

GreenSource CDI series Model SM Residential Geothermal Heat Pump

Engineering
Submittal
Sheet



BOSCH

Overview and Certifications



Standard Features, Factory Installed Options, and Field Installed Accessories

Standard Features

- ▶ **White Pre-Painted Sheet Metal Cabinets**
 - No visible screws
 - Appliance White for a Clean - Durable Look
 - Door Handles - for Easy Removal for Service
 - LCD Display - for Easy View of Unit Operation
- ▶ **High Efficiency**
 - Up to 32.0 EER @ PL GLHP
 - Up to 22.0 EER @ FL GLHP
 - Compliant with Energy Start Tier 3
- ▶ **Electronically Communicated Motors**
 - Your choice of Variable Speed ECM or Fix-Torque ECM
 - Constant Torque High Efficiency ECM
 - Constant CFM Variable Speed High Efficient ECM
- ▶ **Field Configurable**
 - Supply Air Connection - Top, Side, and Back (Kit required)
 - Return Air Connection - Right or Left Side
 - Electrical Control Box Relocation
 - Patent: Blower Configurability
 - Can Also Order Right Hand Or Left Hand Return From Factory
- ▶ **Closed Cell (Fiber Free) Insulation**
 - Less than 2% Air Leakage Rate
- Improved Indoor Air Quality
- Sound Ratings as Low as 52 DBA
- Patent: Floating Base Pan
- ▶ **Reliability - Durability - Serviceability**
 - Tin Plated Evaporator Coil
 - Alert Communicating Circuit Board
- ▶ **Electronic Circuit Board**
 - LCD Display - for Easy View of Unit Operation
 - Low Pressure Switch Protection
 - High Pressure Switch Protection
 - Alarm Output
 - Condensate overflow protection
 - Anti-Short Cycling
 - 5 minute Delay
 - Low Pressure Bypass at Start Up
 - Random Start of Unit
 - Brown Out Protection
 - Evaporator Freeze Protection
 - Water Coil/Coaxial Coil/Condenser Freeze Protection
- ▶ **Standard Warranty**
 - 10 Year All Parts Limited Warranty
 - 10 Year Labor Limited Warranty

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Standard Features, Factory Installed Options, and Field Installed Accessories continued..

Factory Installed Options

- ▶ **Cupro-nickel Coil:**
 - Recommended in conditions anticipating moderate scale formation or in brackish water.
- ▶ **Internal Electric Heat:**
 - Can be factory mounted or field installed. Choices include 5, 10, 15, or 20 kilowatt back up or an emergency heater depending on the size of the geothermal heat pump.
- ▶ **Domestic Hot Water Heat Recovery Package:**
 - Used to heat domestic hot water using the wasted heat from the hot compressed gas of the compressor.
- ▶ **Dehumidification:**
 - Lower the humidity in your home allowing you to turn up the thermostat in the summer.
- ▶ **SmartStart:**
 - A factory installed start up device that improved start up efficiency as much as 65% and helps reduce wear and tear on the compressor during start up.

Field Installed Accessories

- ▶ **Thermostats:**
 - Bosch thermostats are fully customized to meet your individual needs. True Communicating thermostat that displays the alert messages without having to go to the unit.
- ▶ **DDC Control:**
 - **Field Conversion Kit**

Model Nomenclature

SM 48 - 1 VT C - F L T T T A - X H G X X X X X D 7 X X X X 5
 1-2 3-5 6 7 8-9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

MODEL:

SM

NOMINAL CAPACITY:

024
036
048
060
070

ELECTRICAL CONFIGURATION:

1 - 208-230/1/60

CABINET CONFIGURATION:

VT - Vertical
HZ - Horizontal
CF - Counterflow

COAX OPTIONS:

C - Copper
N - Cupro-nickel*

*Only coils are cupro-nickel.

WATER CONNECTIONS:

F - Front (HZ Only)
S - Side

RETURN AIR CONFIGURATION:

L - Left
R - Right

DISCHARGE AIR LOCATION:

T - Top (VT only)
E - End Blow (HZ only)
B - Bottom (CF only)

FAN/MOTOR OPTION:

A - Constant CFM Motor
T - Constant Torque Motor

AIR COIL:

T - Tinned

REVISION LEVEL:

A - Rev A

AIR FILTRATION:

5 - MERV13 - 2" w/ 4-Side Filter Rack

OPEN:

X - None

ECONOMIZER:

X - None

WATER FLOW CONTROL OPTIONS:

X - None

CONTROLS:

X - Standard

TRANSFORMER:

7 - 75VA

REFRIGERATION:

X - None
H - Hot Gas Reheat On/Off
1 - Heat Recovery Package

ELECTRICAL OPTIONS:

A - EMS Relay
E - Pump/valve Relay
H - Flow Proving Switch
N - Comfort Alert Module
S - Start Assist
X - As default for non-used electrical codes

APPLICATION:

G - EXTENDED RANGE (Geothermal)

CABINET CONSTRUCTION:

H - Painted Steel / 1/2" Closed Cell Foam

ELECTRIC HEAT:

X - None
A - 5 kW
C - 10 kW
D - 15 kW
E - 20 kW

GreenSource SM Series

Residential Geothermal Heat Pumps



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Physical Data						
Description	Unit	Value				
		SM024	SM036	SM048	SM060	SM070
Compressor Type (Qty 1)	—	Scroll	Scroll	Scroll	Scroll	Scroll
Refrigeration Charge VT/HZ	Oz.	58/58	98/85	88/77	110/100	114/114
Max Water Working Pressure	PSIG/kPa	450/3100	450/3100	450/3100	450/3100	450/3100
Constant Torque High Efficiency Motor						
Fan Motor Type/Speeds	—	Const Torque Motor / 5 speed	Const Torque Motor / 5 speed	Const Torque Motor / 5 speed	Const Torque Motor / 5 speed	Const Torque Motor / 5 speed
Fan Motor	HP	0.33	0.75	0.75	1.00	1.00
Blower Wheel Size	Inch (Dia. x W)	10 X 8	11 X 9	11 X 9	11 X 11	11 X 11
Variable Speed Constant CFM High Efficiency Motor						
Fan Motor Type/Speeds	—	Variable Speed Const CFM	Variable Speed Const CFM	Variable Speed Const CFM	Variable Speed Const CFM	Variable Speed Const CFM
Fan Motor	HP	0.33	0.75	0.75	1.00	1.00
Blower Wheel Size	Inch (Dia. x W)	10 X 8	11 X 9	11 X 9	11 X 11	11 X 11
Water Connection Size						
FPT Swivel Connection	Inch	1.0	1.0	1.0	1.0	1.0
Coaxial Coil Volume	Gal	0.33	1.18	0.62	1.07	1.12
Condensate Connection	Inch FPT	¾	¾	¾	¾	¾
Vertical Cabinet						
Air Coil Dimensions (H x W)	Inch (H x W)	24 X 20	32 X 26	32 X 26	38 X 26	38 X 26
Nominal size of Standard Filter - 2" MERV13	Inch (L x H)	24 X 24 (1)	16 X 30 (2)	16 X 30 (2)	20 X 30 (2)	20 X 30 (2)
Weight - Operating	lbs	250	360	340	410	440
Weight - Shipping	lbs	350	475	450	530	560
Horizontal Cabinet						
Air Coil Dimensions	Inch (H x W)	18 X 31.5	20 X 42	20 X 42	20 X 49	20 X 49
Nominal size of Standard Filter - 2" MERV13	Inch (L x H)	18 X 18 (2)	20 X 24 (2)	20 X 24 (2)	18 X 20 (3)	18 X 20 (3)
Weight - Operating (lbs)	lbs	260	375	355	430	460
Weight - Shipping (lbs)	lbs	360	495	470	550	580

GreenSource SM Series

Residential Geothermal Heat Pumps



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

Electrical Data													
Models	Voltage Code	Voltage/Phase/Hz	Voltage Min/Max	Compressor			Total Unit Constant Torque High Efficiency Motor			Total Unit Variable Speed Constant CFM High Efficiency Motor			
				QTY	RLA	LRA	FLA	Min Circuit Amps	Max Fuse/HACR	FLA	Min Circuit Amps	Max Fuse/HACR	
SM024	1	208-230/1/60	197/253	1	11.7	58.3	2.8	17.4	25	2.8	17.4	25	
SM036	1	208-230/1/60	197/253	1	15.3	83.0	6.0	25.1	40	6.8	25.9	40	
SM048	1	208-230/1/60	197/253	1	21.2	104.0	6.0	32.4	50	6.8	33.2	50	
SM060	1	208-230/1/60	197/253	1	27.1	152.9	7.6	41.5	60	9.1	43.0	70	
SM070	1	208-230/1/60	197/253	1	29.7	179.2	7.6	44.7	70	9.1	46.2	70	

i Units with Factory Installed Electric Heat option will have two separate data plates for each electrical circuit.

1st Data plate for units with EH option - compressor power connection									
Models	Voltage Code	Voltage/Phase/Hz	Voltage Min/Max	Compressor					
				QTY	RLA	LRA	Min Circuit Amps	Max Fuse/HACR	
SM024	1	208-230/1/60	197/253	1	11.7	58.3	14.6	25	
SM036	1	208-230/1/60	197/253	1	15.3	83.0	19.1	30	
SM048	1	208-230/1/60	197/253	1	21.2	104.0	26.5	45	
SM060	1	208-230/1/60	197/253	1	27.1	152.9	33.9	60	
SM070	1	208-230/1/60	197/253	1	29.7	179.2	37.1	60	

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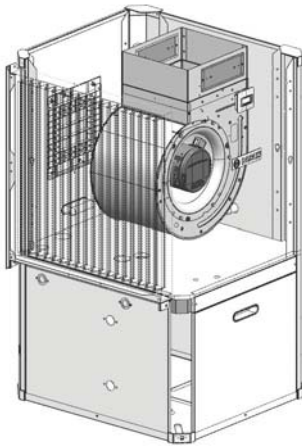
2nd data plate for units with EH option - Constant Torque ECM motor												
Model	Electric Heater Rated kW	Stage	Heater Watts		Heater Amps		Motor FLA (A)	Circuit	MCA		MOCP	
			240V	208V	240V	208V		Fuses	240V	208V	240V	208V
SM024	4.8	1	4,800	3,600	20.0	17.3	2.8	-	28.5	25.1	30	30
SM036	4.8	1	4,800	3,600	20.0	17.3	6.0	-	32.5	29.1	35	30
SM036	9.6	1	9,600	7,200	40.0	34.6	6.0	-	57.5	50.8	60	60
SM048	4.8	1	4,800	3,600	20.0	17.3	6.0	-	32.5	29.1	35	30
SM048	9.6	1	9,600	7,200	40.0	34.6	6.0	-	57.5	50.8	60	60
SM048	14.4	2	14,400	10,800	60	51.9	6	F1/F2	82.5	72.4	90	80
								F3/F4				
SM060	4.8	1	4,800	3,600	20.0	17.3	7.6	-	34.5	31.1	35	35
SM060	9.6	1	9,600	7,200	40.0	34.6	7.6	-	59.5	52.8	60	60
SM060	14.4	2	14,400	10,800	60	51.9	7.6	F1/F2	84.5	74.4	90	80
								F3/F4				
SM060	19.2	2	19,200	14,000	80	69.2	7.6	F1/F2	109.5	96.0	110	100
								F3/F4				
SM070	4.8	1	4,800	3,600	20.0	17.3	7.6	-	34.5	31.1	35	35
SM070	9.6	1	9,600	7,200	40.0	34.6	7.6	-	59.5	52.8	60	60
SM070	14.4	2	14,400	10,800	60	51.9	7.6	F1/F2	84.5	74.4	90	80
								F3/F4				
SM070	19.2	2	19,200	14,000	80	69.2	7.6	F1/F2	109.5	96.0	110	100
								F3/F4				

GreenSource SM Series
Residential Geothermal Heat Pumps

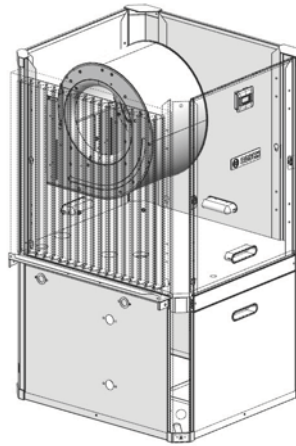


2nd data plate for units with EH option - Constant Airflow ECM motor												
Model	Electric Heater Rated kW	Stage	Heater Watts		Heater Amps		Motor FLA (A)	Circuit	MCA		MOCP	
			240V	208V	240V	208V		Fuses	240V	208V	240V	208V
SM024	4.8	1	4,800	3,600	20.0	17.3	2.8	-	28.5	25.1	30	30
SM036	4.8	1	4,800	3,600	20.0	17.3	6.8	-	33.5	30.1	35	35
SM036	9.6	1	9,600	7,200	40.0	34.6	6.8	-	58.5	51.8	60	60
SM048	4.8	1	4,800	3,600	20.0	17.3	6.8	-	33.5	30.1	35	35
SM048	9.6	1	9,600	7,200	40.0	34.6	6.8	-	58.5	51.8	60	60
SM048	14.4	2	14,400	10,800	60	51.9	6.8	F1/F2	83.5	73.4	90	80
								F3/F4				
SM060	4.8	1	4,800	3,600	20.0	17.3	9.1	-	36.4	33.0	40	35
SM060	9.6	1	9,600	7,200	40.0	34.6	9.1	-	61.4	54.6	70	60
SM060	14.4	2	14,400	10,800	60	51.9	9.1	F1/F2	86.4	76.3	90	80
								F3/F4				
SM060	19.2	2	19,200	14,000	80	69.2	9.1	F1/F2	111.4	97.9	125	100
								F3/F4				
SM070	4.8	1	4,800	3,600	20.0	17.3	9.1	-	36.4	33.0	40	35
SM070	9.6	1	9,600	7,200	40.0	34.6	9.1	-	61.4	54.6	70	60
SM070	14.4	2	14,400	10,800	60	51.9	9.1	F1/F2	86.4	76.3	90	80
								F3/F4				
SM070	19.2	2	19,200	14,000	80	69.2	9.1	F1/F2	111.4	97.9	125	100
								F3/F4				

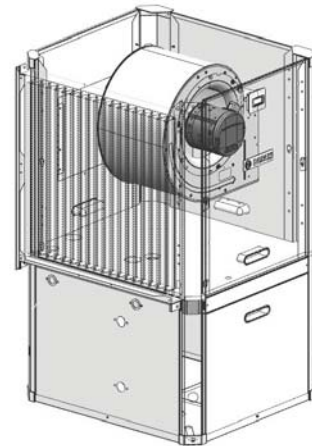
Unit Supply Air Configurations



Top Discharge (Default)

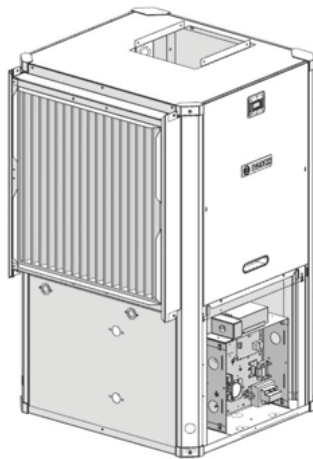


Back Discharge

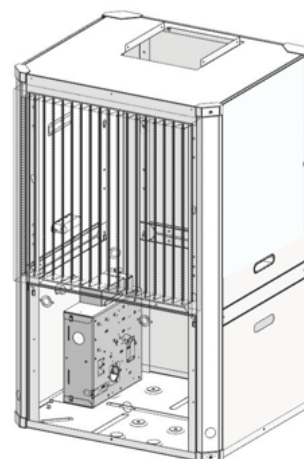


Side Discharge

Unit Return Air Configurations



Left Air Return



Right Air Return



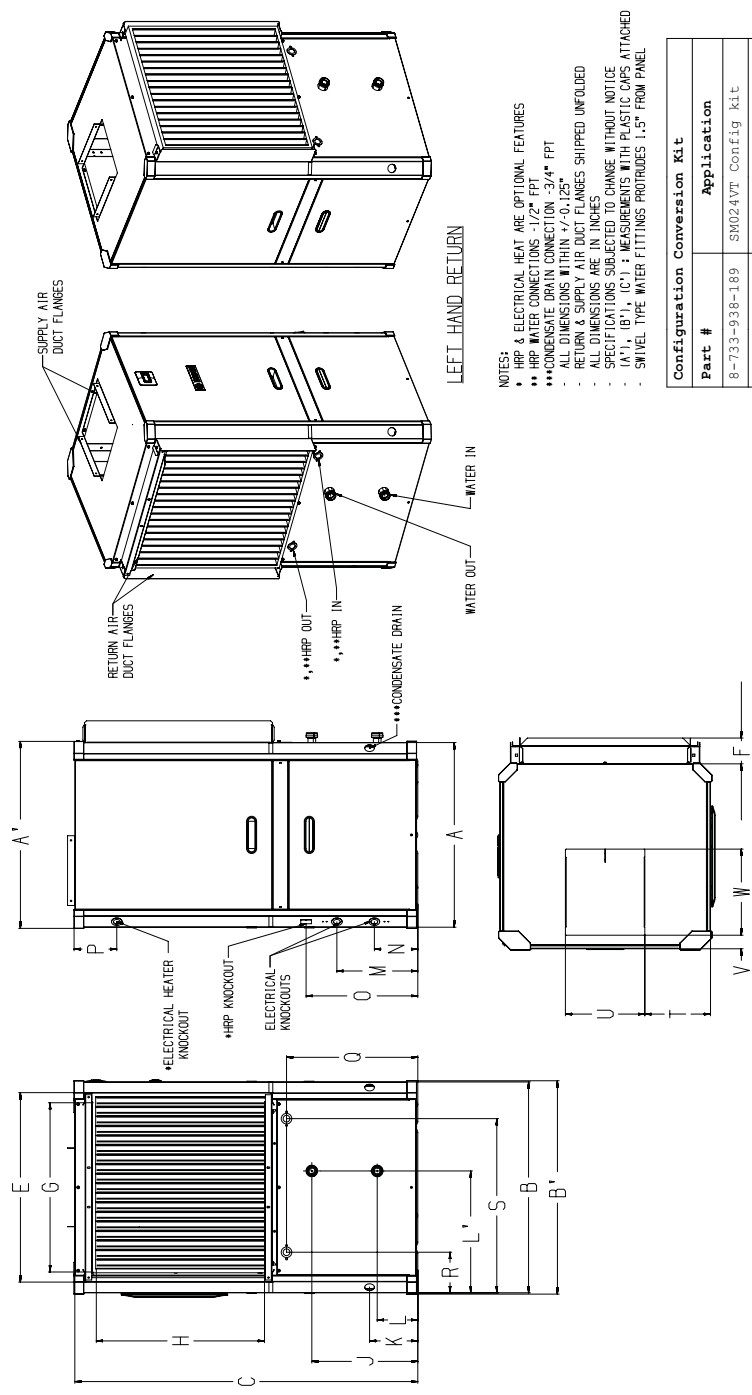
Electrical Box can be relocated inside unit.

