



Proposed Specification Levels Based on the Revised Dataset for the Version 3.0 TV Products Specification

Intent and Background

At the October 18, 2007, TV stakeholder meeting and in subsequent written comments received on the Draft 2 Version 3.0 TV products specification, stakeholders argued that the On Mode levels EPA proposed in the Draft 2 Specification were too rigorous and would eliminate large numbers of products and possibly entire technologies from qualifying for ENERGY STAR. While EPA is committed to the ENERGY STAR being a symbol of leadership in energy efficiency, EPA also recognizes the following:

- 1) the Agency is, with the introduction of Version 3.0, including for the first time in its TV specification On Mode efficiency requirements;
- 2) EPA is calling for the use of IEC 62087 to measure On Mode power use for the first time;
- 3) EPA based the Draft 2 specification levels on a limited data set that is merely a proxy for models currently available, and will remain so in October 2008; and,
- 4) when moving for the first time to On Mode requirements in other ENERGY STAR product areas (e.g., Monitors), EPA introduced a slightly less stringent Tier 1 with the expectation that a subsequent Tier 2 would follow and would increase the stringency of the requirements. Consistent with ENERGY STAR program principles, EPA expects to establish Tier 2 performance requirements that capture closer to 25% of existing models.

As such, this document lays out newly proposed On Mode levels that when coupled with the 1-watt Standby Mode level, result in overall qualification rates of 30% for EPA's current dataset. (The Draft 2 requirements resulted in an overall qualification rate of approximately 25%.) Further, this proposal also allows for very strong qualification of high-resolution products. Based on this revised On Mode proposal, 75% of the manufacturers represented in EPA's dataset have products that could currently meet the proposed ENERGY STAR On Mode requirements.

In addition, to address stakeholders' concern that the EPA dataset, which was built nearly entirely on manufacturer submitted data, reflected smaller or older models, EPA augmented its dataset to include 26 new data points as described below. These additional data points are reflected in the new proposal and shown in the below graphs.

Augmentation of Draft 2 Dataset

The Agency collected additional data to inform the below proposal. EPA's intent was to address industry concerns that the EPA dataset was deficient in larger screen sizes and new and feature rich models. The attached dataset used to create the proposal below has been modified from the Draft 2 dataset in the following ways:

- Addition of 66 data points from EPA testing as well as industry sources (note: not all of these data points were ultimately used, e.g., only data points gathered at default picture settings were included when developing the below proposal, and additional Rear-Projection points provided were not included to maintain alignment with the Consumer Electronics Association's (CEA) TV shipment projections by technology for 2008.)
 - Removal of 12 CRT models to more closely align representation in EPA's dataset with CEA's TV shipment projections by technology for 2008.
 - Two Rear-Projection models were correctly labeled after being mislabeled as LCDs for the Draft 2 analysis. Two Rear-Projection units were then removed in a manner consistent with Draft 2 in order to keep the representation of Rear-Projection models consistent with CEA's projections.
- Changes amount to the addition of 17 LCDs, 6 Plasmas, and 3 CRTs.
- Switched out data for one manufacturer after clarifying which display mode submitted was the "default" configuration.
- Brings the dataset to 175 points altogether that were analyzed to develop this revised proposal.

New Proposed On Mode Levels

In analyzing the data after the inclusion of additional models EPA found that a specification continuing to differentiate High Definition (HD) and Full High Definition (FHD) TVs (i.e., 768 and 1080) was difficult to justify. This is partially because of the high power draw of available data for large 768 TVs, which then would necessitate levels higher or equal to 1080 TVs. Since having higher levels for 768 in comparison to 1080 conflicts with the original justification for splitting these resolution groups, EPA is proposing to combine the high definition models into one resolution bin. In order to address stakeholders' concerns that 1080 units use greater power, the On Mode specification lines were developed by finding a qualification rate greater than 25% (28%) for 1080 models and then analyzing the 768 models with these levels. Using this approach, EPA believes it has found specification levels that treat both HD and FHD product categories fairly.

