



## PRODUCT LINE

HEATING | COOLING | HOT WATER

[www.geostar-geo.com](http://www.geostar-geo.com)



AFFORDABLE RENEWABLE CLEAN

GEOTHERMAL HEAT PUMPS

## WHAT IS GEOTHERMAL?

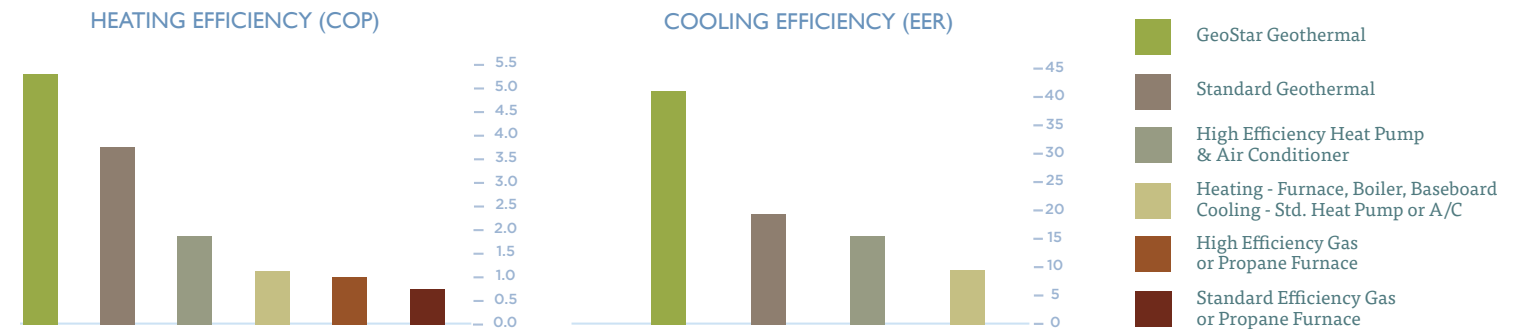
Geothermal units are similar to ordinary heat pumps but use the solar energy stored just below our feet to provide heating, air conditioning and hot water. The earth acts as a giant solar panel, absorbing roughly half of the sun's heat energy. A series of pipes called a "loop" (see next page for more) is buried just below the frost line to tap into that stored energy. In the winter,

heat is brought in through the loop, concentrated, and delivered throughout your home. During summer, the excess heat in your home is removed and delivered back to the earth, completing the cycle. Because geothermal units use the earth's natural heat, they are among the most efficient and comfortable heating and cooling technologies currently available.



## COMPARE THE PERFORMANCE

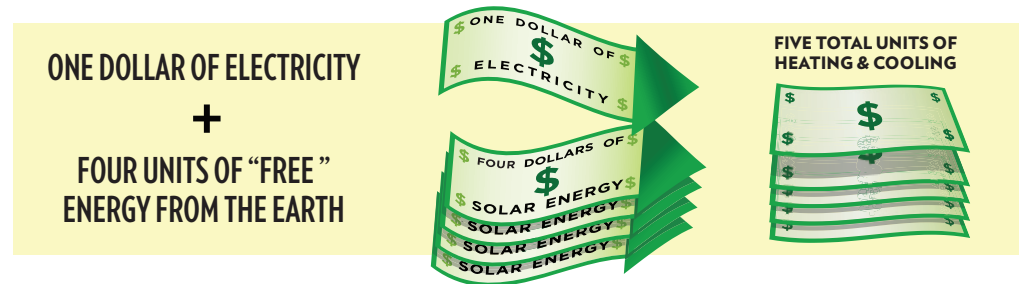
A GeoStar unit can reduce your annual costs for heating, cooling and hot water by as much as 70% per year. No other gas furnace, air conditioner or heat pump comes close to GeoStar's efficiency. With continuous and dramatic increases in the cost of fossil fuels like natural gas, propane and fuel oil, the savings possibilities are even greater in the future. Your GeoStar dealer can use software modeling tools to estimate the heating and cooling costs for your home based on square footage, construction style, and climate.



