

Compliance and Verification Testing

When(s)?

How(s)?

Who(s)?



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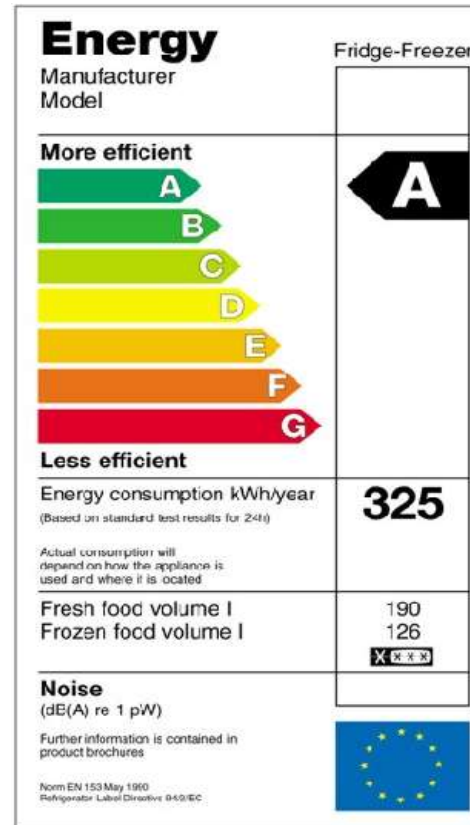
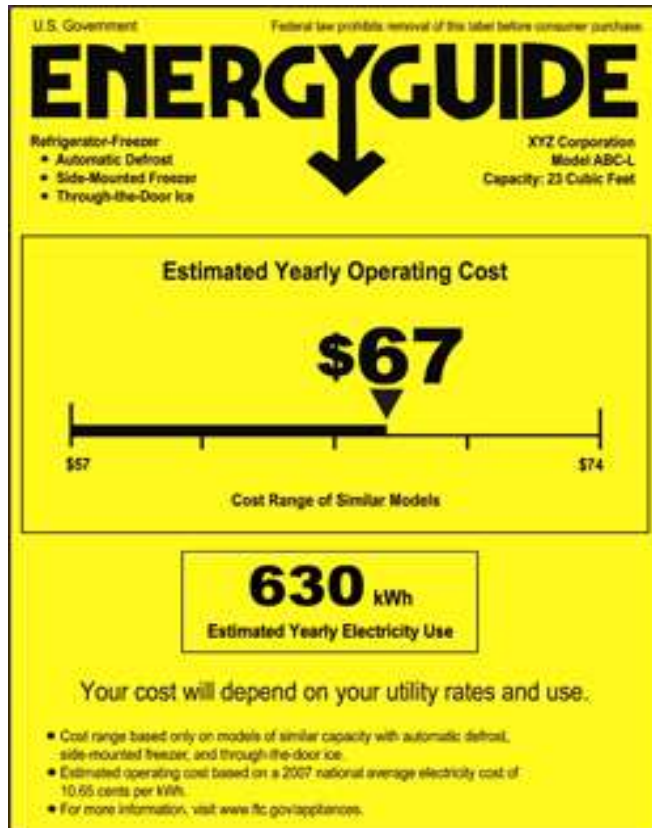
Context ➔ Underreporting Product Energy Use Matters

- Unfair sales advantage for non-compliant model (e.g., able to take short cuts and produce lower cost product, obtain better rating on label, improperly qualify for rebates, etc.)
- Higher electric bills for consumers and businesses
- Greater demand for electricity than forecast (extreme case – power outages)
- Increased CO₂ emissions

Multiple Policies That Depend Upon Accurate Energy Use Reporting

1. Mandatory minimum energy performance standards (MEPS)
2. Product labeling – A→G, 1→5 star, etc.
Shows product energy use and operating cost
3. Endorsement label – indicates “best” etc. such as Energy Star (US), Top Ten, etc.
4. Financial Incentives (rebates for efficient models)
5. Institutional/Green procurement – (e.g., corporation or city govt. will only buy A-rated computers)

Sample Energy Use Labels



Endorsement Label – Yes/No



The “Whens”

- Initial certification – submit prior to offering for sale
- Re-certification
 - Every X years? (Require a retest, even if product is “unchanged”)
 - When product is modified (and what does that mean?)
- “Spot checks” – verify models are meeting the regulations (MEPS or energy use label)

Current Realities

- Manufacturer supply chains are very dynamic
 - Product X may come from 3 different factories, none of which are owned by the “brand”; quality may vary significantly between them
 - Pricing pressure could result in frequent component changes or shift to a different supplier/factory entirely

Bottom Line – just testing once is not enough.

