



NRDC Comments on ENERGY STAR Lamps Version 1.0 Draft 4 Specification

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On behalf of the Natural Resources Defense Council (NRDC) and our more than 1.3 million members and electronic activists we respectfully submit our comments on the latest draft of the ENERGY STAR Version 1.0 specification for energy efficient lamps (more commonly referred to as bulbs). NRDC is very supportive of the work done by EPA and its consultants throughout this specification process and with the few exceptions listed below, we are supportive of the content of the latest draft issued by ENERGY STAR. We also encourage EPA to finalize and publish the specification as soon as possible to ensure the specification requirements can be applied to the market, in particular the rapidly changing LED market segment.

Our comments include recommendations on three parts of the specification:

- a) Maintain the R9 requirements for CFLs to improve consumer satisfaction with how reddish objects appear.
- b) Maintain the requirement to test all lamps in an elevated temperature environment, and do not allow manufacturers to simply state “not for use in enclosed fixtures” on the package as a means to avoid meeting this requirement.
- c) Improve the text governing which dimmers should be selected during testing of dimmable bulbs. Also include dimming tests within EPA’s verification testing program.

1. Maintain the positive R9 requirement for CFLs to increase consumer satisfaction

One of the reasons some consumers choose not to purchase CFLs is their dissatisfaction with the “quality of the light”. The spectral distribution of light produced by most CFLs is somewhat deficient in how they render red objects. The positive R9 requirement that EPA originally had in its specification properly addresses this concern and we recommend it be reinserted.

In the May 13 webinar EPA stated they removed this requirement due to increase in cost and loss in efficacy. No data was provided during the webinar backing these claims up. The method for achieving a positive R9 value for CFLs is simply to switch to a slightly different mix of phosphors, which should not result in a significant increase in cost or efficacy loss. Unless it can be proven that the incremental cost or efficacy losses are significant, we believe the slight increase in cost is worth it as it may result in greater customer satisfaction and sales of CFLs. We believe CFLs remain a viable energy savings alternative to LEDs and we want to make sure consumers like them and come back for more.

Those consumers who are not willing to pay the \$10 to \$50 needed to buy a LED lamp and do not like the CFL due to its color quality, will instead buy the much less efficient incandescent halogen which uses three times as much energy. We recommend EPA reconsider its proposal and reinsert the positive R9 requirement for CFLs.

2. Reinsert requirement to test omnidirectional lamps in an elevated temperature environment to ensure lamps placed in enclosed fixtures do not fail prematurely and turn consumers away from LED lamps.

Most consumers do not spend much time thinking about what light bulb they buy and are not well informed on many of the choices involved. As such we should make it as easy as possible for consumers to pick the right bulb and increase the probability they will have a good experience with the bulb they select. One of the reasons many CFLs fail prematurely is because they are placed in totally enclosed fixtures that trap heat and stress the lamp's electronics. CFLs have for years stated in the fine print on the side or back of the package warning language "not for use in enclosed fixtures" but consumers do so anyhow. The reality is when a consumer buys an omni directional lamp they are not necessarily thinking which fixture it will go in, especially when they buy a 4 pack of bulbs. When the bulb burns out they typically replace it with the one they have in their closet that is most similar to the old one.

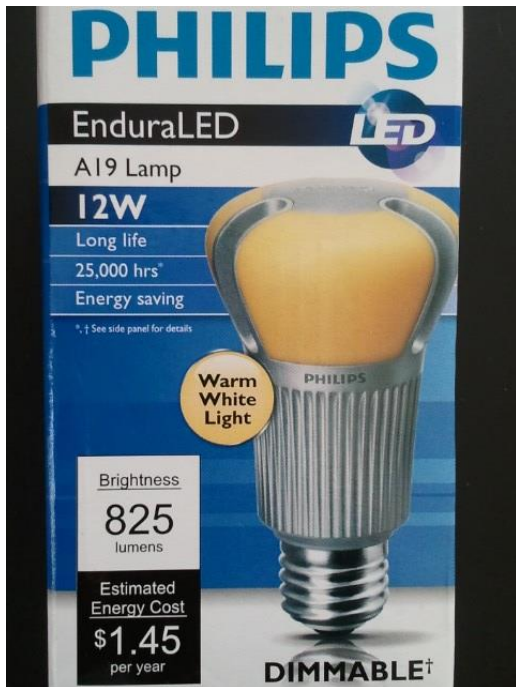
One of the biggest consumer disatisfiers with CFLs is their premature failure, which is largely due to their use in enclosed fixtures. Designing lamps and their components to be able to withstand higher temperature environments, like those encountered in enclosed fixtures, will in most cases increase the lifetime and lumen maintenance of the lamp.

