

The OPTUM Advantage



Not only is the **Optum** the most energy efficient unit heater available, it is the most environmentally friendly too. Reduced emissions, low fuel utilization and a reduced carbon footprint give **Optum** our green stamp of approval!


Beacon Morris

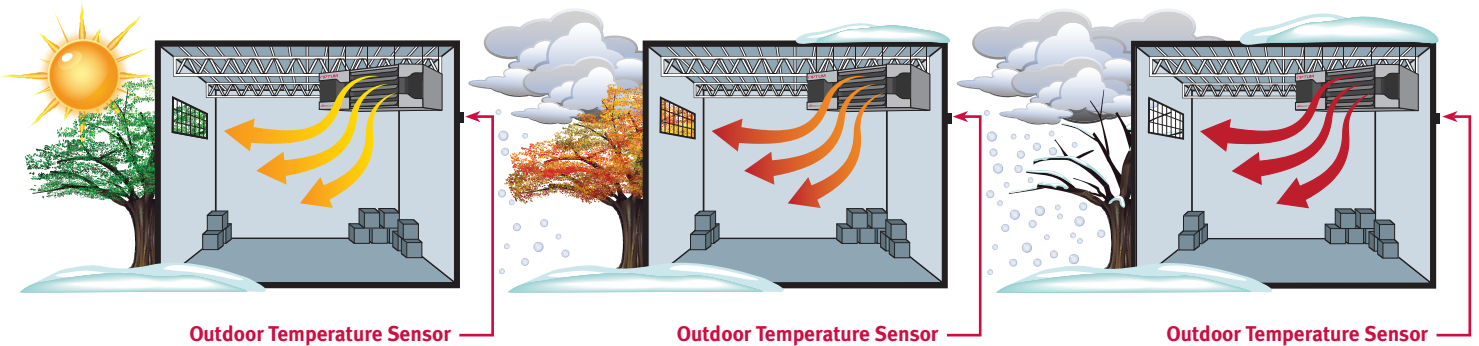


Efficiency

The number one driving factor in lowering operating cost is thermal efficiency. The more efficient the unit, the lower the fuel bill. **Optum** offers the best efficiency in industry with an amazing 95+% certified efficiency at high fire, up to 99% maximum efficiency at full turndown.

Gas Control – Single Stage vs Optum

Competitive units offer only single stage gas controls, which results in units frequently over or under-heating the space since they are unable to adjust to the heating needs of the space. Single stage units also experience increased cycling resulting in higher fuel costs and more wear and tear on the equipment. **Optum**' variety of gas controls offer unique ways to reduce overall operating costs.



Modulating with Outdoor Air Reset (Master)

Used in parts of the country with large temperature swings. Units automatically vary discharge air temperature based on outside air temperature. Unit operates more efficiently at part load, there is no reason to run at full fire when it is 60°F outside. By running at a lower discharge air temperature, units are able to run longer at higher efficiencies resulting in less cycling, lower fuel costs and increased occupancy comfort.

For example, a great application for this gas control would be Colorado where it can be 20°F in the morning and 70°F in the afternoon. It is not recommended for parts of the country such as Corpus Christi, Texas where the coldest it gets in winter is 41°F (i.e. the unit will only be on when it is above 41°F and less than setpoint).

Modulating with Outdoor Air Reset (Network)

The master outdoor air reset gas control includes an outdoor air temperature sensor. Since the outdoor air temperature will be the same regardless of where the unit is in the building, only one sensor is required per building. This allows unit heaters to be networked together with the master unit to communicate the outdoor temperature with all other units without requiring additional sensors.

