CFL Color Roundtable Meeting

Summary of Meeting
Agenda & Discussions

By

Conan O’Rourke
Technical Director
The Lighting Research Center
Increasing Market Acceptance of CFLs

- The Lighting Research Center, in cooperation with the ENERGY STAR® program under the U.S. Environmental Protection Agency and the U.S. Department of Energy, investigated methods of increasing market acceptance of screw-base compact fluorescent lamps (CFLs).
CFL Color Roundtable Meeting

Scope

– Perform limited laboratory measurements
  • Color
  • Warm-up time

– Verify the ranking of the issues/barriers associated with consumer acceptance of CFLs

– Suggest actions to overcome the identified issues.
CFL Color Roundtable Meeting

Laboratory Measurements

- CFLs Evaluations
  - Warm-up time
  - Color
    - Chromaticity Coordinates
    - Correlated Color Temperature (CCT)

Focus Groups

- In-home observations
- In-focus group facility discussions
- Survey of observations
- Consumer discussions
- Table lamps demonstration
CFL Color Roundtable Meeting

Results

• Wide variation in CCT and chromaticity coordinates
  – Between manufacturers
  – Within manufacturers

• CCT is not an unambiguous description of color
CFL Color Roundtable Meeting
CFL Color Roundtable Meeting

• Color
  – Need to have greater precision in color specification
    • CCT is not a good metric
  – Communication needs to be simpler
    • Avoid using industry jargon
CFL Color Roundtable Meeting
• Current Status
  – NEMA submitted proposed “hockey stick”, which is being evaluated by LRC, EPA, and DOE

For more information, please go to www.lrc.rpi.edu
Response & Proposal
From Lamp Manufacturers

By

Peter Bleasby
Director of Industry Relations and Standards
Osram Sylvania
Response To The Response

By

Conan O’Rourke
Technical Director
The Lighting Research Center

Actually A Perspective On CFL CCT Tolerances
4 Step Ellipse

- Cycle 2
- Cycle 3
- Cycle 4
- Cycle 5
5 Step Ellipse

- Cycle 2
- Cycle 3
- Cycle 4
- Cycle 5
6 Step Ellipse

- Cycle 2
- Cycle 3
- Cycle 4
- Cycle 5
7 Step Ellipse

- Cycle 2
- Cycle 3
- Cycle 4
- Cycle 5
7 Step Ellipse Region

- Cycle 2
- Cycle 3
- Cycle 4
- Cycle 5
Percentage of CFLs Eliminated

MacAdam Ellipses

- Strict MacAdam Ellipse
- Hockey stick
Demonstration
Questions to Answer

• If a color difference is noticeable, how much is acceptable
• Does it matter which direction?
  – Green vs purple?
  – Blue vs red?

• What is the impact on efficacy?
  – How much green is acceptable?