



# Overview of Draft 1 Version 3.0 ENERGY STAR<sup>®</sup> TV Products Specification

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# Key Components of Specification



- Electronic Labeling Option
- On, Download Acquisition, and Standby Mode Requirements
- Duty Cycle Assumptions
- User Information Requirement
- IEC Test Procedures

# Electronic Labeling Option

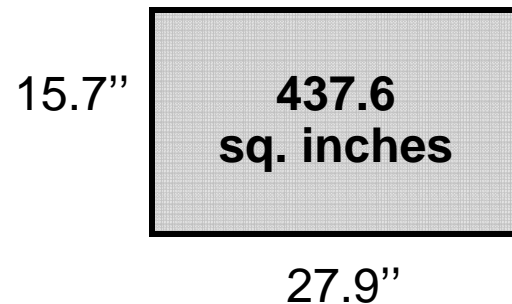


- Proposed alternative to placing physical label on top/front of the product
- Three options to label the TV:
  1. Permanent label on the top/front of TV
  2. Temporary label on the top/front of TV
  3. Use of an electronic label so the ENERGY STAR certification mark appear on the TV's menu-screen for pre-set picture settings

# On Mode Requirements



- All TV products must not exceed maximum On Mode power consumption equation:  $Y = 0.245X + 11^*$
- Example:

