



April 21, 2023

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U.S. Environmental Protection Agency  
Washington, DC 20460

Re: NEMA and ALA Comments Regarding ENERGY STAR® Recessed Downlights V1.0 Draft 1

Submitted electronically to [lighting@energystar.gov](mailto:lighting@energystar.gov)

Dear Taylor,

The National Electrical Manufacturers Association (NEMA) continues to represent nearly 325 electrical equipment and medical imaging manufacturers that make safe, reliable, and efficient products and systems serving building systems, building infrastructure, lighting systems, industrial products and systems, utility products and systems, transportation systems, and medical imaging. Our combined industries account for 370,000 American jobs in more than 6,100 facilities covering every state. These industries produce \$124 billion in shipments and \$42 billion in exports of electrical equipment and medical imaging technologies per year.

The American Lighting Association (ALA) represents over 1,300 member companies in the residential lighting, ceiling fan and controls industries in the United States, Canada, the Caribbean and Mexico. Member companies are manufacturers, manufacturers' representatives, retail showrooms and lighting designers.

ALA members and members of NEMA's Lighting Systems Division have thoroughly reviewed EPA's first draft of the ENERGY STAR Recessed Downlights V1.0 specification. We thank you and the rest of the team for sharing our vision for maintaining high quality and energy efficiency in this segment of the lighting market. With our support for EPA's proposed timeline, we enter the following technical and commercial commentary for your consideration and careful attention, and we thank you for the opportunity.

### **Recertification Costs & Benefits**

NEMA and ALA members appreciate EPA's interest in ensuring a smooth transition between specifications, and especially the stated intent to not require additional testing for already-certified products. In its 6 January response to EPA's Lighting Sunset Proposal, NEMA's recommendation to EPA was to maintain the ENERGY STAR Luminaires V2.2 ("V2.2") certification of downlight products meeting a revised specification's increased requirements. We proposed that EPA use its program management authority to direct certification bodies ("CBs") to delist the subset of certified luminaires not meeting the

narrower scope and higher performance specification. With this approach, higher-performance downlight product certifications would remain certified without additional action required of EPA, manufacturers, or the EPA-recognized certification bodies who manufacturers pay for ENERGY STAR product certification. Alternatively, EPA has proposed recertification of already-certified products under a new ENERGY STAR Recessed Downlights V1.0 specification (“V1.0”).

The analyses published with EPA’s Proposal demonstrate that the Agency is itself capable of identifying currently certified products (i.e., those certified to V2.2) which meet the requirements detailed in the new specification, and those which do not. By way of their original third-party certification per ISO/IEC 17065 requirements, EPA knows those existing certified models’ test report data to be credible. If the data are already certified and within the control of EPA-recognized certification bodies, demonstrate to EPA specific products’ compliance with the higher performance specification, and if EPA intends no additional testing to be required of that subset of certified models, we believe recertification is unjustified, unnecessary, and provides no additional value to consumers, to energy efficiency programs, to the Agency, or to energy efficiency efforts broadly. Likewise, it provides no benefit to manufacturers, as recertification would introduce considerable costs without accomplishing anything new. If EPA understands that a subset of certified product models already meets the new specification’s requirements, in the absence of explicit manufacturer direction to discontinue specific product certifications, EPA should identify a way to continue recognizing those models as certified without shifting essentially a redundant paperwork burden onto manufacturers and certification bodies. We urge the Agency to reconsider this aspect of its Lighting Sunset Proposal. The Proposal would place undue cost on manufacturers **to repeat third-party paperwork services that have already been procured, paid for, and completed, without any perceptible benefit to any stakeholder save for the financial windfall EPA-recognized certification bodies would expect to enjoy while providing the same service with the same outcome a second time.**

Third-party product certifications to the ENERGY STAR Luminaires V2.2 specification inform EPA not only of the availability of new products meeting that specification’s requirements, but also the degree to which those products exceed minimum specification requirements. We appreciate that the Government Accountability Office (GAO) directed EPA to require third-party product certification, but a standard of reasonableness must be applied if the Agency expects continued manufacturer engagement in the Program. To require recertification of existing certified test report data without benefit to anyone would not in our view be consistent with GAO’s intent. ALA and NEMA members ask the Agency to identify a way to recognize and reward manufacturers who have participated in Luminaires V2.x for their continued engagement; requiring unnecessary and costly bureaucratic processes of manufacturers will surely have the opposite effect. We remind you that some of those manufacturers have been engaged with EPA’s ENERGY STAR lighting program since it was established more than 30 years ago.

The V1.0 recertification approach proposed by EPA also seems to work against longstanding Program goals of growing the market share of certified products and increasing the number of ENERGY STAR certified models available to consumers and builders. If a recessed downlight is presently ENERGY STAR certified under V2.2 at 100 lumens per watt (lm/W) and meets all V1.0 proposed requirements, should this achievement – and the benefit it brings to the consumer and home builder markets – be stripped away because a manufacturer refused to pay to repeat a certification process (read: paperwork review) that was already completed, often years ago?

### **Efficacy Requirements**

We agree with EPA on the need to raise the luminous efficacy requirements for earning the ENERGY STAR. From our analyses, NEMA and ALA members believe 90 lm/W at the luminaire level is too aggressive of an approach. At that level, roughly 12% of downlight models on the existing certified

products list would qualify; due to recertification costs, however, we believe only a small fraction of that subset would remain certified going into 2025. To provide a robust product offering to consumers and builders, we recommend EPA proceed with a minimum luminous efficacy requirement of 75 lumens per watt.

## **Scope**

Our members have identified two minor concerns regarding the scope of the new specification.

