



**National Lighting Partner Meeting  
February 25-27, 2008**

**How to Qualify Residential Light Fixtures**

# Overview



- Version 4.1: Updates
- Review of ENERGY STAR submittal documents
- Documentation Sources
- Common Questions
- Further Resources

# Version 4.1: Updates



- Version 4.1 of the ENERGY STAR specification for Residential Lighting Fixtures affects only products and fixtures using self-ballasted GU-24 lamps.

## Key Dates

- 4/1/08: Deadline for new GU24 4.0 submissions and use of 4.0 forms
- 8/1/08: Version 4.1 becomes effective



# Version 4.1: Updates



## Important Notes:

- All 4.0 previously qualified ***fixtures*** that do NOT use integrated GU-24 lamps will automatically qualify under 4.1
- All 4.0 previously qualified ***fixtures*** that use integrated GU-24 lamps will need to show documentation of label on fixture & product packaging showing mercury website info →
- All **new** integrated GU-24 ***lamps*** must meet the requirements of 4.1 on April 1, 2008
- **All** integrated GU-24 ***lamps*** must meet the requirements of 4.1 on August 1, 2008

[www.epa.gov/bulbrecycling](http://www.epa.gov/bulbrecycling)

# Version 4.1: Updates



- **Self-Ballasted GU-24 lamps can now be qualified as ENERGY STAR replacement lamps. New requirements:**
  - **Accelerated, Cycling, Thermal and Voltage stress test (ACTV)**
  - **Maximum Mercury Content**
  - **Run-up Time**
  - **1000-hour lumen maintenance** for new qualifications
  - **Product Packaging and Lamp Labeling Requirements** for GU-24 based integrated lamps, fixtures and their packaging to promote consumer awareness of mercury content and proper lamp disposal.
  - **Testing Orientation Notification on platform letters**
  - **2-Year Warranty for Replacement Lamps**



Ballasts and lamps inside thermal chamber used in ACTV test

# Key Documents and Forms



- ENERGY STAR Residential Light Fixture (RLF) Eligibility Criteria – Current Version 4.1
- Qualified Product Information (QPI) Forms
  - Indoor
  - Outdoor
- Supplemental Information Reporting Form (SIR)

OMB No. 2060-0528

**ENERGY STAR® QUALIFIED PRODUCT**  
**INFORMATION FORM FOR INDOOR RESIDENTIAL LIGHT**  
**FIXTURES AND GU-24 BASED INTEGRATED LAMPS**

INDOOR

ENERGY STAR product information form for use by ENERGY STAR qualified residential light fixture partners (Companies who have joined ENERGY STAR for residential light fixtures by signing a Partnership Agreement)

You may use this form to report those products that are sold under your company's brand name. If your firm sells models, fixtures, or GU-24 based integrated lamps under a brand name different from your company name, you must list the brand name and the associated retailer/organization. Please copy this form and return one for each lamp/ballast combination to the address below.

MANUFACTURER (ENERGY STAR Partner): \_\_\_\_\_

**SECTION I – LAMP & BALLAST INFORMATION:**

Number of Lamps/Fixture	Number of Ballast/Fixture	Individual Listed Lamp Wattage	Lamp Type	GU-24 Lamp Type	Lamp Size <sup>2</sup>	Lamp (e.g., light bulb) Manufacturer & Model Number <i>(If integrated lamp, copy this into cell at the right)</i>	Ballast Manufacturer & Model Number

ENERGY STAR should review this submittal as a (circle one):      Lamp &/or Ballast Platform<sup>1</sup>      Complete Fixture      GU-24 Based Integrated Lamp<sup>3</sup>

1. Lamp type (choose one or the following): CFL = Compact fluorescent, CK = Circular, L = Linear, GK = Circular  
 2. GU-24 Lamp Type (for GU-24 based integrated lamps, only): B = Base, C = Covered, R = Reflector, D = Dimmable  
 3. Lamp Size: For example, T4, T5, or T8.  
 4. With the exception of GU-24 Based Integrated Lamps, a lamp and ballast platform does not receive the ENERGY STAR mark and cannot be promoted as an ENERGY STAR qualified product. Rather, you may promote the "approved" lamp, ballast, or lamp-ballast platform as a component that meets applicable ENERGY STAR Program Requirements when used in ENERGY STAR qualified residential light fixtures.  
 5. GU-24 Based Integrated Lamp submittals may receive the ENERGY STAR mark and be promoted as an ENERGY STAR qualified product provided they meet all applicable requirements set forth in the Residential Light Fixtures Eligibility Criteria.

