



Manufacturers of Commercial & Professional Refrigerators and Freezers

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Subject: Comments, Energy Star specifications for Commercial Refrigerators and Freezers
Version 2, Draft 3.

Please find below Traulsen's response or commentary to EPA's Energy Star "Version 2", "Draft 3" specification proposal. We have taken great care in its preparation and know it contains many insightful observations and suggestions. Traulsen believes the Energy Star Program has a meaningful purpose in providing Energy Efficiency Data for Commercial Refrigerators and Freezers to potential purchasers or end users, BUT ONLY IF the program requirements accurately represent the realistic capabilities of the industry as a whole. For the Energy Star program to succeed in the US, it must provide realistic buying options for consumers. We encourage EPA to review Traulsen's previous comments on Drafts 1 and 2 of the Version 2 specification as they cover many more topics in great detail.

- 1.) Partner Commitments, Version 2 – Draft 3, Line 18(a): Some manufacturers have one or more models listed with Energy Star that are not currently available for purchase by consumers through normal and customary distribution channels. Two reasons or examples may be, 1) the product is not currently in production or 2) the product is proprietary and customer specific. Traulsen believes any model comprising the Energy Star data base meet the following, 1) be current and in production, 2) be available through normal distribution channels and 3) if a model is proprietary and customer specific, must have a "base model" available through normal distribution channels. As part of the "Partner Commitments" Version 2 – Draft 3, EPA should require a "Statement" from manufacturers on a monthly basis indicating which models are current and available (In other words, a required monthly review of listed models). This action should improve the accuracy of the Energy Star product listing data base.
- 2.) Partner Commitments, Version 2 – Draft 3, Line 18(b): Traulsen STRONGLY supports the concept requiring manufactures to include a "Signed Declaration" with each new "Qualifying Products Information" form submitted to EPA, with the declaration stating that the product was tested in accordance with program guidelines and that the data presented is accurate. We additionally suggest all manufactures be required to provide this same "Signed Declaration" for any models currently listed with Energy Star that comply with the Version 2 specification once it is finalized. It is our belief the integrity of the Energy Star program and the confidence consumers place in the listings warrant the effort.
- 3.) Eligibility Criteria, Version 2 – Draft 3, Line 175: As stated in previous correspondence, Traulsen does not believe EPA allows for enough product differentiation, i.e. product categories or groups.

EPA/DOE segregate domestic refrigeration products (i.e. home refrigerators and freezers) into eighteen different categories based on products features that include defrost type (manual / automatic), ice dispenser in the door or not, top or bottom mount, etc. without giving the same consideration to the commercial market. Traulsen does not understand how EPA can state on Line 216 that “defrost cycle type” “did not result in functional differences between units”, when clearly it is a differentiator for domestic refrigeration equipment. Note: an analytical analysis of the energy requirements between the differing defrost styles (manual / automatic) will result in a “significant” consumption variation. (Both measured and calculated)

- 4.) Eligibility Criteria, Version 2 – Draft 3, Line 184: A great number of third-party certifying organizations conduct evaluations to both the UL and NSF specifications. Because of this, determining a product’s “true” eligibility becomes difficult. Traulsen believes as part of the public record, manufacturers should be required to 1) report the name of the certifying agency, 2) their file number with that agency and 3) the actual model tested if the product is cross branded or multi- listed. (These criteria would increase the number of “fields” in the EPA Energy Star data base, but would simplify verification.)
- 5.) Eligibility Criteria, Version 2 – Draft 3, Line 202: Traulsen supports the analytical method proposed by EPA for determining the maximum total daily energy consumption of mixed” solid/glass door refrigerator or freezer equipment. We would further suggest this analytical approach be applied to “mixed” refrigerator/freezer cabinets with separate compartments. (Traulsen believes the original method or approach was flawed and inappropriate, when used to calculate maximum energy consumption for this product category, a “hold-over” from previous domestic appliance standards.)
- 6.) Eligibility Criteria, Version 2 – Draft 3, Line 217: Traulsen believes EPA to be misinformed concerning the effects of interior lighting on total energy consumption for glass door merchandisers. We intend to demonstrate this claim with a simple analytical example:
 - a) Our example will consists of a twenty-five cube foot glass door refrigerator with one fluorescent light tube running vertically on one side of the door. This is a typical setup for some merchandising cabinet manufacturers, and the Version 2, Draft 3 specification for our example cabinet calls for a maximum daily energy consumption rate of 4.55KWH/24hr.
 - b) The typical bulb in this application is a F32T8 fluorescent lamp powered by high efficiency electronic ballast. In fact, this is the typical solution required by the CEC. F32T8 lamps radiate approximately 32 watts of waste energy to the surrounding area; in this example, the inside of the refrigerator.
 - c) A ballast in this application, say a Fulham IH1-UNV-232-T8, consumes approximately 40 watts of energy to power the F32T8 lamp.
 - d) The typical high efficiency refrigeration system has a COP of about 1.4 to 1.5. Using this range, the waste heat added to the refrigerated space by the F32T8 lamp requires about $(32W / 1.45 = 22W)$ 22 watts of additional energy for removal.
 - e) Now because the test lasts twenty four hours, we have a total energy contribution from one F32T8 fluorescent lamp of about $(40W + 22W) * 24Hrs / 1000$ or 1.49KWH/24hr.
 - f) With an allowable 4.55KWH/24hr, 1.49KWH/24hr represents approximately 33% of the allowable power consumption. This is NOT insignificant, and further many manufacturers actually use two vertically mounted fluorescent lamps, one on each side of the door. In this scenario, the percentage energy used by the lighting circuit climbs to greater than 50% of the allowable amount.