Modulating with Indoor Air Reset

When a unit is controlled by room sensing, it waits until the temperature of the space is outside of the set parameters (usually setpoint $\pm 2^\circ\text{F}$) then turns on to heat the space. Indoor Air Reset attempts to learn your buildings heating needs and run at the bare minimum to keep the space temperature within the allowed range leading to improved occupancy comfort since the temperature is in the allowed range for a greater period of time. Running longer at lower outputs increases efficiency and reduces cycling. Unlike outdoor air reset, this gas control is ideal for regions that do not have large temperature swings. For example, Milwaukee, Wisconsin where the temperature will be 5°F at night and 21°F in the afternoon.

Modulating with Room Sensing

Units vary the discharge air temperature to more closely match the needs of the space. This leads to increased efficiency, comfort and reduced cycling.

Modulating with 2-10 VDC/4-20mA

This allows the building automation system to control the unit.

Modulating via Modbus Communication

Similar to the 2-10 VDC/4-20mA this allows the unit to be controlled through the building automation system (BAS) while providing feedback to the BAS allowing for remote monitoring of over 30 data points including unit fault codes. This allows user to know what is wrong with the unit without even entering the building.

Venting – Pipe Size

By using a combustion blower and power venter, the **Optum** unit can deliver improved performance while using a small combustion air inlet and flue pipe.

Size Range	Pipe Size		
	Modine	Reznor	Beacon Morris
55 - 135	3" PVC	Flue Pipe = 4" PVC Combustion Air = 6" Steel	2" PVC
156 - 260	4" PVC	Flue Pipe = 4" PVC Combustion Air = 6" Steel	3" PVC
300 - 310	6" Steel	Flue Pipe = 4" PVC Combustion Air = 6" Steel	4" PVC
400	Not Available	Not Available	4" PVC

By using a smaller pipe or a PVC pipe instead of steel pipe, the owner can greatly reduce the installation cost, especially if there are multiple units on the project.

Auto-Adjusts for Altitude

A traditional unit heater varies the manifold pressure in order to increase or decrease the unit firing rate. **Optum** uses a negative pressure gas valve and the gas pressure leaving the valve is always approximately 0" w.c. In order to vary the firing rate, the unit changes the RPMs of the combustion blower and power venter based on the pressure drop through the heat exchanger (note: the control board "syncs" the combustion blower and power venter so they are always supplying the same CFM). An additional advantage of this control method is the unit automatically adjusts for altitude without requiring components to be changed or the unit to be adjusted in the field. The National Fuel Gas Code (NFPA 54) says that unless otherwise stated by the manufacturer, the unit performance will de-rate 4% for

Two Stage Gas Control

As an alternative to modulation, two-stage gas controls allow units to run at part load when the heating load is 50% or less. This will result in improved efficiency and a lower fuel cost.

Turndown – 1:1 vs Optum 3:1

Competitive units only offer single stage units (on/off). **Optum's** 3:1 modulation allows for precise discharge temperature control eliminating over/under-heating of the space for improved occupancy comfort. Units run longer at lower firing rates; reducing cycling, improving efficiency for lower operating costs and increased life expectancy.



every 1,000 feet above sea level. The **Optum** unit was tested and certified at a variety of altitudes and de-rate is 2.71% for every 1,000 feet above sea level. This results in an increased output versus our competitors at altitude.

Overcomes Partial Vent Blockages

In addition to auto-correcting for altitude, unit controls also auto-adjust to overcome partial blockages in the combustion air or flue pipe without a decrease in performance and much safer operation. Because the unit control is based on pressure, the combustion blower and power venter will automatically increase RPM's to overcome blockages and maintain performance and safety.

Voltages

Optum is available in a variety of standard voltages to meet the customer's needs. Some competitive units require a field provided step down transformer.

Double Wall – Competitors No, Optum Yes.

With double wall construction more heat is reflected into the supply air stream instead of distributed as casing radiated heat. This results in more of the heat being blown down into the space instead of staying up at the ceiling. This also reduces the external jacket temperature of the unit making it safer and easier to work with. An additional benefit is no exposed insulation to the air stream.

