## ENERGY STAR for Residential Light Fixture (RLF) Specification Draft Amendment and Clarifications: Durability

The following tables are sections of the ENERGY STAR (RLF) specification that will change when durability requirements are added to the specification. Proposed amendments to the RLF specification are highlighted in Yellow. Clarifications to current RLF specification (version 3.1) are highlighted in Green. Items not highlighted will remain as they appear in the current RLF specification (version 3.1).

### *Table 1 - Indoor Fixtures*

| Performance Characteristic | ENERGY STAR Specification |
|---|---|
| Durability<br>ANSI Standardized Lamps | Lamps shall meet ANSI C78.901-2001 or C78.81-2001as appropriate<br><br>For fixtures using non-ANSI standardized lamps, supply a manufacturer lamp specification sheet that includes the following information as appropriate. (Use ANSI lamp data sheets found in ANSI C78.901and C78.81 as reference):<br>o Lamp Description:<br>– Lamp Abbreviation<br>– Nominal Wattage<br>– Nominal Dimension (OAL, Width, Depth)<br>– Bulb Designation<br>– Circuit Application<br>o Physical Characteristics<br>– Dimensional Characteristics<br>– Base Specifications (must be standardized, reference ANSI C81.61)<br>o Operating Position<br>o Cathode Characteristics<br>– Type<br>o Radio Interference Suppression Capacitor<br>– Minimum (uF) (at 60Hz)<br>– Maximum (uF) (at 60Hz)<br>o Lamp Starting Time<br>o Reference Ballast Characteristics<br>– Rated input voltage (V)<br>– Reference Current (A)<br>– Impedance (ohms)<br>o Thermal Conditions<br>– Base temperature rise (K max.)<br>o Information for Ballast Design:<br>– Starting Voltage<br>✍ Voltage between lamp terminals:<br>At 0°F(-18°C) and above, (Vrms) min.<br>At 0°F(-18°C) and above, (Vpeak) max. |

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| | o Maximum Lamp Operating Current Ration (%)<br>o Preheat Current<br>– Minimum at 90% of rated line voltage (A)<br>– Maximum at 106% of rated line voltage (A)<br>o Cathode heat Requirements<br>– Dummy load resistor, for both cathodes in series<br>o Information for Luminaire Design<br>o Nominal Lamp Operation<br>– Maximum temperature at point X on lamp base (°C)<br>o Abnormal Lamp Operation<br>o Maximum base temperature (°C) |
| ANSI Standardized Ballast | See "Performance Characteristics For Electronic and Magnetic Ballasts" later in this table. |
| Maximum Ballast Operating Case Temperature for Optimal Performance | See Maximum Ballast Operating Case Temperature Requirements for Optimal Performance later in this table. |

***Table 3 – Reference Standards and Required Documentation***

| **Performance Characteristic** (refer to Table 1, 2A or 2B as appropriate) | **Methods of Measurement Reference Standards** | **Required Documentation** (to be attached to or recorded on the Qualified Product Information Form) |
|---|---|---|
| Durability | | |
| ANSI Standardized Lamps | ANSI C78.901-2001; ANSI C78.81-2001; ANSI C81.61 | Specify applicable ANSI or ANSI-IEC Standard Data Sheet Number.<br>For non-ANSI standardized lamps supply manufacturer lamp specification sheet that describes the electrical and dimensional information typically found in ANSI lamp data sheets. |
| ANSI Standardized Ballast | ANSI C82.11 | See performance requirements for electronic and magnetic ballasts. |
| Maximum Operating Ballast Case Temperature for Optimal Performance | Maximum Operating Ballast Case Temperature for Optimal Performance | See Maximum Operating Ballast Case Temperature for Optimal Performance requirements |

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| Maximum Ballast Operating Case Temperature for Optimal Performance | UL 1598, Section 11<br><br>Lighting Research Center (LRC) "Proposed Durability Testing Method: Temperature" | Supply manufacturer or lab data that shows that the temperature of the ballast case, when installed in the fixture, does not exceed the manufacturer's maximum ballast case temperature for performance.<br><br>Note: A laboratory test report must be submitted upon EPA request:<br><br>1. Existing laboratory test reports demonstrating that the ballast operating case temperature meets the ENERGY STAR specification will be accepted.<br><br>2. If no existing test report is available, than the manufacturer should use the LRC's "Proposed Durability Testing Method: Temperature" as guidance. The temperature of the ballast case should be taken at the "hot-spot" locations for performance as indicated by the ballast manufacturer. If the maximum ballast operating case temperature and hot-spot locations cannot be obtained from the ballast manufacturer, measurements should be completed in accordance with the LRC's "Proposed Durability Testing Method: Temperature". |