

Greensource CDI series

Model SM Rev C

Residential Geothermal Heat Pump

Engineering
Submittal
Sheet



BOSCH

Overview and Certifications



Standard Features and Field Installed Accessories

Standard Features

- ▶ **White Pre-Painted Sheet Metal Cabinets**
 - Appliance White for a Clean - Durable Look
 - Door Handles - for Easy Removal for Service
- ▶ **High Efficiency**
 - Up to 4.7 COP @ PL GLHP
 - Up to 4.3 COP @ FL GLHP
 - Up to 30.0 EER @ PL GLHP
 - Up to 21.0 EER @ FL GLHP
- ▶ **Electronically Commutated Motors**
 - Constant CFM Variable Speed High Efficiency ECM
- ▶ **Closed Cell Foam (Fiber Free) Insulation**
 - Improved Indoor Air Quality
 - Floating Base Pan
- ▶ **Reliability - Durability - Serviceability**
 - Evaporator Coil - Tin-plated copper tubing with high-tech polymer coated aluminum fins (DuoGuard™)*
 - Alert Communicating Printed Circuit Board
- ▶ **Bosch EasyStart App & Local Wireless Communication**
 - Includes a WiFi Module (WIM) which allows a local wireless connection from the unit to the EasyStart application. The EasyStart App is required to start-up, commission, and troubleshoot the unit.
- ▶ **Standard Warranty**
 - 10 Year All Parts Limited Warranty
 - 10 Year Labor Limited Warranty

* Available only for Vertical models. For Horizontal models, tin-plated copper tubing only is available.



Standard Features and Field Installed Accessories continued..

► Heat Pump Control (HPC) Board

- Configurable Variable Speed Blower for Heat/Cool/Ventilation
- Refrigeration Safety protection include:
 - Low / High Pressure
 - Low Loop Water Protection Control
 - Evaporator Freeze Protection
 - Coaxial Coil/Condenser Freeze Protection
- Compressor Operation Protection
- Water Flow Protection
- Brown Out Protection
- Blower Fault Protection
- Alarm Output
- Condensate Overflow Detection
- Thermostat Interface with Humidity/Dehumidification Input
- Smart HRP Control
- Anti-Short Cycling
- Random Start of Unit
- Loop Pump Control (Pump/Valve Relay)
- Auxiliary Output (Electric Heat)
- Critical Diagnostic Information (Status) LED
- Heartbeat LED
- Power LED

► Domestic Hot Water Heat Recovery Package (Desuperheater)

- Utilizes the compressor's superheated discharge gas to preheat domestic hot water.
- The HRP reduces the amount of electricity or fossil fuels otherwise used for hot water.

► Cupro-nickel Coils

- Cupro-Nickel coils are recommended for applications where the water is of lower quality. Only coils are cupro-nickel. All fittings and straight lengths of pipe will be copper.

Field Installed Accessories

► Thermostats

- Bosch thermostats are fully customized to meet your individual needs. Bosch offers communicating thermostats that can display alert messages without having to go to the unit.
- Passive dehumidification can be achieved via ECM fan controls paired with optional Bosch thermostat with humidity control

► Internally Mounted Electric Heater Kits

- A field installed option for back up heat. Available in 5, 10, 15, or 20 kW depending on the size of the geothermal heat pump.

► Stainless Steel Hose Kits

- Available in various lengths and diameters depending on the need for your application.

► SmartStart Assist Kit

- An option which provides a means of reducing inrush currents at compressor startup. Light flickering is eliminated, and a smooth start is achieved.

► Horizontal Discharge Air Conversion Kit

- The horizontal conversion kit allows end blow to straight through conversion of discharge air, as the straight through configuration for horizontal is no longer available.