**SECTION II – TEST RESULTS:** Enter results from test report (complete using average of tested samples) or manufacturer data as specified in the ENERGY STAR Program Requirements for Residential Light Fixtures Version 4.0/4.1 and attach required documentation in an associated Supplemental Information Reporting (SIR) form.

Performance Characteristic	Test Result	Required Documentation (please attach to this form)
<b>Combined Lamp &amp; Ballast Requirements</b>		
System Efficacy	_____	Test report from a lab accredited by NVLAP or one of its MRA signatories, an EPA approved Platform Letter of Qualification, or
	_____	
	_____	

OMB # 2060-0528

**ENERGY STAR® for Residential Light Fixture**  
**Supplemental Information Reporting Form**

Manufacturer:

Date: \_\_\_\_\_

*For Fixtures:* On the "model #" line, list the First Fixture Model Number On Corresponding Qualified Product Information Form

*For Platforms or dual Platform and Fixture reviews:* On the "model #" line, list the lamp and ballast Manufacturer & Model Number, both as they appear on the QPI Form. Use the following format: "<Lamp> + <Ballast>"

\_\_\_\_\_

(model #)

Indoor, Outdoor, or Platform Submittal?

# Submittal Process Overview



- Review RLF eligibility criteria
  - Tables 1: *Indoor Fixtures*
  - Tables 2A & 2B: *Outdoor Fixtures*
  - Table 3: *GU24 Integrated Lamps*
- Complete QPI form in its entirety
- Insert required supplemental documentation into the appropriate tab within the SIR form
- Email submittal to [ESRLF\\_Submit@icfi.com](mailto:ESRLF_Submit@icfi.com)

# When to Start a new QPI



- Submittals organized by lamp/ballast platform in fixture
- New QPI/SIR if yes to any of the following:
  - Fixtures use a different ballast
  - Fixtures use a different lamp (includes wattages)
  - Fixtures share Lamp & Ballast but in different numbers
    - Remember to adjust system efficacy to the # of lamps used!
- SIR Section 8 – list all fixture model numbers with this combination



# Fixture Documentation Support



- NEMA/ALA Matrices  
([www.nema.org/lampballastmatrix/](http://www.nema.org/lampballastmatrix/))
- ENERGY STAR Platform Letters

## Required Documentation

### Provide:

1. a test report from a laboratory accredited by NVLAP, one of its MRA signatories; or
2. an EPA approved Platform Letter of Qualification that lists the lamp/ballast combination used in the fixture and the test result for this performance characteristic; or
3. EPA-approved documentation from an industry association, such as the NEMA/ALA matrices; or
4. a test report from an ISO 9000 registered facility.

*Example Size: > 10 lamps must be tested*

*Version 4.1 Specification*

# Common Questions



- **Conditional Qualification - check date!**

- Visible on the Platform letter
- Present in Version 4.0 for lumen maintenance and lamp life (in some cases)

Lamp Requirements:		
Lamp Life	10000 (1/1/2007)	Average
Lumen Maintenance	88.9	% of 40% (4,000)

EPA has reviewed the Testing Documentation submitted and determined that it meets the Version 4.1 Residential L this Letter of Approval to other manufacturers interest

- **Conditional GU-24 platform letters**

- Integrated (one-piece) GU24 lamps: **ALL expire 8/1/2008** (without additional testing)

Testing Orientation* (due 8/1/08 for continued compliance)	
Performance Characteristic	

Meets ENERGY STAR Specification? (Yes/No)
Yes
n/a (due 8/1/08)