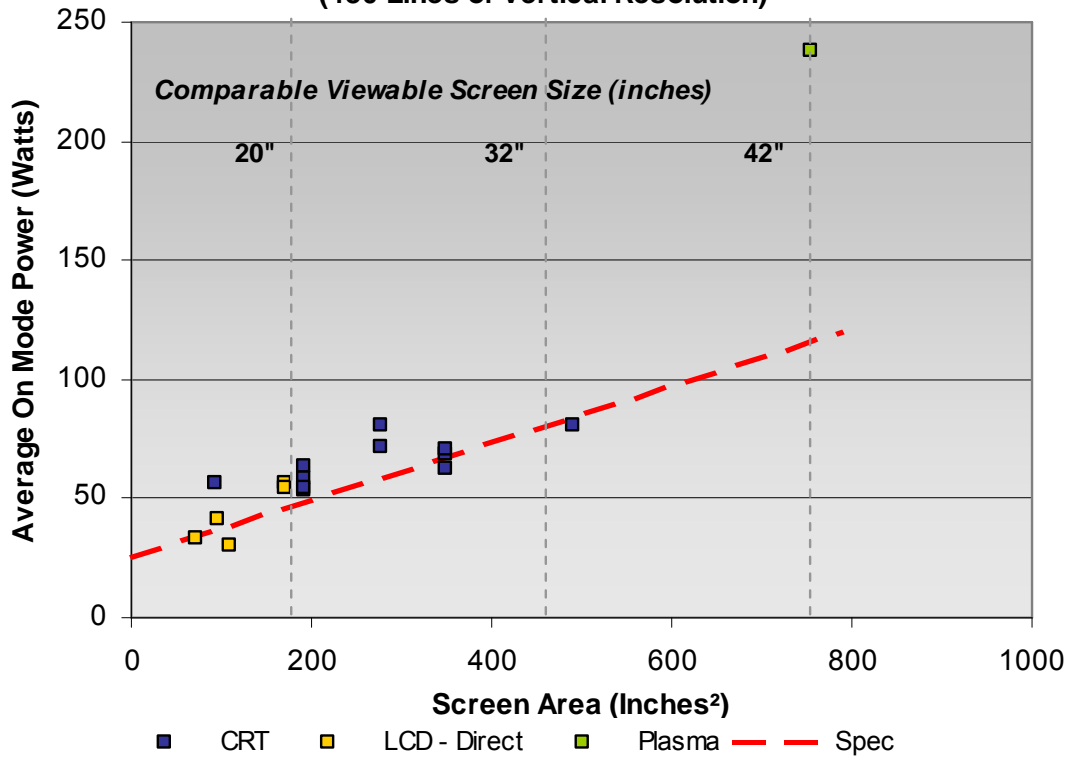
In developing the levels, EPA has chosen a non-continuous function, with different lines for products less than 650 inches², between 650 inches² and 1000 inches², and above 1000 inches². EPA has chosen to propose this approach as it tracks with the ENERGY STAR program's intent to help consumers find the most efficient model in a wide range of size sizes.

The following table and charts show the newly proposed levels:

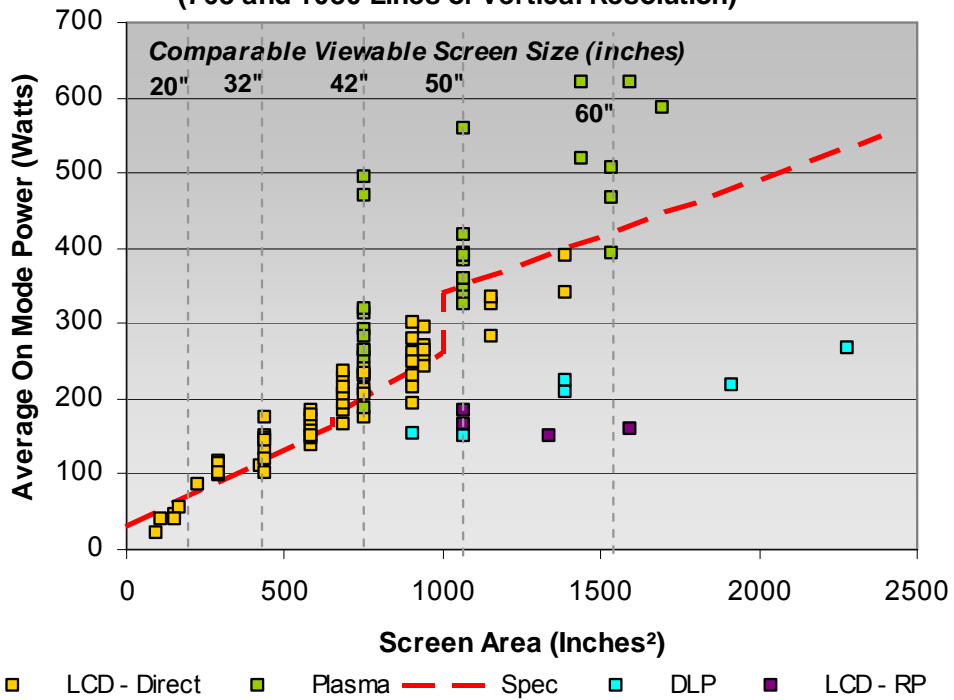
Summary of New Proposed Qualification Levels

	Draft 2	New Proposal
Vertical Resolution	Maximum On Mode Power Consumption Draft 2 (A expressed in inches ²)	Maximum On Mode Power Consumption (A expressed in inches ²)
480	$P_{Max} = 0.13*A + 25$	$P_{Max} = 0.12*A + 25$
768	$P_{Max} = 0.20*A + 40$	All HD and FHD TVs (768 & 1080) $P_{Max} = 0.20*A + 32$ ($A \leq 650$ inch ²) $P_{Max} = 0.24*A + 22$ (650 inch ² < $A \leq 1000$ inch ²) $P_{Max} = 0.15*A + 190$ ($A > 1000$ inch ²)
1080	$P_{Max} = 0.20*A + 40$ ($A \leq 650$ inch ²) $P_{Max} = 0.24*A + 14$ ($A > 650$ inch ²)	

