



Hubbell Lighting, Inc.



Progress Lighting

701 Millennium Blvd
Greenville, SC 29607
PHONE: (864)678-1201
FAX: (864)678-1411
www.progresslighting.com

Date: October 29, 2010

Page 1 of 8

To: Alex Baker

From: Craig Wright

Re: HLI Response to Energy Star Luminaires Standard Draft 2

Mr. Baker,

On behalf of Hubbell Lighting, Inc., and Progress Lighting please acknowledge the following comments taken from draft 2 of the comprehensive Energy Star standard issued for stakeholder comments 10/01/10.

It is strongly encouraged that EPA conduct a round table or webinar with luminaire stakeholders prior to the release and subsequent publishing of Draft 3. In lieu of a Draft 4 to allow for further stakeholder comments considering the significant changes presented in Draft 2, this will allow stakeholders to make interim proposals and ask pertinent questions for purposes of establishing clarity.

Sincerely,

A handwritten signature in black ink that reads "Craig Wright". The signature is written in a cursive, flowing style.

Craig Wright
Product Manager – Progress Lighting



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1. Page 1 – Residential outdoor post-mounted luminaires are classified as directional. Most residential luminaires of this type include an omnidirectional decorative diffuser. Classification of this type of luminaire as directional is contrary to the requirements of the application. This requirement along with the necessary testing and performance criteria will essentially exclude this product type from qualification.
2. Page 1 – Exterior steplights, exterior pathway lights, and bollards have been omitted; however, they are currently specified in SSL 1.1. While typically installed in commercial applications, it is strongly encouraged that steplights and bollards be added back into the specification as there are significant energy savings opportunities with respect to SSL.
3. Page 1 – It is recommended that EPA investigate the potential energy savings associated with adding commercial track and adjustable heads to the product categories.
4. Page 8 – Related to solid state drivers primarily, how is it possible to have drivers certified to a database if the ‘supplemental testing guidance’ states that the relevant tests are to be performed with the LED packages, modules, or arrays used in the luminaire? If the purpose of the database is to maintain a list of components that are certified for use in Energy Star luminaires, then the test requirements of the component must be separate from the luminaire.
5. Page 10 – The column entitled ‘Supplemental Testing Guidance’ was changed from ‘Required Documentation’ in draft 1. The test under this heading consistently states ‘test results shall be’. A point of clarification is requested as to this detail be ‘guidance’ or required for product qualification. While we appreciate the EPA’s revisions in this latest draft to open the door for manufacturers to do their own testing and then submit those results through a 3rd party “Certification Body or CB” we believe this approach is still adding significant cost and time to the process of introducing new products to the market. Recognizing the EPA’s concerns for valid test data we would suggest as an alternative that manufacturer’s labs that are either already NVLAP certified or registered with UL/CSA through their Data Acceptance Programs (DAP) be allowed to submit their test results directly to the EPA without having to incur the added cost and time of obtaining a 3rd party review and approval of those test results. Both NVLAP and UL/CSA registration require significant investment in in-house laboratories and represent 3rd party recognition of the validity and integrity of testing results that come from those labs. For an optional energy efficiency rating system such as Energy Star, this should be sufficient to ensure data integrity. As currently proposed, the added cost and delay in product launches will only serve to make Energy Star qualification less desirable.
RECOMMENDATION: Permit manufacturers labs which are either NVLAP certified or part of a recognized 3rd party independent laboratory certification program such as UL’s Data Acceptance Program to submit their energy star program qualification testing results directly to the EPA for acceptance.



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6. Page 10 – System/source efficacy requirements for fluorescent is generally accepted as this states the current practice; however, the requirements for solid state are perceived to create issues. A significant volume of chandeliers and vanities are 3-light designs, but the standard states ‘more than 3 heads’. A system source of 450lm is reasonable when targeting performance of a 40W candelabra, and it is within reason when considering the state of SSL technology (accepting cost targets as well). Requirements of differing luminance for <4 and >3 heads will create inequalities in fixture families (e.g. 1-lt pendant & 5-light chandelier). From the notes section on page 11, it is understood that most qualified products today employ sources that deliver 800lm; however, this is most likely because a 13W omnidirectional CFL is the lamp of choice. SSL requires balance of output, distribution, and cost which inhibits achievement of the 800lm goal for <4 heads.

