



ENERGY STAR CFL Criteria – Version 4.0

David Ryan
Glen Salas
D&R International

2009 ENERGY STAR Lighting Partner Meeting
San Antonio, TX
March 17–19, 2009

Agenda



1. Review of ENERGY STAR 4.0 Requirements
 - Significant Changes from 3.0
2. Transition from 3.0 to 4.0
 - Grace Period and Qualified Product Lists
3. Independent Third Party Testing and Verification Program
 - Update on Cycle 1
4. Questions!

Changes Under 4.0



- Major Changes
 - High-heat testing for reflector lamps
 - 3rd Party Testing
 - Tightening Color Requirements
 - Expanding criteria to include candelabra-base products
 - Mercury limits & labeling
 - Lifetime for bare lamps (effective December 2, 2009)
- Minor Changes
 - Revising efficacy levels, tightening lumen maintenance, CRI tolerances, run-up time for non-amalgam

High-Heat Testing for Reflector Lamps

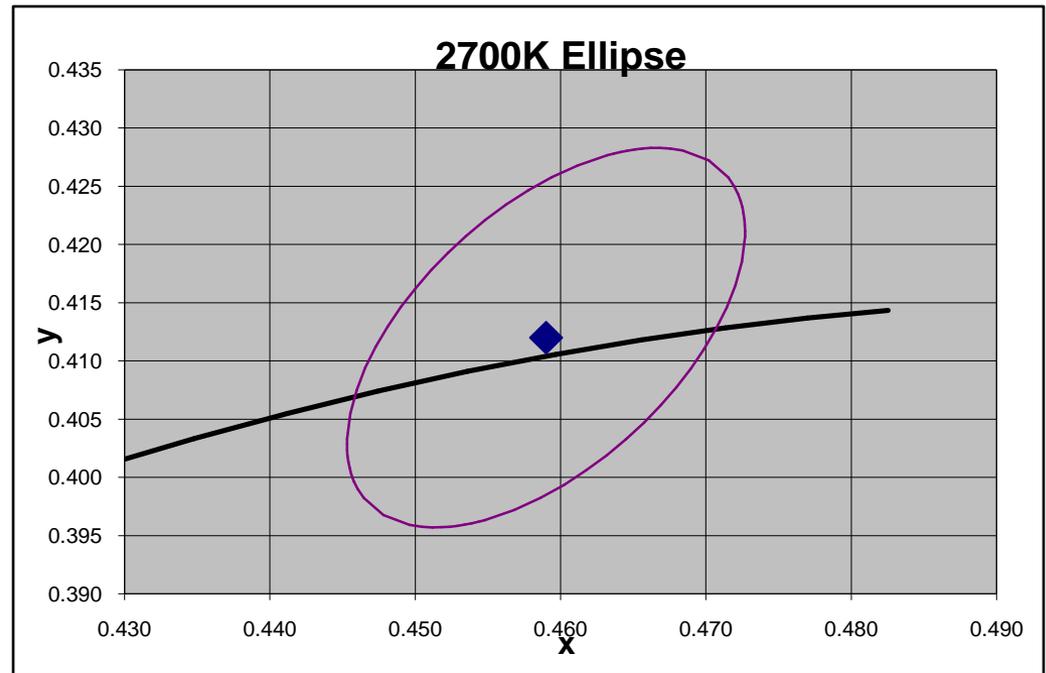


- Two test procedures available for partner use
- Traditional CFL photometry and lifetime testing done in 25 °C ambient, new tests designed to better mimic ambient conditions in recessed downlights (~50 °C)
- Requirements include both initial light output and lifetime testing
- Reflector lamps explicitly marketed only for use in outdoor applications are exempt from high-heat testing

CCT and Chromaticity



- Previous criteria allowed any CCT, no tolerance limitations
- New criteria harmonizes with ANSI standards; allows only 6 discrete nominal CCT
- Required submission of x,y chromaticity data
 - 9 of 10 samples must fall within a 7-step MacAdam ellipse of the declared CCT



