

In response to **Draft 1, Version 2 ENERGY STAR Laboratory Grade Refrigerators and Freezers**, True Manufacturing Company offers the following comments:

In Section 5.1.2 of the “Eligibility Criteria Version 1.1” of the “Energy Star Program Requirements for Laboratory Grade Refrigerators and Freezers”, point ii states:

“Solid vs. Transparent Doors for Refrigerators: While EPA’s current data set does not show a significant difference in energy efficiency of the two, based on stakeholder feedback EPA will revisit this potential area of differentiation in Version 2.0 as additional available data allows.”

The *Data Package.xlsx* file found on the “ENERGY STAR Laboratory Grade Refrigerators and Freezers Specification Development” webpage shows a significant difference in the energy efficiency of solid and transparent door refrigerators that would justify separate formulas for calculation Maximum Daily Energy Consumption (MDEC) requirements. This difference should be considered in “Eligibility Criteria Version 2.0”.

The kWh/day per cubic foot of internal volume can be calculated for every listed High-Performance Refrigerator, normalizing the energy consumption for comparison between differently sized cabinets. Doing so reveals that the median value for the transparent door listings (0.154) is 50% higher than for solid door listings (0.103), a significant discrepancy.

Table 1 below shows the potential reduction in the number of qualifying products based on the proposed MDEC formulas for different categories. Overall, the proposed requirement would reduce the number of qualifying solid door products by 43%, down from 23 to 13. However, the proposal would disproportionately reduce the number of qualifying transparent door products from 76 down to 14, an 82% reduction.

This disparity is illustrated most significantly amongst one-door refrigerators, which make up the greatest share of current listings. Here, the number of qualifying transparent door products under the current proposal is reduced 86% from 49 to 7, while the qualifying solid door products are reduced only 45%, from 22 to 12.

A solution to this problem may be found in the analogous Energy Star criteria for Commercial Refrigerators, a product category very similar to Laboratory Grade Refrigerators. Amongst commercial products having an internal volume of 10-50cuft, the transparent doors are allowed an average of 41% higher energy consumption.

Based on the data presented above, True Manufacturing is requesting a similar additional allowance for Laboratory Grade Refrigerators with transparent doors.

Type	Door Type	# Doors	Current Listings	Proposed Listings	% Decrease
High Performance	Solid	1	22	12	45%
High Performance	Solid	2	1	1	0%
High Performance	Solid	3	0	0	N/A
High Performance	Transparent	1	49	7	86%
High Performance	Transparent	2	24	5	79%
High Performance	Transparent	3	3	2	33%
TOTALS					
High Performance	Solid	All	23	13	43%
High Performance	Transparent	All	76	14	82%
All LGR's	All	All	105	27	74%

Table 1: Comparison of Lab Grade Refrigerator listings under the current Energy Star v1.1 criteria vs. the proposed Energy Star v2.0 criteria.