A CANON COMPANY

Memo

Venlo, August 22, 2018

from
Jos Beekwilder

to
EPA Mr. Ryan Fogle
ICF – Mr. Matt Malinowski

subject
Comments Energy Star Product Specification for Imaging Equipment Draft 2, Version3.0 and related draft test methods | 18-0161

Dear Sirs,

Océ has taken notice of the further draft documents containing product specifications for Imaging Equipment under the ENERGY STAR® program. The company welcomes the opportunity to provide comments on the ENERGY STAR Product Specification for Imaging Equipment Draft 2, Version 3.0 and related test methods. Below you will find our feedback and suggestions.

1 Eligibility criteria

Page 1: Definitions Professional Imaging Product:
Lines 30, 31
"A printer or MFD marketed as intended for producing deliverables **for sale**, with the following features":

- ➔ Professional Imaging Products do not necessarily produce deliverables for sale.

It is the opinion of Océ that Professional Imaging Products should be those products that are intended for high volume and a broader range of paper sizes and weights including special paper media. This will make the distinction with office equipment. The criterion "deliverables for sale" excludes products intended for in house reproduction in centralized print rooms intended to serve large organizations such as government agencies and corporate offices.
It is proposed to define professional products only by means of technical criteria such as the list in lines 32-57. In addition to the criteria listed in these lines, Océ proposes to add a criterion for the rated power of professional products, distinguishing them from other (more office and household oriented) products. The rationale of this is, that professional products need to be able to print on heavier paper for longer periods of time (exceeding roughly 5 minutes per job) which requires more power. The proposed power threshold for professional products is 2000W (corresponding with 16A on a 120V network)

Page 5: Definitions Professional Digital Front End:
Line 169: "ii. has processor performance per socket equal to or greater than 20;"

- ➔ It is the opinion of Océ that it is too limiting to define a professional Digital Front End as described in the current draft. The proposed performance per socket is too high, this limits the definition to very high end productive professional applications. A better definition

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distinguishing higher performance DFE's from the classical type 1 and type 2 definitions would a lower value, e.g. 12.

- ➔ In addition, defining Professional Digital Front Ends as servers (by requiring ECC, BOB and buffered DIMMs) would exclude high end PC-like products from the class of Professional Digital Front Ends, whereas these offer a professional functionality at an affordable price. The server features ECC and buffered DIMMs/BOB provide reliability to servers that is not relevant for DFE functions. Requiring these functions seems arbitrary from a DFE point of view.
- ➔ Instead of requiring server functions, Océ proposes to require at least 6 of the features mentioned in the list in lines 148-156 for Professional Digital Front Ends

Page 7, (lines 236-241) 2.2.2 Excluded products

Line 236:

"Products that satisfy one or more of the following conditions are not eligible for ENERGY STAR certification under this specification"

- ➔ It must be emphasized that this kind of products are not allowed to use EPA label in order to avoid misuse or unfair competition.

Line 239:

- ➔ Océ is concerned that professional imaging products complying with ENERGY STAR V2.0 eligibility requirements cannot qualify for ENERGY STAR anymore under the Version 3.0 eligibility requirements due to the absence of criteria. Such products would effectively loose ENERGY STAR certification without any alternative. Océ proposes to establish a transition period for these products until the EPA has established eligibility criteria. During this transition period, professional imaging products should be able to retain their V2.0 ENERGY STAR certification.

Page 8. DFE Requirements.

Lines 286-289

"iv. DFEs that fail to meet these requirements will not only not have their power subtracted from that of the Imaging Equipment product as a whole, but will disqualify the product from ENERGY STAR. Therefore, such DFEs may not be sold with ENERGY STAR qualified Imaging Equipment."

- ➔ This rule is too strict.

  If a DFE does not meet the requirements, then the only consequence can be that the DFE power is not to be subtracted. The manufacturer may decide to use a DFE-like hardware in combination with a very energy efficient imaging product that as a system together meet the requirements of ENERGY STAR for the imaging product. This should be rewarded with an ENERGY STAR certification as an environmentally conscious design choice.

lines 293-296.

- ➔ Note can be interpreted as follows:

  If a professional DFE is applied, this DFE does not have TEC_{DFE} requirements and the DFE power may be subtracted from the TEC of the printer.

  Is this interpretation correct?

