

## DOCKETED

<b>Docket Number:</b>	16-AAER-04
<b>Project Title:</b>	2016 California Quality LED Lamp Specifications
<b>TN #:</b>	214840
<b>Document Title:</b>	LED voluntary spec presentation
<b>Description:</b>	VOLUNTARY CALIFORNIA QUALITY LIGHT EMITTING DIODE (LED) LAMP SPECIFICATION, VERSION 3.0
<b>Filer:</b>	Harinder Singh
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	12/16/2016 2:18:12 PM
<b>Docketed Date:</b>	12/16/2016

# **VOLUNTARY CALIFORNIA QUALITY LIGHT EMITTING DIODE (LED) LAMP SPECIFICATION, VERSION 3.0**

California Energy Commission  
Business Meeting

December 14, 2016

Soheila Pasha  
Appliances and Outreach and Education Office  
Efficiency Division



# Purpose

- Establish recommended levels of performance for LED lamps used in applications traditionally served by incandescent lamps.
- Match consumer expectations for light quality and performance.
- Avoid poor performance of early compact fluorescent lamps (CFLs).



# Previous Specifications

- Version 1.0 published December 2012.
  - Based on draft ENERGY STAR specification plus additional metrics.
  - Matched or exceeded most ENERGY STAR requirements.
- Version 2.0 adopted November 2014.
  - Aligned light distribution metrics with ENERGY STAR Product Specification for Lamps, version 1.1.



# Voluntary Specification Version 3.0

- Aligns with mandatory Title 20 appliance efficiency standards previously adopted by the Commission and effective on January 1, 2018.
- The goals of this alignment are:
  - To prepare the market in advance of mandatory efficiency standards.
  - To accelerate the current market's shift away from less efficient technologies.



# Voluntary Specification Version 3.0

- Scope includes additional lamps frequently used by consumers.
- Examples:
  - Candelabras with decorative light distribution.
  - LED downlight retrofit kits with qualifying base.
- Lamps that are not included could be considered for rebates under ENERGY STAR.



# Voluntary Specification Version 3.0

- New efficacy requirement using a compliance score based on lamp efficacy and Color Rendering Index (CRI).
- Light distribution requirements updated:
  - Omnidirectional – ENERGY STAR v.2.0
  - Decorative – ENERGY STAR v.1.1
- Allows wider range of correlated color temperature (CCT).
- Duv and color metrics aligned with T20.



# Effective Dates

- Voluntary specification has two tiers of metrics.
  - Voluntary specification Tier 1 effective prior to January 1, 2018.
  - Voluntary specification Tier 2 effective from January 1, 2018 to June 30, 2019.
- Implementation addressed by rebate programs, but may include “phase-in”.





# Public Comments

- Public comments received from NEMA, ZigBee Alliance, TCP, Silicon Labs, OSRAM, Philips Lighting, and two individuals on behalf of testing laboratories.
- Staff made some modifications:
  - Provide smoother transition to new test procedure, similar to U.S. DOE provisions.
  - Several clarifications and corrections made.
- No change recommended where comments requested deviation from alignment with T20.



# Questions?