RECOMMENDATION: Change the luminance criterion to 450lm without exception. This will provide manufacturers the opportunity to apply the current state of the technology to residential luminaires without introducing undesired aesthetic consequences (e.g. glare). As an example, pendants can easily be designed to include systems that deliver 450lm, but this is often done at the expense of providing omnidirectional light (i.e. it’s easy to direct light straight out from LED’s).

RECOMMENDATION (secondary): Change the head requirement for chandeliers and vanities to ≥ 3 .

7. Page 10 – Is the certified component database going to provide efficacy for specific fluorescent lamp and ballast combinations showing compliance to the system requirements? Otherwise, the standard as it is written appears to require the fixture manufacturers to provide efficacy via testing. Reference page 16 requirements for light source life. Currently, there are two databases from which fixture manufacturers may select system components: 1) NEMA lamp and ballast matrices, 2) EPA component database. The NEMA matrices are separate for lamps and ballasts, and the ballast matrix does not associate them with specific lamps. The EPA database lists ballasts with specific lamp models.

RECOMMENDATION: Clarification is needed as to EPA’s intention for components to be selected from the future database. Are systems now limited to the lamps for which the ballasts are identified with in the database? This will put a great deal of pressure on manufacturing as it limits use of and restricts use of ballasts that are currently specified from the separate NEMA matrices.

8. Page 14 – The note regarding zonal lumen distribution of undercabinet luminaires remains unclear. Fluorescent sources are omnidirectional, so it would be difficult for an undercabinet with this source not to meet the zonal distribution requirements (as substantiated by the recent testing). The question is then passed on to other sources such as solid state. Zonal lumens from this primarily directional source require additional optical components to “put the light where it’s needed”. More optical control results in lower efficiency, lower lumens, and lower efficacy.

RECOMMENDATION: Evaluate zonal lumen distribution based on application requirements rather than benchmarking currently qualified product. Good undercabinet lighting will provide sufficient lighting for task oriented actions on the work plane, indirect light from the wall to the work plane, and minimal glare on the counter surface.



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9. Page 23 – Including lamps with recessed cans will present issues with the traditional rough-in installation procedure as well as potential issues with bulk shipping. Residential recessed cans are installed during the rough-in stages by electrical contractors. At this stage, the cans are secured to the ceiling supports and electrical power is connected. The following stages involve sheet rock going up, and then painting. Then, the electrical contractor returns to install the trims and lamps. It is not practical to ship lamps with recessed cans, nor is it practical as it relates to making necessary accommodations with master pack cartons.

RECOMMENDATION: There are no historical quality issues associated with the use of GX24q lamps in recessed cans that may have resulted from EC's installing "non-Energy Star" lamps. It is however likely that the use of GU24 self-ballasted CFL's in recessed cans will present quality issues. It is therefore strongly encouraged that EPA require lamps to be shipped with GU24 cans only, and that GX24 cans not be required to be shipped with lamps. In addition to protecting quality, this will assist in balancing costs between the two products (i.e. GX24 include a remote ballast, GU24 includes a self-ballasted lamp).

10. Page 23 – Most recessed luminaires include housings/cans that are sold separately from mating trims. In the case of LED recessed, the driver may be sold with the housing/can resulting in it being a dedicated element of the luminaire (i.e. the trim can't function without the accommodating housing/can). The lamps included requirement indicates that qualified LED luminaires 'must be shipped with all light source components included'. Again, while the entire luminaire (housing/can + trim) may be Energy Star qualified, the respective elements may be qualified, sold, packaged, and shipped separately. It is therefore very likely that a housing/can with an integrated driver but no light engine, and a trim with a light engine but no driver, may carry the Energy Star mark but not be shipped together.

RECOMMENDATION: Allow luminaires to be shipped in separate components but still carry the Energy Star logo. It may be accepted to include a label on the respective cartons indicating that the Energy Star mark is valid if that particular product is installed for use with the accommodating mating sku. e.g 'Energy Star when used with....'.