GreenSource SM Series Residential Geothermal Heat Pumps



SM-VT Dimensions and Connections

Model	A (A')	B (B')	C (C')	D	FILTER RACK		G	H	J	K	L	L'	M	N	O	P	Q	R	S	T	U	V	W	WATER CONNECTIONS (SWIVEL TYPE)	FILTER SIZE	
					WIDTH	DEPTH																				HEIGHT
SM024-VT	24.0 (24.3)	27.4 (27.7)	44.6 (44.7)	25.0	3.3	22.2	22.5	13.8	6.3	5.3	5.3	15.8	10.5	5.6	14.5	5.6	16.5	4.9	18.2	8.7	10.0	1.9	10.8	1"	F.P.T.	24x24x2(1)
SM036-VT	25.8 (26.1)	33.4 (33.7)	52.6 (52.7)	33.0	3.3	28.2	30.5	11.3	6.3	5.3	5.3	19.3	10.5	5.6	14.5	5.6	16.9	5.6	28.5	10.8	11.7	1.9	13.0	1"	F.P.T.	16x30x2(2)
SM048-VT	25.8 (26.1)	33.4 (33.7)	52.6 (52.7)	33.0	3.3	28.2	30.5	11.3	6.3	5.3	5.3	19.3	10.5	5.6	14.5	5.6	16.9	5.6	28.5	10.8	11.7	1.9	13.0	1"	F.P.T.	16x30x2(2)
SM060-VT	27.0 (27.3)	33.4 (33.7)	62.0 (62.1)	41.0	3.3	28.3	38.6	12.0	6.3	5.9	5.9	17.0	10.5	5.6	14.5	5.6	18.3	4.7	27.8	9.6	14.2	1.9	13.0	1"	F.P.T.	20x30x2(2)
SM070-VT	27.0 (27.3)	33.4 (33.7)	62.0 (62.1)	41.0	3.3	28.3	38.6	12.0	6.3	5.9	5.9	17.0	10.5	5.6	14.5	5.6	18.3	4.7	27.8	9.6	14.2	1.9	13.0	1"	F.P.T.	20x30x2(2)

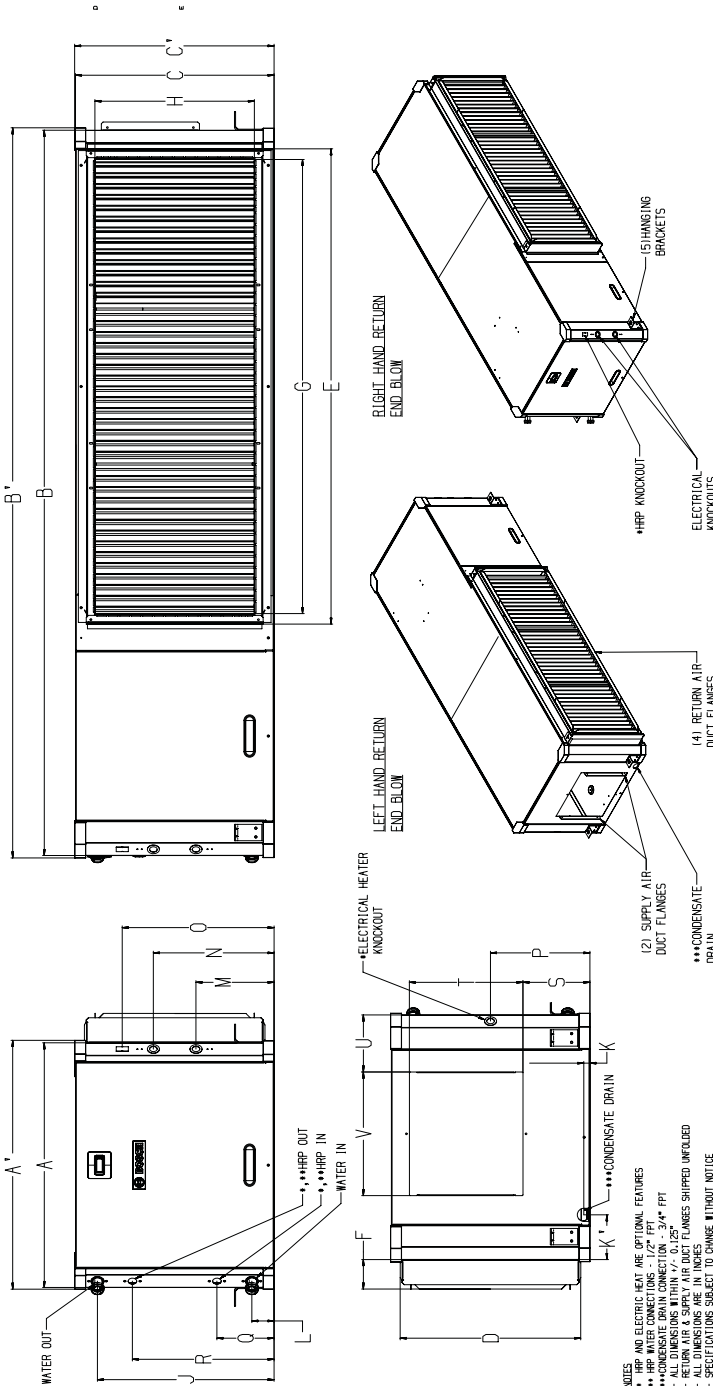


- NOTES:
- HRP & ELECTRICAL HEAT ARE OPTIONAL FEATURES
 - HRP WATER CONNECTIONS - 1/2" FPT
 - CONDENSATE DRAIN CONNECTION - 3/4" FPT
 - ALL DIMENSIONS WITHIN +/-0.125"
 - RETURN & SUPPLY AIR DUCT FLANGES SHIPPED UNFOLDED
 - ALL DIMENSIONS ARE IN INCHES
 - SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
 - (A'), (B'), (C') : MEASUREMENTS WITH PLASTIC CAPS ATTACHED
 - SWIVEL TYPE WATER FITTINGS PROTRUDES 1.5" FROM PANEL

Configuration Conversion Kit	
Part #	Application
8-733-938-189	SM024VT Config Kit
8-733-938-190	SM036/048VT Config Kit
8-733-938-191	SM060/070VT Config Kit

SM-HZ End Blow Dimensions and Connections

Model	A (A') B (B') C (C')		D	E F		G	H		J	K K'		L	M	N	O	P	Q	R	S (RH) S' (LH) T (URH) U' (LH) V		WATER CONNECTIONS (S/WELL TYPE)	FILTER SIZE			
	WIDTH	DEPTH		HEIGHT	HEIGHT		RETURN AIR DUCT WIDTH	RETURN AIR DUCT DEPTH		RETURN AIR DUCT HEIGHT	WATER OUT								WATER IN	WATER DRAIN PORT			WATER IN	WATER ELECTRICAL KNOCKOUT	HP KNOCKOUT
SM024-HZ28.0	25.1	64.1	18.7	18.7	34.0	18.7	18.7	18.7	18.7	18.7	18.7	2.5	7.4	12.3	15.9	9.9	6.5	6.5	6.5	2.0	10.0	7.5	10.8	1" F.P.T.	18X18X2 (2)
SM036-HZ28.0	28.0	76.0	22.7	22.7	34.0	20.2	20.2	20.2	20.2	20.2	20.2	2.5	8.9	13.8	17.4	11.4	6.5	6.5	6.5	2.0	11.7	9.0	13.0	1" F.P.T.	20X24X2 (2)
SM048-HZ28.0	28.0	76.0	22.7	22.7	34.0	20.2	20.2	20.2	20.2	20.2	20.2	2.5	8.9	13.8	17.4	11.4	6.5	6.5	6.5	2.0	11.7	9.0	13.0	1" F.P.T.	20X24X2 (2)
SM060-HZ28.0	28.0	83.0	22.7	22.7	34.0	20.2	20.2	20.2	20.2	20.2	20.2	2.5	8.9	13.8	17.4	11.4	6.5	6.5	6.5	2.0	14.2	6.5	13.0	1" F.P.T.	18X20X2 (3)
SM070-HZ28.0	28.0	83.0	22.7	22.7	34.0	20.2	20.2	20.2	20.2	20.2	20.2	2.5	8.9	13.8	17.4	11.4	6.5	6.5	6.5	2.0	14.2	6.5	13.0	1" F.P.T.	18X20X2 (3)

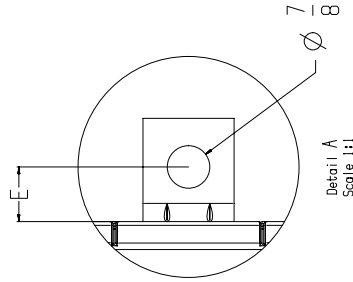


SUPPLY AIR CONFIGURATION: END BLOW

- NOTES**
- HRP AND ELECTRICAL HEAT ARE OPTIONAL FEATURES
 - CONDENSATE DRAIN CONNECTION - 3/4" FPT
 - ALL DIMENSIONS WITHIN +/- 0.125"
 - RETURN AIR & SUPPLY AIR DUCT FLANGES SHIPPED UNCOUPLED
 - SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
 - (A'), (B'), (C') = MEASURED WITH PLASTIC CAPS ATTACHED
 - (A'), (B'), (C') = MEASURED WITH PLASTIC CAPS REMOVED
 - UNITS CAN BE FIELD CONVERGED BETWEEN END BLOW AND STRIP THROUGH SUPPLY AIR CONFIGURATIONS
 - EXTERNALLY MOUNTED FEATURES, OPTIONS AND ACCESSORIES MAY ALTER SHOWN DIMENSIONS
 - DIMENSIONS SHOWN ARE FOR STANDARD CONFIGURATION
 - SINGLE TYPE WATER FITTING PROTRUSSES 1.5" FROM FACE

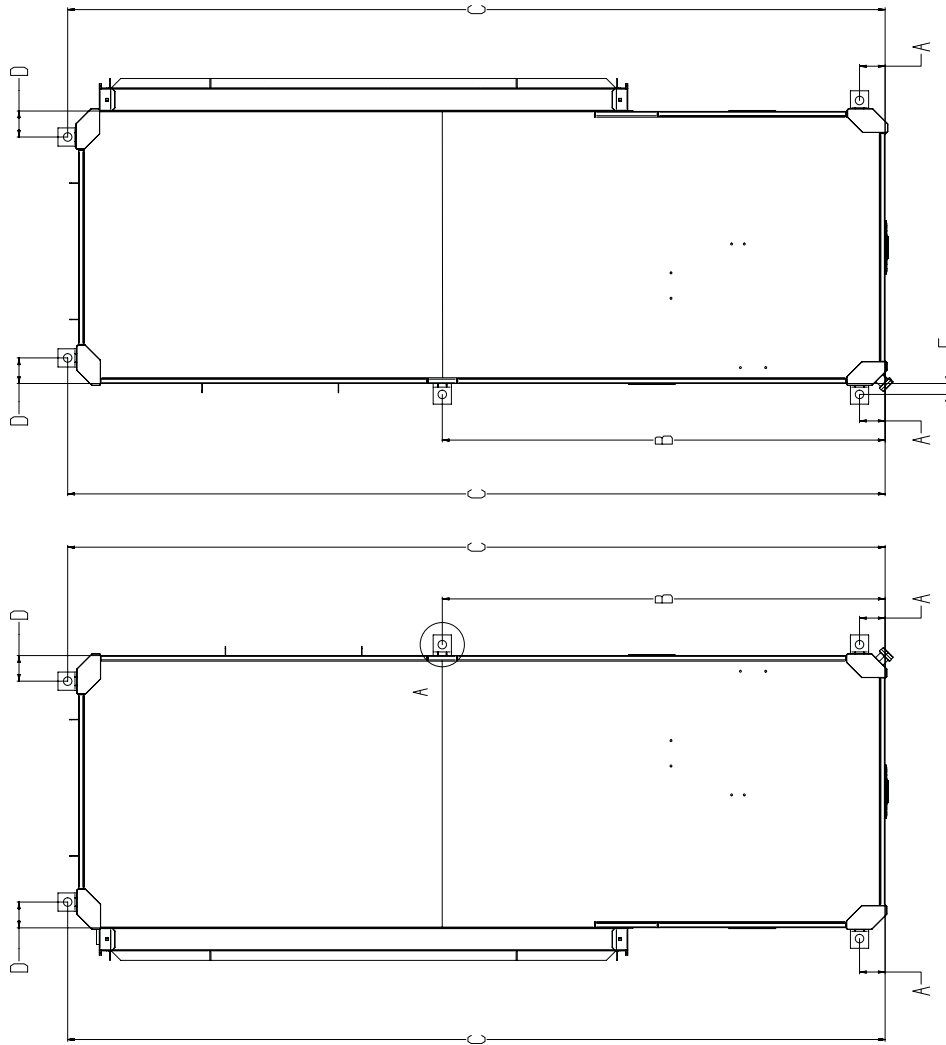
SM-HZ Hanging Bracket Dimensions and Connections

Model	A	B	C	D	E
SM024-HZ	2.634	32.817	65.225	2.634	1.125
SM036-HZ	2.634	33.972	77.125	2.634	1.125
SM048-HZ	2.634	33.972	77.125	2.634	1.125
SM060-HZ	2.634	45.573	84.125	2.634	1.125
SM070-HZ	2.634	45.573	84.125	2.634	1.125



NOTES
 -ALL DIMENSIONS WITHIN +/- 0.125"
 -ALL DIMENSIONS ARE IN INCHES
 -SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
 -DIMENSION "E" IS TYPICAL FOR ALL MODELS,
 CONFIGURATIONS AND BRACKET POSITIONS

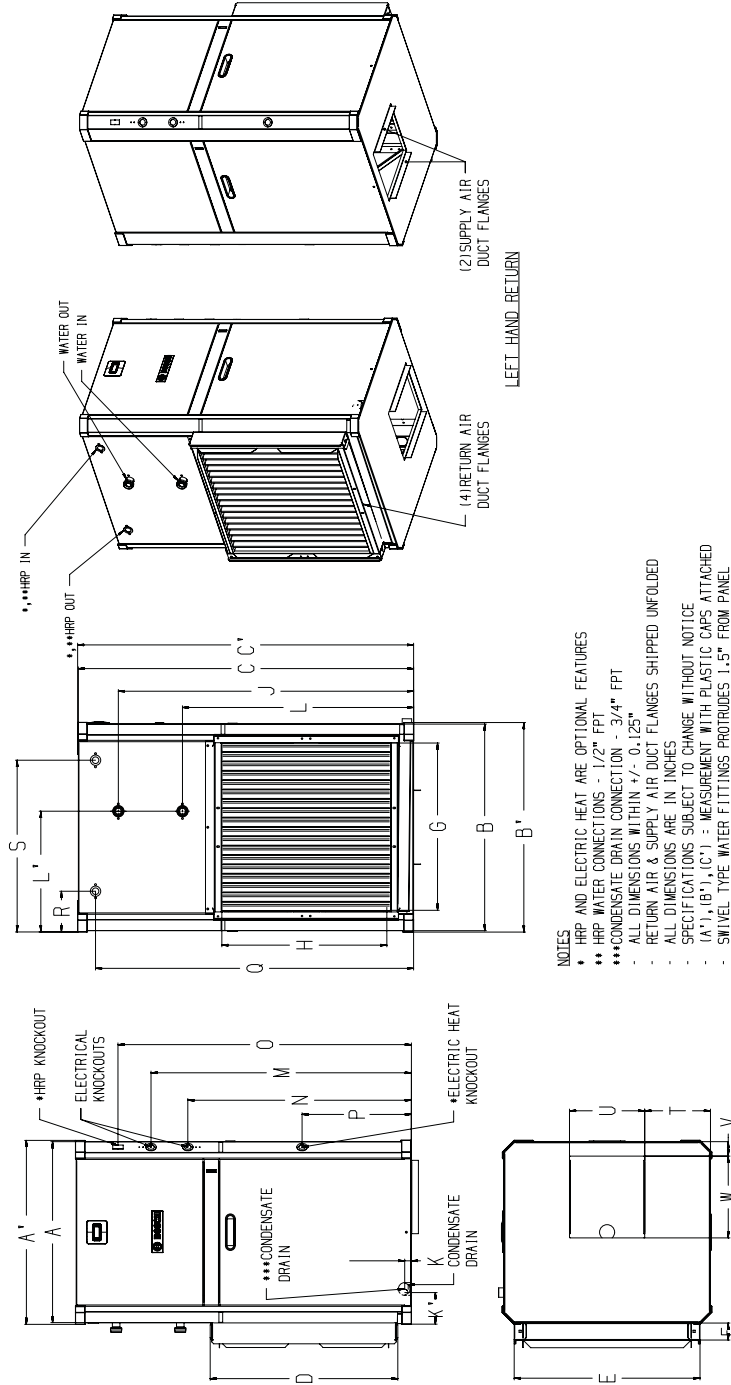
HANGING BRACKET LOCATION SPECIFICATIONS





SM-CF Dimensions and Connections

MODEL	A (A")	B (B')	C (C')	D	E	F	G	H	J	K	K'	L	L'	M	N	O	P	Q	R	S	T	U	V	W	WATER CONNECTIONS (SWIVEL TYPE)	FILTER SIZE	
																											RETURN AIR DUCT HEIGHT
SM024-CF	24.0	(24.3)	27.4	(27.7)	44.4	(44.7)	3.3	22.2	39.4	1.0	4.8	30.9	16.1	34.5	29.6	38.9	5.5	42.2	5.4	18.4	8.7	10.0	1.9	10.8	1" F.P.T.	24x24x2(1)	
SM038-CF	25.8	(26.1)	33.4	(33.7)	52.4	(52.7)	3.3	28.2	30.5	44.8	1.0	4.8	38.8	19.5	42.5	37.6	46.9	5.5	50.1	5.1	26.5	10.8	11.7	1.9	13.0	1" F.P.T.	18x30x2(2)
SM048-CF	25.8	(26.1)	33.4	(33.7)	52.4	(52.7)	3.3	28.2	30.5	44.8	1.0	4.8	38.8	19.5	42.5	37.6	46.9	5.5	50.1	5.1	26.5	10.8	11.7	1.9	13.0	1" F.P.T.	18x30x2(2)
SM060-CF	27.0	(27.3)	33.4	(33.7)	61.8	(62.1)	3.3	28.3	38.6	51.4	0.8	4.8	45.3	18.2	51.9	47.0	56.3	14.5	59.6	5.5	28.2	9.6	14.2	1.9	13.0	1" F.P.T.	20x30x2(2)
SM070-CF	27.0	(27.3)	33.4	(33.7)	61.8	(62.1)	3.3	28.3	38.6	51.4	0.8	4.8	45.3	18.2	51.9	47.0	56.3	14.5	59.6	5.5	28.2	9.6	14.2	1.9	13.0	1" F.P.T.	20x30x2(2)



