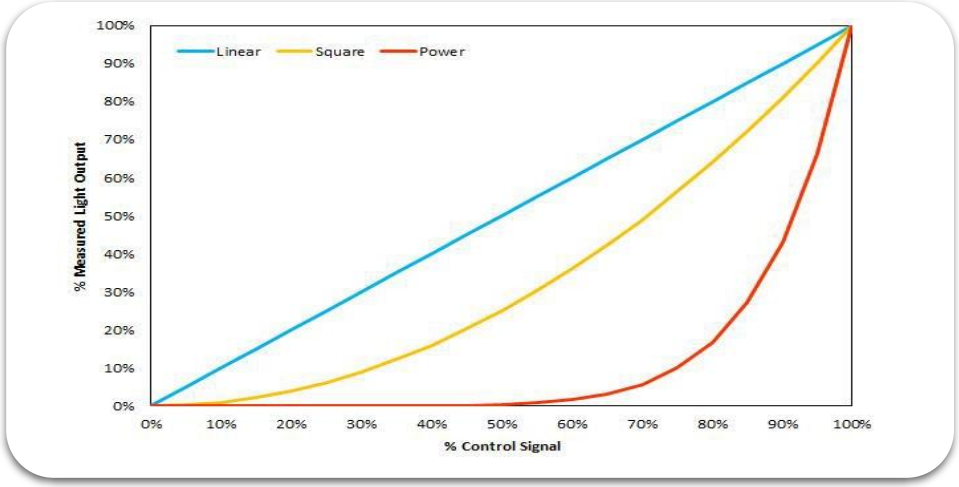
Why Are We Here?

- We want a policy that . . .
- Increases the ability to control lights . . .
  - By making more of them controllable, and . . .
  - By making it easier to understand how to control them.
- Is understandable.
- Does not add undue burden.
- Is simple to implement from . . .
  - The testing perspective.
  - The review perspective.

Draft Testing and Reporting Requirements

Metric	Current V4.4 Requirements	Draft Requirement	Method of Evaluation
Dimming	Reporting of dimming capability required for all products	Dimming capability required for all products, with category exceptions. Continuous dimming required for indoor, continuous or stepped dimming for outdoor.	Product documentation

- Dimming section on QPL may show:
  - Continuous
  - Stepped
  - Exempt



Draft Testing and Reporting Requirements

Metric	Current V4.4 Requirements	Draft Requirement	Method of Evaluation
Integral Controls	Reporting optional, with Yes/No answers of whether product has integral controls (Reporting required for Premium).	Required to report, with additional information provided	Product documentation

- Integral Controls section on QPL may show:
  - Daylight harvesting
  - Occupancy sensing
  - Energy metering
  - Temperature
  - ?

Draft Testing and Reporting Requirements

Metric	Current V4.4 Requirements	Draft Requirement	Method of Evaluation
Controls Compatibility	None	Required to report method of inducing dimming in the product.	Product documentation

- Controls Compatibility section on QPL may show:
  - Dimming signal type
  - Dimming signal communication method

Comment Categories

Main Comment Trends

- Dimming requirement will present challenges
- Dimming requirements for lamps are unreasonable / unrealistic
- Dimming exemptions need further consideration
- Dimming and flicker will have interactive effects
- Integral controls reporting
- Miscellaneous concerns

Dimming requirement will present challenges

Comments

- Dimming should not be required
- Several comments that support continued reporting, potentially with enhanced reporting
- Most dimming fixtures sold are not actually dimmed in the field
- Too many products will be delisted
- Lack of a standard will create confusion

Icebreakers

- Where can we find stats on actual field usage of dimming?
- There are LOTS of dimming standards. If we require one or more of them, what does this do to test burden?
- If we do not require dimming, but ask for enhanced reporting about it, what might be useful reporting?