“Whos”? “Whats”?

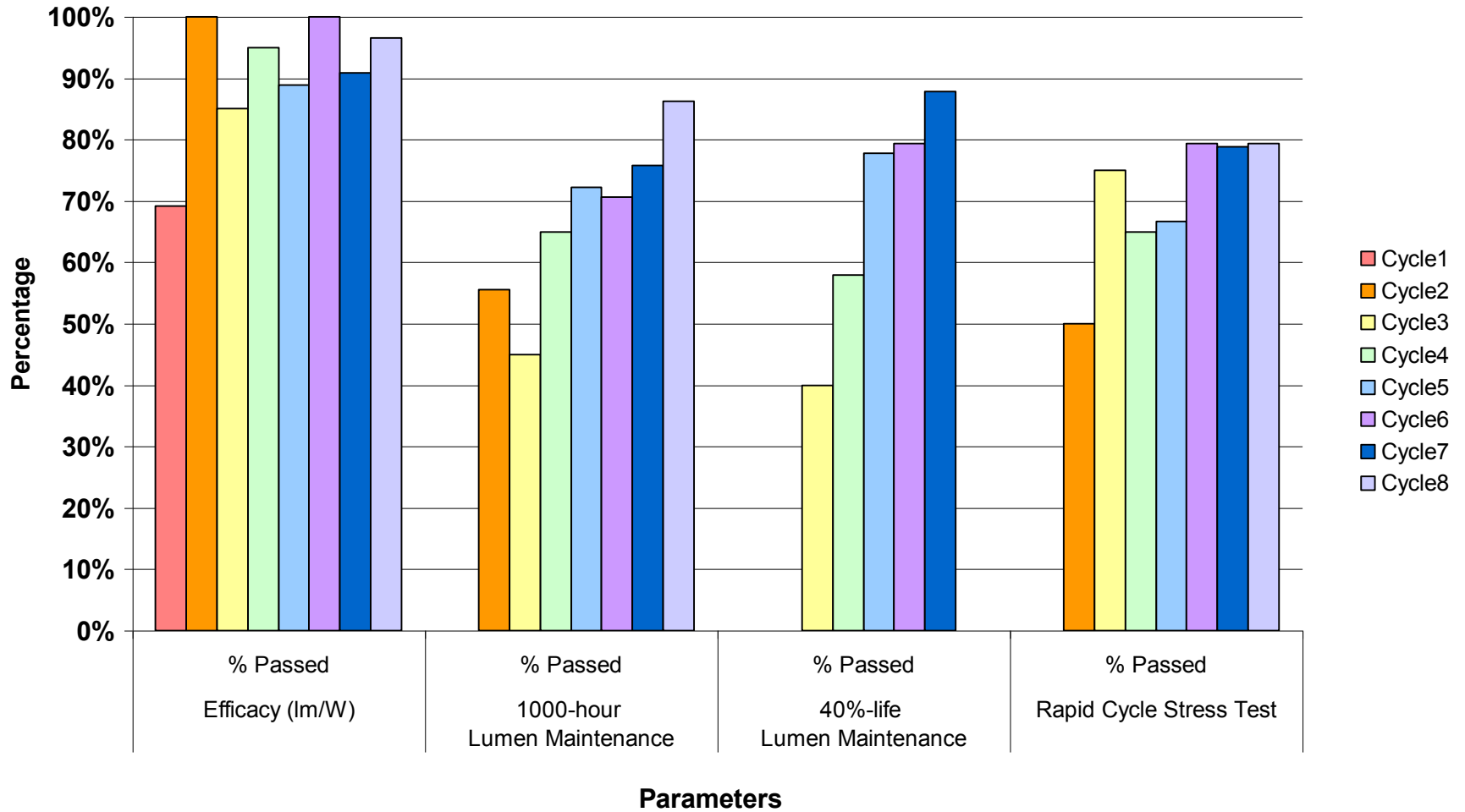
- Who “picks” the samples to be tested?
 - Manufacturer or the regulator
- What lab does the testing?
 - Must it be “certified”?
 - Manufacturer lab OK if certified, or require independent lab?