► Externally Mounted Duct Heater Kits

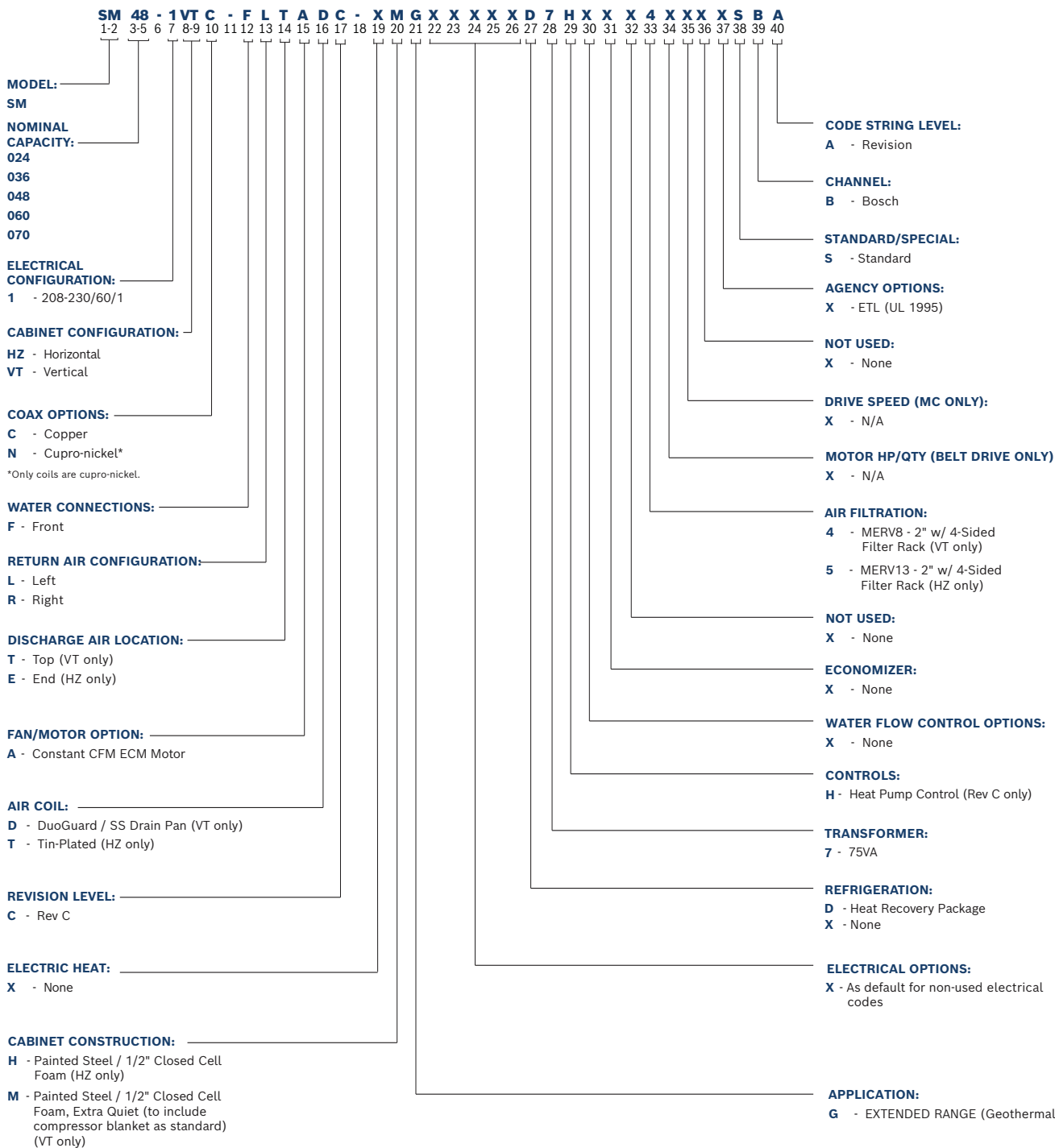
► Flow Center Kits

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



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Model Nomenclature



Greensource SM Rev C 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	Oz.	45	73	75	98	94
Refrigeration Charge HZ only	Oz.	58	85	77	100	114
Max Water Working Pressure	PSIG/kPa	450/3100	450/3100	450/3100	450/3100	450/3100
Max Water Working Pressure w/ Swivel fittings	PSIG/kPa	125/861	125/861	125/861	125/861	125/861
Fan Motor and Blower						
Fan Motor Type/Speeds	—	ECM Const Air Flow	ECM Const Air Flow	ECM Const Air Flow	ECM Const Air Flow	ECM Const Air Flow
Fan Motor (HP)	HP	0.33	0.75	0.75	1.00	1.00
Blower Wheel Size VT	Inch (Dia. x W)	9 X 7	11 X 11	11 X 11	11 X 11	11 X 11
Blower Wheel Size HZ only	Inch (Dia. x W)	10 X 8	11 X 9	11 X 9	11 X 11	11 X 11
Water Connection Size						
FPT VT (Factory brazed non-swivel type)	Inch	3/4	1.0	1.0	1.0	1.0
FPT HZ only (Factory brazed swivel)	Inch	1.0	1.0	1.0	1.0	1.0
Field installed Swivel fittings (Shipped loose with unit)	Inch	1.0	1.0	1.0	1.0	1.0
Coaxial Coil Volume VT	Gal	0.43	0.73	0.64	1.08	1.08
Coaxial Coil Volume HZ only(gal)	Gal	0.33	1.18	0.62	1.07	1.12
Vertical Cabinet						
Air Coil Dimensions (H x W)	Inch (H x W)	24 x 21	32x28.3	32x28.3	36x28.3	36x28.3
Air Coil Fin Density	Fins/Inch	14	14	14	14	14
Nominal size of Standard Filter - 2" MERV 8 (L x H)	Inch (L x H)	24 X 24	16 X 30 (2)	16 X 30 (2)	20 X 30 (2)	20 X 30 (2)
Weight - Operating (lbs)*	lbs	220	360	340	375	375
Weight - Shipping (lbs)*	lbs	300	460	450	500	500
Horizontal Cabinet						
Air Coil Dimensions (H x W)	Inch (H x W)	18 X 31.5	20 X 42	20 X 42	20 X 49	20 X 49
Air Coil Fin Density	Fins/Inch	14	14	14	14	14
Nominal size of Standard Filter - 2" MERV13 (L x H)	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

* This data reflects standard unit weights only. Additional options may cause differences in listed weights.

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



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ASHRAE/AHRI/ISO 13256-1. English (I-P) Units

Models	Coax Coil	Orientation	Fluid Flow Rate	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 41 °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	Copper/CuNi	VT	6	Full	26200	16.20	30300	5.60	29400	24.85	24700	4.90	26900	18.90	18700	4.10
	Copper/CuNi	VT	6	Part	19600	18.30	22800	6.50	22400	32.15	18200	5.30	21300	29.90	15500	4.50
	Copper	HZ	6	Full	25500	16.60	29200	5.60	29000	25.75	23500	5.00	26600	19.90	18000	3.70
	Copper	HZ	6	Part	18500	18.40	21200	6.20	21700	31.85	16700	5.20	21000	27.00	14400	4.10
	CuNi	HZ	6	Full	25500	15.65	29200	5.60	29000	24.10	23500	5.00	26600	18.30	18000	3.70
	CuNi	HZ	6	Part	18500	17.50	21200	6.40	21700	29.90	16700	5.20	21000	25.70	14400	4.10
SM036	Copper/CuNi	VT	10	Full	39300	18.60	46300	6.20	44300	27.10	36700	5.40	40200	21.00	28200	4.30
	Copper/CuNi	VT	10	Part	28900	20.40	33100	7.20	32800	35.10	26000	5.60	31600	30.00	22000	4.70
	Copper/CuNi	HZ	9	Full	38100	17.45	42800	5.10	43300	26.00	35900	4.55	39900	20.20	28400	3.95
	Copper/CuNi	HZ	9	Part	27500	19.90	31000	5.60	31300	33.20	25200	4.65	30000	26.00	22400	4.10
SM048	Copper/CuNi	VT	12	Full	50500	15.95	60300	5.45	56900	24.30	49200	4.90	51800	18.60	38200	4.20
	Copper/CuNi	VT	12	Part	37100	17.80	44200	6.20	42600	31.50	35500	5.10	40100	26.40	30600	4.40
	Copper	HZ	12	Full	49200	16.10	56100	5.40	55300	24.40	46300	4.80	51300	18.75	36900	4.10
	Copper	HZ	12	Part	36700	18.30	40900	6.30	42000	31.80	33700	5.30	39900	26.85	29800	4.70
	CuNi	HZ	12	Full	49200	15.50	56100	5.30	55300	23.80	46300	4.80	51300	18.00	36900	4.10
	CuNi	HZ	12	Part	36700	17.50	40900	6.10	42000	30.80	33700	5.00	39900	26.00	29800	4.50
SM060	Copper/CuNi	VT	15	Full	62500	15.35	78300	5.40	71600	24.00	62400	4.70	63900	18.60	48600	4.00
	Copper/CuNi	VT	15	Part	46400	17.70	57600	6.00	53500	30.60	45900	4.90	51100	25.20	39900	4.40
	Copper/CuNi	HZ	15	Full	63800	15.45	73300	4.80	70200	22.30	60300	4.35	65100	17.60	45500	3.70
	Copper/CuNi	HZ	15	Part	47500	17.20	53600	5.65	53300	29.30	44300	4.65	51600	25.00	37200	4.10
SM070	Copper/CuNi	VT	18	Full	69700	14.30	88900	5.00	78900	22.10	72600	4.40	71500	17.30	56000	3.70
	Copper/CuNi	VT	18	Part	52900	16.40	67700	5.50	61200	26.90	53800	4.60	58100	23.30	46100	4.10
	Copper/CuNi	HZ	18	Full	71600	14.10	84000	4.80	78700	21.20	70000	4.35	73700	16.40	55300	3.60
	Copper/CuNi	HZ	18	Part	55200	15.30	64900	5.20	60800	26.40	48400	4.45	60300	22.00	46900	4.00

ENERGY STAR Rated Products

Electrical Data (ECM Blower Motor)

Models	Voltage Code	Voltage/Phase/Hz	Voltage Min/Max	Compressor			Total Unit Variable Speed Constant CFM High Efficiency Motor			
				QTY	RLA	LRA	FLA	Min Circuit Amps	MOP Calculation	Max Fuse/HACR
SM024	1	208-230/1/60	197/253	1	11.7	58.3	2.8	17.4	29.0	25
SM036	1	208-230/1/60	197/253	1	15.6	83.0	6.8	26.3	41.9	40
SM048	1	208-230/1/60	197/253	1	21.2	104.0	6.8	33.2	54.4	50
SM060	1	208-230/1/60	197/253	1	26.9	139.9	9.1	42.7	69.6	60
SM070	1	208-230/1/60	197/253	1	29.7	179.2	9.1	46.2	75.9	70



Values shown above do not include electric heat option.



