

When it comes to designing your heating system there are a wide number of variables. Gas, Electric, Propane, Fuel Burning Stove, & HWC heaters are the most common. Passive system such as forced air geothermal (commonly referred to as ghat) do offer ambient temperature controls when installed correctly. Which one is right for your application? If you are just looking to add heat to an existing greenhouse or update an old system that may not be keep up, the easiest way to calculate is based on cubic feet & BTU. Other factors in this measurement will be the minimum exterior temperature, inside temperature you need to maintain. We aren't going to cover each type of heater and it's pros and cons, but rather we are going to discuss other key components to making sure you're heating system runs at it's peak performance.

Heat loss is a variant based on loss through specific materials such as polycarbonate, glass, and the thicknesses. This loss factor is also affected by foot traffic, and the way the glazing system is installed. Due to the many fluctuating factors many fuel conversion charts are deemed as "estimates" only, & not exact. More heat is better than less heat. Interior air circulation is vital. An interior light duty fan installed high in your greenhouse roof frame system will help push the escaping hot air back down, while wall fans can help move that air around. Low cfm(cubic feet per minute) fans are best for these applications. Centrally mounted heaters can also help increase your greenhouses efficiency.

Making sure your greenhouse does not have any air leaks is also vital during the colder winter months. Sealing up around any exhaust or intake vents, air leaks around entryway doors can also be common. One component that is often overlook if your glazing system. If you have air leaks in your glazing system, or an open glazing system, this will cause large scale efficiency problems. AWG Incs' greenhouses are specifically designed and engineered to minimize air leaks & engineered to recapture the energy created inside the polycarbonate panels to help maintain heat and humidity levels in the winter months.

To determine your cubic feet you can use the following simple calculation:
Length X Width X Height= Y. Y/1,728= cubic feet.

Using this calculation, ensure that your heater is rated for up to double of this area. At AWG Inc we offer only the best proven heaters designed for lifetime use with minimal maintenance. With our Proprietary design, even on the coldest of days, our heaters cycle, and do not run constantly. One of the many things that makes AWG Incs' Greenhouses the most efficient in the world.

There are a couple of things that are just as important as the size of the heater you choose: 1. Location of the Heater. 2. Interior Air Circulation.

There are many types of heaters and many different manufacturers. At AWG Inc we only sell the very best heaters that are proven performers. Key features being efficient, & little to no maintenance backed by manufacturers that stand behind their products.

Typically, you will find heaters in greenhouses mounted to the roof frame. Even though the heaters have dampers on them, this location for a heater means that up to 90% of the heat goes straight to the roof, & the plant areas of your greenhouse remain minimally affected by the temperature control. Relocating your heater can be a daunting task in some circumstances.

A simple solution that helps reduce the amount of heat loss is to install specific air circulation fans at specific locations to move air into the desired location. While this will help make your greenhouse more efficient, the placement of the air circ fans, & the type are unique to each situation there is no "one answer". Even in winter months, it is not uncommon is some types of greenhouses for the temperature at the highest point in the roof to be more than double that at plant level. While this will assist in air circulation, there will always be cold temperatures radiating up from ground level, & depending on your foundation, this could present a challenge to maintain balanced temperatures in your greenhouse which decreases the efficiency.

Radiant Floor Systems are a viable option for decreasing the ground temperature in your greenhouse during the winter months. During the winter months, the cold creeps up quickly through your floor system. It is common for the concrete to hold 40-degree temperatures when the greenhouse is at operating temperature. There are other ground heating solutions such as forced air geothermal systems(ghats), insulated foam board placed under the concrete, Swedish style foundations, etc.

During the coldest winter months, every decrease of cold temperatures radiating into your greenhouse makes a difference. Lack of efficiency are why so many greenhouses utility costs are substantially higher than they need to be. The thermocline in your greenhouse is the ratio in which hot air rises, the difference in temperature between ground level & at the highest point in the roof. This temperature variance can easily be 100-degrees. Heat rises, & if your greenhouse is not using this to its advantage, it is quite literally in a constant state of “heating the outdoors”. AWG Incs’ Greenhouses are uniquely engineered to maintain the same temperatures year round from ground level to the peak. Balancing your interior temperature is one of the features that makes AWGs’ Greenhouse Systems the most efficient in the world. If your heaters are constantly running and not cycling on and off, this is one sure way to tell that your greenhouse is struggling with its efficiency aside your heating bill. AWG Inc Services & repairs/updates heating systems in all greenhouses, as well as offering consultation services for the “do it yourselves” to help you lower your utility costs.

