



BOSCH

Invented for life

Bosch Water Source Heat Pump

ES Models

The ES Model features a two-stage scroll compressor, an ECM constant airflow blower motor and enhanced features that provide the best all around value in the highly competitive commercial market place.





High Efficiency, Water-to-air Heat Pumps

Meet the Enhanced Bosch ES

The ES 2-stage, water-to-air heat pumps offer high efficiency, value added features and dual capacity with standard features like a two speed scroll compressor and a ECM constant airflow fan motor. Features like this give you the flexibility, performance and quiet operation needed to exceed the expectations of your clients.

Quiet Comfort

- ▶ Floating Compressor Base - Reduces vibration and noise transmission from the compressor to the structure
- ▶ Closed-cell Foam Insulation (option) - Helps to provide cleaner, fiber-free air and reduces sound transmission
- ▶ Compressor Blanket (option) - Offers optimum low sound levels (not available on smaller units with rotary compressor)

Service Friendly

- ▶ Blower Inlet Ring - (available in 015-070 only) Allows quick servicing of blower fan motor without disassembly of blower housing
- ▶ Insulated Divider - Separates the compressor and blower sections, allowing the unit to be serviced easily during operation
- ▶ Schrader Charging Valves - Facilitates service diagnosis by allowing the connection of refrigerant hoses quickly and securely

Robust and Durable Construction

- ▶ Galvanized Steel Cabinet - Provides strength and corrosion protection
- ▶ Stainless Steel Drain Pan - Resists cracking & corrosion which provides long-lasting reliability for condensate collection
- ▶ Cupro-nickel Coaxial Heat Exchanger (option) - Protects against corrosion when water conditions are of low quality

Safety

- ▶ Flow Proving Switch (option) - Prevents the operation of the compressor should the water supply fail
- ▶ Unit Protection Module (UPM) - Monitors the unit operation and safety controls that protect the unit
- ▶ Dual Refrigerant Freeze Sensors - Monitors if refrigerant temperatures reach freeze limits and disables unit to protect it

Quality Design & Efficiency

- ▶ LEED® Friendly Design - Helps qualify for the most credits possible with a water source HVAC system
- ▶ Boilerless Control (option) - Disables the compressor and/or activates electric heater should the water temperature drop below adjustable set point
- ▶ Water Side Economizer (option) - Provides free-cooling without the use of mechanical cooling (compressors)
- ▶ Extended Range (option) - Accommodates geothermal closed loop applications when Entering Fluid Temperatures are anticipated below 60 °F
- ▶ Heat Recovery Package (option for 024-070 in -1 or -3 voltage only) - Provides domestic water heating during the air conditioning or heating mode to supplement your building's potable water heating needs assisting any electric domestic water heating storage tank

Options Designed for any Application

MERV-8 and MERV-13 Filters

The optional 2" MERV-8 or -13 filter is most advantageous for premium air filtration on commercial HVAC projects. High efficiency filtration is a cost-effective way of upgrading air quality while maintaining low pressure drop and sustaining long service life. These filters effectively remove up to 98% of airborne matter, such as fine particulates, bacteria, smoke, gases and allergens including dust mites, pollen, mold spores, dust and smog. MERV-8 and MERV-13 rated filters are a minimum requirement for EQ credits 3.1 and 5 on LEED® projects. Note: MERV-13 factory option requires ECM Constant Airflow fan motor option. With the optional ECM constant airflow motor the EP is prepared to handle higher external pressure drops when utilizing the higher efficiency MERV-13 filters.

ECM Constant Airflow Fan Motor

The high efficiency Electrically Commutated Motor (ECM), available in 1/3hp to 1hp, provides constant airflow in a wide static pressure range up to 1 in.w.g. Optional in all unit sizes except 1/2 through 1 ton, this motor is a great choice in high filtration applications. The motor has a soft start/stop feature, keeping noise to a minimum. Passive dehumidification can be achieved with the constant airflow ECM by reducing nominal airflow by 15%. This control feature lowers air coil temperature and prevents over-cooling of the space when in dehumidification mode. The constant airflow ECM requires a neutral wire in a 460V application.

Evaporator Coil

Air side refrigerant coils have copper tubes, aluminum fins and side plates to help prevent corrosion. The air coils are state-of-the-art, employing lanced fin and rifled tubing for maximum heat transfer giving the ES Model superb efficiencies. Large face areas result in lower face velocity reducing sound while ensuring high latent heat removal for maximum dehumidification in the cooling mode. Available as an option is our tin-plated evaporator coil protection; this will protect the evaporator coil from most forms of corrosive elements in the air stream and adds life expectancy to the entire system.



