

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



OFFICE OF  
AIR AND RADIATION

September 28, 2017

Dear ENERGY STAR<sup>®</sup> Partner or other Interested Stakeholder:

The U.S. Environmental Protection Agency (EPA) announces the release of the final [ENERGY STAR Requirements for the Use of LM-80 Data](#). Referred to in this letter as “the new document”, it replaces the [ENERGY STAR Program Guidance Regarding LED Package, LED Array and LED Module Lumen Maintenance Performance Data Supporting Qualification of Lighting Products](#), referred to as “the 2011 document”. The new document will help improve the certification process for partners, certification bodies, and assist LED suppliers through increased clarity and flexibility. The majority of changes made were clarifications and adjustments based on learnings of a maturing market; users will also notice a new format.

EPA would like to thank partners and stakeholders for their thoughtful participation during the revision process. EPA has worked closely with stakeholders to address all comments. The last round of comments resulted in the following final revisions:

- Minor revisions to the definitions of Case Temperature, LED Temperature Measurement Point, Power Density and Successor,
- Removal of the LED Driver Case Temperature Measurement Point definition,
- Addition of Device Under Test (DUT) and Subcomponent definitions.
- Addition of DUT Sampling Method and Minimum Die Spacing to the LM-80 test reporting requirements for ENERGY STAR
- Relocation of the requirements for multi-die LED packages and for those constructed as an assembly of LED packages on a printed circuit board (PCB) from the Content section to the Application section.

**Major highlights for the new document as it compares to the 2011 document are highlighted below.**

- The new document supports the use of LM-80 data (i.e. IES LM-80-08, its Addendum A, or ANSI/IES LM-80-15) for ENERGY STAR certification of lighting products.
- EPA clarified how the CCT of the LM-80 sample set may differ from the certified product as follows:
  - LM-80 sample sets with CCT of 2200K to 2700K may represent a product with any nominal CCT  $\geq$  2200K covered by the specification;
  - LM-80 sample sets with CCT of 3000K or 3500K may represent a product with any nominal CCT  $\geq$  2700K covered by the specification; and
  - LM-80 sample sets with CCT of 4000K to 6500K may represent a product with any nominal CCT  $\geq$  4000K covered by the specification.
- EPA clarified some of the reporting requirements and added reporting requirements for:
  - The date the report was first issued, and revised (if applicable);

- Total input power to align with the adjusted requirement for successors;
- Average current density per LED die to align with the adjusted requirement for successors;
- Average power density per LED die to align with the adjusted requirement for successors;
- Nominal Color Rendering Index (Ra) for the tested sample set; and
- Minimum die spacing to align with the requirements for multi-die LED packages.
- For multi-die LED packages EPA added a requirement that average current density per LED die be less than or equal to the tested LED package to align with current density requirements elsewhere in the document.

### **Timeline for Implementation**

With the exception of Section 3—Content of LM-80 Test Reports—this document immediately supersedes the *ENERGY STAR Program Guidance Regarding LED Package, LED Array and LED Module Lumen Maintenance Performance Data Supporting Qualification of Lighting Products*.

LM-80 test reports issued after December 27, 2017 must meet the requirements of Section 3. This may be accomplished through supplemental documentation (e.g. cover page). Test reports issued prior to that date will be accepted without supplemental documentation until March 27, 2019.

Beginning March 27, 2019, all reports and supplemental documentation used to support new ENERGY STAR certifications must meet the requirements of Section 3.

Note that while the new document supports use of the latest industry standards at the time of publication, test data must comply with the relevant ENERGY STAR lighting program specification. For example, Luminaires V2.0 does not reference LM-80-15, but EPA intends to add it soon through a V2.1 revision.

If you have questions, please contact me at (202) 343-9042 or [Jantz-Sell.Taylor@epa.gov](mailto:Jantz-Sell.Taylor@epa.gov) or Daniel Rogers, ICF, at (908) 233-0554 or [lighting@energystar.gov](mailto:lighting@energystar.gov).

Thank you for your continued support of ENERGY STAR.

Sincerely,



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ENERGY STAR Lighting Program Manager  
U.S. Environmental Protection Agency