## GEOSTAR BENEFITS

Thanks to the unique way geothermal units operate, they provide a host of exciting benefits to you and our environment.

**AMAZING ENERGY EFFICIENCY:** Geothermal heat pumps don't create energy, they simply move it. Only a small amount of electricity is used to circulate heat to and from your home. This allows GeoStar units to provide \$5 of heating for every \$1 of electricity used, while current "high-efficiency" fossil fuel furnaces provide only 98c. Our units are far more efficient than any conventional furnace!



**COST EFFECTIVENESS:** Though geothermal systems can be more expensive to purchase up front, the cost difference will be returned through drastically lower energy bills. Most GeoStar owners see savings up to 70% on their utility bills!

**GREATER COMFORT:** GeoStar units run only at the level needed by using variable speed motors. They slowly ramp up to speed rather than "roaring" to life like traditional units—resulting in even, consistent comfort. You won't experience the large temperature fluctuations associated with other heating and cooling solutions.

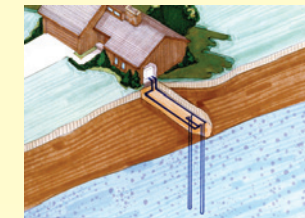
**QUIET:** With our units, there's no noisy outdoor equipment to disturb the peace or clutter your yard. Some homeowners have reported checking the unit to see if it's running.

**LONGER LIFE AND RELIABILITY:** Because GeoStar units don't require any outdoor equipment, they are protected from the rain, snow, environmental contaminants and abuse that hinders the efficiency of traditional air conditioners and heat pumps.

**ENVIRONMENTALLY FRIENDLY:** Geothermal units don't burn any fossil fuels or create carbon monoxide. This reduces our dependence on foreign oil while it works to reduce greenhouse gas emissions. One GeoStar geothermal unit is the environmental equivalent of taking two cars off the road forever. In fact, the Environmental Protection Agency (EPA) says geothermal heat pumps are the most environmentally friendly and cost effective way to condition our homes.

## GEOTHERMAL LOOP TYPES:

There are four main loop types used in the geothermal industry today. Your GeoStar dealer can provide you with guidance and advice for your specific situation.



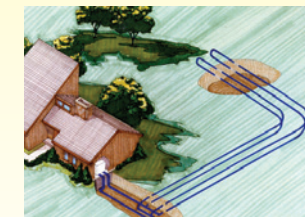
### VERTICAL LOOP

Used when space is limited. Holes are bored approximately 125 to 250 ft. deep using a drilling rig. A pair of polyethylene pipes with a u-bend fitting is inserted into the holes. A typical home requires three to five bores with roughly a 15-foot separation between the holes.



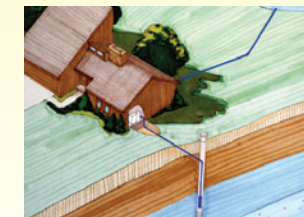
### POND LOOP

If an adequately sized body of water is close to your home, a pond loop can be installed. A series of closed loops are coiled and sunk to the bottom of the pond or lake. A 1/2 acre, 8-foot-deep pond is usually sufficient for the average home.



### HORIZONTAL LOOP

Used where adequate land is available. Horizontal loops involve one or more trenches dug using a backhoe or chain trencher. Polyethylene pipes are inserted, and the trenches are backfilled. A typical home requires 1/4 to 3/4 of an acre for the trenches.



### OPEN LOOP

An open loop is used where there is an abundant supply of quality well water. The well must have enough capacity to provide adequate flow for both domestic use and the GeoStar unit. GeoStar units require 3 - 10 GPM, depending on size.