Dimming requirements for lamps are unreasonable / unrealistic

Comments

- The vast majority of lamps will be eliminated from the QPL
- Non-dimmable lamps will still sell absent DLC
- The price for lamps would be forced artificially higher by requiring functionality that will not be used
- Would need a “reference ballast”
- The vast majority of the installed base, into which retrofit lamps and kits would go, is not dimmable

Icebreakers

- How many reference ballasts would be required?
- If there is a power threshold, are there special use cases that would penalize high-power lamps?
- What *is* the actual dimming rate on the existing lamp-and-socket base?

Dimming exemptions need further consideration

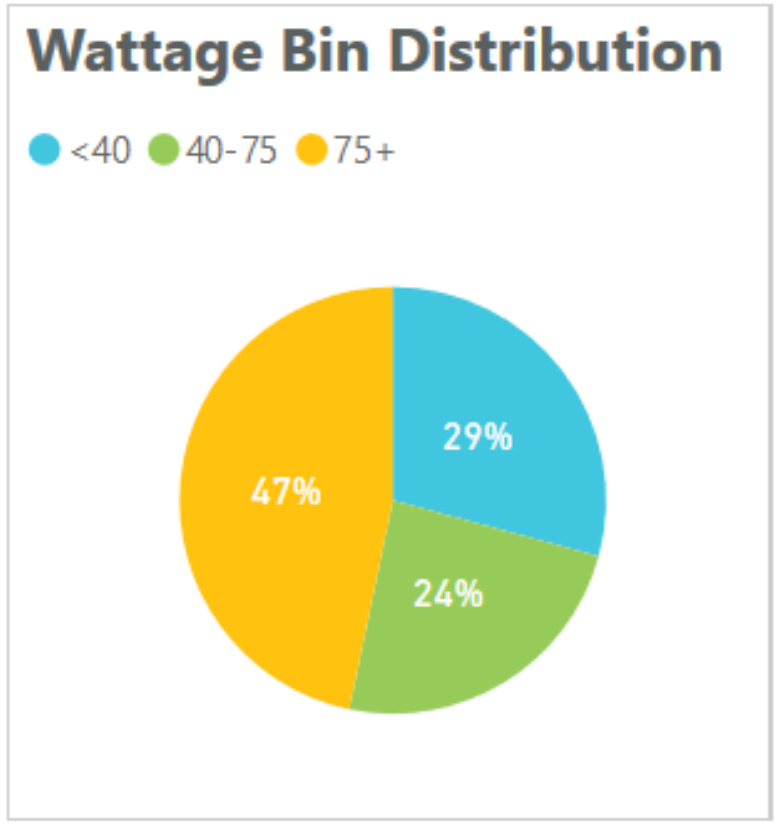
Comments

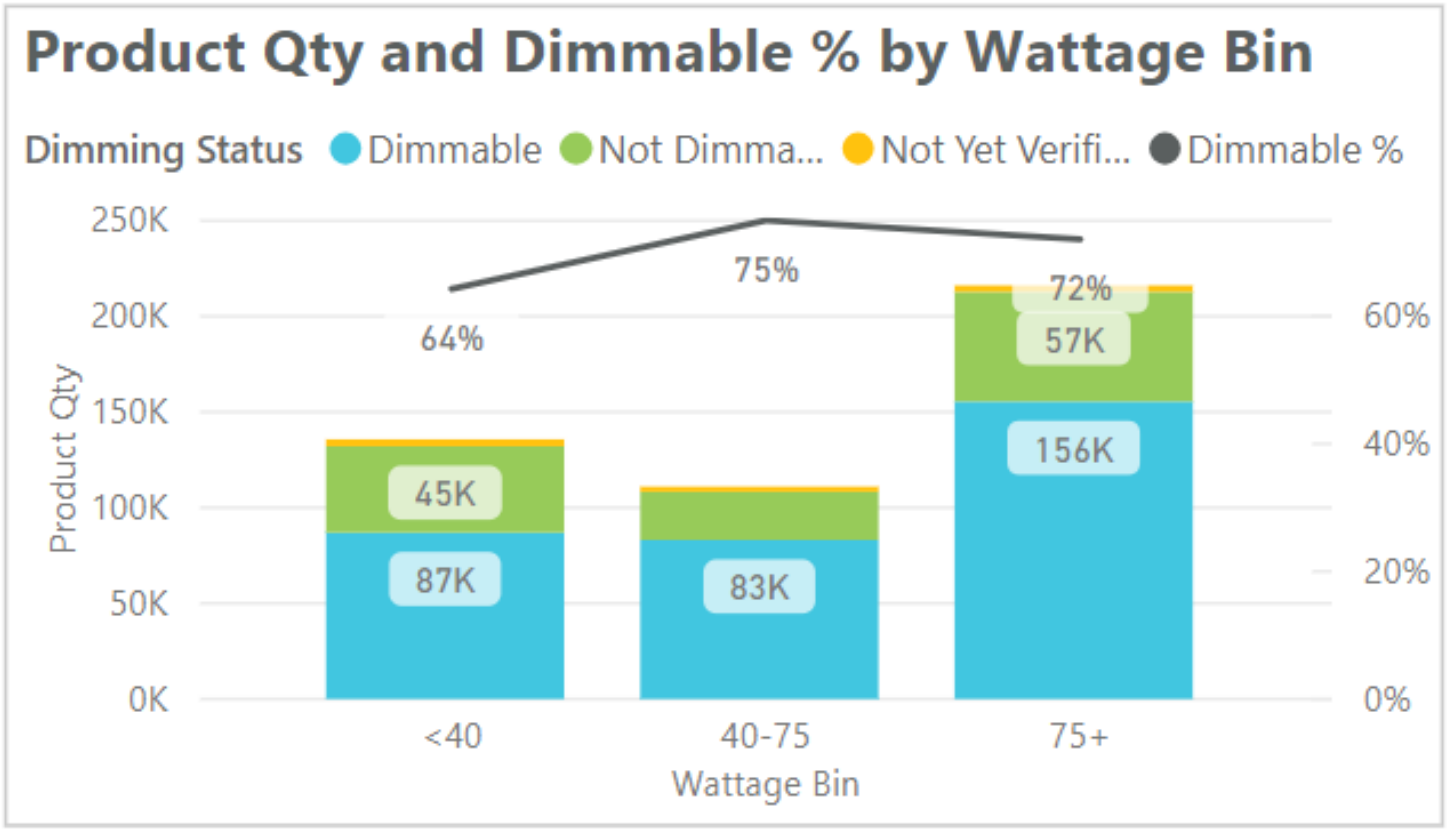
- Exempt low power products, potentially by PUD; see CA Title 24
- Exclude certain PUDs like bollards, decorative, and MogLEDs
- Exclude all outdoor; the selection of dimmable drivers is inadequate
- Step dimming should be allowed for indoor PUDs
- Exempt dimming by application, like retail sales floor or industrial
- Create a tier structure for dimming (no dimming, limited dimming, advanced dimming)

