

# CEE Commercial Kitchens Initiative

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## High Efficiency Specifications for Solid Door Refrigerators and Freezers and Glass Door Refrigerators

Effective Date 01/01/2006

### Efficiency Requirements for Qualifying Products

Door Type	Equipment Type	Specification	Corresponding Base Specification	Maximum Daily Energy Use (kWh/day)
Solid Door	Refrigerator	CEE Tier 1	ENERGY STAR®	.10V + 2.04
		CEE Tier 2	ENERGY STAR® + 40%	.06V + 1.22
	Freezer	CEE Tier 1	ENERGY STAR®	.40V + 1.38
		CEE Tier 2	ENERGY STAR® + 30%	.28V + .97
Glass Door	Refrigerator	CEE Tier 1	25% of top-performing products	.12V + 3.34
		CEE Tier 2	28% more efficient than Tier 1	.086V + 2.39

\*V = Volume of unit in cubic feet

### Definitions

A. Commercial Refrigerator: A cabinet designed for storing food or other perishable items at temperatures above 32 degrees Fahrenheit (F) but no greater than 40 degrees F.

B. Commercial Freezer: A cabinet designed for storing food or other perishable items at temperatures of 0 degrees F or below.

C. Commercial Refrigeration Cabinet: A refrigerator or freezer for storing food products or other perishable items at specified temperatures and designed for use by commercial or institutional facilities.

D. Self-contained Refrigeration Cabinet: A refrigerator, freezer, or refrigerator-freezer which has the condensing unit built into the cabinet.

E. Energy Consumption: The energy required to maintain the contents at a specified temperature for a 24-hour period.

F. Integrated Average Product Temperature: The integrated average of all test package temperatures, recorded at 15-minute intervals, as determined using the test method prescribed below under Test Criteria.

G. ASHRAE: American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc.

H. Worktop Surface: A solid working surface and backsplash. The working surface may be a cutting board, a stainless steel work surface, or a stone slab.

I. Solid Door Cabinet: A commercial refrigeration cabinet in which 50% or less of the door surface is glass.

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J. Glass Door Cabinet: A commercial refrigeration cabinet in which more than 50% of the door surface is glass.

## Qualifying Products

For the purposes of CEE, the following types of commercial refrigerators and freezers may qualify.

A. Reach-in Cabinet: An upright commercial, self-contained refrigeration cabinet with hinged doors but excluding undercounter, roll-in, roll-through, or pass-through cabinets.

B. Undercounter Cabinet: An upright commercial, self-contained refrigeration cabinet with or without a worktop surface (see definition in Section 1) which has hinged doors. In the case where the unit does not have a worktop surface, the unit is intended for installation under a counter. In the case where the unit has a worktop surface, this surface may not add to the total energy consumption of the unit. Preparation tables are not eligible under this specification.

C. Roll-in or Roll-through Cabinet: An upright, self-contained commercial refrigeration cabinet with hinged doors that allows wheeled racks of product to be rolled into or through the refrigerator or freezer.

D. Pass-through Cabinet: An upright commercial, self-contained refrigeration cabinet with hinged doors on both the front and rear of the refrigerator or freezer.

## Test Methods

Manufacturers are required to perform tests and self-qualify those product models that meet the CEE guidelines. In measuring energy consumption, the following test standards must be used:

ASHRAE Standard 117-1992, "Method of Testing Closed Refrigerators," to measure the daily energy consumption of commercial refrigerators and freezers with the following temperature specifications:

Product Type	Integrated average product temperature
Commercial solid door refrigerator	38 degrees $\pm$ 2 degrees F
Commercial solid door freezer	0 degrees $\pm$ 2 degrees F
Commercial glass door refrigerator	38 degrees $\pm$ 2 degrees F

## Future Specification Revisions

In 2005 Congress passed new Federal minimum efficiency standards (effective January 1, 2010) for solid door refrigerators and freezers that mirror CEE Tier 1 levels. CEE plans to review this specification to ensure that CEE specifications represent highly efficient equipment in the market.