Homeowners who install an ENERGY STAR® rated geothermal system in the U.S. are eligible for a 26% federal tax credit. The 26% credit will last through 2022 and can be claimed on equipment and installation costs with no upper limit. The credit is scheduled to decrease to 22% in 2023, so act now for the most savings!





## SYCAMORE SERIES

Variable capacity at its best

The Sycamore Series is our most impressive system yet. A variable capacity compressor works in concert with a variable speed blower motor and variable speed loop pump to provide the utmost in comfort. The entire system can ramp itself up or down to provide exactly the output your home needs at any given time. Add in the Aurora family of controls for two-way communication and energy monitoring, and you'll get one of the most advanced heating and cooling systems on the planet.

## ASTON SERIES

One of our most efficient units

Aston Series units represent some of our best efficiencies and features. Dual capacity operation provides increased comfort, energy savings and reliability. Each unit utilizes environmentally safe R-410A refrigerant and comes standard with our Aurora family of controls for advanced two-way communication and energy monitoring.

## MAGNOLIA PLUS SERIES

Combining value & performance

GeoStar Magnolia Plus Series units are the perfect balance between performance and price. They benefit from more than 30 years of advancements in research, engineering, and manufacturing. You'll rest easy knowing the Magnolia Plus Series will provide you with many years of reliable energy savings and relaxation.

## CYPRESS SERIES

Heating, cooling & radiant heat

The Cypress Series is a geothermal boiler, furnace and air conditioner—all in one unit. It provides ultra efficient heating and cooling along with hot water for radiant floor heat (domestic hot water option also available). It shares many of the features from our Aston Series line such as ozone-safe R-410A refrigerant, computer controlled components, advanced troubleshooting features, scroll compressors, and corrosion resistant air coils.

	SYCAMORE SERIES	ASTON SERIES	MAGNOLIA PLUS SERIES	CYPRESS SERIES
<b>SIZES</b>	3 thru 5 ton variable capacity	1 thru 6 ton single speed (9 sizes) 2 thru 6 ton dual capacity (5 sizes)	2 thru 6 ton dual capacity (5 sizes)	3 thru 6 ton (4 sizes)
<b>EFFICIENCY: PART LOAD</b> <small>AHRI 13256-1 (GLHP) Closed loop</small>	5.1 - 5.3 COP 36.0 - 41.0 EER	3.9 - 4.8 COP 24.9 - 28.0 EER	3.7 - 4.1 COP 20.6 - 22.3 EER	4.0 - 4.2 COP 21.0 - 25.7 EER
<b>EFFICIENCY: FULL LOAD</b> <small>AHRI 13256-1 (GLHP) Closed loop</small>	3.5 - 3.6 COP 19.4 - 22.0 EER	3.7 - 4.2 COP 17.6 - 22.0 EER	3.4 - 3.8 COP 15.5 - 16.5 EER	3.7 - 3.9 COP 16.1 - 18.7 EER
<b>REFRIGERANT</b>	R-410A	R-410A	R-410A	R-410A
<b>COMPRESSOR</b>	High-efficiency (variable capacity)	Scroll (single speed & dual capacity)	Scroll (dual capacity)	Scroll (dual capacity)
<b>BLOWER</b>	ECM variable speed	ECM variable speed 5-Speed ECM Optional PSC single speed except in dual capacity units	5-Speed ECM	ECM variable speed
<b>CABINET CONFIGURATIONS</b>	Vertical top flow Vertical bottom flow Vertical rear discharge Horizontal end or side discharge All left or right return	Vertical top flow Vertical bottom flow Vertical rear discharge Horizontal end or side discharge All left or right return	Vertical top flow Horizontal end or side discharge All left or right return	Vertical top flow All left or right return
<b>STAGES (* with aux.)</b>	Variable	3 heat*, 2 cool	3 heat*, 2 cool	3 heat*, 2 cool
<b>CONTROL</b>	Aurora	Aurora	Aurora	Microprocessor Fault & status lights Onboard diagnostics Fault retry
<b>AIR COIL</b>	Coated	All-Aluminum	All-Aluminum	All-Aluminum
<b>HOT WATER GENERATION</b>	Optional Internal mount pump	Optional Internal mount pump	Optional Internal mount pump	Optional External mount pump
<b>AUXILIARY HEAT</b>	Optional Internal mount on vertical	Optional Internal mount on vertical	Optional Internal mount on vertical	Optional Internal mount on vertical
<b>ZONE CONTROL</b>	IntelliZone2 (up to 6 zones)	IntelliZone2 (up to 4 zones)	IntelliZone2 (up to 4 zones)	IntelliZone2 (up to 4 zones)
<b>ENERGY STAR RATED</b>	Yes—All sizes	Yes—All ECM models and most PSC models	Yes—All sizes	Yes—All sizes