Mercury Limits & Labeling



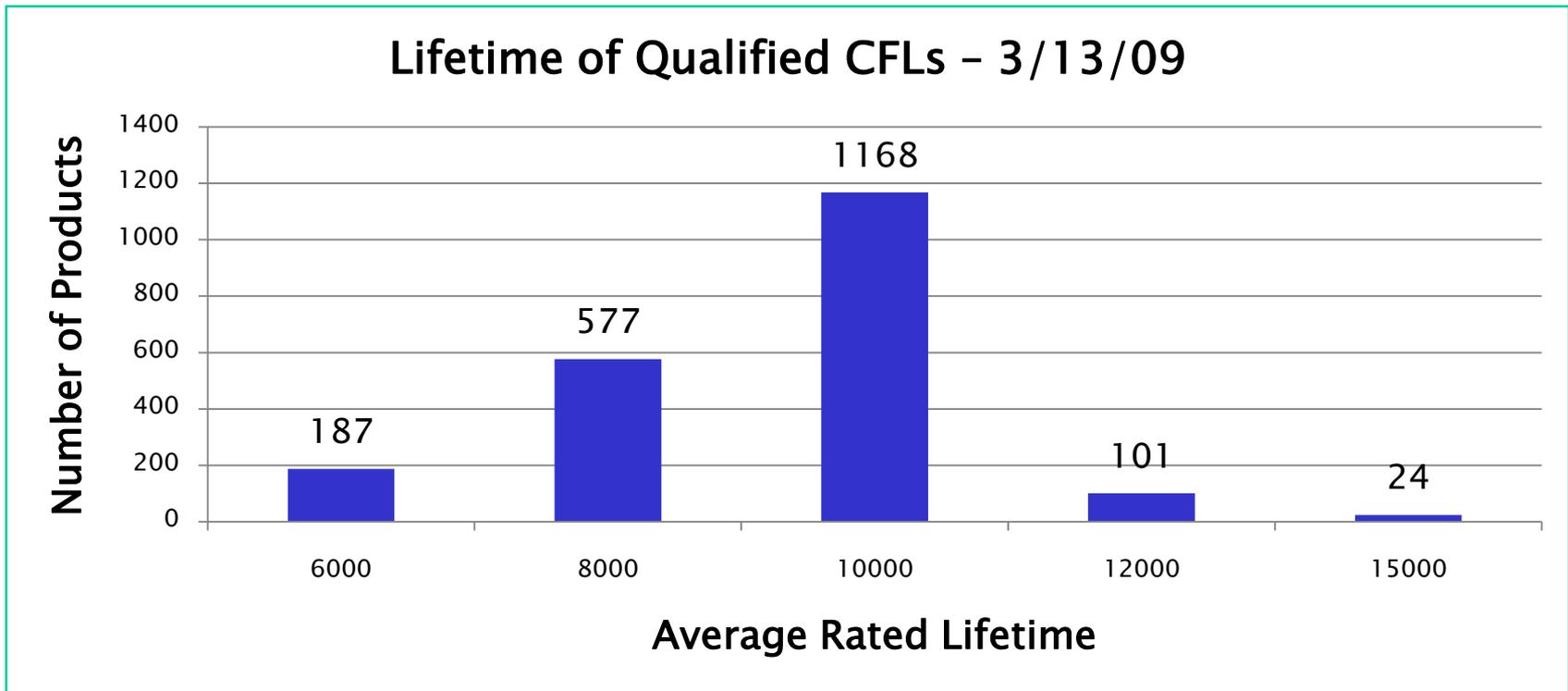
- Requires partners to be party to the NEMA Voluntary Industry Commitment to Limit Mercury Content in Self-Ballasted CFLs
 - <25 W must use ≤ 5 mg Hg
 - 25W to <40W must use ≤ 6 mg Hg
- Also adopts labeling requirements

 LAMP CONTAINS MERCURY,
Manage in Accord with Disposal
Laws, See: www.lamprecycle.org
or call 1-800-555-0050

Lifetime



- Increases minimum lifetime requirement for bare spiral lamps to 8000 hours
 - Effective December 2, 2009
 - No Grace Period



Transition – Grace Period



- Official criteria change on December 2, 2008
 - New products must meet 4.0
 - Products able to be manufactured under 3.0 up until that date
 - 4.0 criteria explicitly does not allow grandfathering
- On October 17, 2008, the Department of Energy extended grace period until **July 1, 2009**.
- Concerns over economic slowdown. Goal of grace period is to not unfairly burden manufacturers, while providing for effective transition.

Transition – Status of Qualified Product Lists



- In early February 2009, products list transitioned to identify only those meeting the current criteria
 - I.e. those that meet 4.0
- Products under transition are currently noted with a disqualification date of 7/1/09
 - Indications that many of these products are still in testing. If new test results show product in compliance, listing will revert to qualified.
- “Transition List” will be posted shortly. Static list will be updated ~2 weeks.



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Home > Products > Lighting > CFLs

Compact Fluorescent Light Bulbs for Consumers

(Are you a partner? [For Partners](#))

An ENERGY STAR qualified compact fluorescent light bulb (CFL) will save about \$30 over its lifetime and pay for itself in about 6 months. It uses 75 percent less energy and lasts about 10 times longer than an incandescent bulb.



[Buyers Guide](#)

Learn about color, bulb types, what works where — and where to go when you're ready to buy.



[How CFLs Work](#)

Find out how CFLs work, how to get the most from your bulbs and more.



[Recycling & Mercury](#)

Find out the real environmental costs of using — or not using — CFLs. Learn about disposal options and what to do if a CFL breaks.

In 2007, Americans saved \$1.5 billion by switching to ENERGY STAR qualified CFLs. The energy saved could light all the households in a city the size of Washington, DC for over 30 years. Put another way, changing these bulbs removes as much greenhouse gas pollution as planting 2.85 million acres of trees or taking 2 million cars off the road each year.