- NOTES**
- HRP AND ELECTRIC HEAT ARE OPTIONAL FEATURES
 - HRP WATER CONNECTIONS - 1/2" FPT
 - CONDENSATE DRAIN CONNECTION - 3/4" FPT
 - ALL DIMENSIONS WITHIN +/- 0.125"
 - RETURN AIR & SUPPLY AIR DUCT FLANGES SHIPPED UNFOLDED
 - ALL DIMENSIONS ARE IN INCHES
 - SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
 - (A'), (B'), (C') : MEASUREMENT WITH PLASTIC CAPS ATTACHED
 - SWIVEL TYPE WATER FITTINGS PROTRUDES 1.5" FROM PANEL

GreenSource SM Series
Residential Geothermal Heat Pumps



SM024 Heating Performance Data - Full Load @ 825CFM								
Entering Water Temp °F	Water flow GPM	Pressure Drop (FOH)	Pressure Drop (PSI)	Ent. Air db/wb, °F	Total Btu/hr.	Ht. Abs. Btu/hr.	Unit kW	COP
30	3	1.8	0.8	60	18.1	13.6	1.38	3.8
				70	17.7	12.7	1.52	3.4
				80	17.4	11.8	1.67	3.0
	4	3.1	1.3	60	18.7	14.1	1.39	3.9
				70	18.2	13.2	1.53	3.5
				80	17.9	12.2	1.68	3.1
	6	6.4	2.8	60	19.4	14.7	1.41	4.0
				70	18.8	13.8	1.54	3.6
				80	18.4	12.7	1.69	3.2
40	3	1.8	0.8	60	20.5	15.8	1.43	4.2
				70	20.0	14.8	1.57	3.7
				80	19.6	13.9	1.72	3.3
	4	3.0	1.3	60	21.2	16.5	1.44	4.3
				70	20.7	15.5	1.58	3.8
				80	20.2	14.5	1.74	3.4
	6	6.1	2.7	60	22.1	17.3	1.46	4.4
				70	21.5	16.2	1.60	3.9
				80	20.9	15.2	1.75	3.5
50	3	1.7	0.7	60	23.1	18.2	1.48	4.6
				70	22.6	17.2	1.62	4.1
				80	22.2	16.2	1.78	3.6
	4	2.9	1.2	60	24.0	19.1	1.50	4.7
				70	23.4	18.0	1.64	4.2
				80	23.0	16.8	1.80	3.7
	6	5.9	2.6	60	25.1	20.0	1.52	4.8
				70	24.4	18.9	1.66	4.3
				80	23.8	17.7	1.82	3.8
60	3	1.6	0.7	60	25.9	20.8	1.54	4.9
				70	25.3	19.8	1.68	4.4
				80	24.9	18.6	1.84	4.0
	4	2.8	1.2	60	27.0	21.9	1.56	5.1
				70	26.3	20.8	1.70	4.5
				80	25.8	19.5	1.85	4.1
	6	5.7	2.5	60	28.2	23.1	1.58	5.2
				70	27.5	21.8	1.72	4.7
				80	26.8	20.5	1.87	4.2
70	3	1.6	0.7	60	28.9	23.6	1.59	5.3
				70	28.2	22.5	1.73	4.8
				80	27.6	21.3	1.89	4.3
	4	2.7	1.2	60	30.1	24.8	1.61	5.5
				70	29.4	23.7	1.75	4.9
				80	28.7	22.3	1.91	4.4
	6	5.5	2.4	60	31.6	26.2	1.63	5.7
				70	30.7	24.9	1.78	5.1
				80	29.9	23.4	1.93	4.5
80	3	1.5	0.7	60	31.9	26.5	1.64	5.7
				70	31.1	25.3	1.78	5.1
				80	30.5	24.0	1.94	4.6
	4	2.6	1.1	60	33.4	27.9	1.66	5.9
				70	32.5	26.6	1.81	5.3
				80	31.7	25.1	1.97	4.7
	6	5.4	2.3	60	35.0	29.5	1.69	6.1
				70	34.0	28.0	1.83	5.4
				80	33.1	26.4	2.00	4.9

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GreenSource SM Series
Residential Geothermal Heat Pumps



SM024 Heating Performance Data - Partial Load @ 650CFM								
Entering Water Temp °F	Water flow GPM	Pressure Drop (FOH)	Pressure Drop (PSI)	Ent. Air db/wb, °F	Total Btu/hr.	Ht. Abs. Btu/hr.	Unit kW	COP
30	3	1.8	0.8	60	12.8	9.7	1.01	3.7
				70	12.4	8.9	1.13	3.2
				80	12.1	8.1	1.26	2.8
	4	3.1	1.3	60	13.2	10.0	1.01	3.8
				70	12.7	9.2	1.13	3.3
				80	12.3	8.4	1.26	2.9
	6	6.4	2.8	60	13.6	10.4	1.02	3.9
				70	13.1	9.5	1.14	3.4
				80	12.7	8.7	1.27	2.9
40	3	1.8	0.8	60	14.8	11.6	1.03	4.2
				70	14.4	10.8	1.15	3.7
				80	14.0	9.9	1.28	3.2
	4	3.0	1.3	60	15.3	12.0	1.03	4.4
				70	14.9	11.1	1.15	3.8
				80	14.3	10.3	1.28	3.3
	6	6.1	2.7	60	15.7	12.5	1.03	4.5
				70	15.3	11.5	1.15	3.9
				80	14.7	10.7	1.29	3.4
50	3	1.7	0.7	60	16.9	13.7	1.04	4.8
				70	16.4	12.7	1.16	4.2
				80	16.0	11.9	1.29	3.6
	4	2.9	1.2	60	17.5	14.2	1.04	5.0
				70	16.9	13.2	1.16	4.3
				80	16.5	12.3	1.30	3.7
	6	5.9	2.6	60	18.0	14.7	1.04	5.1
				70	17.4	13.7	1.16	4.4
				80	17.0	12.8	1.30	3.8
60	3	1.6	0.7	60	19.1	15.8	1.04	5.4
				70	18.5	14.8	1.17	4.7
				80	18.1	13.9	1.31	4.1
	4	2.8	1.2	60	19.7	16.4	1.04	5.6
				70	19.1	15.4	1.17	4.8
				80	18.6	14.4	1.31	4.2
	6	5.7	2.5	60	20.4	17.1	1.04	5.8
				70	19.7	16.0	1.17	5.0
				80	19.1	14.9	1.31	4.3
70	3	1.6	0.7	60	21.3	18.0	1.04	6.0
				70	20.7	17.0	1.17	5.2
				80	20.1	15.9	1.32	4.5
	4	2.7	1.2	60	22.0	18.7	1.04	6.2
				70	21.3	17.6	1.17	5.3
				80	20.7	16.5	1.32	4.6
	6	5.5	2.4	60	22.8	19.5	1.04	6.4
				70	22.0	18.3	1.17	5.5
				80	21.4	17.1	1.32	4.7
80	3	1.5	0.7	60	23.5	20.3	1.04	6.7
				70	22.9	19.2	1.17	5.8
				80	22.3	18.0	1.32	4.9
	4	2.6	1.1	60	24.4	21.1	1.03	6.9
				70	23.6	19.9	1.17	5.9
				80	22.9	18.7	1.32	5.1
	6	5.4	2.3	60	25.2	22.1	1.03	7.2
				70	24.4	20.8	1.16	6.2
				80	23.7	19.5	1.32	5.3

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GreenSource SM Series
Residential Geothermal Heat Pumps



SM036 Heating Performance Data - Full Load @ 1100CFM								
Entering Water Temp °F	Water flow GPM	Pressure Drop (FOH)	Pressure Drop (PSI)	Ent. Air db/wb, °F	Total Btu/hr.	Ht. Abs. Btu/hr.	Unit kW	COP
30	4.5	3.4	1.5	60	26.0	19.5	1.93	3.9
				70	25.6	18.4	2.15	3.5
				80	25.4	17.2	2.40	3.1
	6	5.7	2.5	60	26.8	20.3	1.95	4.0
				70	26.4	19.1	2.17	3.6
				80	26.1	17.9	2.42	3.2
	9	11.9	5.2	60	27.8	21.2	1.97	4.1
				70	27.2	19.9	2.19	3.6
				80	26.8	18.6	2.43	3.2
40	4.5	3.3	1.4	60	29.7	22.9	2.01	4.3
				70	29.2	21.7	2.23	3.8
				80	28.7	20.4	2.48	3.4
	6	5.5	2.4	60	30.7	23.9	2.03	4.4
				70	30.1	22.5	2.25	3.9
				80	29.6	21.2	2.50	3.5
	9	11.5	5.0	60	31.9	25.0	2.05	4.6
				70	31.2	23.5	2.28	4.0
				80	30.5	22.0	2.52	3.5
50	4.5	3.2	1.4	60	33.6	26.6	2.09	4.7
				70	33.0	25.2	2.32	4.2
				80	32.5	23.7	2.57	3.7
	6	5.4	2.3	60	34.9	27.8	2.12	4.8
				70	34.2	26.3	2.34	4.3
				80	33.6	24.7	2.59	3.8
	9	11.1	4.8	60	36.3	29.1	2.15	4.9
				70	35.5	27.5	2.37	4.4
				80	34.8	25.9	2.62	3.9
60	4.5	3.1	1.3	60	37.8	30.5	2.18	5.1
				70	37.0	28.9	2.40	4.5
				80	36.4	27.4	2.65	4.0
	6	5.2	2.2	60	39.4	31.9	2.21	5.2
				70	38.4	30.2	2.43	4.6
				80	37.7	28.5	2.68	4.1
	9	10.7	4.6	60	41.1	33.5	2.25	5.4
				70	40.0	31.7	2.47	4.8
				80	39.1	29.8	2.71	4.2
70	4.5	3.0	1.3	60	42.2	34.6	2.27	5.4
				70	41.3	32.9	2.49	4.9
				80	40.5	31.1	2.75	4.3
	6	5.0	2.2	60	44.0	36.3	2.31	5.6
				70	42.9	34.4	2.53	5.0
				80	41.9	32.5	2.78	4.4
	9	10.4	4.5	60	46.0	38.1	2.36	5.7
				70	44.7	36.1	2.57	5.1
				80	43.6	34.0	2.82	4.5
80	4.5	2.9	1.2	60	46.7	38.8	2.37	5.8
				70	45.7	36.9	2.59	5.2
				80	44.7	35.0	2.85	4.6
	6	4.8	2.1	60	48.8	40.7	2.42	5.9
				70	47.5	38.7	2.64	5.3
				80	46.4	36.6	2.89	4.7
	9	10.1	4.4	60	51.1	42.8	2.48	6.0
				70	49.6	40.6	2.69	5.4
				80	48.3	38.4	2.94	4.8

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GreenSource SM Series

Residential Geothermal Heat Pumps



BOSCH

SM036 Heating Performance Data - Partial Load @ 800CFM								
Entering Water Temp °F	Water flow GPM	Pressure Drop (FOH)	Pressure Drop (PSI)	Ent. Air db/wb, °F	Total Btu/hr.	Ht. Abs. Btu/hr.	Unit kW	COP
30	4.5	3.4	1.5	60	18.4	13.6	1.46	3.7
				70	18.0	12.6	1.65	3.2
				80	17.7	11.5	1.86	2.8
	6	5.7	2.5	60	18.9	14.0	1.47	3.8
				70	18.4	12.9	1.65	3.3
				80	18.0	11.7	1.87	2.8
	9	11.9	5.2	60	19.3	14.5	1.47	3.8
				70	18.9	13.4	1.65	3.3
				80	18.3	12.4	1.87	2.9
40	4.5	3.3	1.4	60	21.3	16.4	1.48	4.2
				70	20.8	15.3	1.67	3.7
				80	20.4	14.1	1.88	3.2
	6	5.5	2.4	60	21.9	17.0	1.49	4.3
				70	21.3	15.8	1.67	3.7
				80	20.8	14.6	1.89	3.2
	9	11.5	5.0	60	22.5	17.6	1.49	4.4
				70	21.9	16.3	1.68	3.8
				80	21.4	15.1	1.89	3.3
50	4.5	3.2	1.4	60	24.4	19.5	1.50	4.8
				70	23.8	18.2	1.69	4.1
				80	23.4	17.0	1.91	3.6
	6	5.4	2.3	60	25.1	20.2	1.51	4.9
				70	24.4	18.8	1.70	4.2
				80	23.9	17.5	1.92	3.6
	9	11.1	4.8	60	25.9	20.9	1.51	5.0
				70	25.1	19.5	1.70	4.3
				80	24.6	18.1	1.92	3.7
60	4.5	3.1	1.3	60	27.6	22.6	1.52	5.3
				70	26.9	21.2	1.72	4.6
				80	26.4	19.8	1.94	4.0
	6	5.2	2.2	60	28.5	23.5	1.52	5.5
				70	27.7	22.0	1.72	4.7
				80	27.0	20.5	1.95	4.0
	9	10.7	4.6	60	29.4	24.4	1.53	5.6
				70	28.5	22.8	1.73	4.8
				80	27.8	21.3	1.96	4.2
70	4.5	3.0	1.3	60	30.9	25.9	1.54	5.9
				70	30.0	24.3	1.74	5.0
				80	29.6	22.6	1.98	4.4
	6	5.0	2.2	60	31.9	26.9	1.54	6.1
				70	31.0	25.3	1.75	5.2
				80	30.3	23.6	1.99	4.5
	9	10.4	4.5	60	33.0	28.0	1.55	6.3
				70	32.0	26.3	1.76	5.3
				80	31.2	24.4	2.00	4.6
80	4.5	2.9	1.2	60	34.2	29.0	1.55	6.5
				70	33.2	27.6	1.77	5.5
				80	32.8	25.8	2.02	4.8
	6	4.8	2.1	60	35.4	30.5	1.56	6.7
				70	34.4	28.6	1.78	5.7
				80	33.8	27.1	2.03	4.9
	9	10.1	4.4	60	36.7	31.8	1.56	6.9
				70	35.6	29.9	1.79	5.8
				80	34.7	27.7	2.04	5.0

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GreenSource SM Series
Residential Geothermal Heat Pumps



SM048 Heating Performance Data - Full Load @ 1600CFM								
Entering Water Temp °F	Water flow GPM	Pressure Drop (FOH)	Pressure Drop (PSI)	Ent. Air db/wb, °F	Total Btu/hr.	Ht. Abs. Btu/hr.	Unit kW	COP
30	6	2.8	1.2	60	34.6	25.7	2.67	3.8
				70	34.3	24.1	2.98	3.4
				80	33.9	22.6	3.31	3.0
	8	4.7	2.0	60	35.9	26.9	2.70	3.9
				70	35.5	25.1	3.01	3.5
				80	35.0	23.5	3.34	3.1
	12	9.8	4.2	60	37.3	28.2	2.73	4.0
				70	36.8	26.3	3.04	3.6
				80	36.0	24.6	3.37	3.1
40	6	2.7	1.2	60	39.5	30.3	2.79	4.2
				70	38.9	28.7	3.09	3.7
				80	38.5	26.9	3.42	3.3
	8	4.6	2.0	60	41.2	31.7	2.82	4.3
				70	40.3	30.0	3.12	3.8
				80	39.8	28.1	3.45	3.4
	12	9.5	4.1	60	42.9	33.4	2.86	4.4
				70	42.0	31.4	3.16	3.9
				80	41.2	29.5	3.48	3.5
50	6	2.6	1.1	60	44.9	35.1	2.90	4.5
				70	44.2	33.3	3.20	4.0
				80	43.5	31.5	3.52	3.6
	8	4.4	1.9	60	46.8	36.9	2.94	4.7
				70	45.9	35.0	3.23	4.2
				80	45.1	33.0	3.56	3.7
	12	9.1	4.0	60	49.0	39.0	2.98	4.8
				70	47.9	36.7	3.27	4.3
				80	46.9	34.7	3.60	3.8
60	6	2.5	1.1	60	50.6	40.4	3.01	4.9
				70	49.7	38.4	3.31	4.4
				80	48.9	36.5	3.64	3.9
	8	4.3	1.8	60	52.9	42.6	3.05	5.1
				70	51.8	40.4	3.35	4.5
				80	50.8	38.3	3.68	4.0
	12	8.8	3.8	60	55.4	45.0	3.10	5.2
				70	54.1	42.6	3.40	4.7
				80	52.9	40.1	3.73	4.2
70	6	2.5	1.1	60	56.6	46.0	3.12	5.3
				70	55.5	43.9	3.42	4.8
				80	54.6	41.5	3.77	4.2
	8	4.1	1.8	60	59.1	48.4	3.16	5.5
				70	57.8	46.0	3.47	4.9
				80	56.7	43.8	3.82	4.4
	12	8.6	3.7	60	62.1	51.4	3.21	5.7
				70	60.5	48.7	3.52	5.0
				80	59.1	46.0	3.88	4.5
80	6	2.4	1.0	60	62.7	51.9	3.22	5.7
				70	61.4	49.5	3.54	5.1
				80	60.3	47.0	3.90	4.5
	8	4.0	1.7	60	65.6	54.6	3.27	5.9
				70	64.2	52.0	3.60	5.2
				80	62.8	49.3	3.96	4.6
	12	8.3	3.6	60	69.1	57.9	3.33	6.1
				70	67.2	54.9	3.66	5.4
				80	65.7	51.5	4.03	4.8