EPA refers to “other lighting technologies” as a possible solution for the above example, and again we find EPA misinformed on the facts. While LEDs are significantly more efficient than

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incandescent lighting, lumen per lumen and watt per watt, there is not much difference between LEDs and high efficiency fluorescent lighting. Coupled with a cost factor of over ten times (10X), LEDs are really only a novelty in the fluorescent world. Our example above using LEDs would cost about \$150 vs. \$15, note this is material cost and not selling price. The consumer would see two to three times the difference or \$270 to \$400 of a product price increase in the market. Light quality with LEDs also falls short of the F32T8 fluorescent lamp, and yes Traulsen is investigating their use and application.

With respect to this and other topics, Traulsen believes EPA should disclose their references and/or basis for a particular position. Many of EPA's claims are presented as facts without proof or authorship and in actuality represent only an opinion. With respect to the example given, does EPA plan to modify its position on interior lighting for merchandising cabinets?

- 7.) Eligibility Criteria, Version 2 – Draft 3, Line 220: Will the product specification sheets submitted to EPA with each qualifying product be available for public review or download from the Energy Star website?
- 8.) Eligibility Criteria, Version 2 – Draft 3, Line 234: Some manufactures use a “field Installed” electric condensate pan to evaporate water from a cabinet’s defrost cycles. These pans are listed as “standard equipment” but may come packaged separately when purchased by the consumer. Traulsen questions how EPA intends to include the energy consumed by this accessory, as it represents a “**SUGNIFICANT**” portion of a cabinet's total energy consumption? (Note: currently, one or more manufacturer/s are listing some models with EPA/Energy Star that fall into the above category, and they are “**NOT**” including the energy consumed by the “field Installed” electric condensate pan.) Neglecting to include this accessory (electric condensate pan) in the reporting of total daily energy consumption for covered products misleads the buying public on the true costs of ownership associated with the product. (i.e. the real and total amount of energy consumed)

Traulsen would again like to offer EPA the use “Free of Charge” of an Environment Test Chamber to perform energy audits on any number of commercial refrigerated products of their choosing. Traulsen is part of UL’s Client Test Data Program, Certified by the State of California to perform energy consumption evaluations and the only US commercial refrigerated cabinet manufacturer certified by NSF International to conduct un-witnessed performance tests. Our laboratory is state of the art and staffed by a team of engineers and technicians with over eighty years of combined experience in the commercial refrigeration industry.

In conclusion and as outlined in our previous responses of April 18, 2008, May 19, 2008 and September 26, 2008, Traulsen cannot and does not support the lack of differentiating product categories. Traulsen intends to challenge all non-qualifying products and develop a series of “White Papers” directed at educating the consumer concerning average daily energy consumption for commercial food service equipment. We feel EPA is following a mandate, sometimes at the expense of sound judgment, and the buying public and groups like CEE will soon see Energy Star qualified buying options in popular product categories disappearing. Thanks again for the opportunity to comment.

Sincerely,

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