

January 8, 2009

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Beverage-Air Comments re: ENERGY STAR VERSION 2.0 – DRAFT 3

Beverage-Air fully supports energy usage reduction on commercial refrigerator and freezer solid and glass door units. With this goal in mind, we respectfully submit the following comments.

**DRAFT:**

1) Definitions:

E. Solid Door Cabinet: A refrigeration cabinet in which 50% or greater of the surface area on the front face of all outer doors on one side of the unit is solid. These doors may be sliding or hinged.

F. Glass Door Cabinet: A refrigeration cabinet in which greater than 50% of the surface area on the front face of all outer doors on one side of the unit is glass. These doors may be sliding or hinged.

**RESPONSE:**

We believe the intent of the 1) F. Glass Door Cabinet definition to be that where cabinets having glass representing 1/2 or greater of the total area of the doors. However, this would not take into account the surface area of the frame around the glass for the glass door. In other words, a cabinet having 1 glass door and 1 solid door of essentially the same perimeter dimensions would always have less than 50% of the total surface area being glass, making all 2 (same-size) door "half glass/half solid" cabinets classified as "solid door" units. Typically, glass door commercial refrigerators are used for merchandising, not storage. The refrigeration systems are usually sized for larger capacity to account for the heat load generated from the glass door and merchandiser lighting. The additional energy needed would not allow the unit to meet solid door formula requirements.

After review of some of our models, we would like to propose a clarification of glass door cabinet to include those having an equal number of glass doors to solid doors and where the glass areas are 75% or greater of the total surface areas of the glass doors (including frames). This clarification is necessary to maintain customer utility of the cabinet. Also, we would propose to revise the definitions of the solid door cabinet and glass door cabinet accordingly.

If an allowance is not made for the glass door frame, then the typical option of having essentially identical outer doors of equal size, one being solid and the other glass may be discontinued. The likely option to prevail would be to offer only both glass one-half size doors. This would increase the heat gain into the cabinet and result in additional energy usage. This would be counter to the intent of the Energy Star program to save energy.

**DRAFT:**

2) Qualifying Products:

**Mixed Solid/Glass Door Equipment**

For equipment designed with two or more compartments contained in a single cabinet with the same operating temperature, that have different exterior door types<sup>3</sup> (i.e., one is glass and one is solid) on the same side of the cabinet, the maximum daily energy consumption (MDEC) shall be the sum of all individual compartment MDEC values.

The volume of each individual compartment shall be measured and its MDEC limit determined, based on the compartment's volume and door type, as listed in Table 1. The sum of the volumes of each compartment must be equivalent to the total AHAM volume of the cabinet. The following information must then be

reported on the Qualifying Product Information (QPI) form for these types of units: the total energy consumption for the entire cabinet, the total volume of the cabinet, and the volume for each compartment.

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For purposes of mixed solid/glass door equipment, a solid door is a door where 50% or greater of the surface area on the front face is solid. A glass door is a door where greater than 50% of the surface area on the front face is glass.

### **RESPONSE:**

By the definitions of glass and solid door equipment, the typical model with essentially equal size door perimeter dimensions can not continue to exist and both be 50% or greater. An allowance for the glass door perimeter frame must be allowed. Refer to first response for further dialogue.

### **DRAFT:**

#### 2) Qualifying Products:

#### **Small Volume Units**

Some stakeholders noted that the proposed requirements were based on a small number of models. In the case of vertical, solid door freezers less than 15 cubic feet, EPA had data on only two available models which would meet the Federal minimum efficiency standard. Because of the limited data for this category, the proposed MDEC requirement was drafted to be only slightly more stringent than the Federal Standard. As a result both models in this category meet the proposed requirement. This MDEC requirement will be revisited after one year if additional product data for this category are submitted to NRCAN or EPA.

Another commenter suggested further subcategories for small volume units. When possible, EPA was consistent with the volume subcategorizing across the equipment types.

Several commenters questioned why the proposed MDEC requirements for small volume glass door units, for both freezers and refrigerators, were more stringent in certain volume ranges than those for small volume solid door units. All requirements in Table 1 are based on product data reported to NRCAN. For this Draft 3, EPA revised the equations in Table 1 so that they reflect the top 25% of energy performers using the most recent NRCAN dataset. As a result, the requirement for small volume glass door refrigerator units is now less stringent than that for small volume solid door refrigerator units. The requirement for small volume glass door freezer units represent approximately 25% of the dataset, *but due to the unique nature of the dataset for small volume solid door freezer units, as detailed above, their requirement continues to be more stringent than that for their solid door counterparts.*

*NOTE: Red and italic added for emphasis by Beverage-Air Corp..*

### **RESPONSE:**

The data set that shows the small volume solid door freezer units can use less energy than solid door refrigerators cannot be comparing similar design requirements for overall unit performance. More study must be done in this area. If all other performance requirements are identical except for the holding temperature, then the refrigerator unit theoretically should use less energy than the freezer solid door unit.

Respectfully submitted,

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