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

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1st Data plate for units with EH field installed kit - compressor power connection

Models	Voltage Code	Voltage/Phase/Hz	Voltage Min/Max	Compressor					
				QTY	RLA	LRA	Min Circuit Amps	MOP Calculation	Max Fuse/HACR
SM024	1	208-230/1/60	197/253	1	11.7	58.3	14.6	26.2	25
SM036	1	208-230/1/60	197/253	1	15.6	83.0	19.5	35.1	35
SM048	1	208-230/1/60	197/253	1	21.2	104.0	26.4	47.6	45
SM060	1	208-230/1/60	197/253	1	26.9	139.9	33.6	60.5	60
SM070	1	208-230/1/60	197/253	1	29.7	179.2	37.1	66.8	60

2nd data plate for units with EH field installed kit - Constant Airflow ECM motor

Model	Electric Heater Rated kW	Stage	Heater Watts		Heater Amps		Motor FLA (A)	Circuit	MCA		MOP	
			240V	208V	240V	208V		Fuses	240V	208V	240V	208V
SM024	4.8	1	4800	3600	20	17.3	2.8	-	28.5	25.1	30	30
	9.6	1	9600	7200	40	34.6	2.8	-	53.5	46.8	30	50
SM036	4.8	1	4800	3600	20	17.3	6.8	-	33.5	30.1	35	35
	9.6	1	9600	7200	40	34.6	6.8	-	58.5	51.8	60	60
	14.4	2	14400	10800	60	51.9	6.8	F1/F2 F3/F4	83.5	73.4	90	80
SM048	4.8	1	4800	3600	20	17.3	6.8	-	33.5	30.1	35	35
	9.6	1	9600	7200	40	34.6	6.8	-	58.5	51.8	60	60
	14.4	2	14400	10800	60	51.9	6.8	F1/F2 F3/F4	83.5	73.4	90	80
	19.2	2	19200	14000	80	69.2	6.8	F1/F2 F3/F4	108.5	95.0	110	100
SM060	4.8	1	4800	3600	20	17.3	9.1	-	36.4	33.0	40	35
	9.6	1	9600	7200	40	34.6	9.1	-	61.4	54.6	70	60
	14.4	2	14400	10800	60	51.9	9.1	F1/F2 F3/F4	86.4	76	90	80
	19.2	2	19200	14000	80	69.2	9.1	F1/F2 F3/F4	111.4	97.9	125	100
SM070	4.8	1	4800	3600	20	17.3	9.1	-	36.4	33.0	40	35
	9.6	1	9600	7200	40	34.6	9.1	-	61.4	54.6	70	60
	14.4	2	14400	10800	60	51.9	9.1	F1/F2 F3/F4	86.4	76	90	80
	19.2	2	19200	14000	80	69.2	9.1	F1/F2 F3/F4	111.4	97.9	125	100

The EasyStart App is required to start up and commission all SM rev C units. The EasyStart App will work on devices that meet the following

EasyStart App Device Compatibility

Device	Required Specifications
Tablets	Android: Android version 4.1 or above, RAM 1GB or above, Display size 7" or above
	IOS: iOS 8 or above
Laptops	Windows: Windows 7 or 10 only

* Refer to the IOM for specific details on how to download and use the EasyStart app with your unit.

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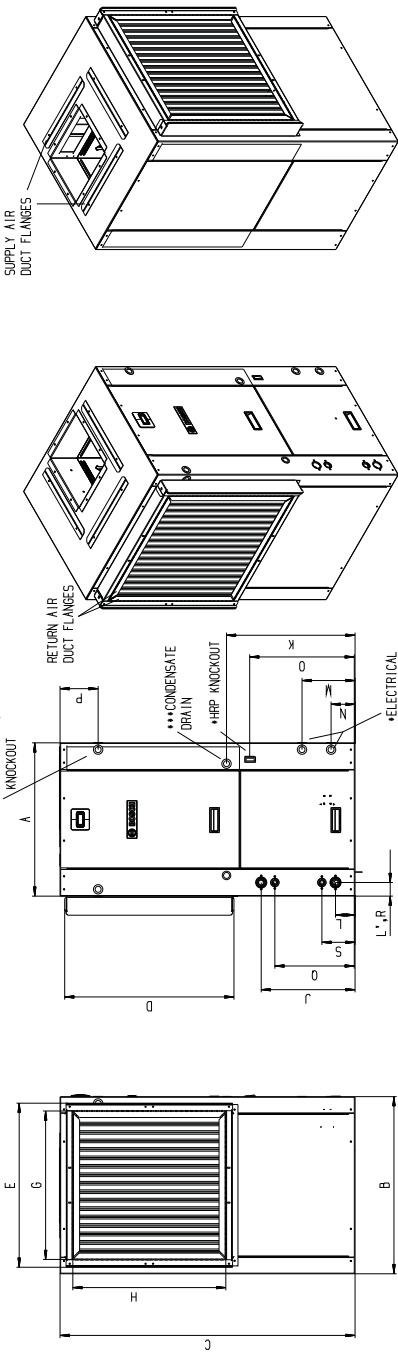


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SM-VT Dimensions and Connections

MODEL	A	B	C	D	E	F	G	H	J	K	L	L'	M	N	O	P	Q	R	S	T	U	U'	V	V'	W	W'	W''	W'''	FILTER SIZE (Qty/Unit)
	WIDTH	DEPTH	HEIGHT	HEIGHT	WIDTH	DEPTH	WIDTH	HEIGHT	WATER DRAIN OUT PORT	WATER IN	WATER IN	ELECTRICAL KNOCKOUT	HP KNOCKOUT	HP KNOCKOUT	HEATER KNOCKOUT	HP KNOCKOUT	Q	R	S	T	U	U'	V	V'	W	W'	W''	W'''	
SM024-VT	22.5	26	43.3	24.4	24.1	2.8	21.8	22.5	13.8	18.9	2.9	2	7.8	3.5	15.5	5.6	11.8	2	4.9	6.1	13.7	13.7	1.4	3.1	15.6	13.1	3/4"	F.P.T.	24x24x2(1)
SM036-VT	24.5	33.3	54	32.4	30.6	2.8	28.3	30.4	16.5	25.9	2.9	2	7.8	3.5	15.5	5.6	13.5	2	5.9	8.1	17.8	17.8	1.4	4	17.6	15.6	1"	F.P.T.	16x30x2(2)
SM048-VT	24.5	33.3	54	32.4	30.6	2.8	28.3	30.4	16.5	25.9	2.9	2	7.8	3.5	15.5	5.6	13.5	2	5.9	8.1	17.8	17.8	1.4	4	17.6	15.6	1"	F.P.T.	16x30x2(2)
SM060-VT	26	33.3	60.1	40.8	30.6	2.8	28.4	36.9	15.3	23.9	2.9	2	7.8	3.5	15.5	5.6	12.3	2	5.9	8.1	17.8	17.8	2	5.4	17.6	15.6	1"	F.P.T.	20x30x2(2)
SM070-VT	26	33.3	60.1	40.8	30.6	2.8	28.4	36.9	15.3	23.9	2.9	2	7.8	3.5	15.5	5.6	12.3	2	5.9	8.1	17.8	17.8	2	5.4	17.6	15.6	1"	F.P.T.	20x30x2(2)

