

# H-Series

Single & Two-Stage Packaged Geothermal Heating and Cooling Systems



Geothermal Systems  
**Hydron**  
Module®

[www.hydronmodule.com](http://www.hydronmodule.com)



## **H-Series Single & Two-Stage**

Hydron Module® geothermal heating and cooling systems provide the total solution to your heating and cooling needs, with a remarkable compilation of benefits. Hydron Module systems do not use fossil fuels, so there is no risk of explosion or carbon monoxide poisoning. Additionally, it is environmentally friendly. In fact, geothermal systems are recognized by the EPA as the most energy efficient heating and cooling systems available. Utilizing the free energy stored in the earth, Hydron Module systems provide relief from the escalating operational costs of conventional systems. No hot and cold spots, better humidification, longer life expectancy, quieter operation and a stainless steel cabinet make Hydron Module geothermal systems the clear choice for demanding homeowners. Purely smarter. Simply the best solution for heating and cooling needs.

Hydron Module - ***Pure and Simple***

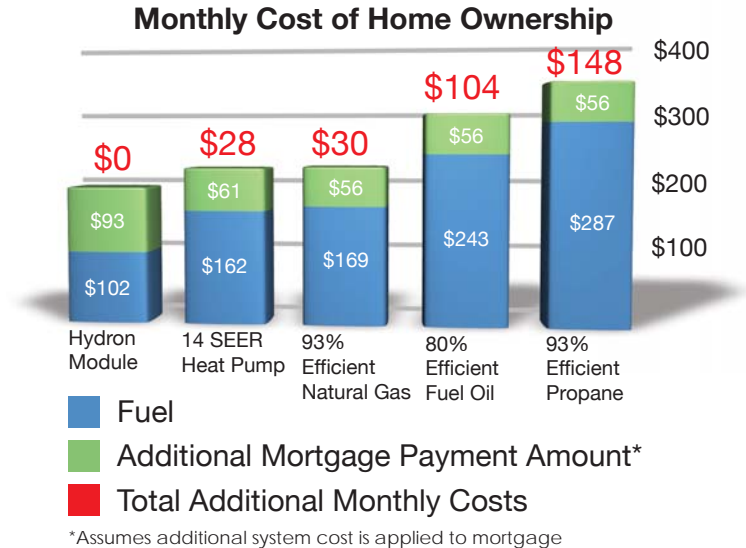
## Why Choose Geothermal?

There are a number of different reasons why you and your family should choose a Hydron Module geothermal heating and cooling system for your home. Everyday, more and more homeowners are turning to geothermal for better comfort and lower energy costs.

Hydron Module geothermal systems are three to four times as efficient as conventional systems. They do not rely on fossil fuels which can harm the environment and they offer unsurpassed comfort through better air purification, dehumidification and more consistent air temperatures.

And don't just take our word for it, the EPA (U.S. Environmental Protection Agency) has stated that geothermal systems are, "the most energy efficient, environmentally clean, and cost-effective space conditioning systems available today.\*"

\* Source: "Space Conditioning: The New Frontier



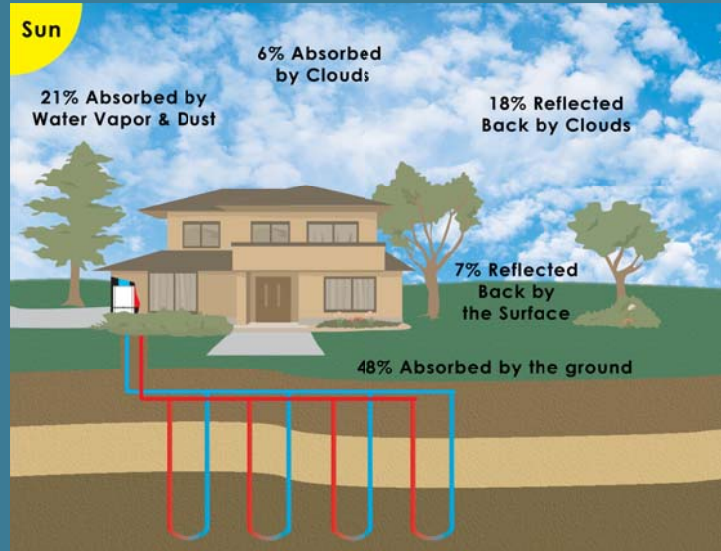
Due to the high installation costs, a new geothermal system will typically have a higher up-front cost versus a conventional system. However, that is only half of the story. Geothermal systems have significantly lower operating costs, which are realized from the very first day the system is in operation. With escalating fossil fuel prices and new State/Provincial and Federal rebates/credits, choosing geothermal becomes an easier decision every day.

