



**BOSCH**

Invented for life

# GreenSource Residential Geothermal Heat Pumps

CDi Series: SM Model

## Simply Smart

The GreenSource CDi Series SM Model geothermal heat pump comes equipped with Bosch's commitment to Creative Design and Innovation - CDi for short. SM Models are our most efficient units with the quality that only Bosch can provide.

[boschheatingandcooling.com](http://boschheatingandcooling.com)



Most Efficient

**2017**

ENERGY STAR

[www.energystar.gov](http://www.energystar.gov)



Pond/Lake Loop System



Vertical Ground Loop System



Horizontal Ground Loop System



Open System

# Geothermal Heating & Cooling

## How does it work?

Bosch geothermal heat pump systems are some of the most energy and cost efficient on the market, as well as the greenest technology for heating and cooling your home. The technology utilizes the constant temperature of the earth which makes it extremely efficient all year long in virtually any climate.

### Advantages of Bosch's Geothermal Systems

#### Environmentally Friendly

Bosch's green technology is the most environmentally friendly way to cool and heat your home. The system has no carbon dioxide emissions or any other negative effects on the environment. Bosch's geothermal installations reduce greenhouse gas emissions which are responsible for climate change.

#### Reliability

Properly installed and maintained ground loops have a life expectancy in excess of 50 years. Your Bosch heat pump is manufactured with rigorous standards ensuring high efficiency operation over the life of the unit. Our residential warranty offering is among the best you will find on the market.

#### Lower Operating Cost

Bosch's technology helps save up to 70% on your energy bills for heating, cooling and hot water because of its more efficient operation when compared to conventional systems. Simple payback could be as short as 5 to 7 years and you can experience cost savings from the beginning.

#### Earth Coupling Options

Geothermal systems use the earth as a heat source and heat sink. In order to transfer heat to or from the house, heat exchangers (ground loops) are installed in the ground. These consist of high density polyethylene plastic pipes. The loops are then connected to the heat pump and water-based fluid is circulated through the loop piping, transferring the heat between the heat pump and the earth.

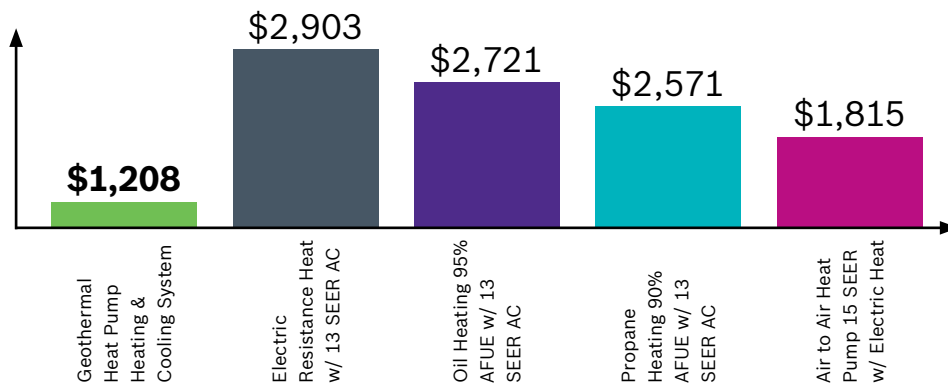


# Why Bosch Geothermal Heat Pumps?

## Being Green Means Saving Green

Recognized as Most Efficient by ENERGY STAR, this fully featured, high-efficiency two-stage heat pump offers an appliance-style aesthetic cabinet and is available in sizes of 2 to 6 tons to suit your needs. The Bosch Greensource geothermal heat pump requires less energy to produce the equivalent cooling and heating output of other heat pumps on the market. This saves energy and reduces the cost to stay comfortable in your home. You can save up to 70% on your energy bills, plus payback on this investment can be as short as 5 to 7 years.

