

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



**OFFICE OF  
AIR AND RADIATION**

August 10, 2012

Dear ENERGY STAR Televisions Stakeholder,

In light of comments received on the Final Draft Version 6.0 ENERGY STAR TV specification, the U.S. Environmental Protection Agency is making a change in how models with Automatic Brightness Control (ABC) will be tested. This letter explains the change and provides opportunity for comment.

In finalizing the Version 6.0 specification, EPA has opted to abandon the proposed interim approach to On Mode requirements for ABC-enabled products, which involved testing with ABC disabled and applying a 10% allowance. Instead, the specification will revert to the current Version 5.3 approach, where products are qualified by measuring On Mode power at 0 lux and 300 lux. A number of factors contributed to this decision:

- Until the Department of Energy (DOE) finalizes changes to its television test procedure, other reporting schemes will continue to reference the approach currently in use, raising the potential for confusion.
- Reverting to the Version 5.3 approach would avoid an extra change, in a relatively short period of time, in the way ABC-enabled products are tested.
- Additional data provided by some stakeholders suggests the 10% allowance may not appropriately reflect the savings associated with ABC.

The ABC sensor validation testing at 10 lux, 50 lux, and 100 lux has been retained as proposed in the Final Draft. A clarification has been added that the On Mode power measured at 300 lux ( $P_{300}$ ) shall be greater than or equal to the average power measured at 100 lux ( $P_{100}$ ). Relevant sections of the Version 6.0 specification, reflecting this change, are included below.

Finally, based on stakeholder input, EPA will clarify that the default picture setting (the default picture setting in "home" mode for TVs with a forced menu) reflects the settings under which the product qualifies for the ENERGY STAR as follows:

"At any time, where consumers have the option of selecting different picture settings from a preset menu, display information that the default picture setting (the default picture setting in "home" mode for TVs with a forced menu) reflects the settings under which the product qualifies for the ENERGY STAR. For example, such information may be indicated by including the ENERGY STAR mark in the name or description of that picture setting or in the form of a message displayed each time any setting other than the default picture setting is selected."

The Agency intends to finalize Version 6.0 by the end of August. If you have questions or concerns about these changes, please provide comments to [televisions@energystar.gov](mailto:televisions@energystar.gov) by August 22, 2012.

Best Regards,

A handwritten signature in cursive script, reading "Verena Radulovic".

Verena Radulovic, Product Manager  
ENERGY STAR for Televisions

Enclosure: Changes to the ABC Requirements

Changes since the Final Draft Version 6.0 Televisions specification will appear as follows:

### 3.3 On Mode Requirements

- 3.3.1 For products with Automatic Brightness Control (ABC) enabled by default and whose performance is validated using the test method outlined in Section 4.3, On Mode power with ABC ( $P_{ON\_ABC}$ ), as calculated per Equation 1 shall be less than or equal to the Maximum On Mode Power Requirement ( $P_{ON\_MAX}$ ), as calculated per Equation 2.

#### Equation 1: Calculation of On Mode Power for Products with ABC Enabled by Default

$$P_{ON\_ABC} = (0.55 \times P_{300}) + (0.45 \times P_0)$$

Where:

- $P_{ON\_ABC}$  is the calculated On Mode power with ABC enabled by default,
- $P_{300}$  is the measured On Mode power with ABC enabled when tested at 300 lux per Section 5.5 of the Test Method,
- $P_0$  is the measured On Mode power with ABC enabled when tested per Section 5.5 of the Test Method, but with 0 lux entering the sensor.

- 3.3.2 For products that do not offer ABC, products that do not offer ABC enabled by default, or for products with ABC enabled by default and whose ABC sensor does not meet the validation criteria set forth in section 4.3, On Mode power with ABC disabled ( $P_{ON}$ ), as measured per the ENERGY STAR test method shall be less than or equal to the Maximum On Mode Power Requirement ( $P_{ON\_MAX}$ ), as calculated per Equation 2:

#### Equation 2: Calculation of Maximum On Mode Power Requirement

$$P_{ON\_MAX} = 100 \times \tanh(0.00085 \times (A - 140) + 0.052) + 14.1$$

Where:

- $P_{ON\_MAX}$  is the maximum allowable On Mode Power consumption in W,
- $A$  is the viewable screen area of the product in square inches
- $\tanh$  is the hyperbolic tangent function

### 4.3 ABC Sensor Validation Testing

- 4.3.1 The average power measured at 50 lux ( $P_{50}$ ) shall increase by at least 5 % relative to the average power measured at 10 lux ( $P_{10}$ ), the average power measured at 100 lux shall increase by at least 5 % relative to the average power measured at 50 lux ( $P_{50}$ ), and the average power measured at 300 lux ( $P_{300}$ ) shall be greater than or equal to the average power measured at 100 lux ( $P_{100}$ ), as indicated in Equation 5.

#### Equation 5: ABC Sensor Validation Conditions

$$\frac{P_{50} - P_{10}}{P_{10}} \geq 5\%, \quad \frac{P_{100} - P_{50}}{P_{50}} \geq 5\%, \quad P_{300} \geq P_{100}$$

Where:

- $P_n$  is the Power consumed for On Mode with ABC enabled at n lux, with a direct light source