## How Geothermal Works

Fundamentally, geothermal systems work differently than ordinary heating and cooling systems. Conventional systems have to produce heat by burning some type of fuel, typically propane, natural gas or fuel oil. Geothermal systems don't create heat; instead they collect and distribute it.

First, you should realize that the earth absorbs and stores nearly half of the sun's solar energy. As a result, at a depth of six feet it maintains a fairly constant temperature of 45 to 70 degrees F. The geothermal system taps into that free, renewable energy and puts it to work.

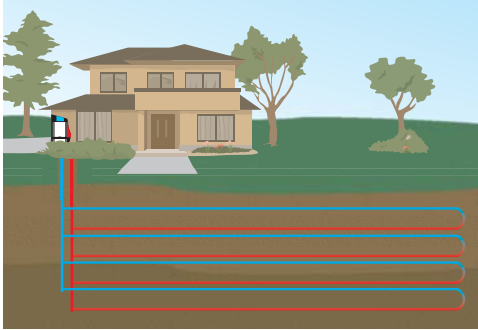
The earth's natural heat is collected in the winter by a series of pipes called a loop system. Fluid circulating in the loop system carries this heat to the home, where it is compressed and released to raise the inside temperature.



In the summer, this process is reversed in order to cool the home. Heat is drawn from the home, rejected to the loop and absorbed by the earth. The result is a comfortable home all year round.

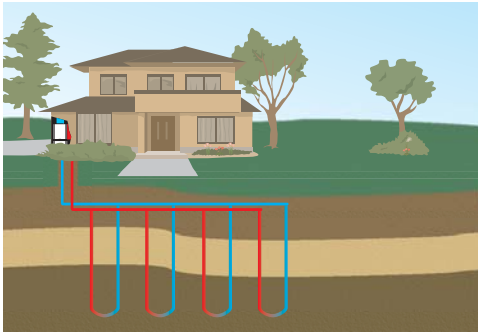
Since most of the energy used for heating and cooling is free from the earth, geothermal systems are the most efficient and environmentally friendly systems on the market today.

## The Heart of the System: Geothermal Earth Loops



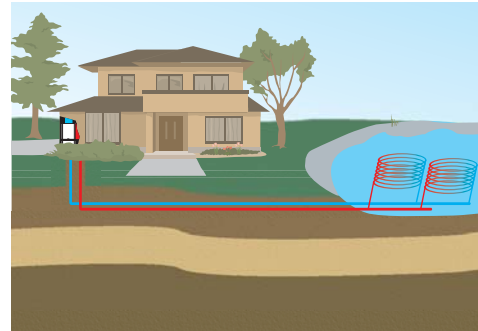
**Horizontal Loop:** This is the most common loop used when adequate land area is available. Loop installers use excavation equipment such as chain trenchers, backhoes and

track hoes to dig trenches approximately 6-8 feet deep. Trench lengths range from 100 to 300 feet per ton, depending on the loop design and application.



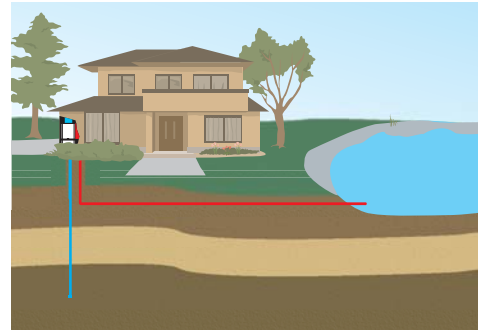
**Vertical Loop:** This loop is used mainly when land area is limited and in retrofit applications of existing homes. A drilling rig is used to bore holes at of depth of 150 to 300 feet per ton. A

U-shaped coil of high density pipe is inserted into the bore hole. The holes are then backfilled with a sealing solution.



