

Section	Topic	Subtopic	Comment	Response
1.1	Specification Scope & Lamp Classification	Included Products	<p>A partner supported the inclusion of more low voltage and 120V lamp bases and suggested including G9, G4, Wedge Base, and GY6.35.</p> <p>A partner recommended the U.S. Environmental Protection Agency (EPA) include the ST shape for omnidirectional lamps.</p>	<p>In Draft 3, EPA has proposed adding G4 and G9 to the list of ANSI standard base types eligible for ENERGY STAR® certification. EPA's intent in doing so is that products with these bases that also fit within an eligible ANSI standard lamp shape can pursue certification using Omnidirectional or Decorative requirements.</p> <p>EPA has also added the ANSI standard ST lamp shape to the list of shapes eligible for ENERGY STAR certification as a Decorative product.</p>
2	Effective Date		A partner requested an 18-month timeline between release of final specification and effective date.	EPA appreciates this input but feels that the proposed 12-month schedule strikes an appropriate balance allowing for extra transition time without undue delay.
4	Definitions		<p>One partner suggested that EPA expand its definition of "color shifting dimmable lamp" in note box 6 to including three separate definitions: 1) dim-to-warm/color shifting dimmable (sunset effect) lamp, 2) tunable white lamp, and 3) tunable color lamp.</p> <p>A partner requested that EPA refine its definition of flicker to distinguish between "flicker" and "stroboscopic effect" and suggested EPA use definitions being promoted within CIE and NEMA's working group on Temporal Light Artifacts.</p>	<p>EPA believes that having a broad definition of Color Tunable Lamps gives manufacturers more flexibility and that additional definitions would not be useful at this time.</p> <p>EPA has proposed an expanded definition of flicker and introduced additional definitions for stroboscopic effect and temporal light artifact.</p>
5.1	Testing Color Tunable		<p>A stakeholder pointed out that EPA's proposal from Draft 2 requiring the least efficient white light setting is likely to be at one of the ANSI endpoints and cause design challenges for meeting efficacy requirements. This stakeholder proposed three alternatives to remedy this issue.</p> <p>A partner and an industry group pointed out that the most consumptive setting is likely to be the condition where all LEDs are driven at full current and may not be on the Black Body Line, or at a chromaticity where CRI is not defined. Therefore, both stakeholders requested that EPA allow "Not Applicable" as an acceptable answer in the case of chromaticities off the BBL.</p>	In Draft 3, EPA has taken these comments and has proposed that all tests and evaluations shall be performed at the most consumptive white light setting and watts, lumens, chromaticity, and CRI shall be tested and reported for default and most consumptive white light settings.

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9.1	Luminous Efficacy		<p>Four stakeholders supported EPA's action of lowering the efficacy requirements in Draft 2 to allow more CFLs to meet the specification requirements and a utility group supported the proposed efficacy levels for directional products.</p> <p>One efficiency organization recommended that EPA increase efficacy requirements to ensure that ENERGY STAR products will be able to be lawfully sold in California.</p> <p>A partner recommended creating a separate category for color tunable lamps with a lower efficacy requirement.</p> <p>One partner recommended that EPA lower the efficacy requirements for all types CFLs. One partner and an industry group suggested lowering the requirements for directional CFLs specifically.</p> <p>A utility group proposed that EPA split the requirements for omnidirectional and decorative products based on lumens.</p>	EPA maintains the current proposal of 65 lumens per watt in the interest of balancing increased efficacy with maintaining adequate product selection and allowing for technology improvement.
9.2	Light Output	3-way Lamps	<p>A partner appreciated EPA's reinstatement of lumen output requirements for 3-way lamps.</p> <p>An efficiency organization recommended modifying the minimum light output levels for 3-way lamps so they better correspond to lighting levels of incandescent equivalents.</p>	EPA believes that reinstating the lower minimum light output levels for 3-way lamp equivalency claims will help consumers choose more efficient 3-way lamps and will communicate that an ENERGY STAR certified lamp provides the same performance as an incandescent 3-way lamp.
9.2	Light Output	CFLs	<p>An industry group recommended EPA refer to IES LM-66-14 for the Light Output Testing Guidance for CFLs and define the reporting value for light output accordingly.</p> <p>A partner requested that reflector CFLs for recessed downlights/indoor use be measured base-up only because they're primarily designed for base-up operation, and requiring the same performance for base-down would require a complete redesign and lower efficacies.</p>	Throughout Draft 3 EPA sought to harmonize with pending DOE regulations where appropriate. For CFL light output, EPA referenced 10 CFR Part 430 Appendix W to Subpart B.
9.3	Elevated Temperature Light Output Ratio		Two partners suggested alternative language to clarify exemption language.	Based on these partner comments, EPA modified exemption language in Draft 3.
9.6	CCT		Two partners and one utility group supported the future addition of 2200K and 2500K CCT levels.	Following the recent publication of ANSI C78.377-2015, EPA added 2200K and 2500K nominal CCTs in Draft 3.