## ASTON SERIES INDOOR SPLIT

Indoor versatility & efficiency

Indoor Splits are for installations where space is at a premium. When combined with a GeoStar air handler, the unit can provide complete home heating & cooling. When added to a furnace, the system will automatically switch to the most economical heating source for energy conservation. All Aston units utilize R-410A refrigerant. This unit provides the efficiency of geothermal in a conveniently small footprint.

## ASTON SERIES OUTDOOR SPLIT

Outdoor versatility & efficiency

Outdoor Splits are designed for use outside when indoor systems would be difficult to install. The Aston Series Outdoor Splits are covered by a high-quality sealed cabinet for protection and are engineered to be connected to an air handler or a fossil fuel furnace and automatically switch to the most economical heating source for improved energy conservation. Again, all Aston units utilize ozone-safe R-410A refrigerant.

## ASTON SERIES WITH OPTIHEAT

Single high temperature hydronic

The Aston with OptiHeat high temperature hydronic heat pump is the geothermal solution for boiler replacement. It utilizes an additional heat exchanger to divert excess heat and reinjects it into the system, creating higher exiting water temperatures and optimum compressor operating conditions. Smaller loads are required and result in the ultimate in efficiency.

## ASTON SERIES SINGLE HYDRONIC

Single hydronic add-on

Aston Single Hydronic units are engineered for hot water needs such as pool/spa heating, radiant floor, snow melt, aquaculture, and process water installations. Units can be selected as heating only or heating/cooling models (020 heating only). Scroll compressors, R-410A refrigerant, and oversized heat exchangers combine to provide users with exceptional energy savings while straightforward controls make operation easy.

## ASTON SERIES DUAL HYDRONIC

Dual hydronic add-on

Aston Dual Hydronic products are engineered for the high-volume water demands of larger luxury homes. Two high efficiency, single speed scroll compressors provide water for pool/spa heating, radiant floor, snow melt, aquaculture and process water installations. An advanced MUI controller comes with each unit to monitor operation. Brazed plate heat exchangers allow efficiency in a compact unit. This Aston Series unit uses R-410A refrigerant.