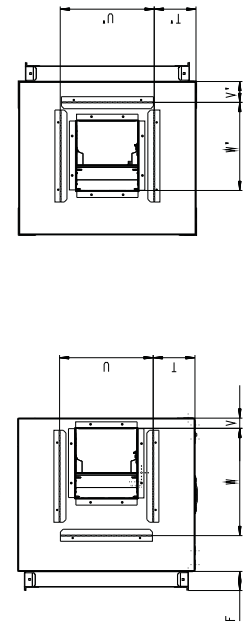
(FIELD INSTALLED
ELECTRIC HEAT KIT)



LEFT HAND RETURN SHOWN

RIGHT HAND RETURN

LEFT HAND RETURN



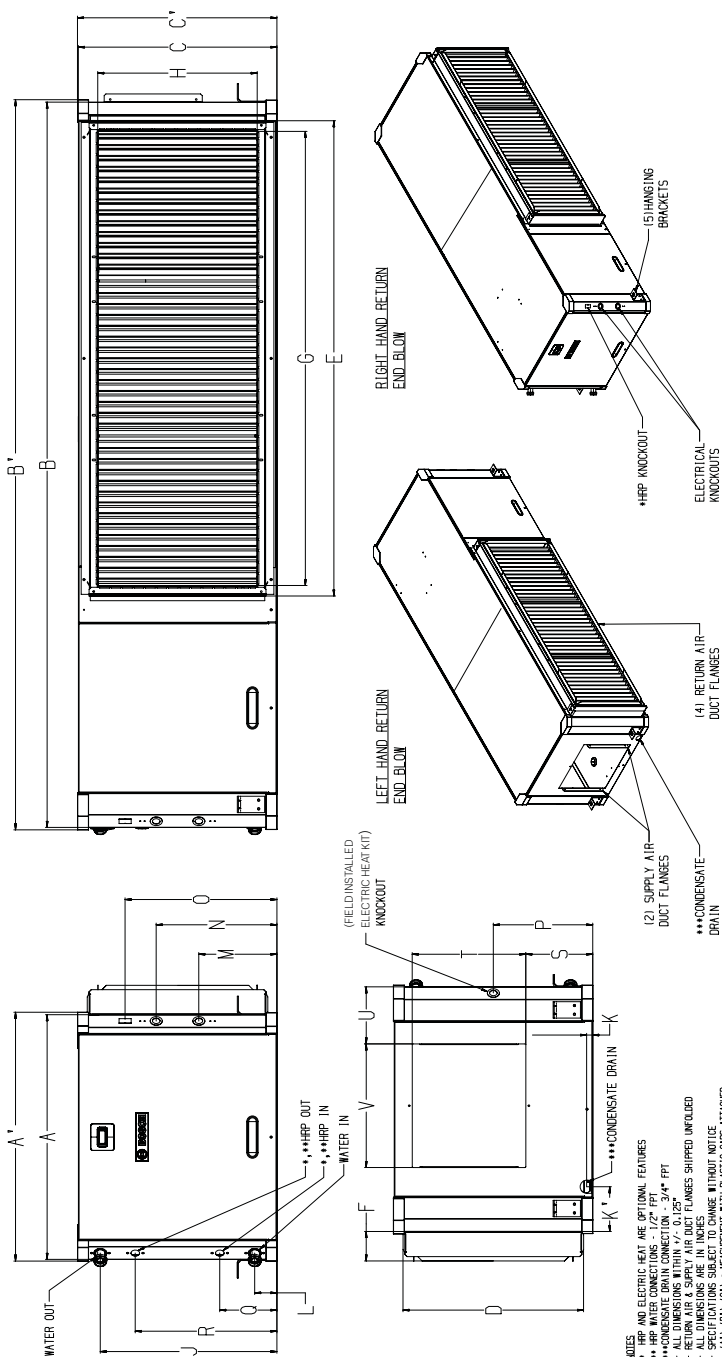
- NOTES:
- HRP & ELECTRICAL HEAT ARE OPTIONAL FEATURES
 - HRP WATER CONNECTIONS - 1/2" FPT
 - CONDENSATE DRAIN CONNECTION - 3/4" FPT
 - ALL DIMENSIONS WITHIN +/- 0.125"
 - RETURN & SUPPLY AIR DUCT FLANGES SHIPPED UNFOLDED
 - ALL DIMENSIONS ARE IN INCHES
 - SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
 - SWIVEL TYPE WATER FITTINGS PROVIDES 1.5" FROM PANEL
 - UNIT SHIPPED WITH SWIVEL FITTING 1.00" FPT FOR FIELD INSTALLATION



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SM-HZ End Blow Dimensions and Connections

Model	A (A'') WIDTH	B (B'') DEPTH	C (C'') HEIGHT	D	E	F	G	H	I	J	K (K'') DRAIN PORT	L	M	N	O	P	Q	R	S (S/H'') SUPPLY AIR DUCT	T (U/H)	U' (L/H)	V	CONNECTIONS (SW/VEL TYPE)	FILTER SIZE	
SM024-HZ	25.1 (25.5)	64.1 (64.5)	19.7 (19.8)	18.7	36.4	3.4	46.0	16.2	17.2	1.3	5.1	2.5	7.4	12.3	15.9	9.9	6.5	13.2	6.5	2.0	10.0	7.5	7.5	10-8	18X18X2 (2)
SM036-HZ	28.0 (28.4)	76.0 (76.4)	22.7 (22.8)	20.7	48.4	3.4	46.0	18.2	20.2	1.3	5.1	2.5	8.9	13.8	17.4	11.4	6.5	16.2	7.5	2.0	11.7	9.0	7.7	13.0	20X24X2 (2)
SM048-HZ	28.0 (28.4)	76.0 (76.4)	22.7 (22.8)	20.7	48.4	3.4	46.0	18.2	20.2	1.3	5.1	2.5	8.9	13.8	17.4	11.4	6.5	16.2	7.5	2.0	11.7	9.0	7.7	13.0	20X24X2 (2)
SM060-HZ	28.0 (28.4)	83.0 (83.4)	22.7 (22.8)	20.7	54.4	3.4	52.0	18.3	20.2	1.3	5.1	2.5	8.9	13.8	17.4	11.4	6.5	16.2	7.5	2.0	14.2	6.5	6.5	13.0	18X20X2 (3)
SM070-HZ	28.0 (28.4)	83.0 (83.4)	22.7 (22.8)	20.7	54.4	3.4	52.0	18.3	20.2	1.3	5.1	2.5	8.9	13.8	17.4	11.4	6.5	16.2	7.5	2.0	14.2	6.5	6.5	13.0	18X20X2 (3)