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9.7	CRI		<p>An efficiency organization recommended alignment with the drafted California appliance standard requirement, which is set at 82. The organization also suggested that a minimum R9 requirement is not sufficient to address color quality issues.</p> <p>An industry group supported EPA's decision to eliminate the proposed R9>0 requirement for CFLs.</p>	EPA is encouraged by the release of IES TM-30-15 and seeks input on its applicability for use in future specifications.
9.9	Color Angular Uniformity		One partner suggested adding the word "linear" to "...be within a total distance..." to ensure consistency with the color maintenance section.	EPA agrees with the comment and has included this language in Draft 3.
10.1	Lumen Maintenance		<p>A partner pointed out that LM-80 reports are not widely available for non-white LEDs, so they suggested requiring a TM-21 calculation only for white LEDs in lamps, which provide the majority of the light output.</p> <p>Two partners and an industry group requested clarification from EPA on the supplemental testing guidance with respect to CFL tested units operated VBU only, reinstatement of specific references to <10W omnidirectional lamps, wording changes, and clarifying which testing requirement takes precedence in certain situations.</p>	<p>EPA believes that LM-80 testing is essential for all LED chips used within certified products.</p> <p>With respect to orientation, EPA is performing additional research and will address this topic in subsequent drafts.</p>
10.2	Rated Life		<p>A utility group and an efficiency organization recommended EPA require a rated lifetime requirement of 25,000 hours for LEDs to maintain the quality of ENERGY STAR LED lamps. Both stakeholders encouraged EPA to establish stronger restrictions to ensure product quality and reliability.</p> <p>A partner and an efficiency organization recommended EPA establish a minimum rated lifetime of 10,000 hours for LEDs to ensure that LED lamps entering the market with shorter rated lives and lower price points can be eligible for ENERGY STAR certification and utility rebates.</p> <p>Two partners recommended EPA restore the 9 out of 10 surviving units at 6,000 hours because eliminating all failures would drastically increase costs with little customer value.</p>	EPA will maintain the 25,000 hour LED lifetime requirement and 10 out of 10 surviving sample size in order to ensure an acceptable level of quality for certified products.
11.2	Power Factor		An efficiency organization recommended EPA set the power factor requirement at 0.9W.	EPA believes that increasing the power factor will add cost without providing significant benefit.
11.4	Start Time		Four stakeholders supported EPA's proposed start time adjustment to 750 milliseconds for non-connected lamps.	
11.5	Run-up Time		Two partners and an industry group proposed longer run-up time requirements for covered, bare, reflector, and decorative lamps.	EPA maintains the current 45-second requirement in light of historical consumer dissatisfaction with long run-up times.

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11.7	Connected Lamps	Standby Power	<p>Two efficiency organizations supported EPA's proposed 0.5W standby power requirement and suggested further improvements in future specifications.</p> <p>One partner recommended EPA set the standby power requirement at 1.0W.</p>	<p>EPA believes that 0.5W is appropriate to accommodate connected lamps in their early stages of market adoption. EPA will continue to monitor the market and development of features as they relate to power consumption to determine if a lower level is more appropriate in the future.</p> <p>EPA is also examining whether connected lamps that have additional features warrant an additional standby power allowance.</p>
12.1	Dimming		A laboratory suggested that the time and testing costs due to the requirements on maximum light output, minimum light output, flicker, and audible noise equal the testing time and cost of all remaining tests put together and therefore requested that the sample size be reduced to two dimmers, each of a different design, rather than five.	EPA performed additional research and determined that reducing sample size rather than the number of dimmers was the appropriate way to reduce testing burden while providing sufficient data to evaluate dimming performance.
12.10	Connected Lamps	Operational Status Reporting	A partner suggested removing references to operational status reporting because the control device will know when it has a command to turn on/off, so requiring the lamp to report it would add unnecessary complexity and cost.	EPA maintained its original language since operational status reporting allows for monitoring of energy use which can lead to consumer savings.
12.11	Connected Lamps	Remote Management	One partner recommended removing this section, citing limited value for residential lighting.	EPA believes it is important for connected functionality to have the ability to control the lamp by a remote control or device outside the product.
12.5	Audible Noise		A laboratory suggested that the ENERGY STAR Lamps V1.0 Test Method for Noise includes references to a document that only allows fully anechoic chambers.	In Draft 3 EPA clarified that a fully anechoic chamber is not required for certification.
12.8	Connected Lamps	Open Standards and Open Access	One partner suggested that all communication that enables connected functionality that involves open and interoperable protocols should be documented by the manufacturer and made available to interested parties. This includes accuracy, units, and measurement interval for Energy Consumption Reporting.	EPA has clarified the open access requirements for products utilizing a manufacturer-specific communication method.
12.9	Connected Lamps	Energy Consumption Reporting	Four partners suggested removing references to energy consumption reporting because of the added costs it would cause. Two of those partners suggested that the control device be able to estimate and communicate data representative of lamp energy consumption.	EPA responded to these comments and clarified that reporting of estimated power consumption is allowed.
13.1	Toxics Reduction		An industry group suggested the addition of two more RoHS exemptions: lead as an alloying element in aluminum, and lead and cadmium in printing inks.	EPA added these two additional exemptions consistent with EU RoHS.
15.1	Lamp Labeling	Lamp Labeling	An industry group requested that EPA remove the requirement to print application exception language on the lamp as required by safety certifiers because it is already required when a product is certified for safety, so it is redundant.	In Draft 3 EPA maintains the current language.

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15.2	Lamp Packaging		<p>An industry group suggested alternative language for the application exemption section to make the language include exemption for totally enclosed, recessed luminaires or an equivalent statement.</p> <p>An efficiency organization recommended maintaining the lamp packaging requirements in Draft 2, Section 15.2, as well as adding a requirement that products not intended for use in enclosed fixtures contain claims on the front of the package regarding use in enclosed fixtures as well as indicating dimmability.</p>	In Draft 3, EPA clarified the exemption language and maintained the current requirements for specific application restrictions to appear on lamp packaging.
15.2	Lamp Packaging	CCT	Four stakeholders supported EPA's proposed decision not to mandate CCT nomenclature, but to provide recommended terms. An industry group said that the names suggested in Draft 2 were more consistent with industry practices, but a partner suggested some changes to the nomenclature.	EPA plans to continue to provide recommended terminology for partners to use on product packaging to help consumers in understanding color performance. EPA seeks input on nomenclature for 2200K and 2500K nominal CCTs and is considering "Blue White" as nomenclature for 6500K.