

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



OFFICE OF  
AIR AND RADIATION

May 23, 2014

Dear ENERGY STAR® Lighting Partner, EPA-Recognized Certification Body or Laboratory, Stakeholder or Other Interested Party:

During the specification development process the Environmental Protection Agency (EPA) acknowledged several items that might trigger amendment of the ENERGY STAR Lamps specification. This letter outlines three minor changes that will be reflected in an ENERGY STAR Lamps V1.1.

When ENERGY STAR Lamps V1.0 was released, EPA cautioned that the decorative category would be monitored for lamps that are not meeting the intent of the specification, such as LED lamps that could be mistaken for an A-lamp replacement.

It remains EPA's intent to provide consumers with efficient replacement lamps without sacrifice in performance and not award the ENERGY STAR label to products that emulate the look of incandescent bulbs (e.g. A19, A21) but fail to deliver the necessary light distribution to adequately replace currently installed lamps. Given the potential that qualification of G18.5 or G19 LED lamps under the decorative category undermines this objective, the Agency is explicitly excluding them.

In addition, as discussed during the specification development process, EPA is now proposing to add GU10 base lamps to the scope of the specification. While this was initially prevented by the lack of a shape outline specified by the American National Standards Institute (ANSI), an ANSI Accredited Standards Committee is currently developing a document that includes the outline of a line voltage MR16 with a GU10 base, and a document that includes a new lamp type MRX16. The expected publish date is this summer for both standards. As requested by the National Electrical Manufacturers Association (NEMA) and other stakeholders, EPA has included both these pending standards in the scope of the ENERGY STAR specification. Parties wishing to comment on the standards or with questions regarding the standard publication process, should contact Karen Willis at [Karen.Willis@nema.org](mailto:Karen.Willis@nema.org).

Line voltage MR16 lamps with GU10 bases are expected to be categorized and tested as directional lamps and have to conform to the dimensional requirements of ANSI C78.79.201X. They would use the line voltage tab of the CBCP tool for benchmarking equivalency performance.

Finally, based on stakeholder feedback, EPA has added an additional allowable variation for PAR30 lamps, which have a short (PAR30 or PAR30S) and long neck (PAR30L) version. PAR30 neck variations will now be listed as an allowable variation for sharing test data.

EPA appreciates any feedback from partners and stakeholders on these amendments by **June 20, 2014**. Questions or concerns can be directed to my attention at (202) 343-9042, or [jantz-sell.taylor@epa.gov](mailto:jantz-sell.taylor@epa.gov) or [lighting@energystar.gov](mailto:lighting@energystar.gov).

Thank you for your support of ENERGY STAR.

Sincerely,

A handwritten signature in black ink, appearing to read "T. Jantz-Sell". The signature is fluid and cursive, with the first name "Taylor" and last name "Jantz-Sell" clearly distinguishable.

Taylor Jantz-Sell  
ENERGY STAR Lighting Program Manager

# Amendments to Current ENERGY STAR Lamps Specification

EPA is modifying sections of the Version 1.0 Lamps Specification to add the following language denoted in blue text. All other existing language remains un-changed, the amendments will be reflected in a Lamps V1.1 specification revision.

## 1. SPECIFICATION SCOPE & LAMP CLASSIFICATION

### 1.1 Included Products

The ENERGY STAR Lamps specification (“this specification”) scope includes the lamp types intended to replace incandescent lamps as outlined in Table 1. The scope is limited to lamps with integrated ballasts and drivers intended to be connected to the electric power grid with the following ANSI standard base types: E26, E26d, E17, E11, E12, **GU10**, GU24, GU5.3, and GX5.3. The scope is also limited to lamps with rated nominal operating voltages of 120, 240 or 277 VAC, or 12 or 24 VAC or VDC.

**Table 1: Specification Scope and Classification**

Lamp Purpose and Performance Description	ANSI Standard Lamp Shape <sup>1</sup>	Non-Standard Lamp Form Factor
<b>Omnidirectional</b> – Lamps intended for general purpose that meet applicable omnidirectional performance requirements in this specification.	A, BT, P, PS, S and T	Self-ballasted compact fluorescent lamps (CFLs) intended to replace ANSI standard incandescent lamps that do not meet Lamp Shape Dimension requirements.  The following self-ballasted compact fluorescent lamps are included: <ul style="list-style-type: none"> <li>• Bare spiral</li> <li>• Bare mini-spiral</li> <li>• Bare twin tube</li> <li>• Bare triple tube</li> <li>• Bare quadruple tube</li> <li>• Covered CFLs</li> <li>• Covered CFLs with reflectors</li> </ul>
<b>Decorative</b> - Lamps of common decorative shapes meeting applicable decorative performance requirements in this specification.	B, BA, C, CA, DC, F and G	
<b>Directional</b> - Lamps meeting applicable directional performance requirements in this specification.	R, BR, ER, MR, <b>MRX</b> and PAR	

<sup>1</sup> Standard form factor lamps must meet the ANSI standard lamp type dimensional requirements in the specification and may claim wattage and ANSI lamp type equivalency. All solid-state lamps must meet standard lamp dimensional requirements.

**Note:** As indicated in Lamps V1.0 section 3.1 - Considerations for Future Revisions, EPA has included the GU10 base and updated the center beam candlepower calculator (CBCP Tool) to support the certification of line voltage MR16 lamps with a GU10 base, pending the publication of ANSI C78.79-201x, which includes a maximum space drawing for this lamp.