# Common Questions



- **Outdoor products**
  - Table 2a – efficient sources
    - Integral photocell
  - Table 2b – reduced operating time
    - Integral photocell and motion sensor



Efficient source



INC fixture w/motion sensor

- **Lamp Shipment**
  - Only exceptions: Recessed fixtures, linear fluorescent fixtures, outdoor fixtures
  - No special exemption for GU-24 at this time

# Future process updates



## Upcoming:

- Online Product Submittals (OPS)
  - Replaces electronic QPI & SIR form submittal
  - Partners will be able to submit product data online to ENERGY STAR
  - Partners can view or edit existing data

A screenshot of a web browser displaying the ENERGY STAR online product submittal form. The browser's address bar shows the URL: http://www.energystar.gov/index.cfm?typeaction=cps.showEdit&cd\_id=1015309&cd=496349&ctoken=94103154&focus\_pd\_id=1015309&pg\_code=... The form is titled "Submission Status: Edits in Progress" and includes navigation buttons: "<< Return to Welcome", "<< Remove Product", "Save Product >>", and "Submit Product to ENERGY STAR". The form is divided into two main sections: "Basic Product Information" and "Manufacture Information". The "Basic Product Information" section includes fields for "Product Category" (Home Electronics), "Product Set-top Box Product Lines", "Model Number" (Test59), "Brand Name" ([test]), "If Other Brand Name, please specify:" (empty field), "Model Name" (Test), and "Is your organization the Original Equipment Manufacturer (OEM):" (radio buttons for Yes and No, with Yes selected). The "Manufacture Information" section is partially visible at the bottom. A "Back to Top" link is located at the bottom right of the form.

# Resources



- ENERGY STAR Website: Lighting
  - [http://energystar.gov/index.cfm?c=manuf\\_res.pt\\_lighting](http://energystar.gov/index.cfm?c=manuf_res.pt_lighting)
  - Materials from this session
  - Specification documents
  - Sample QPI and SIR Forms (updated soon for 4.1)
  - Platform Letters

Questions? Contact Christina Morris at ICF International

RLF@icfi.com  
(202) 862-1141



Questions?

# Backup Slides



# NEMA/ALA Matrices



- Web site: [www.nema.org/lampballastmatrix/](http://www.nema.org/lampballastmatrix/)
- Structure: Fixture manufacturer matches lamp matrix entry to ballast matrix entry
- Submittal requirements for fixture manufacturers:
  - **FAQ Available:** “Reference Materials” -> “Instructions for Luminaire Manufacturers”
  - Complete the NEMA/ALA Matrix Supplemental form (this form calculated efficacy and is what allows EPA to verify where the data is coming from and verify that the lamp and ballast combination selected meets the ENERGY STAR requirements.)
  - Use the data reported on matrix to complete the QPI form
  - Insert the NEMA-ALA Supplemental form into the SIR form (section 2c)
- EPA discussing inclusion of self-ballasted GU-24






# ENERGY STAR Platform Letters



- Web site:  
[http://energystar.gov/index.cfm?c=manuf\\_re\\_s.pt\\_platform\\_ltrs](http://energystar.gov/index.cfm?c=manuf_re_s.pt_platform_ltrs)
- History: EPA responding to requests from manufacturers that made both lamps and ballasts and were not NEMA or ALA members. Serves the same purpose as NEMA/ALA Matrices – allows fixture manufacturers to avoid testing and retesting lamps and ballasts that they do not manufacture.
- Submittal requirements:
  - Use the data reported on the letter to complete the QPI form
  - Insert the letter into the into the SIR form (section 2c)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



OFFICE OF  
AIR AND RADIATION

[Date]  
[Name]  
[Company]  
[Address]  
[Address]  
Dear [Name]

EPA has reviewed the Testing Documentation submitted by [Company] for the following [lamp, ballast, lamp/ballast combination], and determined that it meets the Version 4.0 Residential Light Fixture (RLF) specifications indicated below. [Company] may provide this Letter of Qualification to other manufacturers interested in qualifying the same [lamp, ballast, lamp/ballast combination] for ENERGY STAR. Those manufacturers may, in turn, submit a copy of this Letter in lieu of lab testing reports for the given performance characteristics. Please note that this Letter of Qualification only covers the performance requirements in the table below.