PEARL – Off the shelf testing of Energy Star qualified CFLs

- Utilities and others concerned about CFL quality – premature failure, lumen maintenance (gives off much less light over time)
- PEARL created to test lamps bought directly at retail
- Data shared with DOE who then delisted some of the models that were non-compliant
- Product quality has INCREASED since testing began.
Key driver : delisting = ineligible for rebate;

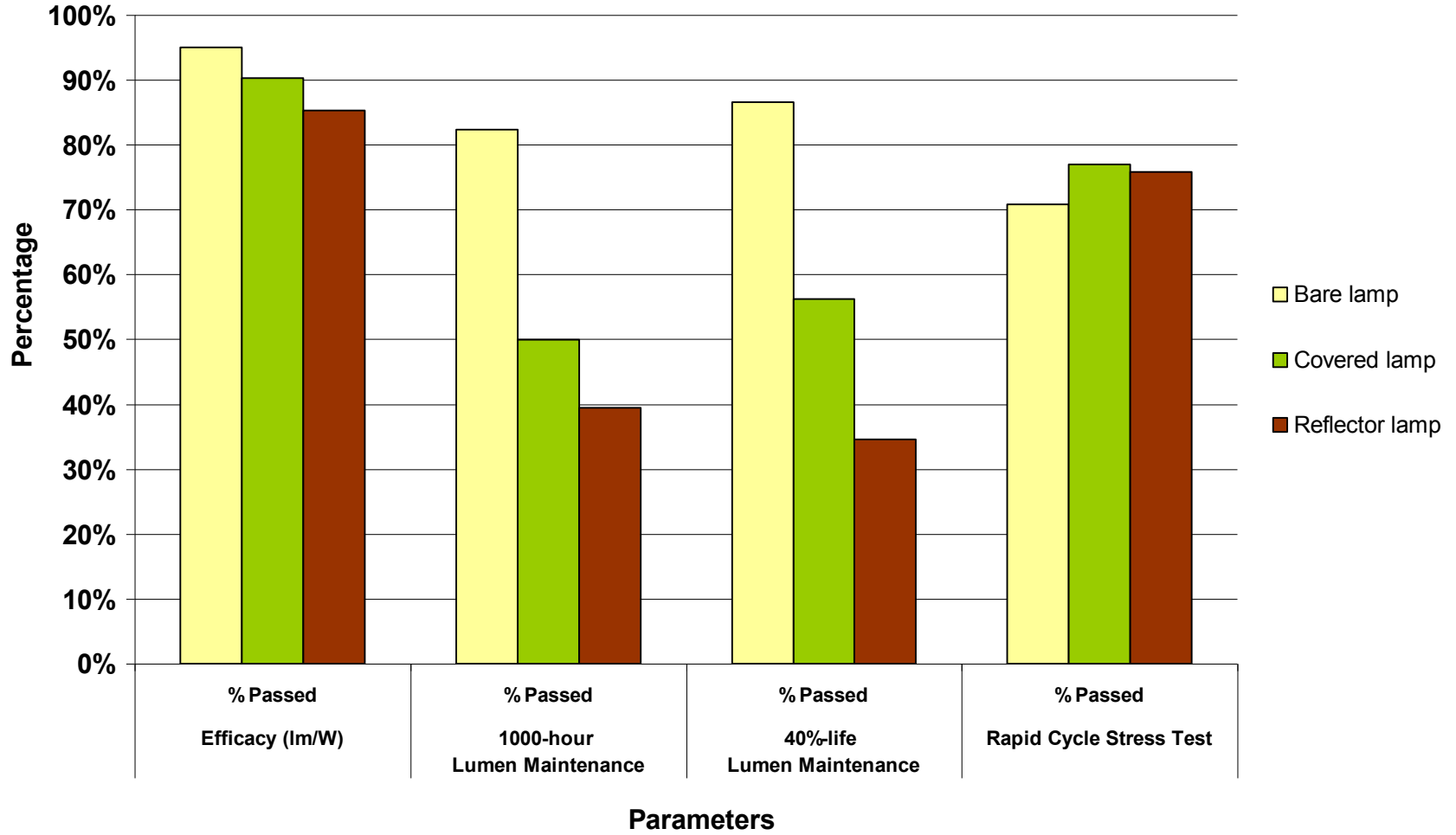
Percentage of Compliance with Energy Star Spec for All CFLs tested in PEARL

(Categorized by Cycles)



Percentage of Compliance with Energy Star Spec for All CFLs tested in PEARL

(Categorized by CFL bulb type)



Who Pays for Testing ?

- Initial certification
- Post market surveillance (also called “spot check”, or “off-the-shelf” testing)

Various Models

- Initial Certification
 - a) Manufacturer fills out a form and submits to regulator (lab report required?),
 - or
 - b) Trade association or non-profit manages the process, publishes directory, etc.