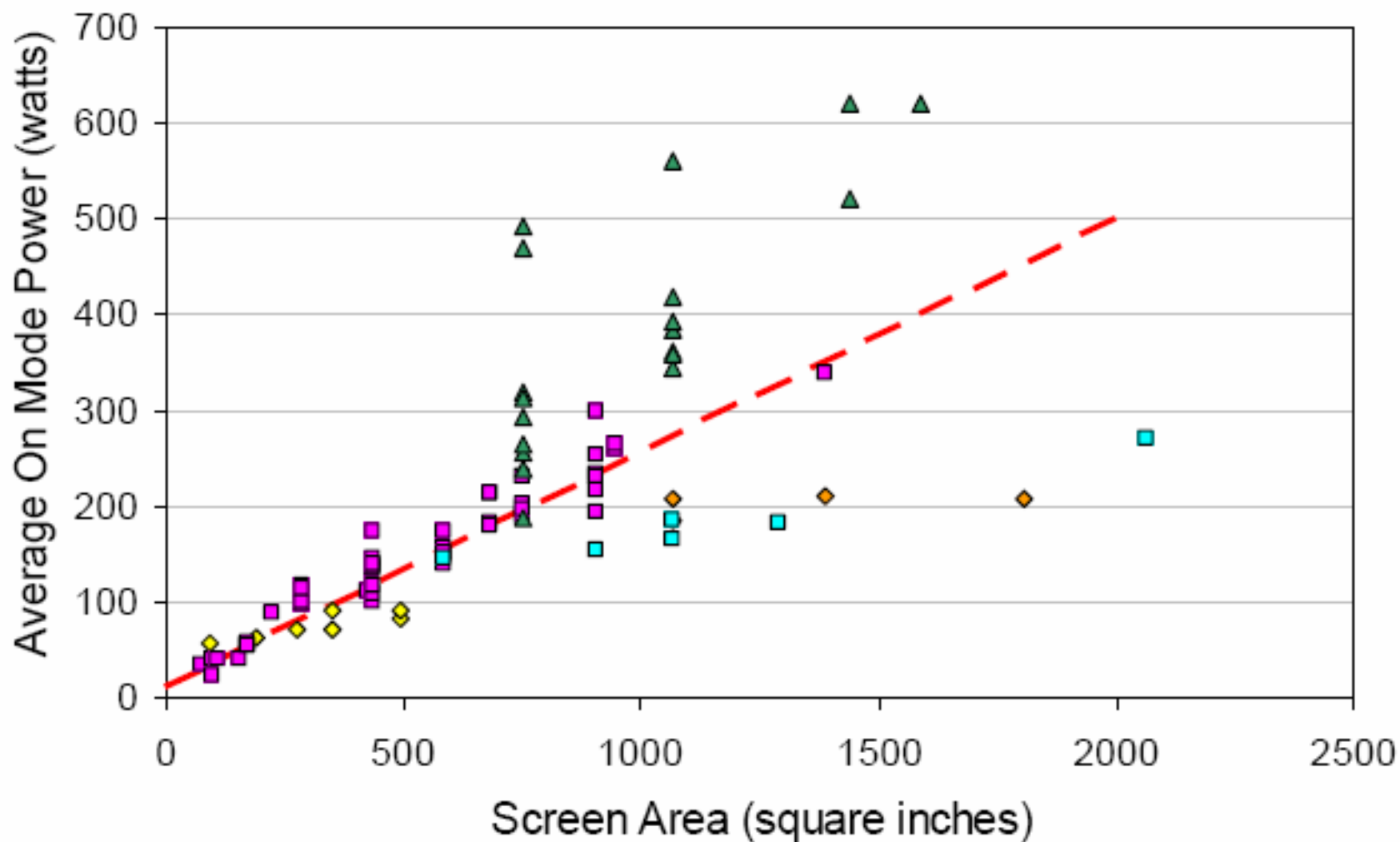


$$0.245(437.6) + 11 = 118.21 \text{ or } 118 \text{ watts}$$

\*Y: average On Mode power consumption in watts, rounded to the nearest whole number

X: screen area of the product in square inches

# On Mode Data by Screen-type



◆ CRT    ■ LCD-CCFL    ▲ Plasma    ◆ RP-DLP    ■ RP-LCD    - - - Spec

# Average On Mode Power Level Requirements for TVs



<b>Viewable Screen Size (Inches)</b>	<b>TV Dimensions (Width x Height) in Inches</b>	<b>Screen Area (Square Inches)</b>	<b>Maximum Power Use (Watts)</b>
15	13.1 x 7.4	96.1	35
19	16.6 x 9.3	154.3	49
27	21.6 x 16.2	349.9	97
32	27.9 x 15.7	437.6	118
37	32.2 x 18.1	585	154
40	34.9 x 19.6	683.7	179
42	36.6 x 20.6	753.8	196
46	40.1 x 22.6	904.2	233
47	41 x 23	943.9	242
50	43.6 x 24.5	1068.2	273
57	49.7 x 27.9	1388.3	351
65	56.7 x 31.9	1805.3	453

# Download Acquisition Mode (DAM) Requirements



- Requirement for energy consumed by a TV when downloading channel listing information according to a defined schedule for use by the EPG or communicating with a connected device through a network protocol
- TV products must not exceed power consumption of 4 watts in DAM
- Products may spend no longer than 1 hour in an 8 hour period in DAM

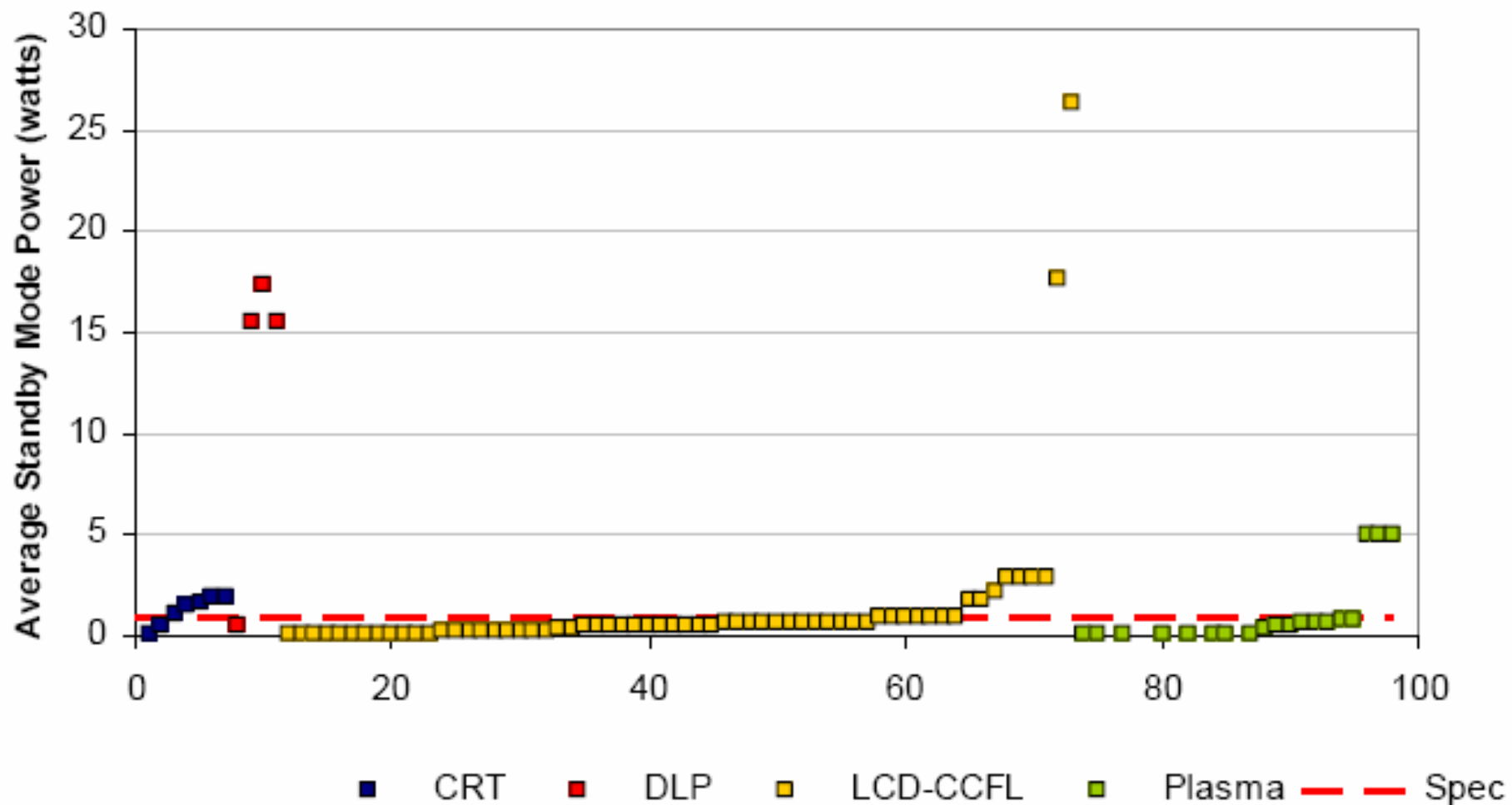
# Standby Mode & User Information Requirement