DDC Controls and Zone Sensors

To complement the controller, Bosch Thermotechnology offers a line of intelligent zone sensors, which provide precision measurement and communication capabilities in an attractive low profile enclosure.



DDC Controls

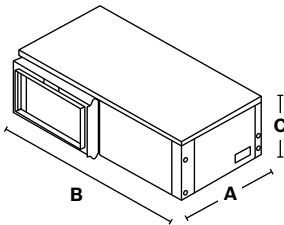
The optional factory mounted DDC Controller is preprogrammed and installed on the unit with the Unit Protection Module (UPM) to be job site ready. With a factory-supplied DDC wall sensor, the unit will operate in a 100% stand-alone control mode or connect to a Building Automation System (BAS) using open protocols BACnet™, Modbus, N2 or LonWorks® (with an optional Lon card).

Additional Options

- ▶ 5, 10, 15, 20 kW electric heaters
- ▶ Relays - EMS, blower monitor, compressor monitor, and pump/valve
- ▶ Fire alarm/dual power
- ▶ Comfort alert module
- ▶ Autoflow water regulator valve

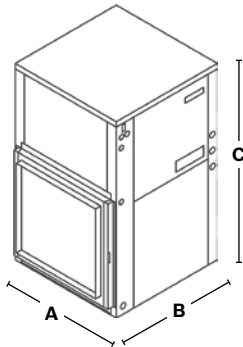
Technical Specifications

Horizontal



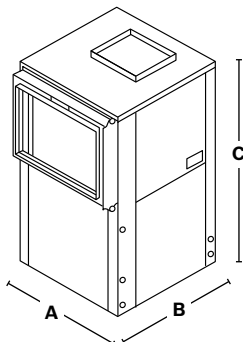
Model	Horizontal Unit Dimensions (in inches)		
	A (width)	B (depth)	C (height)
ES025	26.00	54.50	21.75
ES035	26.00	54.50	21.75
ES049	30.00	68.00	21.75
ES061	30.00	68.00	21.75
ES071	30.00	78.00	21.75

Counterflow



Model	Counterflow Unit Dimensions (in inches)		
	A (width)	B (depth)	C (height)
ES025	21.50	26.00	47.25
ES035	21.50	26.00	47.25
ES049	24.00	32.75	47.25
ES061	26.00	33.25	51.25
ES071	26.00	33.25	58.25

Vertical



Model	Vertical Unit Dimensions (in inches)		
	A (width)	B (depth)	C (height)
ES025	21.50	26.00	47.25
ES035	21.50	26.00	47.25
ES049	24.00	32.75	47.25
ES061	26.00	33.25	51.25
ES071	26.00	33.25	58.25

NOTES: 1. All dimensions in inches unless otherwise noted. All dimensions within +0.125". Specifications subject to change without notice.
2. For each configuration, add relevant dimensional information and drawings for units with Waterside Economizer.

AHRI/ANSI 13256-1 Performance Data														
Model	Load	GPM	Water Loop Heat Pump				Ground Water Loop Heat Pump				Ground Loop Heat Pump			
			Cooling 86°F		Heating 68°F		Cooling 86°F		Heating 68°F		Cooling 77°F		Heating 32°F	
			Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP
ES025	Part	6	18800	17.5	20500	5.1	21000	30.0	18000	4.6	20000	24.5	15500	4.0
	Full	6	26000	16.0	30000	5.0	29000	24.0	25000	4.6	27500	18.7	19000	3.8
ES035	Part	9	24000	17.0	27000	5.3	27000	28.0	22500	4.5	27000	24.5	20500	4.0
	Full	9	36000	14.6	43000	4.8	42000	21.6	36000	4.2	38000	17.2	28000	3.8
ES049	Part	12	34000	16.0	39000	5.4	38000	24.0	32000	4.6	36000	21.8	28500	4.0
	Full	12	48000	12.6	58000	4.8	54000	19.0	48000	4.2	49000	15.5	38000	3.6
ES061	Part	14	42000	17.0	48000	5.4	48000	26.0	40000	4.6	45000	23.5	36500	4.0
	Full	14	60000	14.0	72000	4.7	68000	19.7	61000	4.3	62000	15.7	49000	3.6
ES071	Part	18	51000	15.8	55000	4.4	57000	25.2	47000	4.0	56000	21.8	42000	3.7
	Full	18	72000	14.5	80000	4.5	77000	19.6	68000	4.2	74000	16.3	53000	3.5

Ratings based upon AHRI/ANSI 13256-1 with 1" disposable filter.