Page 9, Table 2 - Maximum TEC_{DFE} Requirements

- ➔ Allowed energy consumption of type 2 DFE is not linearly reduced with the type 1 DFE.

  A type 2 DFE effectively (can) consume equal energy as a type 1 DFE.

Please note that there is no principal difference in computation hardware for a type 1 or type 2 DFE, the only difference is the presence or not presence of an AC power supply.
So the allowed consumption for a type 2 DFE should be 0.8 x 7 = 5.6 (cat A) or 0.8 x 12 = 9.6 (cat B) instead of 3 resp. 3. Justification: it is fair to assume that the AC power supply consumes no more than 25% of the energy of the DFE without the power supply.
The proposed DFE TEC requirements are based on current DFE data present in EPA's database, which are dominated by relatively low printing speed products up to roughly 50 images per minute (as there are many more of these models on the market than high speed models). This would effectively make it impossible for DFE's supporting high speed printing products to meet the requirements. With increasing imaging speed and print resolution, higher performance processing platforms are required, which results in higher energy use in ready mode. In addition, equipment with high productivity also typically has increased functionality.

Proposal:

It is proposed to define TEC requirements for DFE as a function of the productivity, i.e. a function of "s"(images per minute). Based on limited data Océ proposes to consider the following TEC requirement formulae:

Type 1: $TEC_{DFE} \leq 0.15 \times s$

Type 2: $TEC_{DFE} \leq 0.12 \times s$

Page 11, Equation 3, 4 and 5.

➔ Job volume reduction - A copy/print volume reduction of a factor 4 is not realistic for high-speed imaging products.

Printers with high printing speed are intended for high volume printing, and although the ratio speed-volume has changed over the years, it hasn't reduced by a factor of 4, a factor of 2 seems more reasonable.

Page 13, Table 6 – TEC Requirements

➔ The TEC requirements are unrealistically stringent. Taking into account the reduced print volume it has become impossible to comply for productive printing products that are (close to meeting the definitions of) professional imaging equipment. This would put these products in the situation that they cannot achieve ENERGY STAR certification anymore without any outlook on ENERGY STAR criteria that can be used as design targets, in absence of eligibility criteria for professional printing products.

Page 14, Table 7- determination of max recovery time

Please clarify if maximum delay time is meant (instead of maximum default time), otherwise there is a contradiction with table 3. In case maximum default time is meant, 60 seconds recovery time is not sufficient to perform system initialization and to reach thermal conditions necessary for printing.

Printers with high speed are intended for high volume printing and will go far less often in energy saving mode than slower printers. Therefor higher recovery times are fully acceptable for a user (not annoying) compared to low end printers. It is also very understandable that higher speed printers require a longer recovery time than lower speed printers and it would be no more than fair if it is not limited to 60 seconds but keeps scaling with the print speed of the printer

2 Comments regarding Test Methods

2.1 Test method for determining Imaging Equipment Energy Use, DRAFT 3

Page 3:
Lines 55-58 (length of USB cable to 1' and 50 mOhm for Power and Ground Line)

- ➔ we do not understand, please clarify

We think there is no need for any restriction on this length or resistance. For larger lengths e.g. higher resistance the measured power consumption will be higher/increase due to extra power loss across this cable. This is a disadvantage for the applicant. Therefor the applicant will keep his cable length/resistance already as short/low as possible if energy consumption is substantial.
Footnote on page 2 and lines 94-96: **Reference to IEC 62301**

- ➔ this standard is for measurement of Standby Power, which is no longer defined in the ENERGY STAR requirements or test methods.

2.2 Test method for determining Professional Imaging Product energy use, DRAFT 1.

Page 1-3: Test set-up and instrumentation, Ambient Temperature Relative humidity:
Océ observes that the test set up requirements of ISO21632 require to take into account the energy consumption of the climate conditioning equipment in the energy consumption measurement of the printing product. Océ thinks that this equipment is separate from the printing product (often acquired separately by the user of the printing product) and thus should not be taken into account in the ENERGY STAR test method for professional equipment.
page 3:
Basis Weight – 127.9 g/m2

- ➔ It is unclear to Océ what the rationale behind this paper weight specification is. Commonly available paper weights in the category "moderately heavy" are 120 g/m2 (equivalent basis weight Bond 32 lbs) or 136 g/m2 (Equivalent basis weight: Bond 36 lbs). Using a most common paper weight makes testing less burdensome for applicants.

Kind regards,

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