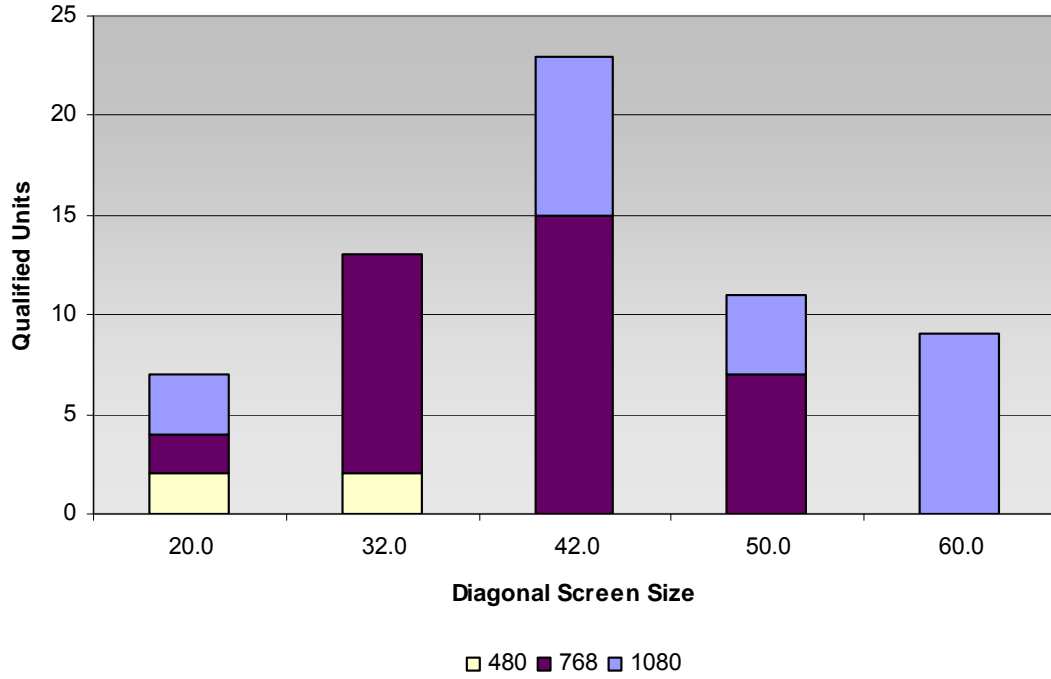
**Average On Mode Power for Non-High Definition TVs
(480 Lines of Vertical Resolution)**



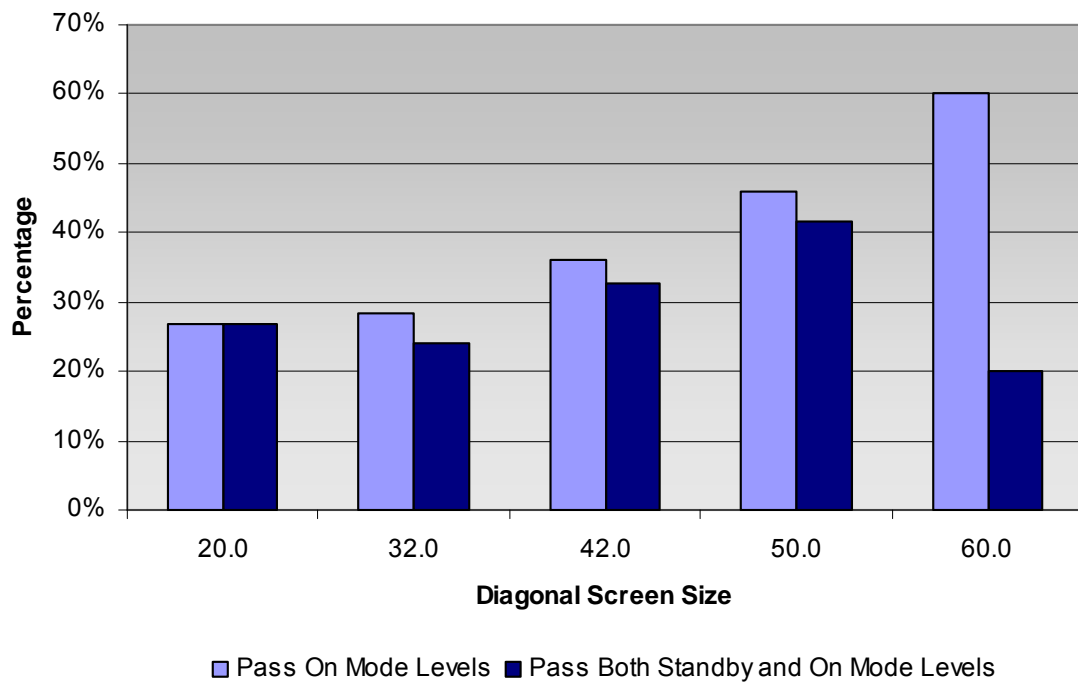
**Average On Mode Power for All High Definition TVs
(768 and 1080 Lines of Vertical Resolution)**



Qualified Units by Resolution and Screen Size



Qualification Percentages by Screen Size



Percentage of Units Which Meet On Mode Requirements by Resolution and Screen Size

