

Think **Green**  
Think **Renewable**  
Think **Greensource**



## **Greensource** Residential Geothermal Heat Pumps

CDi Series: SM Model

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



**BOSCH**

Invented for life

## About the **Bosch Group**



The Bosch Group has been a leading global supplier of technology and services in the areas of Automotive, Industrial Technology, Consumer Goods and Building Technology for over 100 years. Every Bosch product is built with one goal in mind; to enhance the quality of life by providing innovative technological solutions. Bosch is a leader in the development of next generation technologies that deliver improved performance and peace of mind while conserving and sustaining natural resources. Bosch is highly regarded for its development of automotive braking and steering safety systems (ABS) which have been improving automotive performance for over 30 years, helping reduce the number of accidents on North America's roads and highways. Environmental stewardship inspires and drives Bosch product development. Bosch is a leader in the development of next generation technologies that deliver improved performance and efficiency while conserving natural resources. In the area of sustainable mobility, we're helping reduce the fuel consumption and CO<sub>2</sub> emissions of new vehicles. Energy efficiency and environmental protection are also shaping our Industrial Technology,

Consumer Goods and Building Technology products. Green technologies, such as gas tankless water heaters, wind power and geothermal heat pumps are perhaps the best examples of smart technologies growing in demand and shaping the future of Bosch.

### About **Bosch Thermotechnology** in North America

Bosch Thermotechnology is a leading source of high quality water heating and comfort heating systems in North America. The company offers Bosch tankless, point-of-use water heaters, Buderus and Bosch wall-hung boilers, Buderus floor-standing boilers, Bosch heat pump water heaters, Bosch geothermal heat pumps 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, which enhance quality of life in an ultra efficient and environmentally friendly manner.



#### **Proven and tested technologies**

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.



# 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 uses 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

Ground loop systems have a life expectancy in excess of 50 years. Your Bosch heat pump is manufactured with rigorous standards ensuring high efficient 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 to 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 costs 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 fluid is circulated through the loop piping, transferring the heat between the heat pump and the earth.



Vertical Ground Loop System

Horizontal Ground Loop System

Open System

Pond/Lake Loop System

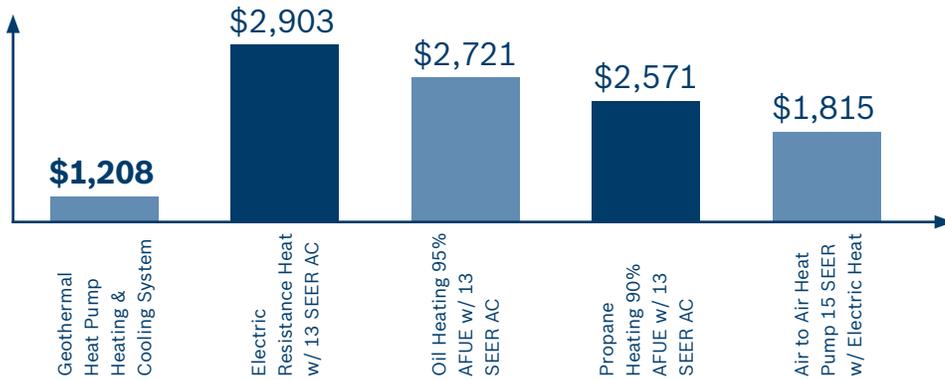
# Why Bosch Geothermal Heat Pumps?



## Being Green Means Saving Green

Recognized as very efficient by ENERGY STAR, this fully featured two-stage heat pump offers an appliance-style cabinet and in sizes of 2 to 6 tons. 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

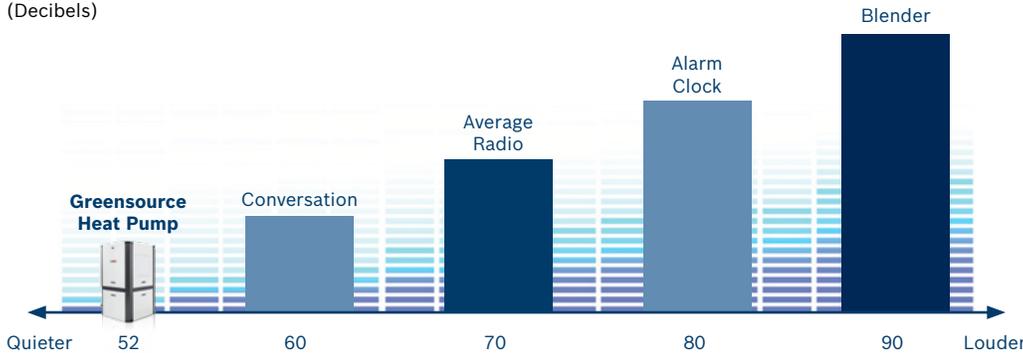
These operating costs are not guaranteed or warranted by Bosch. This is a demonstration of the potential savings with SM Model geothermal equipment and not a promise of actual savings. Savings can vary according to products, local conditions, building size and construction, seasonal use, and types of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

## Reliable and Unmatched Quality

An external LCD comes standard to aid in troubleshooting and helps reduce time required to diagnose maintenance of the unit. The intuitive service tool monitors data from the Greensource geothermal heat pump and provides a read-out for the service technician of any system issues. These alerts can also be displayed at the thermostat when you use a Bosch 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 unit. Based on a weighted overall (dB), according to ARI-260:2001(100hz-10kHz).