Electrical Data ECM Constant Airflow Motor

Model	Voltage Code	Voltage/Phase/Hz	Voltage Min/Max	Compressor			Total Unit with Constant Airflow Motor			Run Capacitor (µF/V)
				Quantity	RLA	LRA	FLA	Min Circuit Amps	Max Fuse/HACR	
ES025	1	208-230/1/60	197/253	1	11.7	58.3	2.8	17.4	25	35/370
	2	265-277/1/60	239/291	1	9.1	54.0	2.6	14.0	20	40/370
ES035	1	208-230/1/60	197/253	1	15.3	83.0	4.3	23.4	35	40/370
	3	208-230/3/60	197/253	1	11.6	73.0	4.3	18.8	30	-
ES049	4	460/3/60	414/506	1	5.7	38.0	4.1	11.2	15	-
	1	208-230/1/60	197/253	1	21.2	104.0	6.8	33.3	50	30/370
	3	208-230/3/60	197/253	1	14.0	83.1	6.8	24.3	35	-
ES061	4	460/3/60	414/506	1	6.4	41.0	5.5	13.5	15	-
	1	208-230/1/60	197/253	1	27.1	152.9	9.1	43.0	70	40/440
	3	208-230/3/60	197/253	1	16.5	110.0	9.1	29.7	45	-
ES071	4	460/3/60	414/506	1	7.2	52.0	6.9	15.9	20	-
	1	208-230/1/60	197/253	1	29.7	179.2	9.1	46.2	70	40/440
	3	208-230/3/60	197/253	1	17.6	136.0	9.1	31.1	45	-
	4	460/3/60	414/506	1	8.5	66.1	6.9	17.5	25	-

NOTES: 1. Resistance value tolerance +/- 7%. All resistance values must be measured with compressor at room temperature.

2. 460/3/60 units will require a neutral wire for ECM constant airflow fan motor. The motor is 277V single phase.

For units with a factory installed heater kit option, there will be two separate data plates for each electrical circuit. The 1st data plate will be for the compressor power connection, and the 2nd data plate will be for the electric heater, fan motor and UPM board and controls.

Model	Voltage Code	Voltage/Phase/Hz	Voltage Min/Max	Compressor			Min. Circuit Amps	HARC Breaker
				Quantity	RLA	LRA		
ES025	1	208-230/1/60	197/253	1	11.7	58.3	14.6	25
ES035	1	208-230/1/60	197/253	1	15.3	83.0	19.1	30
	3	208-230/3/60	197/253	1	11.7	73.0	14.5	25
ES049	1	208-230/1/60	197/253	1	21.2	104.0	26.5	45
	3	208-230/3/60	197/253	1	14.0	83.1	17.5	30
ES061	1	208-230/1/60	197/253	1	27.1	152.9	33.9	60
	3	208-230/3/60	197/253	1	16.5	110.0	20.6	35
ES071	1	208-230/1/60	197/253	1	29.7	179.2	37.1	60
	3	208-230/3/60	197/253	1	17.6	136.0	22.0	35

208/230V units shipped with transformer wired for 230V—for 208V remove orange transformer primary lead and replace with red lead. All blower motors are single phase.

UNIT POWER SUPPLY: A voltage variation of +/- 10% of nameplate rating is acceptable. Phase imbalance shall not exceed 2%.

About **Bosch**

Bosch Group

The Bosch Group is a leading global supplier of technology and services in the areas of Automotive, Industrial Technology, Consumer Goods and Building Technology. The company was founded in Stuttgart, Germany, in 1886 and presently has more than 440 subsidiaries and is represented in over 150 countries.

In the U.S., Canada and Mexico, the Bosch Group manufactures and markets automotive original equipment and aftermarket solutions, industrial drives and control technology, power tools, security and communication systems, packaging technology, thermotechnology, household appliances and software solutions. The Bosch Group's products and services are designed to improving quality of life by providing innovative and beneficial solutions. In this way, the company offers technology worldwide that is "Invented for life." Additional information is available online at boschheatingandcooling.com and bosch.ca.

Bosch Thermotechnology in North America

Bosch Thermotechnology is a leading source of high quality water heating and comfort systems. The company offers gas tankless, electric whole house and point-of-use water heaters, Bosch and Buderus floor-standing and wall mounted boilers, Bosch and FHP geothermal, water-source and air-source systems as well as controls and accessories for all product lines. Bosch Thermotechnology is committed to being Simply Smart by offering products that work together as integrated systems that enhance quality of life in an ultra-efficient and environmentally friendly manner. For more information, visit boschheatingandcooling.com.

Bosch Water-Source Heat Pumps: Made in the U.S.A.

Bosch and FHP water-source and geothermal 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.



Heating



Cooling



Hot Water



Controls

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