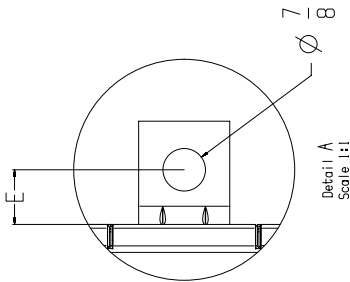
SUPPLY AIR CONFIGURATION: END BLOW

- NOTES:
 ** HP AND ELECTRIC HEAT ARE OPTIONAL FEATURES
 *** HP WATER CONNECTIONS - 1/2" FPT
 **** CHARGEABLE BURN CONNECTION - 3/4" FPT
 ALL DIMENSIONS ARE IN INCHES
 RETURN AIR & SUPPLY AIR DUCT CLASSES SHIPPED UNFOLED
 SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
 AIR CONFIGURATIONS: UNITS CAN BE FIELD ATTACHED
 AND 0.5" TO THE HEIGHT FOR BASE SUPPORT RAILS NOT SHOWN
 AIR CAN BE FIELD CONNECTED BETWEEN END BLOW AND STRAIGHT THROUGH SUPPLY
 UNIT CONFIGURATIONS: UNITS CAN BE FIELD CONNECTED TO SUPPLY
 PLANE. CONTACT CUSTOMER SERVICE FOR FURTHER INFORMATION.
 SNAKE TYPE: WATER FITTING PORTRAILES 1/2" FROM DIST.



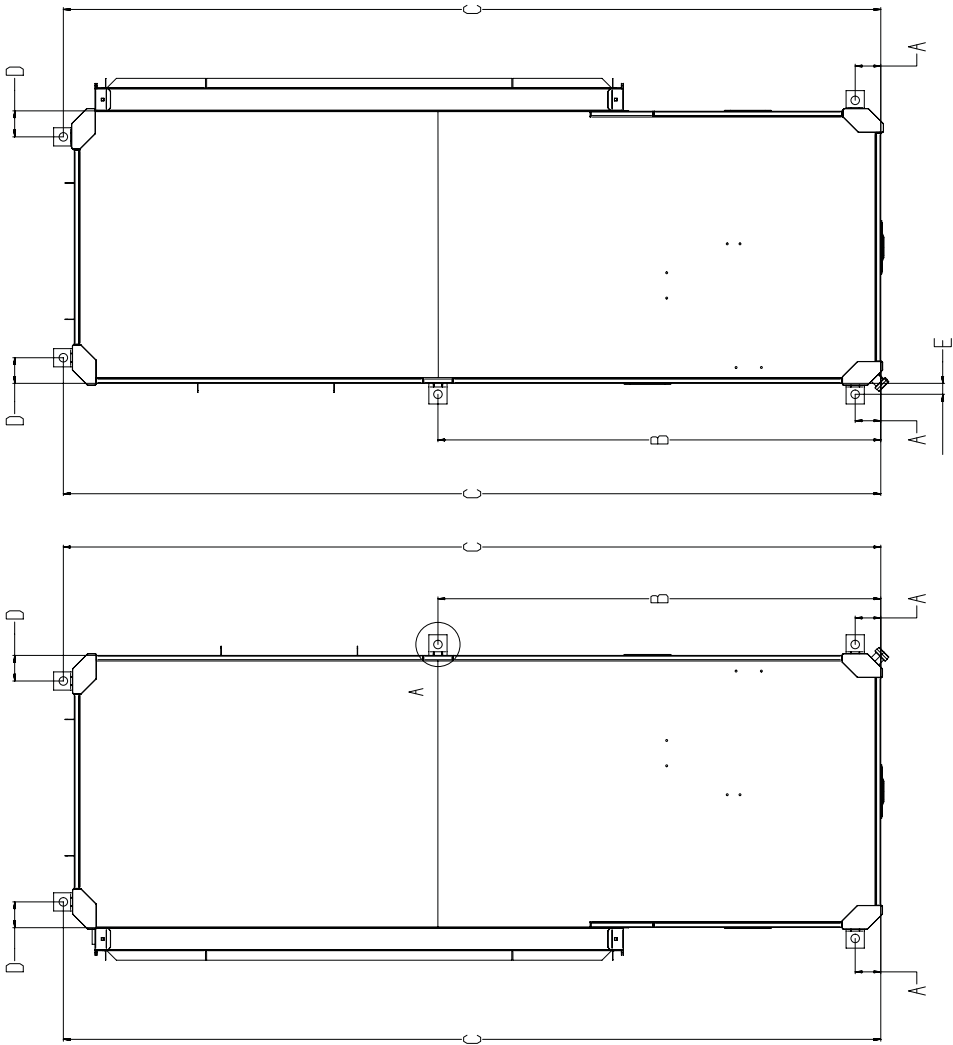
SM-HZ Hanging Bracket Dimensions and Connections

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,
 CONFIGURATION AND BRACKET POSITIONS

