

National Lighting Partner Meeting February 25-27, 2008

How to Qualify Residential Light Fixtures

Energy STAR

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

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)

ENERGY STAR® QUALIFIED PRODUCT INFORMATION FORM FOR INDOOR RESIDENTIAL LIGHT FIXTURES AND GU-24 BASED INTEGRATED LAMPS	INDOOR
FIXTURES AND GU-24 BASED INTEGRATED LAMPS ENERGY STAR	
ENERCY STAR product information form for we by ENERCY STAR qualified reliabeliabiliphtfixture partner (Companies who have joined ENERCY STAR for read intail light fitture) by signing a Partnership Agreement). You may use this form to report thate products that are sold under your company's brand name. If your firm sells models fitture or GU-34 based a brand name alfforms from you company name, you must list the brand name and the associated resulies longistization. Please copy this form and lampe facilities combinate to the address that.	
MANUFACTURER (ENERGY STAR Partner):	
SECTION I LAMP & BALLAST INFORMATION:	
Number of Number of Listed Limp CGU-24 Lemp Ballary Listed Limp Lamp Lamp Spains Wastage Type Spain Sp	
ENERGY STAR should review this submittal as a (circle one): Lamp &/or Ballast Platform Complete Fixture GU-24 Ba	ed Integrated Lamp ⁵
1. Leam plyse (choose one or the Bullowang): Cit. = Compact hiorescent, Cit. = Circulat, L = Linear, Cit. = Circulat 2. CUG-4. Leam plyse (for CU-4 bease integrated lamps, only). B = Bars, C = Coward, R = Reflector, D = Dimmable 3. Leam plias: For example, T 1, T 5, or T8. 4. With the exception of CU-4-Based Integrated Lamps, a lamp and ballast platform does not receive the ENERGY STAR mark and cannot be pror STAR, qualified product. Rather, you may promote the "upproved" lamp, ballast or lampballast platform as a component that meets applicable ENER Requirement when used in ENERGY STAR, qualified residential light finances. 5. CU-4-2 Based Integrated Lamp submittail may receive the ENERGY STAR mark and be promoted as an ENERGY STAR qualified residential experience is Epsilistic Center.	RGY.STAR Program
SECTION II - TEST RESULTS: Enter results from test report (complete using average of tested samples) or manufacturer data as specified program Requirements for Residential Light Fixtures Version 4.04.1 and attach required documentation in an associated Supplemental Information	
	ocumentation n to this form)
Combined Lamp & Ballast Requirements	
System Efficacy Total Lumen Output Test report from a lab or one of its MRA signer approver (watts) Test report from 1 let sport from 1 let sport over 1 let 1 le	atories, an ÉPA

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 appea on the QPI Form. Use the following format: " <lamp> + <ballast>"</ballast></lamp>						
(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



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/)

ENERGY STAR Platform Letters

Required Documentation

Provide:

- a test report from a laboratory accredited by NVLAP, one of its MRA signatories; or
- 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
- EPA-approved documentation from an industry association, such as the NEMA/ALA matrices; or
- a test report from an ISO 9000 registered facility.

Carsola Circu > 40 larges panet be tested

Version 4.1 Specification



Common Questions

Conditional Qualification check date!

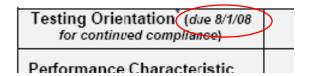
- Visible on the Platform letter
- Present in Version 4.0 for lumen maintenance and lamp life (in some cases)

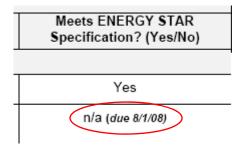
Conditional GU-24 platform letters

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

Lamp Requirements:			
Lamp Life	10000	(1/1/2007)	Avera
Lumen Maintenance	<u>88.9</u>		% of 40% i (4,000

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







Common Questions

Outdoor products

- Table 2a efficient sources
 - Integral photocell
- Table 2b reduced operating time
 - Integral photocell and motion sensor



INC fixture w/motion sensor

Lamp Shipment

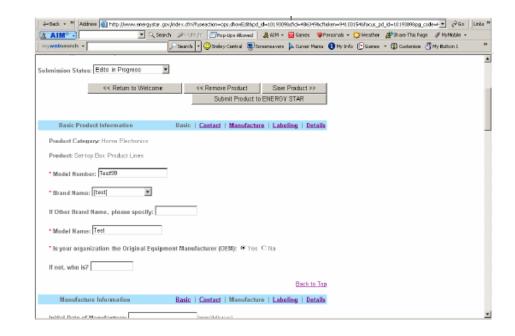
- Only exceptions: Recessed fixtures, linear fluorescent fixtures, outdoor fixtures
- No special exemption for GU-24 at this time



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





Resources

- ENERGY STAR Website: 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

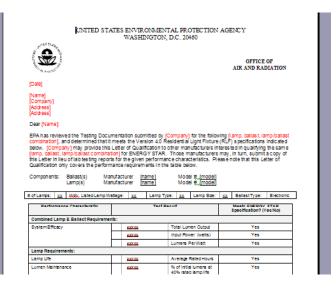
- Web site: www.nema.org/lampballastmatrix/
- Structure: Fixture manufacturer matches lamp matrix entry to ballast matrix entry
- Submittal requirements for fixture manufacturers:
 - FAQ Available: "Reference Materials" -> "Instructions for Luminaire Manufacturers"
 - Complete the NEMA/ALA Matrix Supplemental 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
- 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)



Supplemental Documentation Requirements



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

ENERGY STAR Platform Letters: Benefits



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

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