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GreenSource SM Series
Residential Geothermal Heat Pumps



SM048 Heating Performance Data - Partial Load @ 1300CFM								
Entering Water Temp °F	Water flow GPM	Pressure Drop (FOH)	Pressure Drop (PSI)	Ent. Air db/wb, °F	Total Btu/hr.	Ht. Abs. Btu/hr.	Unit kW	COP
30	6	2.8	1.2	60	25.7	19.3	1.95	3.9
				70	24.9	17.7	2.18	3.4
				80	24.1	16.1	2.43	2.9
	8	4.7	2.0	60	26.4	20.0	1.95	4.0
				70	25.5	18.3	2.18	3.4
				80	24.7	16.6	2.44	3.0
	12	9.8	4.2	60	27.2	20.8	1.95	4.1
				70	26.2	19.0	2.18	3.5
				80	25.2	17.2	2.44	3.0
40	6	2.7	1.2	60	29.4	22.9	1.96	4.4
				70	28.5	21.2	2.20	3.8
				80	27.6	19.4	2.46	3.3
	8	4.6	2.0	60	30.3	23.8	1.96	4.5
				70	29.3	22.0	2.20	3.9
				80	28.3	20.1	2.47	3.4
	12	9.5	4.1	60	31.3	24.8	1.96	4.7
				70	30.2	22.8	2.21	4.0
				80	29.1	20.9	2.47	3.4
50	6	2.6	1.1	60	33.3	26.8	1.97	5.0
				70	32.4	25.0	2.22	4.3
				80	31.4	23.1	2.49	3.7
	8	4.4	1.9	60	34.4	27.9	1.97	5.1
				70	33.3	25.9	2.22	4.4
				80	32.4	24.0	2.50	3.8
	12	9.1	4.0	60	35.6	29.1	1.97	5.3
				70	34.4	27.0	2.23	4.5
				80	33.4	25.0	2.51	3.9
60	6	2.5	1.1	60	37.6	31.0	1.98	5.6
				70	36.5	29.1	2.24	4.8
				80	35.5	27.1	2.51	4.1
	8	4.3	1.8	60	38.9	32.3	1.98	5.7
				70	37.7	30.2	2.24	4.9
				80	36.6	28.2	2.52	4.3
	12	8.8	3.8	60	40.3	33.8	1.98	6.0
				70	39.0	31.6	2.24	5.1
				80	37.8	29.4	2.52	4.4
70	6	2.5	1.1	60	42.1	35.5	1.99	6.2
				70	40.9	33.4	2.25	5.3
				80	39.8	31.3	2.53	4.6
	8	4.1	1.8	60	43.6	37.1	1.99	6.4
				70	42.3	34.8	2.25	5.5
				80	41.1	32.6	2.54	4.7
	12	8.6	3.7	60	45.3	38.8	1.99	6.7
				70	43.9	36.4	2.25	5.7
				80	42.5	34.0	2.54	4.9
80	6	2.4	1.0	60	46.8	40.2	1.99	6.9
				70	45.5	38.0	2.25	5.9
				80	44.3	35.8	2.55	5.1
	8	4.0	1.7	60	48.5	42.0	1.99	7.2
				70	47.1	39.6	2.26	6.1
				80	45.8	37.3	2.56	5.3
	12	8.3	3.6	60	50.5	44.0	1.99	7.5
				70	48.9	41.4	2.26	6.3
				80	47.4	38.9	2.56	5.4

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GreenSource SM Series
Residential Geothermal Heat Pumps



SM060 Heating Performance Data - Full Load @ 2000CFM								
Entering Water Temp °F	Water flow GPM	Pressure Drop (FOH)	Pressure Drop (PSI)	Ent. Air db/wb, °F	Total Btu/hr.	Ht. Abs. Btu/hr.	Unit kW	COP
30	7.5	3.0	1.3	60	45.9	34.1	3.51	3.8
				70	45.2	32.1	3.87	3.4
				80	44.6	30.2	4.25	3.1
	10	5.0	2.2	60	47.4	35.5	3.54	3.9
				70	46.6	33.4	3.90	3.5
				80	45.8	31.3	4.28	3.1
	15	10.4	4.5	60	49.1	36.8	3.57	4.0
				70	48.1	34.8	3.93	3.6
				80	47.3	32.7	4.31	3.2
40	7.5	2.9	1.3	60	52.0	39.7	3.64	4.2
				70	51.2	37.7	3.99	3.8
				80	50.5	35.6	4.38	3.4
	10	4.9	2.1	60	53.9	41.5	3.67	4.3
				70	52.9	39.3	4.03	3.9
				80	52.1	37.1	4.42	3.5
	15	10.1	4.4	60	56.0	43.2	3.71	4.4
				70	54.9	40.8	4.07	4.0
				80	53.9	38.8	4.46	3.5
50	7.5	2.8	1.2	60	58.8	45.9	3.76	4.6
				70	57.9	43.6	4.13	4.1
				80	57.0	41.3	4.53	3.7
	10	4.7	2.0	60	61.1	48.5	3.81	4.7
				70	59.9	45.8	4.17	4.2
				80	58.8	43.4	4.57	3.8
	15	9.7	4.2	60	63.6	50.5	3.86	4.8
				70	62.3	48.1	4.22	4.3
				80	61.0	45.4	4.62	3.9
60	7.5	2.7	1.2	60	65.9	52.9	3.91	4.9
				70	64.7	50.3	4.27	4.4
				80	63.7	48.2	4.69	4.0
	10	4.5	2.0	60	68.8	55.7	3.96	5.1
				70	67.3	52.8	4.33	4.6
				80	66.0	50.0	4.74	4.1
	15	9.4	4.1	60	71.8	58.1	4.02	5.2
				70	70.1	55.2	4.39	4.7
				80	68.7	52.4	4.80	4.2
70	7.5	2.6	1.1	60	73.5	60.0	4.06	5.3
				70	72.1	57.2	4.43	4.8
				80	70.8	54.4	4.86	4.3
	10	4.4	1.9	60	76.8	63.0	4.13	5.5
				70	75.1	60.0	4.50	4.9
				80	73.6	57.0	4.92	4.4
	15	9.1	3.9	60	80.4	66.2	4.21	5.6
				70	78.4	62.7	4.58	5.0
				80	76.8	59.4	5.00	4.5
80	7.5	2.5	1.1	60	81.5	67.3	4.23	5.7
				70	79.8	64.3	4.61	5.1
				80	78.2	61.2	5.04	4.5
	10	4.2	1.8	60	85.2	70.9	4.31	5.8
				70	83.2	67.5	4.69	5.2
				80	81.3	64.1	5.12	4.7
	15	8.8	3.8	60	89.3	74.5	4.40	5.9
				70	87.1	71.7	4.79	5.3
				80	84.8	67.3	5.21	4.8

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GreenSource SM Series
Residential Geothermal Heat Pumps



SM060 Heating Performance Data - Partial Load @ 1600CFM								
Entering Water Temp °F	Water flow GPM	Pressure Drop (FOH)	Pressure Drop (PSI)	Ent. Air db/wb, °F	Total Btu/hr.	Ht. Abs. Btu/hr.	Unit kW	COP
30	7.5	3.0	1.3	60	33.7	25.2	2.56	3.9
				70	32.5	22.9	2.85	3.3
				80	31.3	20.8	3.17	2.9
	10	5.0	2.2	60	34.6	26.1	2.57	4.0
				70	33.3	23.7	2.85	3.4
				80	31.9	21.4	3.17	2.9
	15	10.4	4.5	60	35.6	27.0	2.57	4.1
				70	34.4	24.4	2.86	3.5
				80	32.7	22.2	3.18	3.0
40	7.5	2.9	1.3	60	38.5	29.9	2.59	4.4
				70	37.1	27.6	2.89	3.8
				80	35.9	25.3	3.22	3.3
	10	4.9	2.1	60	39.6	31.0	2.60	4.5
				70	38.1	28.6	2.90	3.9
				80	36.7	26.3	3.23	3.3
	15	10.1	4.4	60	40.8	32.3	2.60	4.6
				70	39.3	29.7	2.91	4.0
				80	38.0	27.0	3.24	3.4
50	7.5	2.8	1.2	60	43.6	35.0	2.62	4.9
				70	42.3	32.4	2.93	4.2
				80	41.0	29.9	3.26	3.7
	10	4.7	2.0	60	45.0	36.4	2.63	5.0
				70	43.6	33.7	2.94	4.4
				80	42.1	31.3	3.27	3.8
	15	9.7	4.2	60	46.5	38.0	2.63	5.2
				70	44.8	35.4	2.94	4.5
				80	43.4	32.1	3.28	3.9
60	7.5	2.7	1.2	60	49.2	40.4	2.64	5.5
				70	47.7	37.9	2.96	4.7
				80	46.4	35.1	3.30	4.1
	10	4.5	2.0	60	50.8	42.1	2.65	5.6
				70	49.2	39.4	2.96	4.9
				80	47.7	36.3	3.31	4.2
	15	9.4	4.1	60	52.6	44.1	2.65	5.8
				70	50.9	41.1	2.97	5.0
				80	49.1	38.4	3.32	4.3
70	7.5	2.6	1.1	60	54.9	46.2	2.66	6.1
				70	53.4	43.4	2.98	5.3
				80	51.7	40.8	3.34	4.5
	10	4.4	1.9	60	56.9	48.2	2.66	6.3
				70	55.1	45.2	2.99	5.4
				80	53.5	41.8	3.35	4.7
	15	9.1	3.9	60	59.0	50.4	2.66	6.5
				70	57.1	47.2	2.99	5.6
				80	55.2	44.1	3.36	4.8
80	7.5	2.5	1.1	60	60.9	52.2	2.66	6.7
				70	59.2	49.2	3.00	5.8
				80	57.4	46.2	3.37	5.0
	10	4.2	1.8	60	63.2	54.5	2.66	7.0
				70	61.1	51.3	3.00	6.0
				80	59.4	47.7	3.38	5.2
	15	8.8	3.8	60	65.6	57.0	2.66	7.2
				70	63.4	53.6	3.01	6.2
				80	61.3	50.2	3.38	5.3

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GreenSource SM Series
Residential Geothermal Heat Pumps



SM070 Heating Performance Data - Full Load @ 2350CFM								
Entering Water Temp °F	Water flow GPM	Pressure Drop (FOH)	Pressure Drop (PSI)	Ent. Air db/wb, °F	Total Btu/hr.	Ht. Abs. Btu/hr.	Unit kW	COP
30	9	2.3	1.0	60	52.6	38.2	4.16	3.7
				70	51.6	35.9	4.56	3.3
				80	51.1	34.0	4.99	3.0
	12	3.8	1.6	60	54.0	39.6	4.19	3.8
				70	53.2	37.6	4.59	3.4
				80	52.8	35.7	5.03	3.1
	18	7.9	3.4	60	55.8	41.8	4.24	3.9
				70	55.4	40.3	4.64	3.5
				80	54.5	37.2	5.07	3.2
40	9	2.2	0.9	60	59.3	44.5	4.29	4.0
				70	58.5	42.3	4.70	3.7
				80	57.9	40.1	5.14	3.3
	12	3.7	1.6	60	61.7	46.6	4.33	4.2
				70	60.8	44.6	4.74	3.8
				80	60.2	42.0	5.19	3.4
	18	7.6	3.3	60	64.3	49.3	4.38	4.3
				70	63.1	47.1	4.79	3.9
				80	62.4	43.4	5.23	3.5
50	9	2.1	0.9	60	67.3	52.1	4.44	4.4
				70	66.4	49.9	4.85	4.0
				80	65.3	46.9	5.31	3.6
	12	3.5	1.5	60	69.9	54.4	4.48	4.6
				70	68.7	51.8	4.90	4.1
				80	67.7	49.1	5.36	3.7
	18	7.3	3.2	60	73.2	58.0	4.55	4.7
				70	71.9	54.7	4.96	4.2
				80	70.2	51.5	5.42	3.8
60	9	2.0	0.9	60	75.7	59.7	4.59	4.8
				70	74.6	57.1	5.01	4.4
				80	73.6	54.6	5.49	3.9
	12	3.4	1.5	60	78.8	62.8	4.65	5.0
				70	77.4	59.8	5.08	4.5
				80	76.1	56.8	5.55	4.0
	18	7.1	3.1	60	82.7	66.8	4.73	5.1
				70	79.0	61.1	5.12	4.5
				80	79.5	60.1	5.62	4.1
70	9	2.0	0.9	60	84.2	67.8	4.75	5.2
				70	82.6	64.7	5.19	4.7
				80	81.4	61.8	5.67	4.2
	12	3.3	1.4	60	88.6	72.2	4.84	5.4
				70	86.9	69.2	5.27	4.8
				80	84.8	64.9	5.74	4.3
	18	6.9	3.0	60	92.8	75.8	4.92	5.5
				70	90.9	72.2	5.36	5.0
				80	88.6	68.8	5.83	4.5
80	9	1.9	0.8	60	93.3	76.4	4.93	5.5
				70	91.6	73.1	5.37	5.0
				80	90.0	69.7	5.86	4.5
	12	3.2	1.4	60	97.9	80.6	5.03	5.7
				70	95.8	77.0	5.46	5.1
				80	94.5	74.0	5.96	4.6
	18	6.6	2.9	60	103.2	85.5	5.13	5.9
				70	100.7	81.4	5.57	5.3
				80	98.2	77.3	6.05	4.8

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GreenSource SM Series
Residential Geothermal Heat Pumps



SM070 Heating Performance Data - Partial Load @ 1850CFM								
Entering Water Temp °F	Water flow GPM	Pressure Drop (FOH)	Pressure Drop (PSI)	Ent. Air db/wb, °F	Total Btu/hr.	Ht. Abs. Btu/hr.	Unit kW	COP
30	9	2.3	1.0	60	39.9	29.3	3.05	3.8
				70	38.9	26.8	3.38	3.4
				80	37.5	24.5	3.76	2.9
	12	3.8	1.6	60	40.0	30.1	3.05	3.8
				70	39.4	28.9	3.39	3.4
				80	38.9	25.9	3.78	3.0
	18	7.9	3.4	60	42.2	30.5	3.06	4.0
				70	40.9	29.6	3.40	3.5
				80	40.0	27.4	3.80	3.1
40	9	2.2	0.9	60	45.2	35.1	3.09	4.3
				70	44.3	32.5	3.44	3.8
				80	43.1	31.7	3.83	3.3
	12	3.7	1.6	60	46.8	36.3	3.10	4.4
				70	44.9	33.0	3.44	3.8
				80	45.1	32.1	3.84	3.4
	18	7.6	3.3	60	45.7	38.3	3.06	4.4
				70	46.8	34.8	3.46	4.0
				80	45.7	32.8	3.85	3.5
50	9	2.1	0.9	60	51.4	41.2	3.14	4.8
				70	50.3	38.1	3.48	4.2
				80	49.8	36.6	3.89	3.8
	12	3.5	1.5	60	53.2	42.9	3.15	5.0
				70	52.3	40.7	3.51	4.4
				80	50.8	39.9	3.91	3.8
	18	7.3	3.2	60	55.3	44.8	3.16	5.1
				70	53.8	42.1	3.52	4.5
				80	52.0	38.4	3.91	3.9
60	9	2.0	0.9	60	58.2	47.3	3.18	5.4
				70	56.9	44.6	3.55	4.7
				80	55.8	41.9	3.95	4.1
	12	3.4	1.5	60	60.4	49.3	3.19	5.6
				70	58.8	47.0	3.56	4.8
				80	58.8	45.1	3.98	4.3
	18	7.1	3.1	60	63.1	52.0	3.21	5.8
				70	58.1	47.7	3.51	4.9
				80	59.3	45.4	3.99	4.4
70	9	2.0	0.9	60	65.3	54.3	3.22	5.9
				70	63.7	51.4	3.61	5.2
				80	62.1	48.8	4.02	4.5
	12	3.3	1.4	60	67.6	57.3	3.24	6.1
				70	66.2	53.6	3.63	5.4
				80	66.0	50.9	4.07	4.8
	18	6.9	3.0	60	70.7	59.3	3.26	6.4
				70	68.9	55.5	3.65	5.5
				80	67.3	53.7	4.09	4.8
80	9	1.9	0.8	60	72.6	61.5	3.28	6.5
				70	71	58.2	3.67	5.7
				80	70.6	57.2	4.12	5.0
	12	3.2	1.4	60	75.7	64.2	3.30	6.7
				70	73.7	60.7	3.70	5.8
				80	73.3	59.2	4.15	5.2
	18	6.6	2.9	60	78.9	68.0	3.32	7.0
				70	76.6	64.8	3.73	6.0
				80	70.0	66.5	4.09	5.0