HANGING BRACKET LOCATION SPECIFICATIONS



GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



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SM024 HZ Full Load Cooling Performance Data - 930 CFM								
Entering Fluid Temp (°F)	Water Flow (GPM)	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	0.7	75/63	26.4	21.6	31.2	1.4	19.0
			80/67	28.1	22.2	32.9	1.4	19.8
			85/71	29.7	22.9	34.7	1.4	20.6
	4.5	1.2	75/63	27.5	21.9	31.9	1.3	21.2
			80/67	29.2	22.6	33.7	1.3	22.1
			85/71	30.9	23.2	35.6	1.3	23.2
	6	2.4	75/63	28.0	22.2	32.3	1.2	22.4
			80/67	29.7	22.8	34.1	1.3	23.5
			85/71	31.6	23.6	36.0	1.3	24.8
60	3	0.7	75/63	25.3	21.0	30.4	1.5	16.7
			80/67	26.8	21.7	32.0	1.5	17.4
			85/71	28.4	22.5	33.7	1.6	18.2
	4.5	1.2	75/63	26.2	21.4	31.0	1.4	18.5
			80/67	27.8	22.1	32.8	1.4	19.4
			85/71	29.6	22.7	34.6	1.5	20.3
	6	2.4	75/63	26.7	21.6	31.4	1.4	19.5
			80/67	28.4	22.4	33.1	1.4	20.5
			85/71	30.2	22.9	35.0	1.4	21.6
70	3	0.7	75/63	24.0	20.7	29.6	1.6	14.6
			80/67	25.5	21.2	31.2	1.7	15.3
			85/71	27.0	22.0	32.8	1.7	16.0
	4.5	1.2	75/63	24.9	21.0	30.2	1.5	16.1
			80/67	26.5	21.7	31.8	1.6	17.0
			85/71	28.2	22.2	33.6	1.6	17.8
	6	2.3	75/63	25.4	21.2	30.5	1.5	17.0
			80/67	27.1	21.8	32.2	1.5	17.9
			85/71	28.8	22.5	34.0	1.5	18.9
80	3	0.7	75/63	22.8	20.0	28.8	1.8	12.8
			80/67	24.2	20.7	30.3	1.8	13.4
			85/71	25.7	21.3	31.9	1.8	14.0
	4.5	1.2	75/63	23.7	20.4	29.3	1.7	14.1
			80/67	25.2	21.2	30.9	1.7	14.8
			85/71	26.8	21.8	32.6	1.7	15.6
	6	2.3	75/63	24.1	20.7	29.6	1.6	14.7
			80/67	25.7	21.3	31.3	1.7	15.6
			85/71	27.3	22.1	33.0	1.7	16.4
90	3	0.7	75/63	21.6	19.5	28.1	2.0	11.0
			80/67	22.9	20.2	29.5	2.0	11.6
			85/71	24.3	21.1	31.0	2.0	12.2
	4.5	1.2	75/63	22.3	20.0	28.5	1.8	12.1
			80/67	23.8	20.7	30.1	1.9	12.8
			85/71	25.3	21.3	31.7	1.9	13.5
	6	2.2	75/63	22.8	20.0	28.8	1.8	12.7
			80/67	24.3	20.9	30.3	1.8	13.5
			85/71	25.8	21.6	32.0	1.8	14.2
100	3	0.6	75/63	20.3	19.1	27.4	2.1	9.5
			80/67	21.6	19.9	28.8	2.2	10.0
			85/71	23.0	20.5	30.3	2.2	10.5
	4.5	1.2	75/63	21.0	19.4	27.8	2.0	10.4
			80/67	22.5	20.1	29.3	2.0	11.0
			85/71	24.0	20.8	30.8	2.1	11.7
	6	2.1	75/63	21.4	19.5	28.0	2.0	10.9
			80/67	22.9	20.2	29.5	2.0	11.6
			85/71	24.4	20.9	31.1	2.0	12.3
110	3	0.6	75/63	19.0	18.7	26.9	2.4	8.1
			80/67	20.3	19.3	28.2	2.4	8.5
			85/71	21.6	20.0	29.6	2.4	9.0
	4.5	1.2	75/63	19.7	18.9	27.1	2.2	8.8
			80/67	21.1	19.7	28.6	2.2	9.4
			85/71	22.5	20.5	30.1	2.3	10.0
	6	2.1	75/63	20.1	19.1	27.3	2.2	9.2
			80/67	21.5	19.8	28.8	2.2	9.8
			85/71	22.9	20.6	30.3	2.2	10.5

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



SM024 HZ Full Load Heating Performance Data - 930 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
30	0.7	60	17.7	14.0	1.4	3.71
		70	17.5	12.7	1.5	3.35
		80	17.4	12.2	1.7	3.02
	1.2	60	18.9	14.5	1.4	3.91
		70	18.5	13.8	1.6	3.49
		80	18.2	13.0	1.7	3.14
	2.5	60	19.4	15.2	1.4	3.99
		70	19.0	14.3	1.6	3.57
		80	18.7	13.4	1.7	3.21
40	0.7	60	20.1	16.4	1.4	4.09
		70	19.7	15.2	1.6	3.66
		80	19.6	14.2	1.7	3.32
	1.2	60	21.5	17.5	1.5	4.31
		70	20.9	15.9	1.6	3.84
		80	20.3	15.1	1.7	3.41
	2.5	60	21.4	16.9	1.5	4.29
		70	21.5	16.6	1.6	3.92
		80	21.1	15.8	1.8	3.51
50	0.7	60	22.6	18.5	1.5	4.46
		70	21.8	16.9	1.6	3.95
		80	21.3	15.9	1.8	3.54
	1.2	60	24.0	20.1	1.5	4.65
		70	23.0	18.3	1.6	4.11
		80	22.5	16.7	1.8	3.69
	2.4	60	24.8	20.5	1.5	4.77
		70	23.7	18.6	1.7	4.21
		80	23.9	18.4	1.8	3.86
60	0.7	60	24.9	20.4	1.5	4.77
		70	24.5	19.2	1.7	4.3
		80	24.4	19.0	1.8	3.91
	1.2	60	26.7	21.9	1.6	5.03
		70	26.4	21.4	1.7	4.54
		80	25.2	19.7	1.8	4.01
	2.4	60	27.7	22.4	1.6	5.16
		70	26.9	22.3	1.7	4.59
		80	26.7	21.3	1.9	4.19
70	0.7	60	27.8	22.8	1.6	5.16
		70	28.0	22.9	1.7	4.76
		80	27.1	21.6	1.9	4.24
	1.2	60	30.2	25.7	1.6	5.48
		70	29.0	23.6	1.7	4.87
		80	28.8	22.7	1.9	4.44
	2.3	60	30.7	25.8	1.6	5.52
		70	30.4	25.3	1.8	5.05
		80	29.7	24.8	1.9	4.54
80	0.7	60	31.3	26.8	1.6	5.61
		70	30.0	24.8	1.8	4.99
		80	30.0	24.2	1.9	4.59
	1.2	60	33.1	27.8	1.7	5.84
		70	32.7	26.8	1.8	5.33
		80	31.9	26.4	2.0	4.78
	2.3	60	34.1	29.6	1.7	5.94
		70	33.9	29.0	1.8	5.45
		80	32.5	26.8	2.0	4.85