First, downlights are installed in many ways across many applications. They are of course recessed above the ceiling line, but they're often installed flush with the ceiling, or hung as pendants, or wall mounted. In some instances, the same model of luminaire is used across multiple applications with various installation hardware; that is, same luminaire is installed in different ways. With this in mind, we ask EPA to consider a minor expansion of the specification scope to include *downlights* broadly, not only the recessed variety, regardless of mounting method.

We have noted also that some recessed applications, especially if a higher minimum luminous efficacy requirement is enacted, will require an allowance for specific trims. A shower trim, for example, is intended to keep moisture from damaging luminaire components but will also reduce luminaire light output. We ask EPA to consider allowances for specific types of trims, including shower trims.

Please note that across the downlight category, apertures are not always circular; square apertures are popular as well. Regarding the aperture limits detailed in the Scope, how are those limits to be applied to square trims, and other non-round trims? We ask that this be clarified in the next specification draft.

## **Testing Considerations**

### *Testing Color Tunable and Multi-Output Downlights*

ALA and NEMA members agree with EPA that the process for qualifying tunable products should be changed from that in Luminaires V2.2 to that of Lamps V2.1. The proposed text in Section 5.1 accomplishes this.

### *Standards and accreditation*

We note EPA's intent to allow (re)certification to V1.0 using existing test reports from V2.2 certification. However, the V1.0 specification does not reflect the versions of the standards that were specified (and to which laboratories were accredited) for V2.2 certifications. If EPA cannot find a way to maintain the existing V2.2 certifications that manufacturers have already paid for, then the older versions of these standards will need to be normatively referenced in the V1.0 specification to permit use of those existing test reports for recertification. Likewise, EPA will need to direct CBs to recognize the accreditation statuses of the laboratories at the time those test reports were originally written. If a laboratory is no longer accredited for a given method, that should not be a factor in recertification to V1.0.

### *ANSI/IES TM-21 Projections*

NEMA and ALA members appreciate and support EPA's proposal to adopt the ANSI/IES TM-21 calculator hosted online by the Illuminating Engineering Society. As you know however, we are concerned that this calculator has been shown to produce more conservative luminous flux maintenance projections in some instances compared with the legacy EPA calculator's projections using the same

data. These concerns are highlighted in a NEMA whitepaper published in 2022 that we encourage you to review: <https://www.nema.org/standards/view/nema-comments-on-updated-ies-tm-21-22-calculator>.

We request that EPA ensure the ANSI/IES TM-21 calculator has been validated and officially released (i.e., no longer labeled *beta*) by the Illuminating Engineering Society (IES) before the effective date of the V1.0 specification. In addition, we request that EPA collaborate with NEMA and the IES on an educational campaign to inform the market of the benefits of the newer, more conservative calculation method and instructing that its results cannot be compared to previous calculations.

For continuity between specifications, given EPA's stated intent to avoid additional testing and allow the continued use of existing product test reports for (re)certification, it would be fair to allow products certified to V2.2 and meeting V1.0 requirements to use their existing TM-21 projections for V1.0 recertification. Without such an allowance, in some instances, projections from the new calculator will fail to meet ENERGY STAR requirements that were met using EPA's old calculator. To meet the Agency's intent to enable recertification of V2.2-certified products under V1.0, the new specification will need to make normative reference to the old calculator, and the older versions of IES TM-21 and LM-80 that were employed for V2.2 certifications.

#### *Power Factor*

Regarding power factor, we ask EPA to simply make normative reference to ANSI C82.77-10-2021 *Lighting Equipment – Harmonic Emission Limits – Related Power Quality Requirements*. There are many technically sound reasons for this recommendation, all of which were considered during the industry consensus standard development process which led to publication of this American National Standard, and they are detailed within.

#### **Packaging Requirements**

Our members advise that not all products within the scope of the V1.0 specification are typically packaged for merchandising on consumer shelf space. Many products will not have their packaging visible to the consumer until after the sales process is complete, for instance when luminaires are purchased through online resellers, distributors, or through direct sales. In these instances, requiring detailed information on otherwise brown-box packaging potentially increases packaging size, and limits packaging flexibility, generating more waste and a higher burden of packaging storage and handling by manufacturers. We ask EPA to consider relaxing the packaging requirements for units that are bound for the online reseller, distributor, or direct sales channels.

#### **Verification Testing and Other Outstanding Questions**

For our members to determine their level of engagement in the V1.0 program going forward, we reiterate NEMA's previous request for the following information noted in its initial response to EPA's Lighting Sunset Proposal.

1. For more than a decade, EPA-recognized certification bodies (CBs) have collected lighting product performance data for tens of thousands of products. ALA and NEMA members would not support allowing the CBs to use these data in any way following sunset of the lighting programs without the express written consent of the manufacturers themselves. How do EPA's existing directives to, and signed agreements with the CBs ensure that the data will remain privately held, and not redistributed, shared, bought, sold after sunset?

2. What are EPA's intentions regarding international implementation of ENERGY STAR lighting specifications? Will Natural Resources Canada be required to sunset their lighting activities on the same timeline as EPA?
3. How will EPA identify partnership violations serious enough to warrant reinstating verification testing?

If EPA intends to reinstate verification testing of luminaires under V2.2 or V1.0 or both, our members request the Agency continue the existing program as currently conducted, without adjustment. If changes are to be made, we request advanced notice, and the typical open stakeholder process we would normally expect.

In conclusion, NEMA and ALA members are most pleased to be working with EPA and the larger efficiency community to identify a path for maintaining ENERGY STAR certification of downlights, one of the most technically challenging lighting applications. We believe the ENERGY STAR Recessed Downlights V1.0 specification would be improved by the above recommendations but caution the Agency once again that requiring recertification will seriously impede the achievement of Program goals.

Sincerely,



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National Electrical Manufacturers Association



Michael Weems  
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