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GreenSource SM Series

Residential Geothermal Heat Pumps



SM024 Cooling Performance Data - Full Load @ 825CFM									
Entering Fluid Temp (F)	Water Flow (GPM)	Pressure Drop (FOH)	Pressure Drop (PSI)	Entering Air Temp (db/wb) F	Total Capacity (MBTUH)	Sensible Capacity (MBTUH)	Heat of Rejection (MBTUH)	Power Input (kW)	EER
50	3	1.7	0.7	75/63	27.1	20.7	31.3	1.27	21.4
				80/67	28.8	21.2	33.1	1.29	22.4
				85/71	30.5	21.8	34.9	1.30	23.4
	4	2.9	1.3	75/63	27.8	21.0	31.8	1.21	23.1
				80/67	29.5	21.6	33.6	1.22	24.2
				85/71	31.4	22.1	35.6	1.24	25.4
	6	5.9	2.6	75/63	28.5	21.3	32.3	1.14	25.1
				80/67	30.3	21.9	34.2	1.15	26.3
				85/71	32.3	22.4	36.2	1.16	27.8
60	3	1.6	0.7	75/63	25.9	20.1	30.4	1.38	18.8
				80/67	27.5	20.8	32.0	1.40	19.7
				85/71	29.2	21.3	33.9	1.42	20.7
	4	2.8	1.2	75/63	26.5	20.4	30.9	1.32	20.1
				80/67	28.2	21.0	32.6	1.34	21.1
				85/71	30.0	21.6	34.5	1.35	22.2
	6	5.7	2.5	75/63	27.2	20.7	31.3	1.26	21.6
				80/67	29.0	21.3	33.2	1.27	22.8
				85/71	30.9	21.9	35.1	1.28	24.1
70	3	1.6	0.7	75/63	24.6	19.6	29.4	1.50	16.5
				80/67	26.2	20.2	31.1	1.52	17.3
				85/71	27.8	20.8	32.7	1.53	18.2
	4	2.7	1.2	75/63	25.2	19.9	29.9	1.44	17.6
				80/67	26.8	20.5	31.6	1.46	18.4
				85/71	28.6	21.0	33.4	1.47	19.5
	6	5.5	2.4	75/63	25.9	20.1	30.4	1.38	18.8
				80/67	27.5	20.8	32.1	1.39	19.8
				85/71	29.3	21.4	33.9	1.40	20.9
80	3	1.5	0.6	75/63	23.3	19.1	28.5	1.63	14.4
				80/67	24.8	19.7	30.1	1.65	15.1
				85/71	26.3	20.2	31.7	1.66	15.9
	4	2.6	1.1	75/63	23.9	19.3	28.9	1.57	15.3
				80/67	25.4	19.9	30.5	1.58	16.1
				85/71	27.1	20.5	32.3	1.60	17.0
	6	5.4	2.3	75/63	24.5	19.5	29.4	1.51	16.3
				80/67	26.1	20.2	31.0	1.52	17.2
				85/71	27.8	20.8	32.8	1.53	18.2
85	3	1.5	0.6	75/63	22.7	18.8	28.1	1.70	13.4
				80/67	24.1	19.4	29.6	1.72	14.1
				85/71	25.6	20.1	31.1	1.73	14.8
	4	2.5	1.1	75/63	23.2	19.1	28.4	1.64	14.2
				80/67	24.7	19.6	30.0	1.65	15.0
				85/71	26.3	20.2	31.7	1.67	15.8
	6	5.3	2.3	75/63	23.8	19.3	28.9	1.57	15.2
				80/67	25.4	19.9	30.5	1.59	16.0
				85/71	27.1	20.5	32.3	1.60	17.0
90	3	1.5	0.6	75/63	22.0	18.6	27.6	1.77	12.4
				80/67	23.4	19.1	29.1	1.79	13.1
				85/71	24.9	19.7	30.7	1.81	13.8
	4	2.5	1.1	75/63	22.6	18.7	28.0	1.71	13.2
				80/67	24.0	19.4	29.5	1.73	13.9
				85/71	25.5	20.0	31.1	1.74	14.7
	6	5.2	2.3	75/63	23.1	19.0	28.3	1.65	14.1
				80/67	24.6	19.6	30.0	1.66	14.8
				85/71	26.3	20.2	31.7	1.67	15.8
100	3	1.4	0.6	75/63	20.6	18.0	26.8	1.94	10.6
				80/67	22.0	18.7	28.2	1.96	11.3
				85/71	23.4	19.3	29.7	1.97	11.9
	4	2.4	1.0	75/63	21.1	18.2	27.1	1.88	11.3
				80/67	22.5	18.9	28.6	1.89	11.9
				85/71	24.0	19.5	30.1	1.90	12.7
	6	5	2.2	75/63	21.7	18.4	27.4	1.81	12.0
				80/67	23.2	19.0	29.0	1.82	12.8
				85/71	24.6	19.7	30.5	1.83	13.5
110	3	1.4	0.6	75/63	19.3	17.5	26.0	2.14	9.1
				80/67	20.6	18.2	27.4	2.15	9.6
				85/71	22.0	18.7	28.9	2.17	10.2
	4	2.4	1.0	75/63	19.8	17.7	26.3	2.07	9.6
				80/67	21.1	18.3	27.7	2.08	10.2
				85/71	22.5	19.0	29.2	2.09	10.8
	6	4.9	2.1	75/63	20.2	17.9	26.5	2.00	10.1
				80/67	21.7	18.5	28.1	2.00	10.9
				85/71	23.2	19.1	29.6	2.01	11.6

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GreenSource SM Series

Residential Geothermal Heat Pumps



SM024 Cooling Performance Data - Partial Load @ 650CFM

Entering Fluid Temp (F)	Water Flow (GPM)	Pressure Drop (FOH)	Pressure Drop (PSI)	Entering Air Temp (db/wb) F	Total Capacity (MBTUH)	Sensible Capacity (MBTUH)	Heat of Rejection (MBTUH)	Power Input (kW)	EER
50	3	1.7	0.7	75/63	20.0	15.8	22.5	0.77	25.8
				80/67	21.3	16.3	23.8	0.76	27.8
				85/71	22.7	16.7	25.1	0.76	30.0
	4	2.9	1.3	75/63	20.4	16.0	22.8	0.74	27.4
				80/67	21.8	16.5	24.1	0.73	29.7
				85/71	23.1	16.9	25.5	0.72	31.9
	6	5.9	2.6	75/63	20.8	16.1	23.1	0.71	29.1
				80/67	22.2	16.7	24.5	0.70	31.5
				85/71	23.7	17.1	26.0	0.69	34.2
60	3	1.6	0.7	75/63	19.0	15.4	21.7	0.86	22.1
				80/67	20.3	15.9	22.9	0.85	23.9
				85/71	21.5	16.3	24.2	0.84	25.5
	4	2.8	1.2	75/63	19.4	15.6	22.0	0.82	23.5
				80/67	20.7	16.1	23.3	0.81	25.4
				85/71	22.0	16.5	24.6	0.80	27.3
	6	5.7	2.5	75/63	19.8	15.7	22.3	0.79	24.9
				80/67	21.1	16.2	23.6	0.78	27.0
				85/71	22.5	16.7	25.0	0.77	29.3
70	3	1.6	0.7	75/63	18.0	15.0	21.0	0.96	18.7
				80/67	19.2	15.5	22.2	0.95	20.1
				85/71	20.4	16.0	23.4	0.94	21.6
	4	2.7	1.2	75/63	18.3	15.1	21.2	0.92	19.8
				80/67	19.6	15.6	22.4	0.91	21.4
				85/71	20.8	16.1	23.7	0.90	23.0
	6	5.5	2.4	75/63	18.7	15.3	21.5	0.89	21.0
				80/67	20.0	15.8	22.8	0.87	22.8
				85/71	21.3	16.3	24.0	0.86	24.7
80	3	1.5	0.6	75/63	17.0	14.5	20.2	1.08	15.8
				80/67	18.1	15.1	21.4	1.07	16.9
				85/71	19.2	15.6	22.5	1.06	18.1
	4	2.6	1.1	75/63	17.3	14.7	20.5	1.04	16.6
				80/67	18.4	15.2	21.6	1.03	17.9
				85/71	19.6	15.7	22.8	1.02	19.2
	6	5.4	2.3	75/63	17.6	14.8	20.7	1.00	17.6
				80/67	18.9	15.3	21.9	0.99	19.1
				85/71	20.1	15.9	23.1	0.97	20.6
85	3	1.5	0.6	75/63	16.4	14.3	19.9	1.14	14.3
				80/67	17.5	14.8	21.0	1.14	15.4
				85/71	18.7	15.3	22.2	1.13	16.5
	4	2.5	1.1	75/63	16.7	14.4	20.1	1.10	15.1
				80/67	17.9	15.0	21.2	1.09	16.3
				85/71	19.1	15.5	22.4	1.08	17.6
	6	5.3	2.3	75/63	17.1	14.6	20.3	1.06	16.1
				80/67	18.2	15.1	21.5	1.05	17.3
				85/71	19.5	15.7	22.7	1.04	18.8
90	3	1.5	0.6	75/63	15.9	14.1	19.5	1.21	13.1
				80/67	17.0	14.6	20.6	1.21	14.1
				85/71	18.0	15.2	21.7	1.20	15.0
	4	2.5	1.1	75/63	16.2	14.2	19.7	1.17	13.8
				80/67	17.3	14.7	20.9	1.16	14.9
				85/71	18.5	15.2	22.0	1.15	16.0
	6	5.2	2.3	75/63	16.5	14.3	19.9	1.13	14.6
				80/67	17.7	14.9	21.1	1.12	15.8
				85/71	18.9	15.4	22.3	1.11	17.1
100	3	1.4	0.6	75/63	14.8	13.6	18.9	1.36	10.8
				80/67	15.8	14.2	19.9	1.36	11.6
				85/71	16.8	14.8	21.0	1.35	12.4
	4	2.4	1.0	75/63	15.1	13.7	19.0	1.32	11.4
				80/67	16.1	14.3	20.1	1.31	12.2
				85/71	17.2	14.9	21.2	1.31	13.1
	6	5	2.2	75/63	15.3	13.9	19.2	1.28	11.9
				80/67	16.5	14.4	20.3	1.27	13.0
				85/71	17.6	15.0	21.5	1.26	14.0
110	3	1.4	0.6	75/63	13.7	13.2	18.3	1.53	8.9
				80/67	14.6	13.8	19.2	1.53	9.5
				85/71	15.6	14.3	20.3	1.53	10.2
	4	2.4	1.0	75/63	13.9	13.3	18.4	1.49	9.3
				80/67	14.9	13.9	19.4	1.48	10.0
				85/71	15.9	14.5	20.4	1.48	10.7
	6	4.9	2.1	75/63	14.2	13.4	18.5	1.45	9.8
				80/67	15.2	14.0	19.6	1.44	10.5
				85/71	16.3	14.5	20.7	1.43	11.4

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GreenSource SM Series

Residential Geothermal Heat Pumps



SM036 Cooling Performance Data - Full Load @ 1100CFM

Entering Fluid Temp (F)	Water Flow (GPM)	Pressure Drop (FOH)	Pressure Drop (PSI)	Entering Air Temp (db/wb) F	Total Capacity (MBTUH)	Sensible Capacity (MBTUH)	Heat of Rejection (MBTUH)	Power Input (kW)	EER
50	4.5	3.2	1.4	75/63	40.8	29.9	46.4	1.69	24.1
				80/67	43.5	30.6	49.2	1.74	25.1
				85/71	46.3	31.4	52.2	1.78	26.1
	6	5.4	2.3	75/63	41.6	30.2	47.0	1.64	25.4
				80/67	44.4	31.0	49.9	1.69	26.4
				85/71	47.3	31.7	53.0	1.73	27.4
				75/63	42.3	30.5	47.6	1.60	26.5
				80/67	45.2	31.4	50.7	1.64	27.6
				85/71	48.3	32.1	53.9	1.69	28.7
60	4.5	3.1	1.3	75/63	39.2	29.1	45.1	1.82	21.6
				80/67	41.7	30.0	47.8	1.86	22.5
				85/71	44.5	30.6	50.7	1.89	23.5
	6	5.2	2.3	75/63	39.9	29.4	45.7	1.76	22.7
				80/67	42.6	30.3	48.5	1.80	23.7
				85/71	45.4	31.0	51.4	1.83	24.8
				75/63	40.7	29.8	46.2	1.71	23.9
				80/67	43.4	30.5	49.2	1.74	24.9
				85/71	46.3	31.4	52.2	1.78	26.1
70	4.5	3	1.3	75/63	37.5	28.4	43.9	1.98	19.0
				80/67	39.9	29.2	46.5	2.01	19.9
				85/71	42.6	29.9	49.3	2.04	20.9
	6	5	2.2	75/63	38.1	28.7	44.3	1.91	20.0
				80/67	40.8	29.5	47.1	1.94	21.1
				85/71	43.4	30.3	49.9	1.97	22.1
				75/63	38.8	29.0	44.8	1.85	21.0
				80/67	41.5	29.8	47.7	1.87	22.2
				85/71	44.3	30.7	50.6	1.90	23.3
80	4.5	2.9	1.3	75/63	35.7	27.6	42.6	2.16	16.5
				80/67	38.1	28.4	45.2	2.19	17.4
				85/71	40.6	29.2	47.9	2.22	18.3
	6	4.8	2.1	75/63	36.4	27.8	43.2	2.09	17.4
				80/67	38.9	28.7	45.7	2.11	18.4
				85/71	41.4	29.6	48.4	2.14	19.4
				75/63	37.0	28.1	43.6	2.02	18.3
				80/67	39.5	29.0	46.2	2.04	19.4
				85/71	42.3	29.9	49.0	2.06	20.6
85	4.5	2.8	1.2	75/63	34.8	27.2	42.1	2.27	15.3
				80/67	37.1	28.1	44.5	2.30	16.2
				85/71	39.6	28.8	47.2	2.32	17.1
	6	4.8	2.1	75/63	35.4	27.5	42.5	2.19	16.2
				80/67	37.9	28.3	45.1	2.22	17.1
				85/71	40.5	29.1	47.8	2.24	18.1
				75/63	36.0	27.5	42.9	2.13	16.9
				80/67	38.6	28.6	45.6	2.14	18.0
				85/71	41.3	29.5	48.3	2.16	19.2
90	4.5	2.8	1.2	75/63	33.9	26.8	41.6	2.39	14.2
				80/67	36.2	27.6	44.0	2.41	15.0
				85/71	38.6	28.6	46.4	2.43	15.9
	6	4.7	2.0	75/63	34.6	27.1	42.0	2.30	15.0
				80/67	36.9	27.9	44.5	2.33	15.9
				85/71	39.5	28.8	47.1	2.34	16.9
				75/63	35.1	27.4	42.2	2.23	15.8
				80/67	37.6	28.2	44.9	2.25	16.7
				85/71	40.2	29.1	47.5	2.26	17.8
100	4.5	2.7	1.2	75/63	32.0	26.1	40.5	2.64	12.1
				80/67	34.3	26.9	42.9	2.67	12.9
				85/71	36.5	27.8	45.2	2.69	13.6
	6	4.6	2.0	75/63	32.7	26.3	40.9	2.56	12.8
				80/67	35.0	27.1	43.2	2.58	13.6
				85/71	37.4	28.0	45.7	2.59	14.5
				75/63	33.2	26.5	41.1	2.49	13.4
				80/67	35.5	27.3	43.6	2.51	14.2
				85/71	38.0	28.3	46.0	2.50	15.2
110	4.5	2.6	1.1	75/63	30.2	25.3	39.6	2.93	10.3
				80/67	32.4	26.2	41.8	2.95	11.0
				85/71	34.6	27.1	44.1	2.97	11.6
	6	4.4	1.9	75/63	30.7	25.5	39.8	2.85	10.8
				80/67	32.9	26.5	42.1	2.86	11.5
				85/71	35.2	27.4	44.5	2.87	12.3
				75/63	31.3	25.7	40.1	2.77	11.3
				80/67	33.5	26.7	42.4	2.78	12.1
				85/71	35.9	27.5	44.9	2.79	12.9

