

July 18, 2011

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U.S. Environmental Protection Agency
Via e-mail: displays@energystar.gov

Re: Panasonic Comments on ENERGY STAR Displays Draft 1 Version 6.0 Specification

Panasonic appreciates the opportunity to review and comment on the ENERGY STAR Displays Draft 1 Version 6.0 specification. As a manufacturer and marketer of all television and professional display technologies, Panasonic is a strong supporter of the ENERGY STAR brand and its program objectives. In this instance, however, we do not see any program or consumer benefit by adding the largest size Displays to the specification. Further, Panasonic believes that several of the draft's proposals to fundamentally alter the measurement of automatic brightness control (ABC), and unnecessarily include internet measurements make this proposed specification overly burdensome.

Displays Larger Than 60 Inches Should Continue to Be Excluded

Panasonic recommends ENERGY STAR continue to exclude Displays above 60 inches in size. Displays in this size range are professional models used in a wide variety of applications with their specifications typically determined by the end use customer. These large professional models do not belong in an ENERGY STAR specification that covers small digital picture frames and computer monitors used in comparable settings and with similar applications.

However, should EPA decide to apply the proposed specification to larger size Displays, there are several key areas that need to be modified.

Automatic Brightness Control (ABC):

The most important issue regarding Automatic Brightness Control (ABC) is the selection and weighting of the various ambient illumination levels required during the power measurements. The IEC 62087 committee chose 0 lux and 300 lux (or greater) as extreme values which would be easy to supply to the ABC ambient light sensor while ensuring that the display provided in a repeatable manner the minimum and maximum display brightness respectively.

The 300 lux (or greater) value was considered to be an extremely bright illuminance level that would not be encountered during normal viewing in a typical environment. It was intended to be so high that all ABC sensors would be saturated and thus provide the maximum display brightness. In fact, the IEC 62087 specifies that this value of 300 lux or greater is only provided to the sensor if there is no capability to deactivate the ABC function.

In actual practice, many TV ABC implementations will generally begin to decrease the display brightness at a more reasonable illuminance level of around 100 lux or less. Ambient levels higher than this threshold will require the display to provide its normal brightness for a given picture preset mode. The ENERGY STAR Displays Version 6 Draft 1, Equation 1, requires an equal weighting of the on mode power measured at ambient levels of 10, 100, 150, and 300 lux. Since many actual TV ABC circuits retain the normal brightness until the ambient falls below the threshold of around 100 lux, this Equation 1 applies a combined weight of 75% to the power at this normal brightness which is measured three times at 100, 150, and 300 lux. The only power measurement at a reduced brightness would occur at 10 lux, and would receive just a 25% weighting.

Panasonic recommends that ENERGY STAR modify the ABC Equation 1 to be consistent with actual operation based upon realistic ambient levels. The Consumer Electronics Association (CEA) is currently in the process of enlisting TV installers to collect ambient illuminance data encountered in homes across the United States. We believe this data will be critical to support the development of a revised ABC formula, which will measure and weight the On Mode power at realistic ambient levels. This will ensure that the true energy savings associated with the ABC function can be accounted. Ambient data collected by the CEA is also needed to apply the appropriate corrections such that Version 6 qualification rates, utilizing a revised ABC formula, can be projected from the existing ENERGY STAR Version 5.1 qualified product data base.

Finally, measurements of the On Mode power calculated by the ABC formula must be both accurate and repeatable. Different third party laboratories must be able to supply the identical ambient illumination to the ABC sensor such that the power is reproducible. This is a major reason why the IEC 62087 committee chose the 0 lux and 300 lux (or greater) values. Intricate setup and measurement procedures are not needed with the IEC values since it easy to achieve 0 lux by covering the ABC sensor, and 300 lux (or greater) can be achieved by increasing the illumination source until the ABC sensor becomes saturated .

If ENERGY STAR Displays Version 6.0 specifies absolute illuminance values, it will also be necessary to provide a detailed measurement procedure. This should take into account at least the following items:

- 1) The illumination source collimation and direction
- 2) The illumination source frequency spectrum
- 3) The illumination source stability over time
- 4) The meter used to measure the illumination source
- 5) The ABC sensor location
- 6) The ABC sensor collection angle
- 7) The test room wall reflectivity

Given the complexity, time required, and associated accumulative error of making measurements at multiple absolute illumination values, it is recommended that the number of measurements be limited to no more than two or three.

Internet –Content Testing:

The Draft 1 Test Method, Sections 8.2 and 8.3, specifies that; “On Mode power tests must be repeated using the Internet-content video signal as defined in IEC 62087 Ed. 3.0 Section 11.7”. This video signal was developed in 2007 and 2008 to represent various web-pages encountered while browsing the Internet. Such a signal may be appropriate for dedicated computer monitors measured less than 30 inches in diagonal; however it is not for the larger displays 30 inches and greater. Larger displays are not typically used as computer monitors for web-browsing. Instead, they are employed in many diverse applications such as production studio monitors and signage, etc.

The Internet connection is often used to stream video content, which has essentially the same characteristics as the IEC 62087 dynamic broadcast-content video signal currently being used to measure On Mode power.

Therefore Panasonic feels there is no need to duplicate the on mode power measurements for larger displays 30 inches and greater using the IEC 62087 Internet-content. This measurement serves no practical purpose, and only makes the measurements more time consuming and costly.

Networking Features Additional Testing:

The Draft 1 Test Method, Section 8.6 Additional Testing, specifies that the On Mode and sleep mode power measurements be performed with networking features in the activated state in addition to the deactivated state. This will unnecessarily double the time and cost of these power measurements. Panasonic recommends that an independent study be performed to quantify the incremental power needed to supply a network connection. Realistically, this should be a very small number since similar network connections are performed easily by a variety of battery powered laptops and smart phone devices. This power should not be significant compared to the On Mode power and certainly does not justify the doubling of the cost to perform two sets of power measurements.

Test Signal Specification:

We recommend that for clarification purposes, it should be specified that the Dynamic Broadcast-Content Video Signal should be utilized in both On Mode Testing Sections 8.2.B and 8.3.A of the Displays Test Method. This should be referenced to IEC 62087 Section 11.6.

ENERGY STAR Should Retain Its Sole Focus on Energy Efficiency:

Proposing to add a requirement that LCD Display manufacturers source from suppliers who have demonstrated reduced use of fluorinated gases into ENERGY STAR criteria does not any clear benefit to the program. Other organizations are actively addressing these issues so there is no need for the ENERGY STAR criteria to include them.

The ENERGY STAR brand in large measure has been successful due to its clear, succinct message of promoting energy efficiency. Adding new criteria unrelated to its efficiency messaging will

likely confuse consumers and diminish the ENERGY STAR branding efforts. Consequently, Panasonic recommends that ENERGY STAR not add any sourcing requirements for LCD TV. Likewise, new toxicity and packaging recyclability requirements do not belong in a specification that is intended to promote a product's energy efficiency.

Panasonic has been a longtime proponent of the ENERGY STAR program and believes its partnership with EPA has provided a valuable service to consumers, helping them to make better informed choices about their purchases of energy efficient products. Our comments on the Displays draft specification are intended to improve its application should EPA determine it can be applied to such a broad, diverse product lineup ranging from the smallest digital picture frames to the largest professional displays.

As always, Panasonic appreciates the opportunity to comment on the ENERGY STAR Program and welcomes the opportunity to further discuss our views with you.

Sincerely,

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