11. Page 24 – HLI encourages EPA to reach out to manufacturers of solid state power supplies to determine if start time testing is required for all light engines. Advisement of the inherent costs of such 3rd party testing should be evaluated and disclosed as well.

RECOMMENDATION: As there is no test standard currently available to evaluate start up time for LED engines, this requirement should be dropped from the standard. Otherwise, it is likely that subjectivity will complicate and obscure the issue further.



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12. Page 24 – (from Thomas Research Products) A 1 second maximum for source start time is presumed to have been selected largely due to the absence of a SSL driver standard. Many drivers currently available today go through a self-diagnostic during the startup phase to determine if the load is appropriate for the driver. While this is usually completed in 1 second, some drivers take 2-3 seconds to finish the cycle. Drivers that are compatible with complex systems such as Dali, DMX, and/or have thermal/occupancy feedback capabilities also have a 1-3 second diagnostic/preparation phase.
RECOMMENDATION: In the absence of a driver standard, it is recommended that EPA consider changing this requirement to 2 seconds. Otherwise, controls and other circuitry that further contribute to energy savings may be required to be left out of Energy Star products.
13. Page 24 – Run-up time needs to be further evaluated as with start time.
RECOMMENDATION: As there is no test standard currently available to evaluate start up time for LED engines, this requirement should be dropped from the standard. Otherwise, it is likely that subjectivity will complicate and obscure the issue further.
14. Page 26 – For CFL sources, lower wattage quad lamps are typically dedicated (e.g. 13W=GX24q-1, 18W=GX24q-2), higher wattages have some options (e.g. GX24q-3=26W /32W, GX24q-4=26W/32W/42W). To consolidate inventory of ballasts, fixture OEM's often use multi-watt ballasts for use with different fixtures that may have lower maximum lamp wattages than what the ballast is capable of accommodating. It is incumbent upon the fixture OEM to ensure that the product is designed with sockets that accommodate the desired lamp type/wattage along with an appropriate ballast to operate it.
RECOMMENDATION: CFL fixtures that are capable of supporting multiple lamp wattages must be labeled accordingly. This is done today via relamp labels on the products to advise consumers what to replace the lamps with upon EOL.
15. Page 27 – The future database for luminaire component certification will include compliant ballasts and lamps from which the fixture manufacturers may select. Ballasts are designed to operate ANSI compliant lamps, and the lamps are also designed and produced to applicable ANSI standards. Due to the common practice of design and production to ANSI standards, testing of specific lamps used in a luminaire would not seem to be necessary, and is costly and time consuming for luminaire manufacturers to test. Further, the unavailability of a testing standard will likely add subjectivity and confusion to this requirement.
RECOMMENDATION: Remove this requirement specific to luminaires. It is encouraged that this requirement be established as a general requirement for component/ballast certification considering use with EPA certified lamps.



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16. Page 27 – Beginning here, there are several requirements pertaining to qualification of electronic devices such as ballasts and solid state drivers. Under the ‘Supplemental Testing Guidance’ heading, there are many references to luminaire. A point of clarification is requested as to whether these test requirements pertain to the device or the luminaire. Further, clarification is requested on the correlation between the future device certification database and the various test/performance criteria for these devices in the luminaire standard.
17. Page 27 – There is no available standard nor established qualifying metrics from which luminaire manufacturers may follow to qualify luminaires.
RECOMMENDATION: Remove this requirement from the standard until a test method and agreed upon metrics can be established. The current criterion for SSL fixtures is to note any known incompatibility with controls, and it is encouraged that this practice be continued in the interim to a new test standard.
18. Page 29 – Regarding fluorescent and HID systems, the standard indicates that power factor must be measured for the specific components intended to be used in the luminaire. Power factor is a requirement for components to be certified to the EPA database (assumption).
RECOMMENDATION: Per item 12, if the component database is to include certified components that are designed and manufactured to applicable ANSI standards, then power factor should not be a requirement for specific combinations of these components.
19. Page 30 – HLI requests an explanation from EPA as to why the standard requires that light sources (e.g. lamps, LED modules, etc) be tested with power supplies. Transient protection is applicable only to power supplies and is tested accordingly. The supplemental testing guidance indicates that ballasts/power supplies are to be tested with the light source; however, sample size indicates that only ballasts or drivers are to be tested. Clarification and understanding of test requirements for halogen luminaires is requested as well.
RECOMMENDATION: Test requirements for transient protection should be limited to power supplies without the light source.
20. Page 32 – SSL power supplies are required to operate at or above 120Hz. The test requirement is for 3 samples to pass; however, there is no test standard referenced.
RECOMMENDATION: Due to the unavailability of a standard for which manufacturers may test for this criterion, it is recommended that this requirement be removed from the standard.