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GreenSource SM Series

Residential Geothermal Heat Pumps



SM036 Cooling Performance Data - Full Load @ 800CFM									
Entering Fluid Temp (F)	Water Flow (GPM)	Pressure Drop (FOH)	Pressure Drop (PSI)	Entering Air Temp (db/wb) F	Total Capacity (MBTUH)	Sensible Capacity (MBTUH)	Heat of Rejection (MBTUH)	Power Input (kW)	EER
50	4.5	3.2	1.4	75/63	29.9	21.8	33.2	1.01	29.6
				80/67	32.0	22.5	35.3	1.00	32.1
				85/71	34.2	23.0	37.4	0.98	34.9
	6	5.4	2.3	75/63	30.4	22.0	33.6	0.99	30.9
				80/67	32.5	22.7	35.7	0.97	33.6
				85/71	34.8	23.2	37.9	0.95	36.7
	9	11.1	4.8	75/63	30.8	22.2	34.0	0.96	32.0
				80/67	33.1	22.9	36.2	0.94	35.1
				85/71	35.4	23.5	38.5	0.92	38.5
60	4.5	3.1	1.3	75/63	28.5	21.2	32.1	1.11	25.7
				80/67	30.5	21.9	34.1	1.10	27.9
				85/71	32.7	22.4	36.2	1.08	30.3
	6	5.2	2.3	75/63	29.0	21.4	32.5	1.07	27.0
				80/67	31.0	22.1	34.5	1.06	29.3
				85/71	33.3	22.6	36.7	1.04	32.0
	9	10.7	4.6	75/63	29.4	21.6	32.8	1.04	28.2
				80/67	31.6	22.3	34.9	1.02	30.9
				85/71	33.8	22.9	37.2	1.00	33.7
70	4.5	3	1.3	75/63	27.1	20.6	31.0	1.24	22.0
				80/67	29.1	21.2	33.0	1.23	23.8
				85/71	31.1	21.9	35.0	1.21	25.7
	6	5	2.2	75/63	27.5	20.8	31.3	1.19	23.0
				80/67	29.6	21.4	33.4	1.18	25.1
				85/71	31.6	22.1	35.4	1.16	27.2
	9	10.4	4.5	75/63	27.9	21.0	31.6	1.16	24.2
				80/67	30.0	21.6	33.7	1.14	26.4
				85/71	32.2	22.2	35.9	1.12	28.8
80	4.5	2.9	1.3	75/63	25.7	19.9	30.1	1.39	18.5
				80/67	27.5	20.6	31.9	1.38	19.9
				85/71	29.5	21.3	33.9	1.38	21.5
	6	4.8	2.1	75/63	26.1	20.1	30.3	1.35	19.4
				80/67	28.0	20.8	32.2	1.33	21.0
				85/71	30.0	21.4	34.3	1.32	22.7
	9	10.1	4.4	75/63	26.4	20.3	30.6	1.30	20.3
				80/67	28.5	20.9	32.6	1.29	22.2
				85/71	30.5	21.6	34.6	1.27	24.1
85	4.5	2.8	1.2	75/63	24.9	19.6	29.6	1.48	16.8
				80/67	26.8	20.3	31.5	1.48	18.2
				85/71	28.7	20.9	33.4	1.47	19.6
	6	4.8	2.1	75/63	25.3	19.8	29.8	1.43	17.7
				80/67	27.2	20.5	31.7	1.42	19.1
				85/71	29.1	21.2	33.7	1.41	20.7
	9	9.9	4.3	75/63	25.7	19.9	30.1	1.39	18.5
				80/67	27.6	20.7	32.0	1.37	20.1
				85/71	29.7	21.3	34.0	1.36	21.9
90	4.5	2.8	1.2	75/63	24.2	19.3	29.1	1.58	15.3
				80/67	25.9	20.0	30.9	1.57	16.5
				85/71	27.8	20.7	32.8	1.57	17.8
	6	4.7	2.0	75/63	24.5	19.5	29.3	1.53	16.0
				80/67	26.4	20.1	31.2	1.52	17.4
				85/71	28.3	20.8	33.2	1.51	18.8
	9	9.7	4.2	75/63	24.9	19.5	29.6	1.49	16.7
				80/67	26.8	20.3	31.5	1.47	18.3
				85/71	28.8	21.0	33.4	1.45	19.9
100	4.5	2.7	1.2	75/63	22.7	18.7	28.3	1.80	12.6
				80/67	24.4	19.4	30.0	1.79	13.6
				85/71	26.1	20.1	31.8	1.79	14.6
	6	4.6	2.0	75/63	23.0	18.9	28.5	1.75	13.2
				80/67	24.8	19.6	30.2	1.74	14.3
				85/71	26.6	20.2	32.1	1.73	15.4
	9	9.5	4.1	75/63	23.3	18.9	28.6	1.71	13.6
				80/67	25.1	19.7	30.4	1.68	14.9
				85/71	27.1	20.3	32.4	1.67	16.3
110	4.5	2.6	1.1	75/63	21.1	18.1	27.5	2.05	10.3
				80/67	22.8	18.8	29.2	2.04	11.2
				85/71	24.5	19.5	30.9	2.04	12.0
	6	4.4	1.9	75/63	21.4	18.2	27.7	1.99	10.7
				80/67	23.1	18.9	29.4	1.98	11.7
				85/71	24.9	19.6	31.1	1.97	12.6
	9	9.2	4.0	75/63	21.7	18.3	27.8	1.95	11.1
				80/67	23.4	19.0	29.5	1.94	12.1
				85/71	25.2	19.8	31.2	1.92	13.2

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GreenSource SM Series

Residential Geothermal Heat Pumps



SM048 Cooling Performance Data - Full Load @ 1600CFM

Entering Fluid Temp (F)	Water Flow (GPM)	Pressure Drop (FOH)	Pressure Drop (PSI)	Entering Air Temp (db/wb) F	Total Capacity (MBTUH)	Sensible Capacity (MBTUH)	Heat of Rejection (MBTUH)	Power Input (kW)	EER
50	6	2.6	1.1	75/63	52.3	40.1	60.4	2.48	21.1
				80/67	55.6	41.3	63.9	2.50	22.2
				85/71	59.2	42.3	67.6	2.53	23.4
	8	4.4	1.9	75/63	53.6	40.6	61.4	2.36	22.7
				80/67	57.1	41.8	64.9	2.38	24.0
				85/71	60.8	42.8	68.8	2.40	25.3
	12	9.1	3.9	75/63	54.9	41.3	62.3	2.24	24.5
				80/67	58.7	42.4	66.2	2.26	26.0
				85/71	62.5	43.5	70.1	2.27	27.6
60	6	2.5	1.1	75/63	49.9	39.1	58.7	2.69	18.5
				80/67	53.2	40.3	62.1	2.72	19.6
				85/71	56.7	41.4	65.7	2.75	20.6
	8	4.3	1.9	75/63	51.2	39.6	59.6	2.57	19.9
				80/67	54.6	40.9	63.1	2.59	21.1
				85/71	58.1	42.0	66.7	2.61	22.3
	12	8.8	3.8	75/63	52.5	40.2	60.5	2.46	21.4
				80/67	56.1	41.3	64.3	2.47	22.7
				85/71	59.8	42.5	68.0	2.48	24.1
70	6	2.5	1.1	75/63	47.5	38.1	57.0	2.93	16.2
				80/67	50.8	39.3	60.4	2.96	17.1
				85/71	53.9	40.5	63.7	2.99	18.0
	8	4.1	1.8	75/63	48.7	38.6	57.9	2.81	17.3
				80/67	52.0	39.9	61.3	2.83	18.4
				85/71	55.4	41.0	64.7	2.85	19.4
	12	8.6	3.7	75/63	50.1	39.0	58.8	2.69	18.6
				80/67	53.5	40.3	62.3	2.70	19.8
				85/71	57.1	41.5	66.0	2.71	21.1
80	6	2.4	1.0	75/63	45.2	37.0	55.5	3.21	14.1
				80/67	48.2	38.3	58.7	3.24	14.9
				85/71	51.3	39.4	62.0	3.27	15.7
	8	4	1.7	75/63	46.2	37.6	56.2	3.08	15.0
				80/67	49.5	38.7	59.5	3.10	15.9
				85/71	52.6	40.1	62.8	3.12	16.8
	12	8.3	3.6	75/63	47.5	38.0	57.0	2.95	16.1
				80/67	50.8	39.2	60.4	2.96	17.1
				85/71	54.1	40.6	63.8	2.97	18.2
85	6	2.3	1.0	75/63	43.8	36.6	54.7	3.37	13.0
				80/67	46.8	37.9	57.8	3.40	13.8
				85/71	49.8	39.1	61.0	3.43	14.5
	8	3.9	1.7	75/63	45.0	36.9	55.4	3.23	13.9
				80/67	48.1	38.2	58.7	3.25	14.8
				85/71	51.3	39.4	62.0	3.27	15.7
	12	8.1	3.5	75/63	46.1	37.5	56.1	3.10	14.9
				80/67	49.4	38.7	59.5	3.11	15.9
				85/71	52.6	40.1	62.8	3.12	16.9
90	6	2.3	1.0	75/63	42.6	36.1	54.0	3.53	12.1
				80/67	45.5	37.4	57.0	3.56	12.8
				85/71	48.5	38.6	60.1	3.60	13.5
	8	3.9	1.7	75/63	43.6	36.5	54.6	3.39	12.8
				80/67	46.8	37.7	57.8	3.42	13.7
				85/71	49.8	39.1	60.9	3.44	14.5
	12	8	3.5	75/63	44.7	37.0	55.2	3.25	13.7
				80/67	48.0	38.2	58.6	3.27	14.7
				85/71	51.3	39.4	62.0	3.28	15.6
100	6	2.2	1.0	75/63	40.0	35.0	52.5	3.90	10.2
				80/67	42.7	36.3	55.4	3.94	10.8
				85/71	45.5	37.6	58.4	3.97	11.4
	8	3.8	1.6	75/63	41.0	35.5	53.1	3.75	10.9
				80/67	43.9	36.8	56.1	3.78	11.6
				85/71	46.8	38.0	59.1	3.80	12.3
	12	7.8	3.4	75/63	42.1	35.8	53.7	3.61	11.7
				80/67	45.1	37.1	56.8	3.62	12.5
				85/71	48.1	38.5	59.9	3.63	13.2
110	6	2.2	1.0	75/63	37.4	34.0	51.3	4.33	8.6
				80/67	39.9	35.3	54.0	4.38	9.1
				85/71	42.7	36.6	57.0	4.42	9.7
	8	3.6	1.6	75/63	38.3	34.4	51.7	4.17	9.2
				80/67	41.1	35.7	54.6	4.20	9.8
				85/71	43.8	37.0	57.5	4.23	10.4
	12	7.6	3.3	75/63	39.4	34.7	52.3	4.02	9.8
				80/67	42.0	36.1	55.0	4.03	10.4
				85/71	45.1	37.4	58.1	4.04	11.1

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GreenSource SM Series
Residential Geothermal Heat Pumps



SM048 Cooling Performance Data - Partial Load @ 1300CFM

Entering Fluid Temp (F)	Water Flow (GPM)	Pressure Drop (FOH)	Pressure Drop (PSI)	Entering Air Temp (db/wb) F	Total Capacity (MBTUH)	Sensible Capacity (MBTUH)	Heat of Rejection (MBTUH)	Power Input (kW)	EER
50	6	2.6	1.1	75/63	39.7	31.6	44.4	1.44	27.5
				80/67	42.4	32.5	47.1	1.42	29.9
				85/71	45.2	33.4	49.8	1.39	32.5
	8	4.4	1.9	75/63	40.6	31.9	45.1	1.37	29.7
				80/67	43.4	32.9	47.8	1.34	32.5
				85/71	46.2	33.9	50.5	1.30	35.4
	12	9.1	3.9	75/63	41.6	32.3	45.8	1.29	32.3
				80/67	44.5	33.3	48.6	1.25	35.6
				85/71	47.4	34.3	51.4	1.21	39.1
60	6	2.5	1.1	75/63	37.6	30.7	42.8	1.64	23.0
				80/67	40.1	31.7	45.4	1.61	24.8
				85/71	42.8	32.7	48.0	1.59	26.9
	8	4.3	1.9	75/63	38.4	31.0	43.4	1.56	24.6
				80/67	41.0	32.1	46.0	1.53	26.8
				85/71	43.8	33.1	48.7	1.50	29.2
	12	8.8	3.8	75/63	39.3	31.3	44.1	1.48	26.5
				80/67	42.0	32.4	46.8	1.45	29.1
				85/71	45.0	33.4	49.6	1.41	31.9
70	6	2.5	1.1	75/63	35.4	29.7	41.3	1.85	19.1
				80/67	37.8	30.8	43.7	1.83	20.6
				85/71	40.4	31.9	46.2	1.81	22.3
	8	4.1	1.8	75/63	36.1	30.1	41.8	1.77	20.4
				80/67	38.7	31.1	44.4	1.75	22.1
				85/71	41.4	32.1	47.0	1.72	24.1
	12	8.6	3.7	75/63	37.0	30.4	42.4	1.69	21.9
				80/67	39.7	31.4	45.0	1.66	23.9
				85/71	42.4	32.5	47.8	1.63	26.0
80	6	2.4	1.0	75/63	33.2	28.8	39.8	2.09	15.9
				80/67	35.5	29.8	42.2	2.08	17.1
				85/71	38.0	30.9	44.6	2.06	18.5
	8	4	1.7	75/63	33.9	29.2	40.3	2.01	16.9
				80/67	36.3	30.2	42.7	1.99	18.2
				85/71	38.8	31.3	45.2	1.96	19.8
	12	8.3	3.6	75/63	34.6	29.5	40.8	1.93	17.9
				80/67	37.2	30.5	43.3	1.90	19.5
				85/71	39.8	31.7	45.8	1.87	21.3
85	6	2.3	1.0	75/63	32.0	28.4	39.1	2.22	14.4
				80/67	34.3	29.4	41.4	2.22	15.5
				85/71	36.7	30.6	43.7	2.19	16.7
	8	3.9	1.7	75/63	32.7	28.7	39.5	2.14	15.3
				80/67	35.0	29.8	41.8	2.13	16.5
				85/71	37.6	30.9	44.3	2.10	17.9
	12	8.1	3.5	75/63	33.5	29.0	40.0	2.06	16.3
				80/67	35.9	30.0	42.4	2.04	17.6
				85/71	38.6	31.1	45.0	2.00	19.3
90	6	2.3	1.0	75/63	30.9	27.9	38.4	2.36	13.1
				80/67	33.1	29.1	40.5	2.36	14.1
				85/71	35.5	30.2	43.0	2.33	15.2
	8	3.9	1.7	75/63	31.6	28.2	38.8	2.28	13.9
				80/67	33.8	29.3	41.0	2.27	14.9
				85/71	36.3	30.5	43.5	2.24	16.2
	12	8	3.5	75/63	32.3	28.5	39.2	2.19	14.7
				80/67	34.7	29.6	41.6	2.17	16.0
				85/71	37.2	30.8	44.1	2.14	17.4
100	6	2.2	1.0	75/63	28.7	27.0	37.0	2.66	10.8
				80/67	30.8	28.2	39.2	2.65	11.6
				85/71	33.1	29.4	41.4	2.63	12.6
	8	3.8	1.6	75/63	29.3	27.2	37.4	2.58	11.4
				80/67	31.5	28.4	39.6	2.56	12.3
				85/71	33.8	29.6	41.9	2.54	13.3
	12	7.8	3.4	75/63	29.9	27.4	37.8	2.49	12.0
				80/67	32.1	28.7	40.0	2.47	13.0
				85/71	34.5	29.9	42.3	2.44	14.1
110	6	2.2	1.0	75/63	26.4	26.1	35.8	2.98	8.8
				80/67	28.4	27.4	37.8	2.97	9.6
				85/71	30.5	28.5	39.9	2.96	10.3
	8	3.6	1.6	75/63	27.0	26.3	36.1	2.90	9.3
				80/67	29.1	27.6	38.2	2.88	10.1
				85/71	31.4	28.7	40.4	2.86	11.0
	12	7.6	3.3	75/63	27.5	26.6	36.3	2.82	9.8
				80/67	29.8	27.8	38.6	2.79	10.7
				85/71	32.1	28.9	40.9	2.76	11.6

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GreenSource SM Series

Residential Geothermal Heat Pumps



SM060 Cooling Performance Data - Full Load @ 2000CFM

Entering Fluid Temp (F)	Water Flow (GPM)	Pressure Drop (FOH)	Pressure Drop (PSI)	Entering Air Temp (db/wb) F	Total Capacity (MBTUH)	Sensible Capacity (MBTUH)	Heat of Rejection (MBTUH)	Power Input (kW)	EER
50	7.5	2.8	1.2	75/63	66.7	50.5	77.1	3.16	21.1
				80/67	70.9	52.0	81.5	3.21	22.1
				85/71	75.3	53.4	86.2	3.27	23.0
	10	4.7	2.0	75/63	68.0	51.2	78.1	3.04	22.3
				80/67	72.6	52.6	82.9	3.10	23.4
				85/71	77.2	53.9	87.7	3.15	24.5
	15	9.7	4.2	75/63	69.5	51.8	79.2	2.94	23.7
				80/67	74.0	53.4	84.0	2.98	24.8
				85/71	78.9	54.7	89.0	3.04	26.0
60	7.5	2.7	1.2	75/63	63.8	49.4	75.0	3.40	18.8
				80/67	68.0	50.9	79.4	3.45	19.7
				85/71	72.4	52.1	84.0	3.51	20.6
	10	4.5	1.9	75/63	65.3	49.8	76.1	3.28	19.9
				80/67	69.6	51.3	80.6	3.32	20.9
				85/71	73.9	52.9	85.1	3.37	21.9
	15	9.4	4.1	75/63	66.6	50.5	77.1	3.16	21.1
				80/67	71.0	52.1	81.6	3.20	22.2
				85/71	75.8	53.4	86.6	3.24	23.4
70	7.5	2.6	1.1	75/63	61.0	48.2	73.0	3.68	16.6
				80/67	65.1	49.6	77.4	3.73	17.4
				85/71	69.0	51.1	81.5	3.78	18.3
	10	4.4	1.9	75/63	62.4	48.6	74.0	3.55	17.6
				80/67	66.4	50.3	78.2	3.59	18.5
				85/71	70.7	51.7	82.7	3.63	19.5
	15	9.1	3.9	75/63	63.7	49.2	74.9	3.42	18.6
				80/67	68.0	50.7	79.4	3.46	19.7
				85/71	72.5	52.2	84.1	3.49	20.7
80	7.5	2.5	1.1	75/63	58.0	47.0	71.1	4.01	14.5
				80/67	61.8	48.5	75.1	4.05	15.2
				85/71	65.7	50.0	79.2	4.10	16.0
	10	4.2	1.8	75/63	59.3	47.5	71.9	3.87	15.3
				80/67	63.4	48.9	76.2	3.90	16.2
				85/71	67.3	50.5	80.3	3.94	17.1
	15	8.8	3.8	75/63	60.6	47.9	72.9	3.73	16.2
				80/67	64.7	49.6	77.0	3.76	17.2
				85/71	69.1	50.9	81.6	3.79	18.2
85	7.5	2.5	1.1	75/63	56.6	46.2	70.3	4.19	13.5
				80/67	60.4	47.8	74.3	4.24	14.2
				85/71	64.1	49.4	78.2	4.28	15.0
	10	4.2	1.8	75/63	57.8	46.8	71.0	4.05	14.3
				80/67	61.6	48.4	75.0	4.08	15.1
				85/71	65.7	49.8	79.3	4.12	16.0
	15	8.7	3.8	75/63	59.0	47.2	71.8	3.91	15.1
				80/67	63.0	48.9	75.9	3.93	16.0
				85/71	67.2	50.5	80.2	3.96	17.0
90	7.5	2.5	1.1	75/63	55.1	45.6	69.4	4.39	12.5
				80/67	58.5	47.2	72.9	4.43	13.2
				85/71	62.3	48.8	77.0	4.48	13.9
	10	4.1	1.8	75/63	56.3	46.1	70.1	4.24	13.3
				80/67	60.1	47.7	74.1	4.27	14.1
				85/71	63.9	49.3	78.1	4.30	14.8
	15	8.5	3.7	75/63	57.3	46.7	70.7	4.09	14.0
				80/67	61.4	48.1	74.9	4.12	14.9
				85/71	65.5	49.7	79.1	4.14	15.8
100	7.5	2.4	1.0	75/63	51.9	44.5	67.6	4.82	10.8
				80/67	55.2	46.0	71.0	4.86	11.4
				85/71	58.8	47.5	74.8	4.91	12.0
	10	4	1.7	75/63	53.1	44.8	68.3	4.67	11.4
				80/67	56.7	46.5	72.0	4.69	12.1
				85/71	60.3	48.1	75.8	4.73	12.8
	15	8.3	3.6	75/63	54.0	45.3	68.7	4.51	12.0
				80/67	57.9	47.0	72.7	4.53	12.8
				85/71	61.8	48.6	76.7	4.56	13.6
110	7.5	2.3	1.0	75/63	48.7	43.2	66.0	5.33	9.1
				80/67	51.8	44.7	69.3	5.37	9.6
				85/71	55.3	46.3	73.0	5.41	10.2
	10	3.9	1.7	75/63	49.8	43.5	66.6	5.16	9.6
				80/67	53.2	45.2	70.1	5.19	10.3
				85/71	56.7	46.8	73.7	5.22	10.9
	15	8	3.5	75/63	50.8	43.9	67.1	5.01	10.1
				80/67	54.2	45.6	70.6	5.02	10.8
				85/71	57.9	47.2	74.3	5.03	11.5