Icebreakers

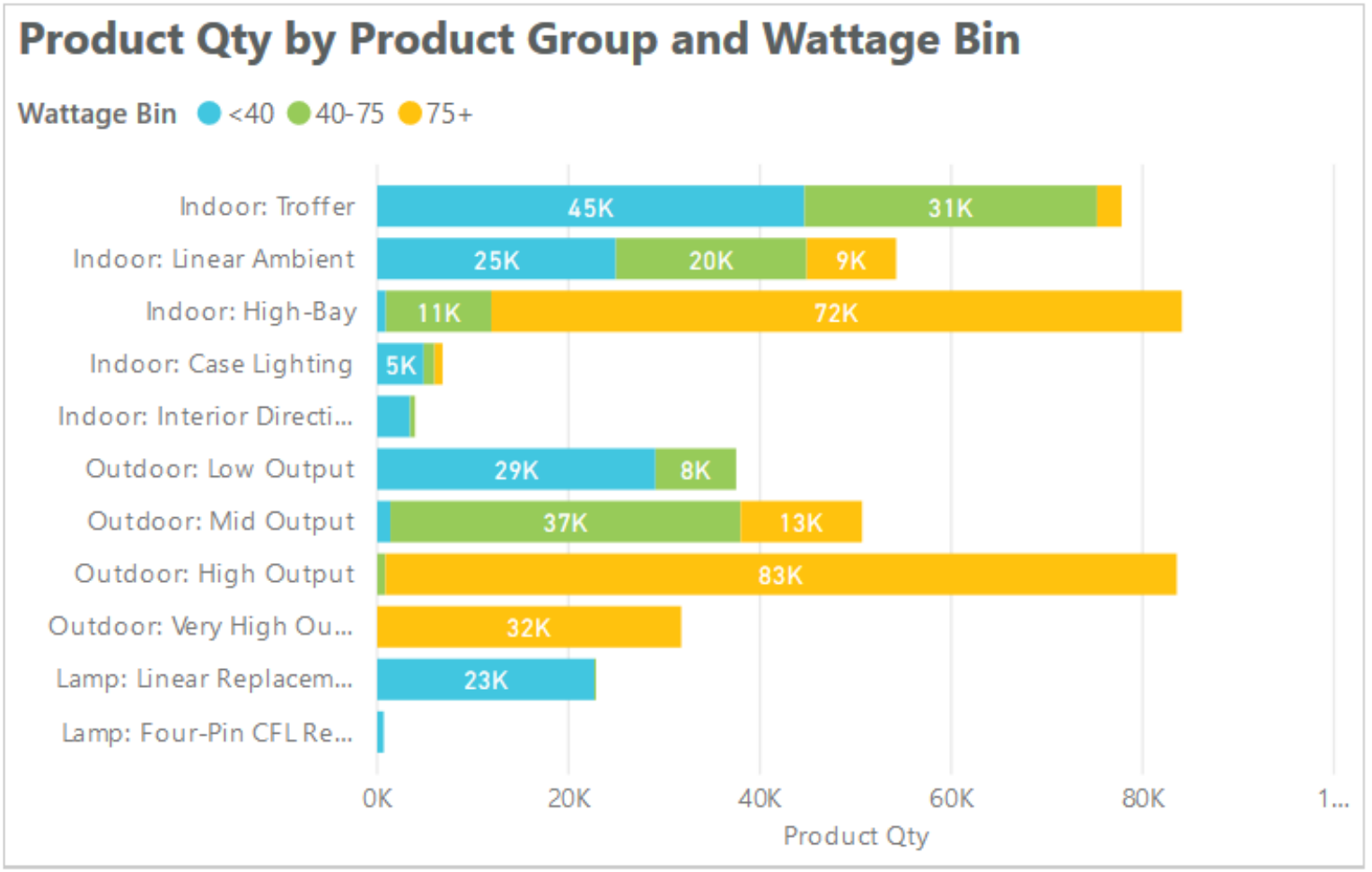
- Let's look at power and PUDs.