Additionally, in response to a proposal from the National Electrical Manufacturers Association (NEMA), EPA is including an additional lamp shape specific to LED lamps, referred to as the MRX16 shape, which is proposed in the ANSI C78.50-201x publication.

Parties interested in seeing a draft of these standards may contact Karen Willis at [Karen.Willis@nema.org](mailto:Karen.Willis@nema.org).

### 1.2 Excluded Products

- **LED lamps that could be mistaken for an A-lamp replacement (e.g. a G18.5 or G19 lamp), that do not meet the omnidirectional luminous intensity distribution requirements.**
- Lamps, other than MR or MRX types, that operate only on an external (i.e. not integral to the lamp) ballast, driver or transformer, e.g. pin-based fluorescent lamps (linear and compact) or their solid-state replacements.
- Solid-state lamps intended to replace linear fluorescent or high-intensity discharge lamps.
- Lamps powered by an internal power source, e.g. solar-powered cell.
- Lamps incorporating power-consuming features in the on or off state which do not provide illumination (e.g. audio functions, air fresheners).
- Lamp technologies lacking applicable industry standardized methods of measurement.
- Lamps with bases not covered in ANSI standards.
- Zhaga compliant LED light engines.

**Note:** EPA has consistently made clear its objective not to award the ENERGY STAR label to products that emulate the look of traditional incandescent bulbs that are most familiar to consumers (e.g. A19, A21) but fail to deliver the necessary light distribution to adequately replace currently installed lamps. Given the potential that certification of G18.5 or G19 LED lamps under the decorative category undermines this objective, the Agency is explicitly excluding them.

## 7.1 Product Variations

**Table 2: Allowable Variations**

Lamp Neck	Applicable to PAR30L lamps where the representative model has the shortest MOL, and the only component changed is the neck of the lamp. Changes to heat sink or driver are not allowed.	None
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**Note:** Based on stakeholder feedback, EPA has added an additional allowable variation for PAR30 lamps, which have a short (PAR30 or PAR30S) and long neck (PAR30L) version. If the short neck version is tested, and the only construction difference between the PAR30 and PAR30L is the neck, the long neck version may be considered a variation. No changes to the lamp heat sink or other components are allowed.

## 8. METHODS OF MEASUREMENT AND REFERENCE DOCUMENTS

ANSI	C78.50-201x	Electric Lamps - Assigned LED Lamp Codes
ANSI	C78.79-201x	Electric Lamps - Nomenclature for Envelope Shapes Intended for Use with Electric Lamps

### 9.2 Light Output

(Exemption: MR, MRX and PAR lamps)

### 9.4 Center Beam Intensity: PAR, MR and MRX Lamps

(Exemption: All Other Lamps)

Lamp Type	ENERGY STAR Requirements	Methods of Measurement and/or Reference Documents	Supplemental Testing Guidance
ANSI Standard PAR, MR and MRX Shape Lamps	Lamp center beam intensity shall be greater than or equal to the center beam intensity value calculated by the <a href="#">ENERGY STAR® Lamp Center Beam Intensity Benchmark Tool</a> for the referenced incandescent lamp. ( <a href="http://www.energystar.gov/LampsCBCP">www.energystar.gov/LampsCBCP</a> )	<b>Measurement (fluorescent):</b> IES LM-66-11  <b>Measurement (solid-state):</b> IES LM-79-08  <b>Reference Documents:</b> IES LM-54-12	<b>Sample Size:</b> One new unit. The sample may be the same unit for testing color angular uniformity as applicable.  The reported value shall be the measured candela value rounded to the nearest whole number.

### 14.1 Lamp Shape Dimensions: All ANSI Standard Lamps and GU-24 base Solid-state Lamps

(Exemption: Non-Standard Lamps)

Lamp Type	ENERGY STAR Requirements	Methods of Measurement and/or Reference Documents	Supplemental Testing Guidance
Omnidirectional ANSI Standard Lamps	Lamp shall comply with ANSI minimum overall length (min OAL), maximum overall length (MOL) and maximum lamp diameter values, where they exist.	<b>Reference Documents:</b> ANSI C78.20-2003	<b>Sample Size:</b> One unit per model.  GU24 base lamps may

<b>Directional ANSI Standard Lamps</b>	Lamp shall comply with ANSI minimum overall length (min OAL), maximum overall length (MOL) and maximum lamp diameter values, where they exist.	<b>Reference Documents:</b> ANSI C78.21-2011 <a href="#">ANSI C78.50-201x</a> <a href="#">ANSI C78.79-201x</a>	qualify as an allowable variation of an ANSI standard lamp, and shall meet the min OAL and MOL of the ANSI standard lamp.
<b>Decorative ANSI Standard Lamps</b>	Lamp shall comply with ANSI minimum overall length (min OAL), maximum overall length (MOL) and maximum lamp diameter values, where they exist.  Where no ANSI maximum lamp space drawing exists, lamp maximum outside diameter shall be within $\pm 15\%$ of the lamp nominal diameter.	<b>Reference Documents:</b> ANSI C78.23-1995 (R2003)	A +5% tolerance may be applied to the measured maximum overall length (MOL) of an omnidirectional lamp if the lamp fails to meet the requirement without the tolerance.

**Note:** References in multiple sections of the specification have been updated to include the MRX lamp type and pending ANSI reference documents.