

**PHILIPS**

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Ms. Taylor Jantz-Sell  
Environmental Protection Agency  
ENERGY STAR Lighting Program Manager  
1200 Penn. Ave NW 6202J  
Washington, DC 20460

Subject: Comments on Energy Star Lamps Specification V1.0 Draft 3

Dear Ms. Jantz-Sell,

Philips has reviewed the Energy Star Lamp Specification V1.0 Draft 3 and as a stakeholder, appreciates the opportunity to provide comments.

If you have any questions, feel free to contact me at the information below.

We look forward to working with the EPA on the development of this Energy Star Lamp specification.

Sincerely,

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1. Specification Scope & Lamp Classification

1.2 Excluded products

- Lamps incorporating power-consuming features in the on or off state which do not provide illumination (e.g. audio functions, air fresheners). *We advocate to include in the specification versus excluding it and to include a requirement of a power consumption  $\leq 0.5W$  per lamp in the OFF state.*
- *If decision is to exclude, would like insight from EPA as to when they plan to consider these types of products (statement also applies to 3.1.1).*

2. Effective Date - early 2014, manufacturing date.

*Since the lamp specification is still in draft form, the proposed effective date of early 2014 is not taking into account the testing time (approx. 8 months) that will be required to recertify products. The proposed time line is too tight.*

*Proposal: End new ENERGY STAR certifications under the current specification after Jan. 2014, but allow the previously approved products to maintain their qualification status for 12 months.*

4. Definitions

The flicker definition is not correct. Proposed definitions are:

- Flicker: the perception of temporal changes in the intensity or chromaticity of the light
- Stroboscopic effect: the perception that objects illuminated by fluctuating light move discretely rather than continuously
- Phantom effect: the perception of a spatially extended series of spots when making rapid eye movements across a light spot that fluctuates over time

Omnidirectional Lamp - These lamps can be standard; having an ANSI standard lamp shape of A, BT, **G**, P, PS, S or T, or non-standard; a self-ballasted compact fluorescent that utilizes a bare spiral, or multiple (twin, triple, quadruple) tube arrangement.

*Proposal: remove the reference to Globe from this definition.*

Referenced Incandescent Lamp: A traditional incandescent lamp that predates the federal efficiency standards in the 2007 Energy Independence and Security Act.

*The definition in draft 2 was an incandescent lamp available in the market meeting federal requirements in effect on the date of qualification. If the new definition remains, there will come a day when lamps "that predate the federal efficiency standards in the 2007 Energy Independence and Security Act" are no longer available on the market (for referencing), along with their data sheets (for referencing). Therefore if EPA doesn't correct this by reverting to the draft 2 language, there will come a time when the specification becomes unusable for PAR and MR lamps.*

*Along with reverting the above to the draft 2 definition, the first sentence in section 5 should be revised to not mention "a traditional incandescent lamp". In draft 2, this section began "Performance requirements in this specification are determined in part by referencing the performance data of an incandescent lamp available in the market meeting federal requirements in effect on the date of qualification (the "referenced incandescent lamp")."*

6. Federal Standards and DOE Rulemaking

- *3 Way lamps are regulated by the DOE Rulemaking, however, this section does not clearly state that they are not included in the scope of this section. Proposal: Modify the sentence accordingly: The scope of this specification includes bare and covered (excludes reflectors and 3 way lamps) medium base compact fluorescent lamps which are regulated by the U. S. Department of Energy Code of Federal Regulations CFR Title 10.*

7. Product Certification

Table 2: CCT (CFL only) Additional test data required for each variant – Lumen Maintenance testing to 40% of rated life. *This requirement does not help. We propose to remove this requirement and add to provide 100 hr test data.*

*Proposal: Allow CCT variation for SSL.*

9. Photometric Performance

9.1 Luminous Efficacy – This section does not account for dimmable and covered CFL lamps.

The EPA raised the bar so high for Reflectors that the dimmable Reflector products will not comply any more. Due to the added circuitry to perform the dimming function, the efficacy of the dimmable CFL-I products drops a bit versus non-dimmable CFL-Is.

In order for the Dimmable Reflector lamps to be able to comply with the efficacy requirement, we need to lower the efficacy requirement to < 20W – 38 lm/W, ≥ 20W – 45 lm/W.

We can either lower the requirement for all Reflector lamps or add a special provision for dimmable Reflector lamps.

The requirement is okay as it is for standard Reflector lamps (non-dimmable).

As proposed in draft 3, dimmable and covered CFLs will not comply with the requirement. Propose to add provisions from CFL V4.3 to this document and provide separate requirements for dimmable and covered CFLs.

		Medium screw	Candelabra screw	GU24
Bare lamp (Dimmable/2-way/3-way)	<15W	50 lpw	50 lpw	40 lpw
	>15W	60 lpw	n/a	40 lpw
Covered (no reflector)	<15W	45 lpw	45 lpw	40 lpw
	>15W	50 lpw	n/a	40 lpw

9.2 Light Output – Directional (R, BR, ER) – The idea behind adding the table for all other directional lamps to align with the rulemaking is only appropriate for incandescent lamps. Based on market needs, the criteria is exceeding consumer requirements, resulting in complaints of the lamps being “too bright”. The proposed lumen values in Draft 3 for reflector lamps are 35% - 45% higher than the old incandescent lamps. There will also be a cost impact to the lamp required in order to drive more lumens. We propose that the requirements should reference the wattage/lumen values of the typical incandescent performance not the rulemaking or ≥ 10 times the incandescent lamp’s rated wattage for the referenced incandescent lamp.