With LEDs, consumers are paying upwards of \$10 to in some cases \$40 or more for an omnidirectional bulb and their expectations for long lamp life are even greater. Given we are in the infancy of the life of LED lamps, its imperative that these bulbs do not get a black eye due to premature failure caused by lamps not being able to withstand the temperatures encountered in enclosed fixtures. While the same lamp might do just fine in a table lamp, the average consumer who experienced this lamp failure in their enclosed fixture, such as a jelly jar, enclosed porch light, bath bar, etc will likely extrapolate their negative experience to all LEDs, which would represent a dramatic set

back to LED sales, energy savings and the integrity of the ENERGY STAR label for lamps.

Below we provide a real example of what a consumer might experience if ENERGY STAR's proposal goes through. In the photos below we show the front and side panel of the Philips Endura¹ LED lamp. Nothing on the front panel indicates the lamp should not be used in enclosed fixtures. The side panel contains multiple claims and warnings and one would need to look very carefully to find the warning "Not for use in totally enclosed luminaires". In fact many consumers may not even look at this side panel when shopping or be familiar with the term luminaire. The mere presence of this type of claim is unlikely to prevent the typical consumer from placing LED lamps into a enclosed fixture that are not designed to be placed there.

NRDC therefore recommends ENERGY STAR reinstate its requirement for LED lamps to be tested in elevated temperature environment and to meet the corresponding lumen maintenance and lamp failure/lifetime requirements.



¹ Note, we picked this lamp simply because we had one in our office and the selection of this lamp is not meant to suggest it would perform poorly in enclosed luminaires. We recognize it is based on the L Prize winning lamp design which did perform well during high ambient temperature testing.

3. Review and update the selection criteria for which dimmers to use during testing and include dimming testing within the EPA verification testing program.

EPA and many stakeholders participating in the specification setting process have worked very hard to develop metrics, test methods and requirements for assessing dimming performance of dimmable lamps. This has resulted in an excellent initial set of dimming requirements requiring ENERGY STAR qualified lamps marketed as dimmable to: a) dim down to a reasonably low level, and b) perform without objectionable levels of noise/hum or flicker.

The effectiveness of this part of the specification is dependent upon which dimmers the lamp is tested on. We have some concerns with some of the dimmer selection text in the specification and how EPA is implementing this portion of the specification and offer the following feedback/suggestions:

- Require dimmers from at least 2 manufacturers – we support this requirement provided the dimmers are not identical dimmers rebranded and sold under a different name. EPA should add some language to ensure the dimmers selected are truly different models besides the manufacturer name.
- Test on 10 dimmers – EPA should add language to ensure dimmers that vary only by their color or appearance of the face plate do not constitute separate models that can be counted towards the 10 dimmer requirement. NRDC is also open to requiring a smaller set of dimmers as a means to reduce testing costs, provided the testing objectives can still be met.
- Compatible with CFL and/or LED lamps – We support this requirement but greater clarity would be useful. This language is in part meant to ensure the dimmer and corresponding circuit are designed to perform well at low wattage levels and not the bottom end of the dimmer's capability as typically seen for dimmers rated to operate a load of 600W. Perhaps this dimmer should not have a rated maximum wattage of more than X watts (150W?) which would more likely indicate the dimmer is designed to be used with lower powered lamps, eg CFLs and LEDs.
- Data integrity – During the webinar the EPA stated: a) testing is not required to be done at an EPA-recognized laboratory for Third Party Certification, and b) they do not intend to include the dimming tests as part of their verification testing that is meant to ensure lamps on the ENERGY STAR products qualified product list are performing as promised. Together this sends a signal to the industry that no one is watching and increases the temptation to game the system. It also provides an uneven playing field and disservice to those manufacturers who invested the extra time and money to get dimming right.

Given this is the first time dimming requirements are part of an ENERGY STAR specification we are not opposed to allow manufacturers to do this testing

in their own laboratories, but do believe EPA should include some dimming testing as part of the verification program for dimmable lamps.