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21. Page 33 – The required noise rating for luminaires with electronic devices is 24dBA. This rating has always been assessed at the device level and not to the entire luminaire. It is requested that EPA advise on the assertion that luminaire manufacturers will take related to overall device compliance as evidenced by their inclusion on the forthcoming certification database. It will be assumed that the device was determined to be in compliance in order to be included in the database.
RECOMMENDATION: This should be applicable at the device level. Remove indications that this will be assessed at the luminaire level. Testing at the luminaire level will incur significant costs and will further delay time to market.
22. Page 38 – Luminaires designed to be installed in wet locations are tested per the relevant criteria established in UL 1598.
RECOMMENDATION: Clarify the testing requirements to indicate that UL 1598 is the testing procedure for luminaires.
23. Page 40 – All dimmable fixture types are required to provide indication of know compatibilities as well as incompatibilities on the product packaging. This requirement may result in a significant number of compatible and incompatible devices to be included on luminaire packaging. While this is understood for retail products, it is impractical and costly related to specification or distributor type product.
RECOMMENDATION: Consider the requirement for inclusion of devices on retail packaging only. Product that is sold through specification or electrical distributors should include only know incompatible devices. It is strongly encouraged that this requirement be limited overall for inclusion on downloadable materials (e.g. specification sheets and/or installation instruction sheets) from manufacturer websites. This will provide the most updated information to consumers, will minimize product costs, and will be the most effective means of conveying changes to the market place.
24. Page 41 – What evidence does EPA have to indicate that RoHs compliance at the luminaire level will significantly reduce the presence of heavy metals in the market place? Compliance at the luminaire level will require significant changes to test lab infrastructure (test equipment, personnel, procedures, oversight, etc), and may present challenges as it relates to the simplest of components. For example, most wire insulation commonly used today is not compliant to RoHs. Maintaining this criterion will require luminaire manufacturers to further segregate production of Energy Star luminaires at significant cost (and resulting market pricing).
RECOMMENDATION: Clarification is requested from EPA as to the value this will bring to the Energy Star brand in comparison to resulting increased costs and market pricing. From the website, Energy Star helps ‘us all save money and protect the environment through energy efficient products and practices’. Clarification is requested as to how the RoHs requirement contributes to and energy savings focused mandate.



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Page 41 – RoHs is not currently the law in the U.S. and there are a significant number of lighting component suppliers and OEMs who have not voluntarily sought to be compliant. According to Technology Forecasters, Inc, the RoHS directive cost the electronics industry more than \$32 billion for initial compliance and \$3 billion annually to maintain compliance. The study also found the average cost per company was \$2,640,000 to achieve initial RoHS compliance and another \$482,000 for annual maintenance. For both small businesses and major OEMs alike this represents a significant cost barrier to participation in the Energy star program. Compliance to this EU regulation at the luminaire level will require significant changes to test lab infrastructure (test equipment, personnel, procedures, oversight, etc), and will present challenges as it relates to the simplest of components. For example, most wire insulation commonly used today is not compliant to RoHs as well as numerous ballasts used in today's fixtures.. Maintaining this criterion will require luminaire manufacturers to either segregate production of Energy Star luminaires with unique RoHS compliant components or convert all production to be RoHS compliant at significant cost (and resulting market pricing).

RECOMMENDATION: Delete this European Union requirement from the Energy Star regulations as it has no relevance to energy savings, and is not a U.S. requirement, but if left unchecked will add significant expense to the Energy star process.

25. Page 42 – It is recommended that warranty letters be required to be posted on luminaire manufacturers' websites. This ensures that consumers have immediate access as well as the most up-to-date information related to the product.

RECOMMENDATION: Luminaire warranty letters should be required to be posted on manufacturers' websites only.