9.4 Center Beam Intensity – Line Voltage MR lamps: The values for the center beam intensity should depend on the beam angle and not only the wattage. The proposed requirement will present an issue with marketing equivalency claims for any products with a beam angle greater than 35°. We propose to utilize the existing calculator with parameters inserted for PAR16 lamps in order to calculate equivalencies for line-voltage MR16s.

9.5 Luminous intensity distribution – Decorative lamps: This requirement is placing the same requirement on decorative products as omnidirectional. This requirement will also impact features of decorative products that consumers prefer, such as the sparkle effect. We propose that the requirement be: No less than 5% of total flux (lumens) shall be emitted in the 90° to 180° zone.

10. Lumen Maintenance

- a. 10.1 CFL – Proposal: Remove requirement for “Lamp shall maintain ≥ 90% of initial lumen output at 1000 hours”. Although it is currently in the CFL V4.3 specification, it adds an additional testing point, which will add cost to the product.
- b. Require the elevated temperature test for Reflector lamps only as it was in 4.3.
- c. If they still want to keep this requirement, then allow all 10 samples to be life tested in BU position and make the measurements in BD position at the checking points.

SSL – All directional lamps > 20 watts shall be tested in accordance with the ENERGY STAR Elevated Temperature Life Test using the Option A test method or Option B test method with an operating temperature of 55°C ± 5°C.

Presumably the thought behind this requirement is that higher power lamps will have higher ambient temperatures. This is not the case, in general, since higher power lamps are generally larger in size, they have more extensive heat sinking. The higher power lamps are also being impacted by legislation.

Proposal: Change the operating temperature back to 45°C ± 5°C for both Option A and B.

10.2 Rated Life CFL – rated life requirement of ≥ 10,000 hrs will present a problem for covered CFLs. The EPA is raising the bar two steps for covered products (Candelabra, Globe and Reflector), raising the lifetime

from 6000 to 10000 hours and imposing the elevated temperature life test set up for all covered products. This becomes particularly problematic for Covered CFL-Is, since they run hotter than bare CFL-Is. In Energy Star V4.3, the elevated temperature life test requirement was for Reflector lamps only, with a lifetime requirement of 6000 hours. In Draft 3, the requirement has been increased two steps for the Candelabra and Globes and one step for Reflectors, but it is quite a substantial jump (40% more lifetime). Their argument that most Covered products comply with 10 K hour lifetime is not valid, because these lamps were under the actual requirement (at 25 °C open burn, not with the elevated temperature set up). The end result will be an increased cost for the products to improve the components of the electronic ballast. This goes against market penetration, especially considering that there are a lot of applications that doesn't require this high spec. Additionally, it is really hard to meet this requirement for high power CFL-Is (e.g.  $\geq 20W$ ).  
Proposal: Allow 8000 hours for covered lamps and 10,000 for bare lamps and remove the requirement of the elevated temperature life testing for bare and covered lamps. Leave this requirement for Reflector lamps only.  
Rated Life SSL - Decorative lamps shall have a rated life  $\geq 15,000$  hours. All other lamps shall have a rated life of  $\geq 25,000$  hours. Proposal: change rated life to "rated lumen maintenance life".

#### 11 Electrical Performance Requirements

11.2 Power Factor Requirement – SSL. Why has the EPA changed their position from current LED specification to include a power factor requirement for low voltage lamps. The system power factor is related to the transformer, so it doesn't make sense to have a power factor requirement for low voltage lamps.  
Propose: Remove power factor requirement for low voltage lamps.

11.3 Operating Frequency: The methods of measurement section must be clarified for certification purposes. It shows none, however, under the supplemental testing guidance, a procedure is outlined.

#### 12. Dimming Performance: Proposal: EPA should obtain quotes on how much it will cost to complete testing for dimming performance requirements and share with industry.

Sample size is currently TBD. Proposal: Due to the proposed dimmer testing configuration, we propose to keep the sample size small at two.

12.1 Maximum Light Output – Lamp light output on a dimmer/control shall not exceed the lamp's **rated** light output by more than 10% or fall below the maximum light output by more than 20%. Proposal: Change the word "rated" to "initial". This aligns with the minimum light output requirement in 12.2.

12.4 Audible Noise – Under supplemental testing guidance. Propose to make microphone placement distance at 1 meter and not 1 foot from the lamp.

For low voltage dimming LED Lamps, both the dimmer and transformer are required to perform testing. Draft 3 does not provide guidance on the use of transformer in the dimming requirements. EPA should provide clarity.

#### 15. Lamp labeling, packaging, and warranty requirements.

15.2 Under application exceptions - Lamp package and product information sheet must include a caution label indicating the lamp may not be compatible with all low-voltage transformers used in existing light fixtures and identifying the Web address (URL) to find up-to-date low-voltage transformer compatibility and appropriate use information.

Propose: Remove requirement to including a caution label on lamp packaging and product information sheet. Require only using website to find low voltage information.