**Pond Loop:** A pond loop is an option if a large body of water is available within approximately 200 feet of the home. A  $\frac{1}{2}$  acre, 10 to 12 foot deep body of water is usually adequate to

support the average home. The system uses coils of pipe typically 300 to 500 feet in length. The coils are placed in and anchored at the bottom of the body of water.



**Open Loop:** This system can be installed if an abundant supply of high quality well water is available. A typical home will require 4 to 8 gallons of water per minute. A proper discharge

area such as a river, drainage ditch, stream, pond, or lake must be present. Check for local restrictions before selecting a specific discharge method.

- ① All Hydron Module units have **coated air coils** which prevent corrosion, **enhancing reliability and life expectancy**.
- ② A **durable stainless steel drain pan is standard** on all Hydron Module systems. This means **no corrosion** and a **long life span**.
- ③ Hydron Module uses only **Copeland scroll compressors**. This proven compressor technology ensures **better reliability** due to fewer moving parts.
- ④ Digital controls insure **proper operation** and a variety of field selectable settings for each installation. Advanced **safety controls help protect the equipment**.
- ⑤ **Hot Water Generator** is standard with all Hydron Module units. This allows the capture of free unused heat, **typically cutting hot water costs by 30 - 50%**.
- ⑥ **ECM blower motors are standard** on all Hydron Module two-stage equipment. These variable speed motors **ensure quiet start up** and operate at a **fraction of the cost** of a conventional blower motor.
- ⑦ **Optional auxiliary electric heaters** for backup heating or emergency heating situations **provide additional heat** in extreme cold weather, allowing the system to be correctly sized for heating and cooling.
- ⑧ **Condensate overflow sensor protects against potential overflows** due to clogged drains.
- ⑨ All Hydron Module units come equipped with an oversized, rifled coaxial water heat exchanger for increased surface area, providing **significantly higher efficiencies** than required by Energy Star® or ASHRAE (American Society of Heating, Refrigeration, and Air-Conditioning Engineers) standard 90.1.



## Additional Unit Features

- Foil Backed, Recycled Blue Jean Insulation (No Fiberglass)
- 10 Year Limited Warranty (2009 or newer models)
- Insulated Refrigerant Circuit
- Bolted, Stainless Steel Cabinet
- All Panels Removable For Easy Access
- Flow Switch Protected

## Unit Performance (Two-Stage)

Model	Capacity	Heating		Cooling	
		Btu/hr	COP	Btu/hr	EER
H026	Full Load	22,200	3.7	29,000	16.0
	Part Load	16,500	4.2	21,500	20.0
H038	Full Load	31,400	3.6	39,400	18.0
	Part Load	20,900	4.5	26,300	24.0
H050	Full Load	45,600	3.5	57,200	17.6
	Part Load	30,300	4.3	37,900	23.8
H062	Full Load	52,200	3.5	65,400	17.4
	Part Load	36,500	4.3	45,700	23.6
H073	Full Load	59,700	3.6	72,000	14.1
	Part Load	46,600	3.5	57,500	19.1

### Notes:

Certified in accordance with ISO Standard 13256-1 which includes Pump Penalties.  
 Heating capacities based on 68.0°F DB, 59.0°F WB entering air temperature.  
 Cooling capacities based on 80.6°F DB, 66.2°F WB entering air temperature.  
 Entering water temperatures Full Load & Single Stage: 32°F heating / 77°F cooling.  
 Entering water temperatures Part Load: 41°F heating / 68°F cooling.

## Unit Flexibility

One of the many advantages that the H-Series offers to homeowners is its ability to deliver the perfect level of comfort year-round no matter what the elements throw at it. With either advanced single or two-stage compressor and ECM variable speed blower technology, the H-Series has a unit to fit any application or climate.

## Unit Performance (Single Stage)

Model	Heating		Cooling	
	Btu/hr	COP	Btu/hr	EER
H018	14,100	3.7	17,600	18.9
H024	21,100	3.7	26,400	18.0
H030	27,200	3.7	34,100	18.5
H036	31,600	3.6	39,600	18.0
H042	36,900	3.6	46,200	18.0
H048	44,500	3.5	56,100	17.8
H060	50,200	3.5	62,700	16.2
H072	61,000	3.4	75,800	16.0



# Geothermal Systems **Hydron** Module®

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