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM024 HZ Part Load Cooling Performance Data - 750 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	0.7	75/63	20.6	17.1	23.7	0.9	23.1
			80/67	22.0	17.7	25.0	0.9	24.8
			85/71	23.3	18.2	26.4	0.9	26.5
	4.5	1.2	75/63	21.3	17.4	24.2	0.8	25.3
			80/67	22.7	17.9	25.6	0.8	27.3
			85/71	24.1	18.4	27.0	0.8	29.4
	6	2.4	75/63	21.6	17.6	24.4	0.8	26.5
			80/67	23.0	18.1	25.9	0.8	28.7
			85/71	24.5	18.6	27.3	0.8	31.0
60	3	0.7	75/63	19.6	16.7	23.0	1.0	19.7
			80/67	20.8	17.3	24.2	1.0	21.1
			85/71	22.1	17.9	25.5	1.0	22.6
	4.5	1.2	75/63	20.2	16.9	23.4	0.9	21.7
			80/67	21.6	17.5	24.7	0.9	23.4
			85/71	22.9	18.1	26.1	0.9	25.1
	6	2.4	75/63	20.5	17.1	23.6	0.9	22.7
			80/67	21.9	17.6	25.0	0.9	24.6
			85/71	23.3	18.3	26.4	0.9	26.5
70	3	0.7	75/63	18.5	16.3	22.2	1.1	16.7
			80/67	19.7	16.8	23.5	1.1	17.9
			85/71	20.9	17.5	24.7	1.1	19.1
	4.5	1.2	75/63	19.1	16.5	22.6	1.0	18.3
			80/67	20.4	17.2	23.9	1.0	19.7
			85/71	21.7	17.6	25.2	1.0	21.2
	6	2.3	75/63	19.4	16.6	22.8	1.0	19.2
			80/67	20.7	17.3	24.1	1.0	20.7
			85/71	22.1	17.8	25.5	1.0	22.4
80	3	0.7	75/63	17.4	15.8	21.6	1.2	14.1
			80/67	18.6	16.4	22.7	1.2	15.0
			85/71	19.7	17.1	23.9	1.2	16.0
	4.5	1.2	75/63	18.0	16.0	21.9	1.2	15.4
			80/67	19.2	16.6	23.1	1.2	16.5
			85/71	20.5	17.2	24.4	1.2	17.8
	6	2.3	75/63	18.3	16.1	22.1	1.1	16.1
			80/67	19.5	16.7	23.3	1.1	17.4
			85/71	20.8	17.4	24.6	1.1	18.7
90	3	0.7	75/63	16.3	15.4	20.9	1.4	11.7
			80/67	17.4	16.0	22.1	1.4	12.5
			85/71	18.5	16.7	23.2	1.4	13.3
	4.5	1.2	75/63	16.8	15.6	21.2	1.3	12.8
			80/67	18.0	16.2	22.4	1.3	13.8
			85/71	19.2	16.8	23.6	1.3	14.8
	6	2.2	75/63	17.1	15.7	21.4	1.3	13.3
			80/67	18.3	16.3	22.6	1.3	14.4
			85/71	19.5	17.0	23.8	1.3	15.5
100	3	0.6	75/63	15.3	15.0	20.4	1.6	9.8
			80/67	16.3	15.7	21.4	1.6	10.4
			85/71	17.3	16.2	22.5	1.6	11.1
	4.5	1.2	75/63	15.7	15.2	20.6	1.5	10.6
			80/67	16.8	15.8	21.7	1.5	11.4
			85/71	18.0	16.3	22.9	1.5	12.2
	6	2.1	75/63	16.0	15.2	20.7	1.4	11.0
			80/67	17.1	15.9	21.8	1.4	11.9
			85/71	18.2	16.6	23.0	1.4	12.7
110	3	0.6	75/63	14.4	14.4	20.0	1.7	8.3
			80/67	15.2	15.2	20.9	1.7	8.7
			85/71	16.2	15.8	21.9	1.8	9.2
	4.5	1.2	75/63	14.6	14.6	20.1	1.7	8.8
			80/67	15.6	15.4	21.1	1.7	9.4
			85/71	16.7	15.9	22.2	1.7	10.0
	6	2.1	75/63	14.8	14.8	20.1	1.6	9.0
			80/67	15.9	15.5	21.2	1.6	9.7
			85/71	17.0	16.0	22.3	1.6	10.5

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM024 HZ Part Load Heating Performance Data - 750 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
30	0.7	60	13.3	10.3	1.0	3.75
		70	12.9	9.6	1.2	3.25
		80	12.5	8.8	1.3	2.84
	1.2	60	13.9	10.8	1.0	3.9
		70	13.4	10.1	1.2	3.38
		80	13.0	9.2	1.3	2.95
	2.5	60	14.2	11.2	1.0	3.99
		70	13.7	10.3	1.2	3.45
		80	13.3	9.5	1.3	3
40	0.7	60	15.2	12.2	1.1	4.24
		70	14.9	11.5	1.2	3.71
		80	14.5	10.7	1.3	3.25
	1.2	60	16.0	13.0	1.1	4.44
		70	15.6	12.2	1.2	3.87
		80	15.2	11.3	1.3	3.39
	2.5	60	16.5	13.4	1.1	4.56
		70	16.0	12.5	1.2	3.97
		80	15.5	11.7	1.3	3.46
50	0.7	60	17.4	14.2	1.1	4.79
		70	16.9	13.5	1.2	4.17
		80	16.6	12.7	1.3	3.69
	1.2	60	18.2	15.3	1.1	5
		70	17.8	14.3	1.2	4.38
		80	17.4	13.5	1.3	3.85
	2.4	60	18.8	15.8	1.1	5.16
		70	18.3	14.8	1.2	4.5
		80	17.8	13.9	1.3	3.94
60	0.7	60	19.3	16.2	1.1	5.28
		70	18.9	15.5	1.2	4.64
		80	18.6	14.7	1.3	4.1
	1.2	60	20.6	17.3	1.1	5.63
		70	20.0	16.6	1.2	4.9
		80	19.5	15.8	1.3	4.29
	2.4	60	21.3	18.2	1.1	5.82
		70	20.6	17.2	1.2	5.05
		80	20.1	16.2	1.3	4.41
70	0.7	60	21.1	17.8	1.1	5.78
		70	21.4	17.7	1.2	5.24
		80	20.6	16.3	1.3	4.52
	1.2	60	22.7	19.7	1.1	6.2
		70	21.6	18.0	1.2	5.29
		80	21.8	17.9	1.3	4.76
	2.3	60	23.3	20.1	1.1	6.38
		70	23.0	19.6	1.2	5.62
		80	22.4	18.7	1.3	4.89
80	0.7	60	23.8	21.2	1.1	6.52
		70	23.2	20.1	1.2	5.67
		80	22.9	18.6	1.3	5
	1.2	60	25.1	22.7	1.1	6.89
		70	24.6	21.0	1.2	6.02
		80	24.2	19.8	1.3	5.3
	2.3	60	26.0	22.6	1.1	7.15
		70	25.5	21.6	1.2	6.27
		80	24.9	21.0	1.3	5.45