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GreenSource SM Series

Residential Geothermal Heat Pumps



SM060 Cooling Performance Data - Partial Load @ 1600CFM									
Entering Fluid Temp (F)	Water Flow (GPM)	Pressure Drop (FOH)	Pressure Drop (PSI)	Entering Air Temp (db/wb) F	Total Capacity (MBTUH)	Sensible Capacity (MBTUH)	Heat of Rejection (MBTUH)	Power Input (kW)	EER
50	7.5	2.8	1.2	75/63	51.0	39.6	57.1	1.86	27.4
				80/67	54.3	40.9	60.3	1.83	29.7
				85/71	57.8	42.0	63.7	1.80	32.1
	10	4.7	2.0	75/63	52.0	40.1	57.8	1.78	29.2
				80/67	55.5	41.3	61.2	1.74	31.8
				85/71	59.2	42.4	64.8	1.71	34.6
	15	9.7	4.2	75/63	53.1	40.6	58.7	1.70	31.3
				80/67	56.8	41.7	62.3	1.66	34.2
				85/71	60.4	43.0	65.8	1.62	37.4
60	7.5	2.7	1.2	75/63	48.1	38.5	54.9	2.09	23.0
				80/67	51.4	39.8	58.2	2.06	24.9
				85/71	54.9	40.9	61.6	2.03	27.0
	10	4.5	1.9	75/63	49.1	38.9	55.7	2.00	24.5
				80/67	52.5	40.2	59.0	1.97	26.7
				85/71	56.0	41.4	62.4	1.93	29.0
	15	9.4	4.1	75/63	50.2	39.3	56.4	1.92	26.2
				80/67	53.8	40.5	59.9	1.88	28.6
				85/71	57.4	41.8	63.5	1.84	31.3
70	7.5	2.6	1.1	75/63	45.4	37.2	53.0	2.35	19.3
				80/67	48.5	38.6	56.0	2.32	20.9
				85/71	51.7	39.9	59.2	2.29	22.5
	10	4.4	1.9	75/63	46.2	37.7	53.5	2.26	20.4
				80/67	49.6	38.9	56.8	2.23	22.2
				85/71	52.9	40.3	60.1	2.19	24.1
	15	9.1	3.9	75/63	47.2	38.1	54.3	2.17	21.7
				80/67	50.7	39.4	57.6	2.13	23.8
				85/71	54.1	40.7	60.9	2.09	25.9
80	7.5	2.5	1.1	75/63	42.4	36.1	50.9	2.65	16.0
				80/67	45.5	37.5	53.9	2.62	17.3
				85/71	48.6	38.8	57.0	2.59	18.7
	10	4.2	1.8	75/63	43.3	36.5	51.5	2.56	16.9
				80/67	46.4	37.8	54.5	2.52	18.4
				85/71	49.7	39.2	57.8	2.49	20.0
	15	8.8	3.8	75/63	44.2	36.8	52.2	2.47	17.9
				80/67	47.5	38.2	55.3	2.42	19.6
				85/71	50.9	39.4	58.7	2.38	21.4
85	7.5	2.5	1.1	75/63	41.1	35.5	50.1	2.81	14.6
				80/67	44.0	36.9	52.9	2.79	15.8
				85/71	47.0	38.2	55.9	2.76	17.0
	10	4.2	1.8	75/63	41.8	35.9	50.5	2.72	15.4
				80/67	44.9	37.3	53.5	2.68	16.7
				85/71	48.0	38.6	56.6	2.65	18.1
	15	8.7	3.8	75/63	42.8	36.2	51.2	2.62	16.3
				80/67	45.8	37.6	54.2	2.58	17.7
				85/71	49.1	39.0	57.4	2.54	19.3
90	7.5	2.5	1.1	75/63	39.6	35.0	49.1	2.98	13.3
				80/67	42.4	36.4	51.9	2.96	14.3
				85/71	45.4	37.7	54.9	2.93	15.5
	10	4.1	1.8	75/63	40.4	35.3	49.6	2.89	14.0
				80/67	43.3	36.7	52.5	2.86	15.1
				85/71	46.4	38.0	55.5	2.82	16.4
	15	8.5	3.7	75/63	41.2	35.6	50.1	2.79	14.7
				80/67	44.3	36.9	53.2	2.75	16.1
				85/71	47.4	38.4	56.2	2.71	17.5
100	7.5	2.4	1.0	75/63	36.7	33.8	47.3	3.34	11.0
				80/67	39.4	35.2	50.0	3.33	11.8
				85/71	42.3	36.6	52.9	3.30	12.8
	10	4	1.7	75/63	37.4	34.1	47.8	3.25	11.5
				80/67	40.2	35.5	50.5	3.22	12.5
				85/71	43.2	36.9	53.5	3.20	13.5
	15	8.3	3.6	75/63	38.1	34.4	48.2	3.16	12.1
				80/67	41.0	35.8	51.1	3.13	13.1
				85/71	44.1	37.2	54.0	3.08	14.3
110	7.5	2.3	1.0	75/63	33.8	32.6	45.7	3.74	9.0
				80/67	36.5	34.2	48.4	3.72	9.8
				85/71	38.7	35.4	50.6	3.71	10.4
	10	3.9	1.7	75/63	34.5	32.8	46.1	3.65	9.4
				80/67	37.2	34.4	48.8	3.62	10.3
				85/71	39.6	35.7	51.2	3.60	11.0
	15	8	3.5	75/63	35.1	33.2	46.4	3.56	9.9
				80/67	38.0	34.6	49.2	3.53	10.8
				85/71	40.9	36.1	52.1	3.49	11.7

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GreenSource SM Series

Residential Geothermal Heat Pumps



SM070 Cooling Performance Data - Full Load @ 2350CFM									
Entering Fluid Temp (F)	Water Flow (GPM)	Pressure Drop (FOH)	Pressure Drop (PSI)	Entering Air Temp (db/wb) F	Total Capacity (MBTUH)	Sensible Capacity (MBTUH)	Heat of Rejection (MBTUH)	Power Input (kW)	EER
50	9	2.1	0.9	75/63	74.7	56.2	86.9	3.69	20.2
				80/67	79.4	58.1	91.8	3.74	21.2
				85/71	84.4	59.7	97.0	3.79	22.2
	12	3.5	1.5	75/63	76.3	56.9	88.1	3.54	21.6
				80/67	81.4	58.5	93.3	3.59	22.7
				85/71	86.5	60.5	98.6	3.63	23.9
	18	7.3	3.2	75/63	78.1	57.6	89.3	3.38	23.1
				80/67	83.4	59.3	94.8	3.42	24.4
				85/71	88.9	60.9	100.5	3.46	25.7
60	9	2	0.9	75/63	71.6	54.8	84.7	3.99	18.0
				80/67	76.1	56.8	89.4	4.03	18.9
				85/71	81.1	58.2	94.6	4.08	19.9
	12	3.4	1.5	75/63	73.2	55.5	85.8	3.83	19.1
				80/67	78.1	57.2	90.9	3.87	20.2
				85/71	83.2	58.8	96.2	3.91	21.3
	18	7.1	3.1	75/63	74.9	56.3	87.0	3.67	20.4
				80/67	79.8	58.3	92.1	3.70	21.5
				85/71	85.1	60.0	97.6	3.73	22.8
70	9	2	0.9	75/63	68.4	53.4	82.5	4.32	15.8
				80/67	72.7	55.5	87.1	4.36	16.7
				85/71	77.4	57.0	92.0	4.41	17.6
	12	3.3	1.4	75/63	69.8	54.4	83.4	4.15	16.8
				80/67	74.4	56.2	88.3	4.19	17.7
				85/71	79.3	58.0	93.2	4.22	18.8
	18	6.9	3.0	75/63	71.5	54.8	84.7	3.99	17.9
				80/67	76.3	56.9	89.5	4.02	19.0
				85/71	81.6	58.2	95.0	4.05	20.1
80	9	1.9	0.8	75/63	64.9	52.3	80.2	4.69	13.8
				80/67	69.2	54.0	84.8	4.74	14.6
				85/71	73.8	55.5	89.5	4.78	15.4
	12	3.2	1.4	75/63	66.5	52.7	81.3	4.52	14.7
				80/67	70.8	54.8	85.8	4.55	15.5
				85/71	75.3	57.1	90.4	4.58	16.4
	18	6.6	2.9	75/63	68.0	53.3	82.3	4.35	15.6
				80/67	72.6	55.4	87.0	4.38	16.6
				85/71	77.5	57.1	92.0	4.40	17.6
85	9	1.9	0.8	75/63	63.3	51.6	79.3	4.88	13.0
				80/67	67.4	53.5	83.6	4.93	13.7
				85/71	71.7	55.2	88.1	4.98	14.4
	12	3.1	1.3	75/63	64.8	51.9	80.2	4.72	13.7
				80/67	69.0	54.1	84.6	4.75	14.5
				85/71	73.6	55.6	89.4	4.78	15.4
	18	6.5	2.8	75/63	66.2	52.5	81.2	4.55	14.5
				80/67	70.8	54.3	85.9	4.58	15.5
				85/71	75.4	56.6	90.5	4.59	16.4
90	9	1.8	0.8	75/63	61.6	51.0	78.3	5.09	12.1
				80/67	65.7	52.8	82.6	5.14	12.8
				85/71	69.9	54.5	86.9	5.18	13.5
	12	3.1	1.3	75/63	63.0	51.6	79.1	4.92	12.8
				80/67	67.2	53.4	83.5	4.96	13.6
				85/71	71.5	55.4	87.9	4.99	14.3
	18	6.4	2.8	75/63	64.4	51.9	79.9	4.76	13.5
				80/67	68.8	54.0	84.5	4.78	14.4
				85/71	73.5	55.5	89.4	4.80	15.3
100	9	1.8	0.8	75/63	58.3	49.6	76.4	5.55	10.5
				80/67	62.2	51.5	80.5	5.60	11.1
				85/71	66.1	53.2	84.7	5.64	11.7
	12	3	1.3	75/63	59.5	50.2	77.1	5.37	11.1
				80/67	63.6	52.0	81.3	5.41	11.8
				85/71	67.8	53.7	85.6	5.44	12.5
	18	6.2	2.7	75/63	60.9	50.5	77.9	5.20	11.7
				80/67	65.1	52.4	82.3	5.22	12.5
				85/71	69.5	54.2	86.7	5.25	13.2
110	9	1.7	0.7	75/63	54.9	48.1	74.8	6.10	9.0
				80/67	58.4	50.1	78.5	6.14	9.5
				85/71	64.9	52.2	85.3	6.21	10.4
	12	2.9	1.3	75/63	56.1	48.6	75.3	5.90	9.5
				80/67	60.0	50.1	79.4	5.93	10.1
				85/71	64.6	51.6	84.2	5.97	10.8
	18	6.1	2.6	75/63	57.1	49.5	75.7	5.71	10.0
				80/67	61.3	50.9	80.1	5.74	10.7
				85/71	65.3	53.0	84.1	5.75	11.3

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GreenSource SM Series
Residential Geothermal Heat Pumps



SM070 Cooling Performance Data - Full Load @ 1850CFM									
Entering Fluid Temp (F)	Water Flow (GPM)	Pressure Drop (FOH)	Pressure Drop (PSI)	Entering Air Temp (db/wb) F	Total Capacity (MBTUH)	Sensible Capacity (MBTUH)	Heat of Rejection (MBTUH)	Power Input (kW)	EER
50	9	2.1	0.9	75/63	58.7	45.7	66.2	2.28	25.7
				80/67	62.5	47.1	70.0	2.28	27.4
				85/71	66.4	48.4	73.9	2.27	29.2
	12	3.5	1.5	75/63	59.8	46.2	67.0	2.18	27.4
				80/67	63.9	47.5	71.0	2.17	29.5
				85/71	67.9	48.8	75.1	2.15	31.6
	18	7.3	3.2	75/63	61.1	46.6	68.0	2.08	29.4
				80/67	65.1	48.1	71.9	2.05	31.7
				85/71	69.5	49.3	76.2	2.03	34.3
60	9	2	0.9	75/63	55.9	44.6	64.3	2.55	21.9
				80/67	59.6	46.0	68.0	2.55	23.4
				85/71	63.5	47.2	71.9	2.54	24.9
	12	3.4	1.5	75/63	57.1	44.9	65.1	2.44	23.4
				80/67	61.0	46.4	68.9	2.43	25.1
				85/71	64.9	47.7	72.9	2.42	26.8
	18	7.1	3.1	75/63	58.2	45.5	65.8	2.33	25.0
				80/67	62.1	46.9	69.8	2.31	26.9
				85/71	66.2	48.3	73.8	2.29	28.9
70	9	2	0.9	75/63	53.1	43.4	62.3	2.85	18.6
				80/67	56.7	44.8	66.0	2.85	19.9
				85/71	60.3	46.2	69.6	2.85	21.1
	12	3.3	1.4	75/63	54.2	43.8	63.0	2.73	19.8
				80/67	57.8	45.3	66.7	2.73	21.2
				85/71	61.6	46.7	70.5	2.72	22.6
	18	6.9	3.0	75/63	55.3	44.2	63.9	2.62	21.1
				80/67	59.1	45.7	67.6	2.60	22.7
				85/71	63.1	47.0	71.6	2.59	24.4
80	9	1.9	0.8	75/63	50.3	42.1	60.6	3.19	15.8
				80/67	53.7	43.6	64.1	3.19	16.8
				85/71	57.2	45.0	67.7	3.20	17.9
	12	3.2	1.4	75/63	51.3	42.5	61.2	3.07	16.7
				80/67	54.7	44.1	64.7	3.06	17.8
				85/71	58.3	45.5	68.3	3.06	19.0
	18	6.6	2.9	75/63	52.3	42.9	61.9	2.95	17.7
				80/67	55.9	44.5	65.4	2.94	19.0
				85/71	59.6	46.0	69.2	2.92	20.4
85	9	1.9	0.8	75/63	48.8	41.5	59.7	3.37	14.5
				80/67	52.1	43.1	63.0	3.38	15.4
				85/71	55.4	44.5	66.4	3.39	16.3
	12	3.1	1.3	75/63	49.7	42.0	60.2	3.25	15.3
				80/67	53.2	43.4	63.8	3.25	16.4
				85/71	56.7	45.0	67.3	3.25	17.4
	18	6.5	2.8	75/63	50.7	42.4	60.8	3.13	16.2
				80/67	54.3	43.9	64.4	3.12	17.4
				85/71	57.9	45.4	68.1	3.11	18.6
90	9	1.8	0.8	75/63	47.4	40.9	58.9	3.57	13.3
				80/67	50.6	42.4	62.2	3.58	14.1
				85/71	53.9	44.0	65.5	3.59	15.0
	12	3.1	1.3	75/63	48.2	41.4	59.3	3.45	14.0
				80/67	51.5	42.9	62.7	3.45	14.9
				85/71	54.9	44.3	66.1	3.45	15.9
	18	6.4	2.8	75/63	49.2	41.7	59.9	3.32	14.8
				80/67	52.7	43.2	63.5	3.31	15.9
				85/71	56.2	44.8	67.0	3.30	17.0
100	9	1.8	0.8	75/63	44.2	39.8	57.1	4.01	11.0
				80/67	47.3	41.3	60.3	4.01	11.8
				85/71	50.5	42.8	63.5	4.03	12.5
	12	3	1.3	75/63	45.2	40.0	57.7	3.88	11.6
				80/67	48.4	41.7	60.9	3.88	12.5
				85/71	51.6	43.2	64.2	3.88	13.3
	18	6.2	2.7	75/63	46.0	40.5	58.1	3.75	12.3
				80/67	49.3	42.0	61.4	3.74	13.2
				85/71	52.8	43.6	64.9	3.73	14.1
110	9	1.7	0.7	75/63	41.1	38.4	55.5	4.51	9.1
				80/67	44.1	40.1	58.6	4.50	9.8
				85/71	47.4	41.8	61.9	4.48	10.6
	12	2.9	1.3	75/63	41.9	38.8	56.0	4.37	9.6
				80/67	45.1	40.4	59.2	4.37	10.3
				85/71	48.4	42.1	62.4	4.34	11.1
	18	6.1	2.6	75/63	42.8	39.1	56.4	4.24	10.1
				80/67	45.9	40.8	59.5	4.23	10.9
				85/71	49.3	42.4	62.9	4.20	11.7