## Total Annual Operating Costs Comparison



Based on South Bend Airport Weather Data, South Bend, IN,  
 Electric per kw 0.11  
 Oil per gallon 3.86  
 Propane per gallon 2.10

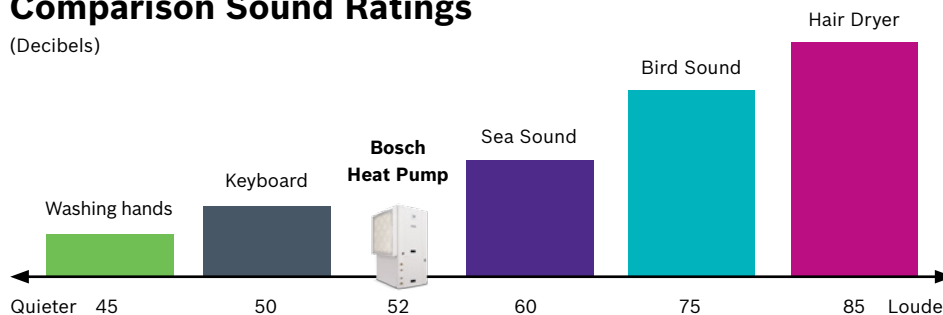
These operating costs are not guaranteed or warranted by Bosch. This is a demonstration of the potential savings with SM Model geothermal equipment and not a promise of actual savings. Savings can vary according to products, local conditions, building size and construction, seasonal use, and types of equipment. For an more accurate assessment on your project, contact a Bosch dealer today.

## Reliable and Unmatched Quality

An external LCD comes standard and provides easy-to-read operational information from the Greensource geothermal heat pump to aid in troubleshooting and helps to reduce time required to diagnose maintenance of the unit. These alerts can also be displayed at the thermostat when you use a Bosch communicating thermostat. Plus, Bosch is so confident that each Greensource geothermal heat pump is reliable that Bosch backs it with a limited warranty on all parts and labor for up to 10 years!

## Comparison Sound Ratings

(Decibels)



The lowest average sound rating is 52dB for the Greensource 3 Ton horizontal unit. Based on a weighted overall (dB), according to ARI-260:2001(100hz-10kHz).

## Quiet Operation

The Greensource CDi SM Model is equipped with an advanced sound package consisting of a high-density compressor blanket and a unique floating base pan to isolate the compressor from the exterior cabinet thereby reducing sound and vibration. Combined with high-density, closed-cell foam cabinet insulation makes the Greensource one of the quietest units on the market.



# Reliable Features and Benefits

- ▶ Recognized as ENERGY STAR Most Efficient with best-in-class performance (COP) and low operating costs to save money
- ▶ 10 year Limited Warranty on parts and labor<sup>(1)</sup>
- ▶ Quiet operation with sound levels as low as 52 dB
- ▶ Fiber-free, closed-cell insulation provides thermal and acoustic insulation while improving indoor air quality
- ▶ Simplified installation and enhanced serviceability for quick set-up and easy routine maintenance
- ▶ Increased durability and formicary corrosion resistant with a tin plated, hair-pin evaporator coil with aluminum fin

## Variable speed ECM constant CFM motor

Every SM Model comes with a standard ECM blower motor which adjusts to the changing external air pressure drop due to filter loading to maintain a constant air flow. This provides a greater level of comfort with less variation in indoor temperature and improved humidity control. With the addition of a humidistat, the air flow can be adjusted to provide maximum humidity removal for improved comfort.

## Ultra-efficient 2-stage scroll compressor technology

Intuitive 2-capacity operation adjusts to the varying load of your home's heating and cooling needs thereby lowering operating costs while maximizing efficiency and comfort.

## Appliance-style and quiet, air-tight cabinetry

The SM model comes pre-painted for an appliance-style look and feel. Our heat pump boasts a best-in-class rating for air-tightness with 2% leakage rate<sup>(2)</sup> and quiet operation. This unit delivers heated and cooled air into a home's duct air distribution system and not the attic, garage, or crawl space, thus lowering your operating costs.

## Sloped stainless steel drain pan

Reduces standing water where mold, bacteria and viruses could grow and improves indoor air quality.

## Floating base pan and fiber-free closed-cell foam insulation

Our high-density foam pad, floating base pan and fiber-free closed-cell insulation helps to achieve our lowest sound levels (52 dB) and delivers our best indoor air quality unit ever.