Dimming exemptions need further consideration

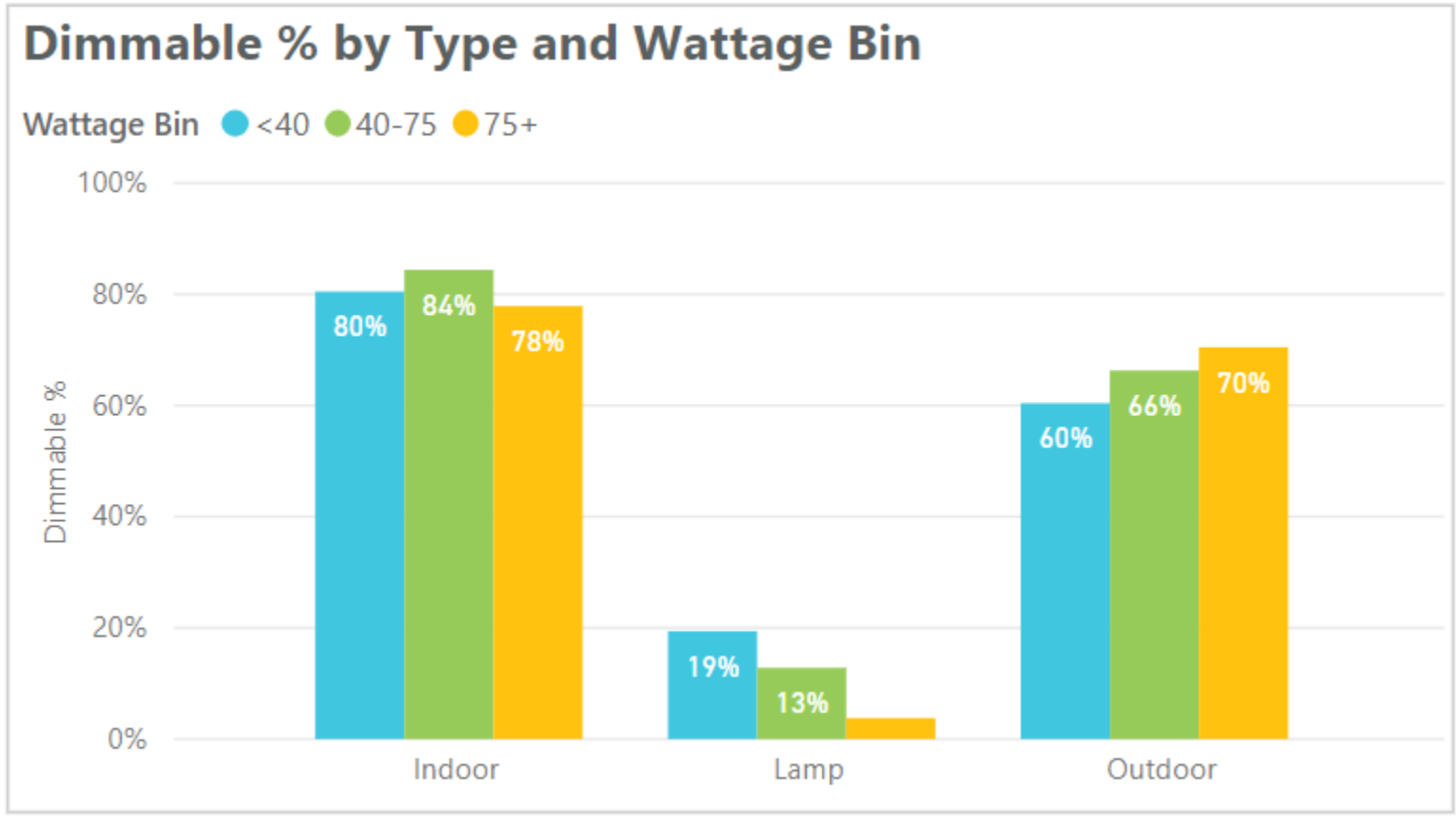




Dimming exemptions need further consideration



Dimming exemptions need further consideration



Dimming exemptions need further consideration

Dimmability by Product Type and Wattage Bin

Type	<40	40-75	75+	Total
Indoor	**80%**	**84%**	**78%**	**81%**
Indoor Luminaires	**80%**	**85%**	**78%**	**81%**
Indoor: Troffer	88%	85%	76%	**86%**
Indoor: Linear Ambient	80%	84%	87%	**83%**
Indoor: High-Bay	87%	85%	77%	**78%**
Indoor: Case Lighting	29%	94%	92%	**45%**
Indoor: Interior Directional	81%	75%	100%	**80%**
Indoor Retrofit Kit	**82%**	**81%**	**73%**	**81%**
Indoor: Troffer	82%	77%	59%	**81%**
Indoor: Linear Ambient	81%	88%	90%	**84%**
Indoor: High-Bay	88%	96%	63%	**70%**

