

COMMERCIAL GLASS-DOOR, REACH-IN REFRIGERATORS



Overview: CEE launched an initiative for high-efficiency commercial glass-door, reach-in refrigerators in December of 2003. In 2006, this initiative became part of CEE's Commercial Kitchens Initiative.

Commercial glass-door, reach-ins account for about 8 percent of packaged commercial refrigeration energy consumption. They are used predominately in stores selling beverages (in this application, they are known as beverage merchandisers). Glass-door, reach-ins are also used in commercial kitchens.

This initiative is based on a common specification approach (see next page).

About this Market: Nationally, an estimated 800,000 units are in place, using 4.7 billion kWh annually. Approximately 90,000 units are sold each year.

An estimated 75-90 percent of these units are sold to bottling companies, such as Coca-Cola Bottling Companies and Pepsi Bottling Group. The bottling companies then place units on various sites, such as grocery stores, retail stores and gas stations. Beverage companies have specific requirements for this equipment, such as lighting, ease of loading and rapid cooling of beverages.

For the rest of the glass-door units sold, the distribution chain is complex. Commercial food service equipment is primarily distributed through a dealer network that interfaces with food service operators on the commercial side and with food service consultants on the non-commercial side (colleges, hospitals, hotels). Large end-users (such as a chain of restaurants or hotels) will often employ architects or engineers to provide a specification directly to the manufacturer (just as beverage companies do).

MARKET PLAYERS

Manufacturers

There are two dominant manufacturers, True and Beverage-Air. Each has approximately 45 percent of the market share. The rest of the market is divided among a large number of small manufacturers, such as Delfield, Victory, and Stevens-Lee.

Trade associations

The Air-Conditioning and Refrigeration Institute (ARI) has a commercial refrigeration manufacturer division (CRMD) that is slowly growing and beginning to develop standards for commercial refrigeration equipment. Currently, only Beverage-Air and some other smaller manufacturers are members of ARI.

Bottling companies

Bottlers (such as those who bottle and distribute Coca-Cola and Pepsi) account for a large number of sales for glass-door, reach-ins. These companies utilize beverage merchandisers as a sales vehicle for their products. Beverage merchandiser specifications generally include rapid cooling requirements and lighting that displays the beverages in an attractive manner.

FACT SHEET

Distributors

Distributors sell a majority of glass-door, reach-ins used in commercial kitchens.

End-user

For the beverage merchandiser, the end-users are grocery, convenience and retail stores. Beverage companies buy the equipment but the end-users pay the electric bill, resulting in a split incentive. Glass-door, reach-in units not selling beverages are used in commercial kitchens such as restaurants, hotels or schools.

Technical potential

A DOE-sponsored study conducted by Arthur D. Little in 1996 estimates that approximately 40 percent savings can be realized by using high-efficiency compressors, efficient lighting (electronic ballasts), and evaporator fan ECMs – with a payback of two years or less. Efficient technologies with a payback of five years or less include ECM/Variable speed compressors and condenser fans with an ECM Motor.

CEE's high-efficiency specification for commercial glass-door, reach-in refrigerators

NOTE: CEE's specifications are updated periodically. See the CEE Web site (www.cee1.org) for the most recent version. For terms and usage of this specification, see the CEE Web site.

	Corresponding base specification	Maximum energy use per day (kWh/day)
TIER 1	25% of top performing products	$.12V + 3.34$
TIER 2	28% more efficient than CEE Tier 1	$.086V + 2.39$

V = Interior volume in cubic feet as determined in ANSI/AHAM HRF1-1979 Test Method ANSI / ASHRAE 117-1992 at 38 deg. +- 2