UP TO

**5.0**

COP - GL  
Part Load

UP TO

**4.5**

COP - GL  
Full Load

### Best-in-Class Performance

UP TO

**32.0**

EER - GL  
Part Load

UP TO

**22.0**

EER - GL  
Full Load

#### **Filter drier**

This factory installed feature removes moisture and other contaminants from the refrigeration circuit giving your heat pump long life and reliability.

#### **Easy access filter rack and 2" MERV-13 filter**

Allows you to change your filter easily and improve your home's indoor air quality by removing 80% of airborne particles and other allergens as small as 1 micron.

#### **Thermal expansion valve (TXV)**

This refrigerant metering device improves efficiency by delivering the precise refrigerant required for heating or cooling - no more, no less.

#### **Standard unit protection features**

Safety features protect vital components by continuously monitoring your unit's safe levels of operation.

#### **Environmentally friendly R410-A refrigerant**

Bosch heat pumps utilize environmentally sound, non-ozone depleting refrigerant.

(2) Based on ASHRAE-193 test, SM Model meets or less than 2% leakage rate.

## Optional Features

#### **Internal Electric Heat**

Can be factory mounted or field installed. Your choices include a 5, 10, 15, or 20 kilowatt back up or an emergency heater can be used depending on the size of the geothermal heat pump.

#### **Dehumidification Options**

If desired, dehumidification can be achieved with the Variable Speed CFM Motor combined with a Bosch humidity control thermostat.

#### **Cupro-nickel Coil**

A cupro-nickel heat exchanger is recommended in conditions anticipating moderate scale formation or in brackish water.

#### **Domestic Hot Water Heat Recovery Package**

This option enables your heat pump to produce domestic hot water, reducing the amount of electricity or fossil fuels otherwise used for your hot water tank.


## Limited Residential Warranty

#### **(1) Coverage for your Geothermal Heat Pump**

With the limited residential warranty, you receive peace-of-mind knowing you will receive replacement parts protection for up to 10 years. This standard offering covers all components incorporated into the unit cabinet at the time of manufacture. Other components or parts that are purchased from Bosch and installed in the field have a 1 year replacement parts warranty from proof of certificate of occupancy date or proof of certified start up date. Additionally, a standard 10 year labor-allowance is included for the replacement of any defective component to help offset labor expenses if a component should fail.