Example – Cool Roof Rating Council (CRRC)

- Non profit that manages a product label and directory. CRRC certified values are referenced in the building code.
- Program includes random testing and member challenge process.
- 5- 10% of all listed products undergo verification testing each year
- Non-complying models removed from list and required to “re-rate” their product. Also subjected to re-testing the following year

IS THE “PENALTY” BIG ENOUGH?

NFRC - Certification Program for Windows (the glass kind 😊)

 National Fenestration Rating Council® CERTIFIED	World's Best Window Co. Millennium 2000+ Vinyl-Clad Wood Frame Double Glazing • Argon Fill • Low E Product Type: Vertical Slider
ENERGY PERFORMANCE RATINGS	
U-Factor (U.S./I-P) 0.30	Solar Heat Gain Coefficient 0.30
ADDITIONAL PERFORMANCE RATINGS	
Visible Transmittance 0.51	Air Leakage (U.S./I-P) 0.2
<small>Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. NFRC does not recommend any product and does not warrant the suitability of any product for any specific use. Consult manufacturer's literature for other product performance information. www.nfrc.org</small>	

AHAM – appliance directory

- US Based trade association administers 3rd party verification scheme for major home appliances. For more info:
http://cooloff.org/sub_manu03.html#08
- **ANNUAL VERIFICATION TESTING**
On an annual basis, as part of the Certification Program, INTERTEK ETL/SEMKO will randomly select basic models (see the Procedural Guide for the details on sample selection formula) from the Licensee's regular production and test them to verify that they perform within the tolerances of the Program. *Should that rating prove to be incorrect, a re-rate would be required according to the guidelines in the Room Air Conditioner Certification Program Procedural Guide.*

Market Surveillance Testing

- Big questions:
 - Which models get tested and who decides?
 - Only those with reported problems?
 - X% of all models/year?
 - a) Random and/or
 - b) targeted
 - Who provides/purchases the samples?
 - Manufacturer, trade association/3rd party or the government
 - Beware the golden sample

Market Surveillance Testing: Big Questions (Cont.)

- What labs can be used?
 - Company owned or independent?
 - Minimum capabilities - certified?
- How many samples to test per model?
 - Can tiered approach work? (start with few # of samples : if X fail then allow re-test with larger sample size at manuf expense). **Good way to make limited testing budget go further.**

US in 60 seconds

- Broad set of products covered by mandatory standards and/or Energy Star (voluntary).
Mandatory labeling for white goods and light bulbs, some consumer electronics soon.
- Verification testing has been very limited to date.
Handful of enforcement cases – all reactive.
- US DOE and Energy Star committed to doing a lot more.

ENERGY STAR Enhanced Testing and Verification – Market-Based Testing Program



Market-Based Testing

Scope: All ENERGY STAR Product Categories

Qualification Testing

Purpose: Ensure that testing is conducted as required by ENERGY STAR specification and that lab submits test results to EPA that are representative of products sold to customer

1. Product tested in approved, accredited lab

Lab sends test information to EPA

2. EPA approves submission and adds product to list of ENERGY STAR qualified products

3. Partner labels product

Provides new data to EPA if changes to the model result in changes to energy consumption

Verification Testing

Purpose: Ensure that products continue to meet ENERGY STAR requirements

1. Product selected for testing

Third-party administrator facilitates product selection once or twice a year based on certified product (if certification program) or ES QP list (if EPA-selected administrator)

2. Manufacturer pays third-party to administer independent, off-the-shelf or off-the-line witnessed testing

3. Third party administrator has products tested as required and shares results with EPA

4. If models deemed failure based on testing, EPA delists product

Requires corrective actions and analyzes root cause to prevent future problems

Data Disclosure Options

- Range of Options to Consider:

Most – List actual test results for all tested models, not just those that fail. Show manufacturer and model number.



Least – Only list non-compliant products and % that failed.

- Nothing confidential about energy use of commercially-available product

Can Trade Association/3rd Party Led Certification Programs Work?

Key “Ifs”:

Is the group using the correct test method, sample collection methods, and certified labs?

Does their verification testing meet the regulators needs? (Could perhaps have regulator do limited supplemental random tests or duplicate tests)

Will the group share with the agency complete information on reporting irregularities or non-compliance?

Final Recommendations

1. Need all three:

- Initial certification
- Periodic re-certification
- Surveillance/Spot-check testing

2. Don't assume all the relevant local agencies are coordinating/sharing data (labeling group might be totally separate than MEPS)

Reality

A few well-publicized enforcement cases go a LONG way to improving compliance.

No company wants to damage the reputation of its brand.