	ASTON SERIES INDOOR SPLIT	ASTON SERIES OUTDOOR SPLIT	ASTON SERIES WITH OPTIHEAT	ASTON SERIES SINGLE HYDRONIC	ASTON SERIES DUAL HYDRONIC
<b>SIZES</b>	2 thru 6 ton single speed (7 sizes) 2 thru 6 ton dual capacity (5 sizes)	2 thru 6 ton dual capacity (5 sizes)	3 thru 6 ton single speed (3 sizes)	1½ thru 5 tons (6 sizes)	8 thru 15 tons (4 sizes)
<b>EFFICIENCY: PART LOAD</b> <small>AHRI 13256-1 (GLHP) Closed loop</small>	3.8 - 4.4 COP 20.0 - 25.3 EER	3.8 - 4.4 COP 20.0 - 25.3 EER	N/A - Single speed units only	N/A - Single speed units only	3.3 - 3.5 COP 18.4 - 22.0 EER
<b>EFFICIENCY: FULL LOAD</b> <small>AHRI 13256-1 (GLHP) Closed loop</small>	3.3 - 4.0 COP 15.0 - 19.9 EER	3.4 - 3.9 COP 15.0 - 17.1 EER	3.2 - 3.3 COP 16.1 EER	2.9 - 3.1 COP 14.0 - 17.5 EER	2.7 - 3.1 COP 15.8 - 16.8 EER
<b>REFRIGERANT</b>	R-410A	R-410A	R-410A	R-410A	R-410A
<b>COMPRESSOR</b>	Scroll (single speed & dual capacity)	Scroll (dual capacity)	Vapor injected scroll (single speed)	Scroll (single speed)	Scroll (single speed)
<b>BLOWER</b>	ECM when mated to the GeoStar variable speed blower air handler.	ECM when mated to the GeoStar variable speed blower air handler.	None	None	None
<b>CABINET CONFIGURATIONS</b>	Compact cube	Compact outdoor unit	Compact unit	Compact unit	Compact unit
<b>STAGES (* with aux.)</b>	3 heat*, 2 cool	3 heat*, 2 cool	1 heat, 1 cool	1 heat, 1 cool	1 heat, 1 cool
<b>CONTROL</b>	Aurora	Aurora	Aurora Advanced Controls	Aurora Advanced Controls	Microprocessor Mode, status & fault lights
<b>AIR COIL</b>	Coated with Aston air handler	Coated with Aston air handler	N/A	N/A	N/A
<b>HOT WATER GENERATION</b>	Optional Internal mount pump	Not Available	Optional. External mount pump Not available on 1½ & 2½ ton	Optional. External mount pump Not available on 1½ & 2½ ton	N/A
<b>AUXILIARY HEAT</b>	Depends on air handler Dual fuel option	Depends on air handler Dual fuel option	N/A	N/A	N/A
<b>ZONE CONTROL</b>	IntelliZone2 (up to 4 zones)	IntelliZone2 (up to 4 zones)			
<b>ENERGY STAR RATED</b>	Yes—Most sizes (If installed with GeoStar air handler or A-coil)	Yes—Most sizes (If installed with GeoStar air handler or A-coil)	Yes	Yes—Most Models	Yes—Select Models

## GEOTHERMAL STORAGE TANK

The GeoStore Geothermal Storage Tank is designed specifically for geothermal installations. It has features not found on most ordinary water heaters and provides consistent water temperature and constant hot water in geothermal systems.

The GeoStore tank uses heating elements that last two to three times longer than standard copper heating elements and increases the overall efficiency of the tank. The tanks also feature two-inch (R-16) insulation, a pre-mounted temperature and pressure relief valve, a lower thermostat for control of our Cypress Series units, a pre-pulled wire for the top exit of controls and chilled water capability.



## NOTES

## ASTON SERIES SAH AIR HANDLER

The Aston SAH Air Handler, featuring 2-6 ton capacities in convenient cabinet sizes, provides the perfect solution for homes with limited utility space when paired with our split systems. Aurora Advanced Controls in equipped split systems provide true energy monitoring, troubleshooting capabilities, integration into the Symphony Home Comfort Platform & IntelliZone2 zoning system, and more. The air handler utilizes R-410A refrigerant and is field convertible to four configurations for a wide range of applications.

Features and Benefits include: All-aluminum A-Coil, Variable speed ECM blower motor, Aurora Advanced Controls, 1-inch cabinet insulation for noise reduction, slide-out blower assembly, and optional electric heat.




## INTELLIZONE2

The IntelliZone2 works in unison with our Aurora controls and allows for control of up to six different zones on one GeoStar system. It gives you the power to condition where and when you choose—providing precise control over your indoor environment. The result is the ultimate in comfort and cost savings. You've already chosen the best heating and cooling system available; now choose the most advanced zoning system available to control it.



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