Components: Ballast(s) Manufacturer [name] Model # [model]  
Lamp(s) Manufacturer [name] Model # [model]

# of Lamps	xx	Input, Listed Lamp/Wattage	xx	Lamp Type	xx	Lamp Base	xx	Ballast Type	Electronic
Performance Characteristics		Test Result			Meets ENERGY STAR Specification? (Yes/No)				
Combined Lamp & Ballast Requirements:									
System Efficiency		xxxx		Total Lumen Output	Yes				
		xxxx		Input Power (watts)	Yes				
		xxxx		Lumens Per/Watt	Yes				
Lamp Requirements:									
Lamp Life		xxxx		Average Rated Hours	Yes				
Lumen Maintenance		xxxx		% of initial lumens at 40% rated amp life	Yes				

# Supplemental Documentation Requirements



<b>Manufacturer Data (lamp, ballast or fixture)</b>	<b>Manufacturer Test Reports</b>	<b>NVLAP or ISO 9000 Facility</b>	<b>NVLAP or OSHA NRTL</b>	<b>NVLAP</b>	<b>OSHA NRTL / UL</b>
Lamp/Lampholder Compatibility	Power Factor	Lamp Life	Lamp Start Time	Efficacy	Ballast Safety
Lamp Labeling	Max Case Temperature inside fixture	Lumen Maintenance	Lamp Current Crest Factor	Color Rendering Index (CRI)	Fixture Safety
Ballast Case Hot Spot	Ballast Frequency	Correlated Color Temperature (CCT)			
Maximum Recommended Ballast Case Temperature	Transient Protection				
Fixture Warranty	End of Life Protection				
Replaceable Ballast					
Decorative LED					
Product Packaging					

# NEMA/ALA Matrices: Benefits



- When using data from the lamp and ballast matrices the following required supplemental documents are NOT required (Indoor):

Manufacturer Data (lamp, ballast or fixture)	Manufacturer Test Reports	NVLAP or ISO 9000 Facility	NVLAP or OSHA NRTL	NVLAP	OSHA NRTL / UL
Lamp/Lampholder Compatibility	Power Factor	Lamp Life	Lamp Start Time	Efficacy	Ballast Safety
Lamp Labeling	<b>Max Case Temperature inside fixture</b>	Lumen Maintenance	Lamp Current Crest Factor	Color Rendering Index (CRI)	<b>Fixture Safety</b>
Ballast Case Hot Spot	Ballast Frequency	Correlated Color Temperature (CCT)			
Maximum Recommended Ballast Case Temperature	Transient Protection				
<b>Fixture Warranty</b>	End of Life Protection				
<b>Replaceable Ballast</b>					
<b>Decorative LED</b>					
<b>Product Packaging</b>					

# ENERGY STAR Platform Letters: Benefits



- When using data from a Platform Letter the following required supplemental documents are NOT required:

Manufacturer Data (lamp, ballast or fixture)	Manufacturer Test Reports	NVLAP or ISO 9000 Facility	NVLAP or OSHA NRTL	NVLAP	OSHA NRTL / UL
Lamp/Lampholder Compatibility	Power Factor	Lamp Life	Lamp Start Time	Efficacy	Ballast Safety
Lamp Labeling	<b>Max Case Temperature inside fixture</b>	Lumen Maintenance	Lamp Current Crest Factor	Color Rendering Index (CRI)	<b>Fixture Safety</b>
<b>Ballast Case Hot Spot</b>	Ballast Frequency	Correlated Color Temperature (CCT)			
Maximum Recommended Ballast Case Temperature	Transient Protection				
<b>Fixture Warranty</b>	End of Life Protection				
<b>Replaceable Ballast</b>					
<b>Decorative LED</b>					
<b>Product Packaging</b>					