- TV products must not exceed power consumption of 1 watt in default Standby Mode, as shipped to consumers
- Manufacturers will have to include in either hard copy or electronic copy in the user manual or on a box insert:
  1. Information on ENERGY STAR
  2. Benefits of keeping the TV at its factory default settings that meet ENERGY STAR criteria
  3. Where necessary, language informing consumer that enabling certain features and functionality (e.g. instant-on) will increase energy consumption, possibly beyond the limits required for ENERGY STAR qualification



# Standby Mode Data by Screen-type



# Overview of TV Data



<b>TV Technology</b>	<b>Total No. of TVs</b>	<b>No. Meet Standby</b>	<b>% Meet Standby</b>	<b>No. Meet Active</b>	<b>% Meet Active</b>	<b>No. Pass Both</b>	<b>% Pass Both</b>
<b>CRT</b>	7	2	28.6 %	5	71.4%	2	28.6%
<b>LCD</b>	56	47	83.9%	18	32.1%	14	25.0%
<b>Plasma</b>	19	16	84.2%	1	5.3%	1	5.3%
<b>RP-DLP</b>	4	1	25.0%	4	100.0%	1	25.0%
<b>RP-LCD</b>	6	6	100%	6	100.0%	6	100.0%
<b>Total</b>	92	72	78.3%	34	37%	24	26.1%

# Duty Cycle Assumptions



- EPA will provide consumers with an estimate of each ENERGY STAR qualified TV's annual energy consumption
- Duty cycle based on a daily usage pattern of:
  - 5 hours in On Mode
  - 3 hours in DAM (if manufacturer reports that DAM exists for their model)
  - 16 hours in Standby Mode
  - TV models without a DAM will have a daily usage pattern of 5 hours in On Mode and 19 hours in Standby Mode

# Test Procedures



Specification Requirement	Test Protocol	Source
Standby Mode	IEC 62301, Ed 1.0: Household Electrical Appliances – Measurement of Standby Power	<a href="http://www.iec.ch">www.iec.ch</a>
On Mode	<i>Draft</i> IEC 62087, Ed 2.0: Methods of Measurement for the Power Consumption of Audio, Video and Related Equipment, Section 11, “Measuring conditions of television sets for On (average) mode.”*	<a href="http://www.iec.ch">www.iec.ch</a>

\* IEC 62087, Ed 2.0 is still in draft form and under IEC committee review, as of the writing of this Draft 1 Version 3.0 specification. While significant changes to the relevant portions of the IEC document are not envisioned by its authors, EPA will review the final version, when available, to ensure that no material changes have been made to the applicable sections of the document.