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Antifreeze Correction							
Antifreeze Type	Antifreeze %	Cooling			Heating		WPD Correction Factor EWT 30 °F
		EWT 90 Deg.F			EWT 30 Deg. F		
		Total Cap.	Sens. Cap	Power	Htg. Cap	Power	
Water	0	1.000	1.000	1.000	1.000	1.000	1.000
	5	0.997	0.997	1.004	0.989	0.997	1.06
Propylene Glycol	10	0.994	0.994	1.006	0.986	0.995	1.125
	15	0.990	0.990	1.009	0.978	0.988	1.19
	25	0.983	0.983	1.016	0.960	0.979	1.3
Methanol	5	0.997	0.997	1.003	0.990	0.997	1.06
	10	0.996	0.996	1.005	0.979	0.993	1.1
	15	0.994	0.994	1.008	0.970	0.990	1.14
Ethanol	5	0.998	0.998	1.002	0.981	0.994	1.16
	10	0.996	0.996	1.004	0.960	0.988	1.23
	15	0.992	0.992	1.006	0.944	0.983	1.280
	25	0.986	0.986	1.009	0.917	0.974	1.4
Ethylene Glycol	5	0.997	0.997	1.003	0.993	0.998	1.06
	10	0.995	0.995	1.004	0.986	0.996	1.12
	15	0.992	0.992	1.005	0.980	0.993	1.19
	25	0.988	0.988	1.009	0.970	0.990	1.33
	30	0.985	0.985	1.012	0.965	0.987	1.4

SM024 Octave Band Sound Power Levels dB, re 10-12 Watts											
Description	Load	Center Frequency - Hz								A weighted overall (dBA)	
		63	125	250	500	1000	2000	4000	8000	"ARI-260:2011 (50Hz-10kHz)"	"ARI-260:2001 (100hz-10kHz)"
Casing Radiated	Cooling Part	79	66	60	54	53	44	38	31	59	58
	Cooling Full	80	63	60	54	54	47	40	37	59	58
	Heating Part	74	66	59	54	52	43	38	31	58	57
	Heating Full	74	65	61	53	54	45	39	34	58	58
	FAN Only	73	61	56	51	48	43	38	30	54	53
Ducted Discharge	Cooling Part	75	67	60	67	63	59	56	49	68	63
	Cooling Full	76	68	62	68	65	61	58	52	70	67
	Heating Part	77	67	60	65	63	58	56	49	67	63
	Heating Full	77	70	62	68	65	61	59	53	70	67
	FAN Only	75	67	60	66	63	59	56	49	67	63

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SM036 Octave Band Sound Power Levels dB, re 10-12 Watts											
Description	Load	Center Frequency - Hz								A weighted overall (dBA)	A weighted overall (dBA)
		63	125	250	500	1000	2000	4000	8000	"ARI-260:2011 (50Hz-10kHz)"	"ARI-260:2001 (100hz-10kHz)"
Casing Radiated	Cooling Part	75	61	53	50	45	39	34	31	53	52
	Cooling Full	75	65	55	52	49	43	41	40	56	55
	Heating Part	74	60	52	50	44	38	33	30	53	52
	Heating Full	73	66	57	51	48	42	39	36	56	55
	FAN Only	66	53	48	45	42	36	29	24	48	47
Ducted Discharge	Cooling Part	78	65	56	61	59	55	53	46	64	63
	Cooling Full	89	71	59	63	62	59	57	51	68	67
	Heating Part	79	65	56	61	59	56	53	46	64	63
	Heating Full	80	68	59	63	62	59	58	52	67	67
	FAN Only	79	66	56	61	59	55	53	46	64	63

SM048 Octave Band Sound Power Levels dB, re 10-12 Watts											
Description	Load	Center Frequency - Hz								A weighted overall (dBA)	A weighted overall (dBA)
		63	125	250	500	1000	2000	4000	8000	"ARI-260:2011 (50Hz-10kHz)"	"ARI-260:2001 (100hz-10kHz)"
Casing Radiated	Cooling Part	75	69	56	52	50	43	36	32	57	57
	Cooling Full	77	75	60	53	53	48	40	36	62	61
	Heating Part	77	69	58	52	51	43	35	31	58	57
	Heating Full	76	75	69	53	53	47	39	34	63	63
	FAN Only	69	56	56	49	48	43	35	27	53	52
Ducted Discharge	Cooling Part	82	70	59	63	63	59	58	52	67	67
	Cooling Full	88	75	64	67	66	64	62	58	72	71
	Heating Part	81	69	60	64	63	60	58	53	68	67
	Heating Full	83	74	64	67	66	64	63	58	71	71
	FAN Only	86	70	60	63	62	60	58	52	68	67

SM060 Octave Band Sound Power Levels dB, re 10-12 Watts											
Description	Load	Center Frequency - Hz								A weighted overall (dBA)	A weighted overall (dBA)
		63	125	250	500	1000	2000	4000	8000	"ARI-260:2011 (50Hz-10kHz)"	"ARI-260:2001 (100hz-10kHz)"
Casing Radiated	Cooling Part	82	66	58	55	51	45	42	37	59	57
	Cooling Full	79	72	62	58	55	49	47	42	62	61
	Heating Part	76	67	62	57	52	47	47	47	60	60
	Heating Full	82	74	63	58	56	49	46	42	63	62
	FAN Only	71	60	57	53	49	44	39	29	55	55
Ducted Discharge	Cooling Part	89	73	63	67	63	61	60	54	70	69
	Cooling Full	94	79	68	70	68	66	66	61	75	74
	Heating Part	88	74	63	67	64	61	60	54	70	70
	Heating Full	94	79	68	70	68	66	66	61	75	74
	FAN Only	87	73	63	67	64	62	60	54	70	70

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SM070 Octave Band Sound Power Levels dB, re 10-12 Watts											
Description	Load	Center Frequency - Hz								A weighted overall (dBA)	
		63	125	250	500	1000	2000	4000	8000	"ARI-260:2011 (50Hz-10kHz)"	"ARI-260:2001 (100hz-10kHz)"
Casing Radiated	Cooling Part	82	68	61	57	52	49	44	36	61	59
	Cooling Full	80	72	63	59	54	51	46	39	62	61
	Heating Part	75	71	63	59	52	48	44	40	61	61
	Heating Full	77	74	64	60	55	50	45	37	63	63
	FAN Only	73	63	61	55	51	49	44	42	58	58
Ducted Discharge	Cooling Part	92	78	67	69	68	66	64	59	74	73
	Cooling Full	97	83	72	72	73	70	69	64	78	77
	Heating Part	92	79	68	70	69	66	64	59	74	74
	Heating Full	96	82	73	73	74	70	69	64	79	78
	FAN Only	93	79	68	70	69	66	64	59	74	74

Blower Performance Data - Constant Torque High Efficiency Motor - Standard															
Models	Fan Speed	Rated Airflow	Factory setting	External Static Pressure (Inches of W.C.)											
				0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
SM024	5	950		1154	1117	1077	1034	988	938	886	830	-	-	-	-
	4	825	FL	1072	1018	966	915	866	818	772	727	-	-	-	-
	3	725		976	920	867	815	766	719	674	631	-	-	-	-
	2	650	PL/Fan only	906	844	785	730	678	630	585	544	-	-	-	-
	1	500		829	750	676	610	551	498	451	412	-	-	-	-
SM036	5	1300		1506	1469	1430	1390	1347	1300	1249	1193	1130	1061	-	-
	4	1100	FL	1425	1326	1250	1191	1143	1100	1056	1006	942	860	-	-
	3	950		1354	1233	1138	1063	1002	950	901	850	791	719	-	-
	2	800	PL/Fan only	1294	1157	1041	946	866	800	744	696	653	611	-	-
	1	750		1213	1084	976	886	812	750	698	653	612	573		
SM048	5	1800		1950	1912	1880	1852	1826	1800	1771	1737	1695	1644	-	-
	4	1600	FL	1774	1738	1703	1669	1635	1600	1562	1521	1475	1423	-	-
	3	1400		1565	1526	1493	1463	1432	1400	1363	1319	1265	1199	-	-
	2	1300	PL/Fan only	1506	1469	1430	1390	1347	1300	1249	1193	1130	1061	-	-
	1	1100		1425	1326	1250	1191	1143	1100	1056	1006	942	860	-	-
SM060	5	2200		2476	2403	2338	2283	2237	2200	2172	2153	2142	2141	2149	2166
	4	2000	FL	2170	2135	2100	2066	2033	2000	1968	1937	1907	1877	1848	1819
	3	1800		1942	1914	1886	1858	1829	1800	1770	1741	1710	1680	1649	1617
	2	1600	PL/Fan only	1766	1729	1693	1660	1629	1600	1573	1548	1526	1505	1487	1470
	1	1400		1561	1520	1483	1451	1423	1400	1381	1366	1356	1350	1349	1352
SM070	5	2500		2723	2671	2622	2578	2537	2500	2467	2437	2412	2390	2372	2358
	4	2350	FL	2566	2529	2489	2446	2399	2350	2298	2242	2184	2122	2057	1990
	3	2100		2256	2230	2202	2171	2137	2100	2060	2017	1971	1922	1871	1816
	2	1850	PL/Fan only	2004	1975	1945	1915	1883	1850	1816	1781	1745	1708	1669	1630
	1	1600		1766	1728	1693	1660	1629	1600	1573	1548	1526	1505	1486	1470

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Blower Performance Data - Variable Speed Constant CFM High Efficiency Motor - Optional														
Models	Fan Speed	Rated Airflow	Adjust	Tap	External Static Pressure (Inches of W.C.)									
					0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
SM024 Part Load	Hi	725	+	A	725	725	725	725	725	725	725	725	-	-
	Med	650	Normal	A	650	650	650	650	650	650	650	650	-	-
	Low	500	-	A	500	500	500	500	500	500	500	500	-	-
SM024 Full Load	Hi	950	+	A	950	950	950	950	950	950	950	950	-	-
	Med	825	Normal	A	825	825	825	825	825	825	825	825	-	-
	Low	725	-	A	725	725	725	725	725	725	725	725	-	-
SM036 Part Load	Hi	950	+	A	950	950	950	950	950	950	950	950	950	950
	Med	800	Normal	A	800	800	800	800	800	800	800	800	800	800
	Low	750	-	A	750	750	750	750	750	750	750	750	750	750
SM036 Full Load	Hi	1300	+	A	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300
	Med	1100	Normal	A	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
	Low	950	-	A	950	950	950	950	950	950	950	950	950	950
SM048 Part Load	Hi	1400	+	A	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
	Med	1300	Normal	A	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300
	Low	1100	-	A	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
SM048 Full Load	Hi	1800	+	A	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
	Med	1600	Normal	A	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
	Low	1400	-	A	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
SM060 Part Load	Hi	1800	+	A	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
	Med	1600	Normal	A	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
	Low	1400	-	A	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
SM060 Full Load	Hi	2200	+	A	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
	Med	2000	Normal	A	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
	Low	1800	-	A	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
SM070 Part Load	Hi	2100	+	A	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
	Med	1850	Normal	A	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
	Low	1600	-	A	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
SM070 Full Load	Hi	2500	+	A	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
	Med	2350	Normal	A	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350
		2100	-	A	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

Factory Installed Option - Electric Heaters for SM Vertical Units					
Kilowatt Heater - 208/230V	Model Number				
	SM024	SM036	SM048	SM060	SM070
Electric Heat - 3.6/4.8 kW	•	•	•	•	•
Electric Heat - 7.8/9.6 kW	•	•	•	•	•
Electric Heat - 10.8/14.4 kW		•	•	•	•
Electric Heat - 14.4/19.2 kW			•	•	•

i 10 kW w/ SM024, 15 kW w/ SM036,
20 kW w/ SM048. All require Constant CFM Variable
Speed Motor.


Factory Installed Option - Electric Heaters for SM Horizontal and CounterFlow / DownFlow Units					
Kilowatt Heater - 208/230V	Order Number				
	SM024	SM036	SM048	SM060	SM070
Electric Heat - 3.6/4.8 kW	•	•	•	•	•
Electric Heat - 7.8/9.6 kW	•	•	•	•	•
Electric Heat - 10.8/14.4 kW		•	•	•	•
Electric Heat - 14.4/19.2 kW			•	•	•


i 10 kW w/ SM024, 15 kW w/ SM036,
20 kW w/ SM048. All require Constant CFM Variable
Speed Motor.

Additional Factory Installed Options															
Description	SM024			SM036			SM048			SM060			SM070		
	VT	HZ	CF	VT	HZ	CF	VT	HZ	CF	VT	HZ	CF	VT	HZ	CF
Constant CFM Variable Speed ECM	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Constant Torque ECM	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Heat Recovery/Desuperheater/HWG	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Differential Pressure Switch	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Smart Start	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Pump Relay	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Comfort Alert	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Hot Gas Reheat	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•



Factory Installed Option - Cupro-Nickel Coil	
Model Number with Standard Copper Coil	Model Number with Cupro-Nickel Coil (To add this option to the product, change the model number 10TH Digit to an "N")
SM024-1CFC	SM024-1CFN
SM024-1HZC	SM024-1HZN
SM024-1VTC	SM024-1VTN
SM036-1CFC	SM036-1CFN
SM036-1HZC	SM036-1HZN
SM036-1VTC	SM036-1VTN
SM048-1CFC	SM048-1CFN
SM048-1HZC	SM048-1HZN
SM048-1VTC	SM048-1VTN
SM060-1CFC	SM060-1CFN
SM060-1HZC	SM060-1HZN
SM060-1VTC	SM060-1VTN
SM070-1CFC	SM070-1CFN
SM070-1HZC	SM070-1HZN
SM070-1VTC	SM070-1VTN

Field Installed Option - Communicating Thermostat		
	Model/Order Number:	7738002993
	Description:	TSTBT4H2CP - M - KA
	Features:	4 stages of heat, 2nd stage latching, Low temp alert, High temp alert, Inefficient heating and cooling operation alerts
	Application:	Communicating Thermostat Kit
	Warranty:	5 Year Limited Warranty
	Communicating Thermostat Accessories	
Model/Order Number:	7738002978	7738002979
Description:	ZONB - OTS - - - M - - A	ZONB - LAS - - - M - - A
Features:	Wired Outdoor Temperature Sensor	Leaving Air and/or Return Air Sensor

Field Installed Option - 24V Conventional Thermostat		
	Model/Order Number:	7738002984
	Description:	TSTBM3H2CPH6W - A
	Features:	Smoke detection, Semi-wireless, Filter change/clean notification, Programmable fan
	Application:	If smoke is detected in ducting, unit will stop, preventing circulation of smoke to other rooms.
	Warranty:	5 Year Limited Warranty
	24V Conventional Thermostat Accessories	
Model/Order Number:	7738002985	7738002986
Description:	TSTBM - RRS - - TW - A	TSTBM - OTS - - TW - A
Features:	Wireless Remote Room Sensor Thermostat	Wireless Outdoor Temperature Sensor

Field Installed Option - SmartStart Accessory															
Order Number	SM024			SM036			SM048			SM060			SM070		
	VT	HZ	CF	VT	HZ	CF	VT	HZ	CF	VT	HZ	CF	VT	HZ	CF
7738003200	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Where Used															

Field Installed Accessory - Internally Mounted Electric Heat Kits						
Model Number	Kilowatt Heater - 208/230V	Availability per Unit				
		SM024	SM036	SM048	SM060	SM070
HK050-1201	Electric Heat - 3.6/4.8 kW	●	●	●	●	●
HK100-1201	Electric Heat - 7.8/9.6 kW	●*	●	●	●	●
HK150-1201	Electric Heat - 10.8/14.4 kW		●*	●	●	●
HK200-1201	Electric Heat - 14.4/19.2 kW			●*	●	●

* ECM Constant Air Flow motor required with use of electric heat kit.



WARNING:
These electric heaters can only be installed in factory default blower configuration only.

Field Installed Accessory - Duct Mounted Electric Heaters 208/230V				
Kilowatt Heater - 208/230V	Part Number	Nominal Dimensions (inches)	Duct Flange Connection (Inches)	Min. CFM Required
Duct Heater 5 kW	7738002745	14 x 14	13.75 x 13.75	600
Duct Heater 5 kW	7738002746	14 x 16	13.75 x 13.75	600
Duct Heater 20 kW	7738002753	18 x 18	17.75 x 17.75	2000
Duct Heater 15 kW	7738002752	18 x 18	17.75 x 17.75	1400
Duct Heater 10 kW	7738002751	18 x 18	17.75 x 17.75	800
Duct Heater 5 kW	7738002750	18 x 18	17.75 x 17.75	600
Duct Heater 10 kW	7738002749	16 x 16	17.75 x 17.75	800
Duct Heater 10 kW	7738002747	14 x 16	13.75 x 13.75	800
Duct Heater 5 kW	7738002748	16 x 16	17.75 x 17.75	600



It is recommended to use a seven (7) conductor cable for thermostat interface.



It is required for the duct mounted heater to have an independent power supply.



In fiber glass duct systems, a metal sleeve **MUST** be used to insert the support the heater.

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Field Installed Option - 2" MERV 13 Filters (Comes Standard with Unit)																
Order Number	Filter Size	SM024			SM036			SM048			SM060			SM070		
		VT	HZ	CF	VT	HZ	CF	VT	HZ	CF	VT	HZ	CF	VT	HZ	CF
Quantity Need per Unit																
8733920333	16 X 30				2		2	2		2						
8733911386	18 X 18		2													
8733911390	18 X 20											3			3	
8733911388	20 X 24					2			2							
8733911389	20 X 30										2		2	2		2
8733920329	24 X 24	1		1												

Field Installed Option - Swivel Connector Kit (two connectors per package)																
Order Number	Type and Size	SM024			SM036			SM048			SM060			SM070		
		VT	HZ	CF	VT	HZ	CF	VT	HZ	CF	VT	HZ	CF	VT	HZ	CF
Where Used																
8-733-927-158	Male 3/4" NPT	•	•	•												
7738003201	Male 1" NPT				•	•	•	•	•	•	•	•	•	•	•	•