1 of 4

OPERATION CHANGE OUT
MILITARY CHALLENGE

Resources

- Qualified Compact Fluorescent Light Bulbs
- Excel Text (CSV)
- Transition List**
- Manufacturer List
- Savings Calculator
- Purchasing Tips

Qualified Compact Fluorescent Light Bulbs

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Third Party Testing – History



2000: PEARL (Program for the Evaluation and Analysis of Residential Lighting) established to address concerns about CFL quality and longevity

PEARL



- Periodic ad hoc testing of products
- Administered by Lighting Research Center
- Testing paid for by EEPS and DOE
- Eight cycles of PEARL testing between 2001 and 2008
- 109 products delisted as a result
- Ninth cycle currently underway

2008: Version 4.0 establishes 3rd Party Testing

Third Party Testing – Program Description



- Independent
 - Coordinated by Third Party Administrator
 - Paid for by product manufacturer
- NVLAP accredited laboratory
- 2 cycles of testing per year
 - 10% of products (unique models) tested per cycle
 - 20% of products tested per year
- Product Selection
 - 50% nominated by Partners
 - 50% randomly selected

Third Party Testing – Components



- Manufacturers of ENERGY STAR qualified CFLs
- ENERGY STAR CFL Partners
- Third Party Testing Program Administrator
- NVLAP Accredited Independent Laboratory
- Product Selection Working Group
- Technical and Research Working Group

Third Party Testing – CFL Manufacturers



- ENERGY STAR Qualified CFL Manufacturers
 - Nominate products for testing: max. 2 products/manufacturer
 - Assist Laboratory to identify point of purchase
 - Supply sources for min. two date or lot codes/model
 - Pay for testing their products
 - Testing fee varies by rated lifetime
 - Max. 6 products tested/manufacturer/year



Third Party Testing – Program Administrator



- Third Party Testing Program Administrator
 - Solicits and selects independent Laboratory
 - Solicits and collects Product nominations
 - Generates random list of Products
 - Compiles nominated and random lists for Product Selection Working Group
 - Informs CFL Partners of intent to test their products
 - Coordinates meetings and communication with Working Groups

Third Party Testing – Working Groups



- **Product Selection Working Group**
 - Oversees final product selection for each cycle
 - Five representatives: two from industry, two from EEPS and committee chair (DOE)
- **Technical and Research Working Group**
 - Provides testing expertise to DOE & Program Administrator
 - Monitors technical & scientific developments, regulations and testing processes
 - Unlimited membership: CFL manufacturers, accredited testing laboratories, EEPS

Third Party Testing – Cost of Testing



- Maximum 6 Products/Manufacturer/year
- Testing fees paid by CFL manufacturer
 - Fixed fees vary with rated life of product
 - Fees include
 - finding and purchasing product
 - testing and reporting
 - program administration costs
- High Heat Testing
 - Elevated Temperature Interim Life @ 40% of Rated Life
 - Option A and Option B testing is available
 - Manufacturer chooses option when contacted by lab

Third Party Testing – Testing Review Process



- Qualification Verification
 - Product meets or exceeds ENERGY STAR requirements
- Marginal Failure
 - One sample exceeds allowable failure rate for one test, e.g.
 - 4 out of 6 samples pass rapid cycle stress test
 - 2 out of 10 fail the interim lifetime testing

Third Party Testing – Marginal Failure Process



- Marginal Failure Process
 - After 40% of rated lifetime testing complete, products reviewed to identify marginal failure
 - If product deemed marginal failure, DOE immediately informs PARTNER
 - Lab procures additional product to test – PARTNER pays associated fees
 - PARTNER can request failed product for autopsy
 - Product passes? Remains ENERGY STAR qualified
 - Product fails? DOE institutes disqualification appeals process
 - During retesting: Product retains ENERGY STAR qualification

Third Party Testing – Disqualification/Appeals Process



- DOE contacts Partner w/intent to dequalify
 - Partner gets 30 days to respond
 - PARTNER can request failed product for autopsy
- Partner can present conclusive evidence of
 - Manufacturing, design, QC evidence of cause
 - How Partner has addressed the issue
- 30 Days Appeals Timeframe
 - No/insufficient response from Partner: DOE disqualifies product
 - Partner must stop shipment
 - Must cease use of ENERGY STAR on all related mat'l
 - Partner waits at least 6 mos. to begin requalification
- If All Tested Products Fail:
 - Mandatory Testing of ALL of Manufacturer's Qualified Products

Questions?



Regarding the Criteria or CFL Program generally:

David Ryan
dryan@drintl.com
301-588-9387
cfl@energystar.gov

Regarding the Third Party Testing Program specifically:

Glen Salas
gsalas@drintl.com
301-588-9387
CFL3rdPartyTest@drintl.com