Type	<40	40-75	75+	Total
Outdoor	**60%**	**66%**	**70%**	**68%**
Outdoor Luminaires	**60%**	**66%**	**71%**	**68%**
Outdoor: Low Output	60%	61%	33%	**61%**
Outdoor: Mid Output	61%	68%	63%	**66%**
Outdoor: High Output	100%	61%	69%	**69%**
Outdoor: Very High Output			76%	**76%**
Outdoor Retrofit Kit	**61%**	**62%**	**62%**	**62%**
Outdoor: Low Output	59%	62%		**60%**
Outdoor: Mid Output	100%	64%	68%	**66%**
Outdoor: High Output		28%	62%	**61%**
Outdoor: Very High Output			62%	**62%**

Type	<40	40-75	75+	Total
Lamp	**19%**	**13%**	**4%**	**17%**
Four Pin-Base Replacement Lamps for CFLs	**33%**			**33%**
Lamp: Four-Pin CFL Replacement	33%			**33%**
Linear Replacement Lamp	**20%**	**15%**		**20%**
Lamp: Linear Replacement	20%	15%		**20%**
Mogul (E39) Screw-Base Replacements for HID Lamps	**9%**	**13%**	**4%**	**8%**
Indoor: High-Bay		4%	6%	**5%**
Outdoor: Low Output	10%	8%		**10%**
Outdoor: Mid Output		14%	4%	**12%**
Outdoor: High Output			2%	**2%**
Outdoor: Very High Output			50%	**50%**

Dimming exemptions need further consideration

Comments

- Exempt low power products, potentially by PUD; see CA Title 24
- Exclude certain PUDs like bollards, decorative, and MogLEDs
- Exclude all outdoor; the selection of dimmable drivers is inadequate
- Step dimming should be allowed for indoor PUDs
- Exempt dimming by application, like retail sales floor or industrial
- Create a tier structure for dimming (no dimming, limited dimming, advanced dimming)

Icebreakers

- Let's look at power and PUDs.
- Let's put a price on that dimming exemption. What does that energy pencil out to over 10 years?
- Are outdoor drivers less dimmable than interior drivers?
- What other PUDs should be exempted?
- Are application-specific dimming requirements enforceable by DLC?

Dimming and flicker will have interactive effects

Comments

- Dimming can introduce flicker
- Need to specify the lowest level of stable dimming

Icebreakers

- Require flicker standards compliance at full power and . .
  - 20%?
  - Min dim?
- Require reporting of lowest stable min dim? How do we define “stable”?

Integral controls reporting

Comments

- Keep options limited to avoid confusion
- Maintain support for “wild-carding” to avoid additional product listings
- Multiple product listings could increase burden on the manufacturers and create confusion on which model is on the QPL
- Document compatibility with NLC system(s)
- DLC should not differentiate control capability
- Report on sensors separately from controls
- Report on dimming protocol, compatible dimmers, and dimming performance

Icebreakers

- What are examples of reporting that is too detailed?
- What are examples of reporting that is not detailed enough?
- What should we present as picklist options?
- What should we *not* present as picklist options?
- Should we allow sensors as a separate subunit? They may or may not be explicitly tied to controls.

Miscellaneous concerns

Comments

- Additional controllability aspects should be addressed
  - Stand-by power
  - Color changing
  - Lumen maintenance correction
  - Dimming protocol
  - ANSI C136.41 (pin usage)
  - Ease of use

Icebreakers

- Stand-by power – who defines and tests for this? Does this matter?
- Should we allow for self-declaration of dimming protocol? This could encourage less friction and allow for the wide range of available options.
- How does one define “ease of use”?

Next Steps

Now:

- We will summarize this group's comments for today's report to the conference

Next Days:

- We continue to collect your feedback throughout the conference

Coming Months:

- We will develop draft 2 for the V5.0 policy, and will reach out for targeted follow-up conversations

Thank You!

Questions? Feedback?

Please feel free to find us throughout the conference
or
Send questions and comments to:

Comments@designlights.org

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