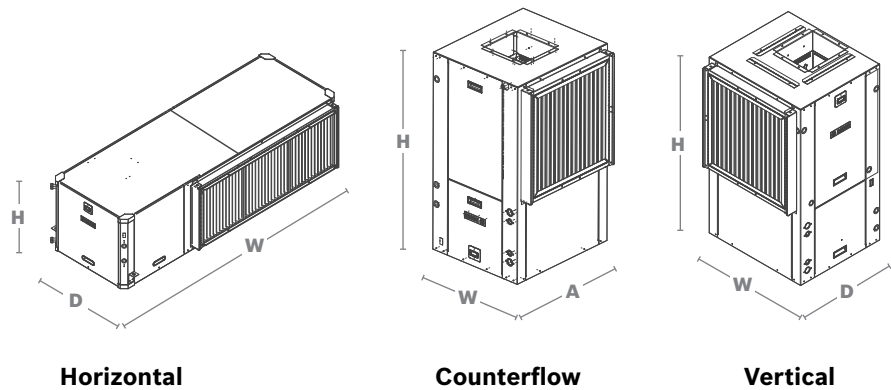
# Technical Information

ASHRAE/AHRI/ISO 13256-1. English (I-P) Units Performance Data															
Model	Orientation	Fluid Flow Rate	Entering Water Temperatures												
			Load	Water Loop (WLHP)				Ground Water (GWHP)				Ground Loop (GLHP)			
			Full	86° F	68° F	59° F	50° F	77° F	32° F	Part	68° F	41° F			
Capacity and Efficiency Data															
				Cooling Capacity	EER	Heating Capacity	COP	Cooling Capacity	EER	Heating Capacity	COP	Cooling Capacity	EER	Heating Capacity	COP
SM024	VT/CF	6.0	Full	25500	17.4	29200	5.6	29000	26.5	23500	4.9	26600	19.9	18000	4.1
	VT/CF	6.0	Part	18500	18.9	21200	6.5	21700	33.6	16700	5.1	21000	28.1	14400	4.4
	HZ	6.0	Full	25500	17.4	29200	5.6	29000	26.5	23500	4.9	26600	19.9	18000	4.1
	HZ	6.0	Part	18500	18.9	21200	6.5	21700	33.6	16700	5.1	21000	28.1	14400	4.4
SM036	VT/CF	9.0	Full	39000	19.0	42800	5.6	43300	28.0	35900	5.1	40800	22.0	28400	4.3
	VT/CF	9.0	Part	29000	22.2	31000	6.5	32600	37.0	25200	5.2	31900	32.0	22400	4.7
	HZ	9.0	Full	39000	19.0	42800	5.6	43300	28.0	35900	5.1	40800	22.0	28400	4.3
	HZ	9.0	Part	29000	22.2	31000	6.5	32600	37.0	25200	5.2	31900	32.0	22400	4.7
SM048	VT/CF	12.0	Full	49200	16.6	56100	5.3	55300	25.3	46300	4.7	51300	19.3	36900	4.0
	VT/CF	12.0	Part	36700	18.9	40900	6.2	42000	33.8	33700	5.2	39900	27.8	29800	4.5
	HZ	12.0	Full	49200	16.6	56100	5.3	55300	25.3	46300	4.7	51300	19.3	36900	4.0
	HZ	12.0	Part	36700	18.9	40900	6.2	42000	33.8	33700	5.2	39900	27.8	29800	4.5
SM060	VT/CF	15.0	Full	63800	17.0	73300	5.2	70200	24.4	60300	4.6	65100	18.9	48000	3.9
	VT/CF	15.0	Part	47500	18.7	53600	5.8	53300	31.2	44300	4.8	51600	26.5	39800	4.4
	HZ	15.0	Full	63800	17.0	73300	5.2	70200	24.4	60300	4.6	65100	18.9	48000	3.9
	HZ	15.0	Part	47500	18.7	53600	5.8	53300	31.2	44300	4.8	51600	26.5	39800	4.4
SM070	VT/CF	18.0	Full	71600	16.3	84000	5.1	78700	23.1	70000	4.5	73700	18.5	55300	3.8
	VT/CF	18.0	Part	55200	17.8	64900	5.7	60800	28.5	52900	4.8	60300	25.4	46900	4.3
	HZ	18.0	Full	71600	16.3	84000	5.1	78700	23.1	70000	4.5	73700	18.5	55300	3.8
	HZ	18.0	Part	55200	17.8	64900	5.7	60800	28.5	52900	4.8	60300	25.4	46900	4.3

ENERGY STAR Rated Products 

## Ordering Information

CDi series Greensource geothermal heat pumps are available as SM Models from 2 to 6 tons.