Condensate Float Switch

Optum is equipped with a condensate float switch that automatically detects a blockage in the condensate drain pipe and turns the unit off. Some competitive units do not have a condensate float switch so the unit continues to run even when there is a blockage resulting in the condensate drain line overflowing out of the unit into the occupied space. Condensate float switch faults can be remotely monitored via external unit LEDs or Modbus fault code to notify end users of the problem without having to remove any panels.

Condensate Connection – Competitors Two vs Optum One

Our competitors require two condensate connections for their units. One on the bottom of the secondary heat exchanger and one located in the flue pipe near the unit in order to ensure that no condensate goes through the power venter. If the condensate goes through the power venter it will cause corrosion and premature failure. **Optum** units use an all plastic power venter allowing for a single condensate connection without the fear of corrosion or premature power venter failure. Units are also easier to install and have a longer unit life cycle.

Condensate Trap – Competitors Field Provided vs Optum Standard

All high efficiency units, regardless of manufacturer, require a condensate trap in order to prevent flue gas from entering the condensate pipe. For our competitors this trap must be field provided by the installing contractor. However, every **Optum** unit includes a clear, spring loaded EZ trap allowing for easy visual inspection to prevent potential clogs before they happen.



Stainless Steel Cabinet

Optum has a premium brushed stainless steel finish instead of the standard painted finish of other units for a high-end look. In addition to a high-end finish, the stainless steel cabinet, combined with the trimetal heat exchanger, stainless steel flue collector and burners offers improved corrosion resistance. This makes it ideal for high humidity environments such as a green house or corrosive environments.

Gas Conversion (Included)

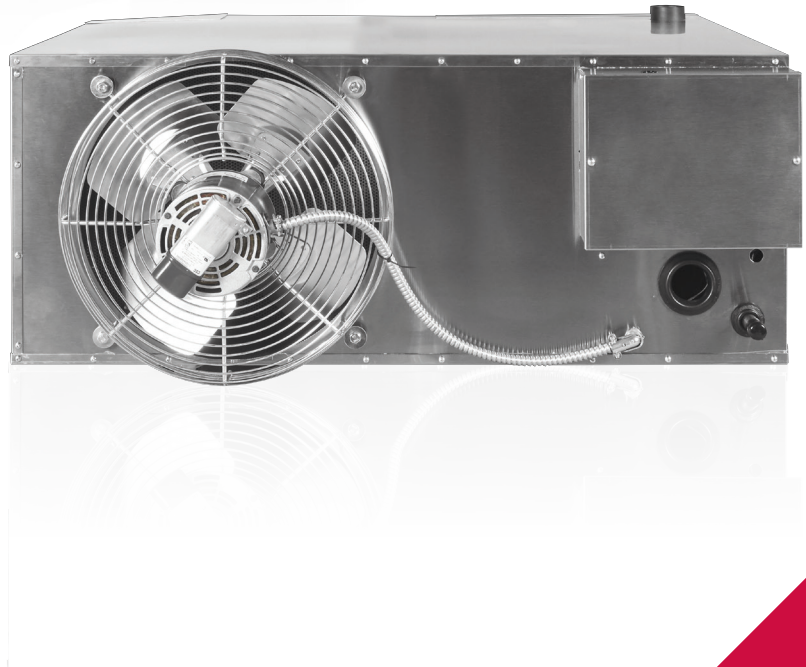
Optum ships with gas conversion (NG to LP) kits standard.

External LED

Optum units have external LED lights visible from virtually any angle for easy troubleshooting. Competitive units have internal LED lights visible through a view port requiring technicians to view from specific angles in order to see them making it difficult to troubleshoot depending on the installation location.

OSHA Guard

Optum OSHA safety guards are standard.





260 North Elm Street | Westfield, MA 01085 | Tel: (413) 562-5423 Fax: (413) 572-3764
7555 Tranmere Dr. | Mississauga, Ont. L5S 1L4 Canada | Tel: (905) 670-5888 Fax: (905) 670-5782
www.beacon-morris.com