## Quiet Operation

Greensource is equipped with an advanced sound package comprising of a unique floating base pan to isolate internal components 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.

# SM

CDi SERIES

UP TO	UP TO
<b>32.0</b>	<b>22.0</b>
EER	EER
Part Load	Full Load

The CDi series Greensource geothermal heat pump comes equipped with the quality and innovative technology that only Bosch can provide including:

- ▶ Low Operating Costs – Saving you money
- ▶ 10 year Limited Warranty on parts and labor\*
- ▶ Quiet Operation – Sound levels as low as 52 dB
- ▶ Fiber-Free, Closed-Cell Insulation helps to keep the system's high efficiency while improving your indoor air quality
- ▶ Designed with you in mind – Fully customizable to meet your individual installation needs with multi-positional configurations
- ▶ Combine the Greensource geothermal heat pump with a Bosch innovative thermostat designed to work exclusively with your system



## Limited Residential Warranty - 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.

## 30% Tax Credit for Geothermal Heat Pumps

As of December 1, 2009, home owners who install ENERGY STAR qualified geothermal heat pumps are eligible for a 30% tax credit on the cost of the geothermal system including all installation costs. There is no cap on the federal tax credit. Presently, these tax credits are only available through the end of 2016. The Bosch Greensource CDi series is compliant with ENERGY STAR Tier 3.

### Financing Information

The smarter way to heat and cool your home is more affordable than ever thanks to special financing options. Qualified homeowners can choose from a variety of loans with a low fixed rate or established fixed monthly rates towards the installation and purchase of Bosch geothermal heat pumps. Depending on model and installation costs, homeowners may be able to borrow as little as \$2,500 or up-to \$20,000 with a 10-year repayment window. A Bosch approved contractor must perform the installation in order to be eligible for the financing. For a complete listing of Bosch installers in your area, log on to [boschheatingandcooling.com](http://boschheatingandcooling.com)

# Key Features

## Standard

### ▶ Tin-Plated Evaporator Air Coil

Extends the life of the evaporator in common to adverse indoor air quality environments.

### ▶ Floating Base Pan

Our high-density foam pad gives our unit sound levels as low as 52 dB.

### ▶ Closed-cell Foam Insulation

Helps to achieve our lowest sound levels and delivers our best indoor air quality unit ever.

### ▶ 2 Stage Compressor

Our intuitive unit adjusts the intensity of your home's heating and cooling needs thereby lower operating costs while maximizing efficiency and comfort.

### ▶ Constant Torque High-Efficiency Motor\*

This motor is designed to operate at constant torque which provides higher efficiency, improved fan performance and comfort as the external air pressure increases due to filter loading.

### ▶ Variable Speed CFM Motor\*

This motor 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.

\*Customer has the choice between these two motors.

### ▶ Filter Drier

This factory installed feature removes moisture and other contaminants from the refrigeration circuit giving your Greensource 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.

### ▶ Sloped Stainless Steel Drain Pan

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

### ▶ Thermal Expansion Valve (TXV)

This refrigerant metering device improves efficiency by delivering the precise refrigerant required for heating or cooling.

### ▶ Air Tight Cabinets

With less than 2% leakage rate, our unit boasts a best in class rating for air-tightness and quiet operation. This unit delivers heated and cooled air into a homes duct air distribution system and not the attic, garage, or crawl space, thus lowering your operating costs.

### ▶ Low and High Pressure Switches

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

### ▶ R410-A Refrigerant

Environmentally sound, non-ozone depleting refrigerant.

## Optional

### Cupro-nickel Coil

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

### 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 use depending on the size of the geothermal heat pump.

### Domestic Hot Water Heat Recovery Package

Can be used to heat domestic hot water using the wasted heat from the hot compressed gas of the compressor. That's like free hot water!

### Dehumidification Options

There are two dehumidification options to suit your needs. The first uses a Variable Speed CFM Motor combined with a Bosch humidity control thermostat. The second option utilizes a Hot Gas Reheat Coil with a Bosch humidity control thermostat.



# Bosch System Solutions

**Indoor Air Quality & Control** Accessories (not included)



Thermostats	Photo-Catalytic Oxidizers (PCO)	Humidifiers	Smoke Detection	Fresh Air Dampers	Carbon and Potassium-Permanganate Filters
Bosch thermostats are fully customizable to meet your individual needs for humidity and temperature control.	Helps to refresh and clean the air in your home by converting volatile organic compounds and other gases into harmless water vapor and CO <sub>2</sub> .	Our humidifiers release moisture into the air while helping to seal windows and doors tightly; saving you money!	In case of a fire, prevents smoke from spreading from room to room.	Brings in a controlled amount fresh air and helps prevent your home from going into a negative pressure situation.	Helps to remove gases, odors, and other volatile organic compounds by trapping them in a carbon and potassium permanganate mesh.

## Net Zero Home: A Peace of Mind Solution

The Bosch Net Zero home is a 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, electricity generating technologies 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 generate enough power to offset the already reduced energy demand, meaning zero energy bill for the home owner.



## Experience Bosch

Bosch has opened a first-of-its-kind experience center that showcases the full line of Bosch energy efficient, sustainable home solutions including Bosch geothermal heat pumps, tankless water heaters, condensing boilers, power tools, clean diesel technology, and home appliances.

Visit [BoschExperienceCenter.com](http://BoschExperienceCenter.com) to learn more.



## Ordering Information

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

Model	Greensource 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

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

ENERGY STAR Rated Products



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Scan the QR code to the right to access Greensource product information.



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