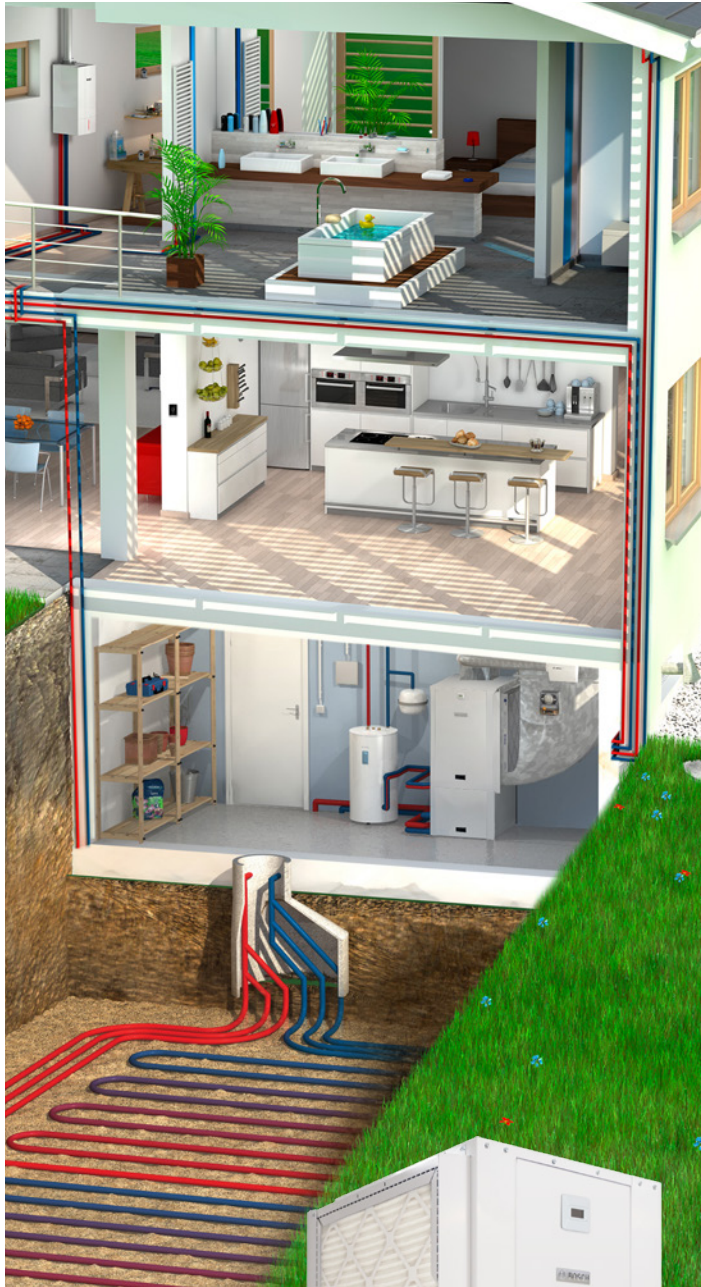


Model	DIMENSIONS					
	Vertical/Counterflow			Horizontal		
	A (width)	B (depth)	C (height)	A (width)	B (depth)	C (height)
SM024	24.0	27.4	44.6/44.4	25.1	64.1	19.7
SM036	25.8	33.4	52.6/52.4	28.0	76.0	22.7
SM048	25.8	33.4	52.6/52.4	28.0	76.0	22.7
SM060	27.0	33.4	62.0/61.8	28.0	83.0	22.7
SM070	27.0	33.4	62.0/61.8	28.0	83.0	22.7

Note: Dimensions measured in inches. Add 0.5" for base support rail on all horizontal units.



# Comprehensive **Benefits**



## **Zero Energy Capable Home for Peace of Mind**

The Bosch zero energy capable home is a full systems approach to creating a house that is not an energy drain on the planet's finite resources. It's technology helps homeowners to reduce their monthly utility bills and protect the environment.

Bosch has assembled a comprehensive suite of heating, cooling, water heating, and energy-efficient appliances that, when installed in a home, reduce the home's energy usage due to intelligent product designs and higher efficiencies. In addition, this approach enables the home owner to save enough power to offset the already reduced energy demand, meaning virtually a zero energy bill for the homeowner.

**Ask your Bosch contractor or go to [boschheatingandcooling.com](http://boschheatingandcooling.com) to learn more about how Bosch products can work together for your ultimate comfort.**

# About **Bosch**

## **About Bosch Thermotechnology Corp.**

Bosch Thermotechnology Corp. is a leading source of high quality heating, cooling and hot water systems. The Company offers Bosch tankless, point-of-use and electric water heaters, Bosch and Buderus floor-standing and wall-hung boilers, Bosch and FHP water-source, geothermal and air-source heat pump systems, as well as controls and accessories for every product line.

Bosch Thermotechnology is committed to reinventing energy efficiency by offering smart products that work together as integrated systems that enhance quality of life in an ultra-efficient and environmentally friendly manner.

Bosch strives to bring the most energy-efficient and environmentally responsible products to global consumers. In delivering the best products at affordable prices to our markets, Bosch has established multiple collaborations and joint ventures on a global scale to bring the latest technologies to North America. All global manufacturing facilities must adhere to stringent quality standards in order to provide the trusted Bosch brand.

## **Bosch Heat Pumps: Made in the U.S.A.**

Bosch heat pumps are made by highly trained and skilled workers in our factory based in Fort Lauderdale, Florida. They are manufactured with rigorous standards and factory testing ensuring high efficient operation over the life of the unit. Bosch's ISO 9001 and ISO 14001 certified facilities provide consistent quality in every unit built.

## **Bosch Thermotechnology Corp.**

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