

Efficiency

A Buyer's Guide for Fireplaces and Fireplace Inserts

Efficiency Ratings - Why?

When purchasing a gas fireplace, ask about its efficiency first. However, a word of caution is necessary: many different methods have been used to measure the efficiency of gas fireplaces, some of which can give misleading results. Until recently, **most efficiency ratings were steady-state measurements** – the maximum efficiency the fireplace could achieve operating under controlled laboratory conditions and after running at equilibrium for a long period of time. This measurement does not take into account many of the ways in which heat loss occurs in a fireplace. A steady-state rating is comparable to the good gas mileage a car achieves when cruising on the highway, as opposed to the much lower mileage you get in stop & go city driving. With a gas fireplace, **the actual operating efficiency of the unit once it is installed in your home will be lower than the steady-state efficiency**, in some cases much lower.



The Mendota BurnGreen™ gas burner/control system takes fireplace technology to the next level, bringing energy savings, a beautiful fire, total comfort and convenience to your home like never before. **BurnGreen™ means burning smarter, giving you choices to conserve fuel and help the environment.** The Mendota BurnGreen™ system lets you turn the burners and the pilot on and off, adjust the heat and blower output—and even turn off the rear burner on mild days. You can also control room temperature using the remote control's digital thermostat. And, it's all done with the touch of a button.



Key Features for efficiency:

- ~ High CSA-P.4 efficiency rating
- ~ Thick gauge steel firebox construction, evaluated by unit weight
- ~ BurnGreen™ gas burner/control
 - ~ High CFM value, above 200
- ~ Two dedicated motors supporting a two fan convection system
 - ~ Radiant, convection, and a blower system

Radiant, Convection, Blower & Efficiency

An important factor to consider when purchasing a gas fireplace is the unit's heat-exchange capabilities. **Gas fireplaces transfer heat into the house by two primary means: radiation and convection.** Together they will increase the heat-exchange capabilities of the fireplace or insert.

Radiation

This is the transfer of heat from flames and hot surfaces to solid objects, such as furniture, walls and people, that are in the direct path of the heat source by means of infrared radiation. The hotter the source and the greater its ability to emit heat, the better the radiant heat transfer. In other words, **when you can see the flame, you can be comfortably warmed by radiant heat.** This capability distinguishes fireplaces from many other heat sources, including central furnaces.

Convection

A well designed fireplace will have channels around and behind the combustion chamber, through which room air will naturally circulate by convection. This is a process of heat transfer where the cool room air picks up heat energy from the fireplace surface causing air currents that transport heat throughout the room. Convection efficiency will be increased with a blower system in addition to relying just on thermal air currents alone. **Fireboxes constructed of thicker gauge steel will store more heat within the heat exchanger than those manufactured with a thinner gauge steel.** Fireplaces that have this benefit can be evaluated by the **total weight of the unit** and will be more efficient.

Blowers and Fireplace Fans

Variable-speed fireplace fans can increase the amount of convective heat supplied by a fireplace by forcing heat into the room. These fans also improve the circulation of air throughout the room. The fan draws cool air in from the room and heats it up inside the convection chamber and then forces it back out into the room.

When selecting a blower system, **the goal is to purchase one with a high CFM** (cubic feet per minute) value. The fireplace blower uses only a small amount of electricity; therefore, the added heat in the room far outweighs any extra electricity required while the blower motor is functioning. In order to reach a high CFM number, a manufacturer will use a dual motor system attached to dedicated blowers. **Dual motors will increase the CFM at a lower RPM which will create a lower noise output.**



CSA "P.4" EFFICIENCY CERTIFICATION

aims to provide a method for measuring
Annual Fireplace Efficiency



The best way to determine the efficiency of a gas fireplace is to ask for its fireplace efficiency rating based on the CSA-P.4 test method. Tests using this Canadian standard for measuring annual fireplace efficiency have shown that **some units operate in the 30 percent range, while the better units range from 70 to 90 percent.**

The CSA-P.4 standard assesses all gas fireplaces, whether they are decorative units or used for space heating. It is an accurate measurement that reflects the overall operation of the fireplace, taking into account its use and performance throughout the entire heating season. **The fireplace efficiency rating is expressed as a percentage; therefore, the higher the rating, the more efficient the unit.**

MENDOTA

AMERICA'S LUXURY FIREPLACE

CSA - P.4. EFFICIENCY
CERTIFICATION REPORT NO. G101425081

FullView Inserts

FV33i - 77.1%
FV33i Mod - 82.5%
FV44i - 83.3%
FV44i Mod - 86.7%

D Series Inserts

D30 - 78.6%
D40 - 84.2%

FullView Fireplaces

FV46 - 76.89%
FV41 - 72.7%
FV41 Mod - 80.2%

DXV Fireplaces

DXV 35 - 76.4%
DXV 45 - 77.1%

Designer Fireplaces

M27 - 70.4%
M50 - 74.8%

Linear Fireplace

ML47 - 71.3%

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