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GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM036 HZ Full Load Cooling Performance Data - 1300 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	1.2	75/63	40.7	31.7	47.3	1.9	20.9
			80/67	43.2	32.8	50.1	2.0	21.8
			85/71	46.0	33.5	53.0	2.0	22.6
	7	2.5	75/63	42.0	32.3	48.4	1.9	22.7
			80/67	44.7	33.4	51.3	1.9	23.6
			85/71	47.7	34.2	54.4	1.9	24.6
	9	3.9	75/63	42.6	32.5	48.8	1.8	23.4
			80/67	45.4	33.6	51.8	1.9	24.4
			85/71	48.4	34.4	55.0	1.9	25.3
60	4.5	1.2	75/63	38.9	31.0	46.1	2.1	18.6
			80/67	41.4	32.1	48.7	2.1	19.5
			85/71	44.0	33.1	51.5	2.2	20.3
	7	2.5	75/63	40.2	31.6	47.0	2.0	20.3
			80/67	42.9	32.5	49.8	2.0	21.3
			85/71	45.7	33.4	52.8	2.1	22.3
	9	3.8	75/63	40.7	31.9	47.3	1.9	21.0
			80/67	43.5	32.7	50.3	2.0	22.0
			85/71	46.4	33.7	53.3	2.0	23.0
70	4.5	1.1	75/63	37.2	30.3	44.9	2.3	16.4
			80/67	39.5	31.4	47.4	2.3	17.2
			85/71	42.1	32.1	50.1	2.3	18.0
	7	2.4	75/63	38.3	30.9	45.7	2.1	17.9
			80/67	41.0	31.8	48.4	2.2	18.9
			85/71	43.7	32.7	51.2	2.2	19.8
	9	3.8	75/63	38.8	31.1	46.0	2.1	18.5
			80/67	41.5	32.0	48.8	2.1	19.6
			85/71	44.3	32.9	51.7	2.2	20.6
80	4.5	1.1	75/63	35.4	29.5	43.8	2.5	14.2
			80/67	37.7	30.5	46.2	2.5	15.0
			85/71	40.0	31.7	48.7	2.5	15.7
	7	2.4	75/63	36.5	30.0	44.5	2.3	15.6
			80/67	39.0	31.2	47.0	2.4	16.5
			85/71	41.6	32.0	49.8	2.4	17.4
	9	3.7	75/63	37.0	30.2	44.7	2.3	16.1
			80/67	39.5	31.4	47.4	2.3	17.1
			85/71	42.1	32.4	50.1	2.3	18.1
90	4.5	1.1	75/63	33.5	29.0	42.7	2.7	12.3
			80/67	35.7	30.0	45.1	2.8	12.9
			85/71	38.1	30.8	47.6	2.8	13.6
	7	2.4	75/63	34.6	29.4	43.3	2.6	13.4
			80/67	37.0	30.5	45.8	2.6	14.2
			85/71	39.5	31.2	48.4	2.6	15.1
	9	3.6	75/63	35.0	29.2	43.5	2.5	13.8
			80/67	37.4	30.6	46.1	2.5	14.7
			85/71	40.1	31.4	48.7	2.6	15.7
100	4.5	1.1	75/63	31.7	28.2	41.8	3.0	10.5
			80/67	33.9	29.1	44.2	3.0	11.1
			85/71	36.1	30.1	46.5	3.1	11.8
	7	2.3	75/63	32.7	28.5	42.3	2.9	11.4
			80/67	35.0	29.5	44.7	2.9	12.2
			85/71	37.3	30.7	47.1	2.9	12.9
	9	3.6	75/63	32.9	28.8	42.4	2.8	11.7
			80/67	35.4	29.4	44.9	2.8	12.5
			85/71	37.8	30.9	47.4	2.8	13.4
110	4.5	1.1	75/63	29.8	27.5	41.0	3.3	8.9
			80/67	31.9	28.6	43.2	3.4	9.5
			85/71	34.0	29.6	45.5	3.4	10.0
	7	2.2	75/63	30.7	27.9	41.4	3.2	9.7
			80/67	33.0	28.8	43.7	3.2	10.3
			85/71	35.2	29.8	46.1	3.2	11.0
	9	3.5	75/63	31.1	28.0	41.6	3.1	10.0
			80/67	33.4	28.9	43.9	3.1	10.7
			85/71	35.6	29.9	46.3	3.1	11.3

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM036 HZ Full Load Heating Performance Data - 1300 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
30	1.2	60	26.9	20.9	1.9	4.12
		70	26.4	19.8	2.1	3.65
		80	26.1	18.6	2.3	3.26
	2.6	60	28.3	22.3	1.9	4.29
		70	27.8	21.1	2.1	3.79
		80	27.4	19.6	2.4	3.38
	4.1	60	29.0	23.0	1.9	4.36
		70	28.4	21.7	2.2	3.86
		80	27.9	19.9	2.4	3.43
40	1.2	60	30.7	24.5	2.0	4.54
		70	30.1	23.3	2.2	4.03
		80	29.6	22.0	2.4	3.58
	2.6	60	32.5	26.3	2.0	4.74
		70	31.8	24.9	2.2	4.2
		80	31.1	23.5	2.5	3.72
	4.0	60	33.4	27.1	2.0	4.82
		70	32.6	25.6	2.2	4.27
		80	31.8	24.1	2.5	3.78
50	1.2	60	34.7	28.3	2.1	4.96
		70	34.0	26.9	2.3	4.41
		80	33.4	25.5	2.5	3.92
	2.5	60	37.0	30.5	2.1	5.17
		70	36.0	29.0	2.3	4.58
		80	35.3	27.4	2.5	4.09
	3.9	60	38.0	31.5	2.1	5.27
		70	37.0	29.8	2.3	4.68
		80	36.1	28.2	2.5	4.16
60	1.2	60	38.9	32.3	2.1	5.35
		70	38.1	30.8	2.3	4.78
		80	37.4	29.3	2.6	4.27
	2.5	60	41.6	34.9	2.2	5.59
		70	40.7	32.9	2.4	5.01
		80	39.7	31.5	2.6	4.46
	3.8	60	42.9	36.1	2.2	5.7
		70	41.7	34.3	2.4	5.09
		80	40.7	32.7	2.6	4.54
70	1.1	60	43.3	36.5	2.2	5.74
		70	42.4	34.9	2.4	5.15
		80	41.6	33.1	2.6	4.61
	2.4	60	46.5	39.6	2.3	6.01
		70	45.4	37.7	2.5	5.39
		80	44.3	35.9	2.7	4.81
	3.8	60	48.0	41.0	2.3	6.12
		70	46.7	39.0	2.5	5.49
		80	45.6	36.6	2.7	4.92
80	1.1	60	47.9	40.9	2.3	6.12
		70	46.9	39.2	2.5	5.5
		80	45.9	37.1	2.7	4.94
	2.4	60	51.7	44.4	2.4	6.39
		70	50.3	42.4	2.6	5.76
		80	49.1	40.0	2.8	5.17
	3.7	60	53.4	46.0	2.4	6.51
		70	51.9	43.9	2.6	5.86
		80	50.5	41.8	2.8	5.25

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM036 HZ Part Load Cooling Performance Data - 1080 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	1.2	75/63	30.5	24.8	34.6	1.2	25.8
			80/67	32.6	25.8	36.6	1.2	27.9
			85/71	34.7	26.6	38.7	1.2	30.1
	7	2.5	75/63	31.4	25.2	35.3	1.1	27.8
			80/67	33.5	26.1	37.4	1.1	30.2
			85/71	35.8	26.9	39.6	1.1	33.0
	9	3.9	75/63	31.7	25.3	35.6	1.1	28.5
			80/67	33.9	26.3	37.7	1.1	31.2
			85/71	36.3	26.9	40.0	1.1	34.2
60	4.5	1.2	75/63	29.0	24.3	33.5	1.3	22.3
			80/67	31.0	25.2	35.5	1.3	24.0
			85/71	33.1	26.0	37.5	1.3	25.9
	7	2.5	75/63	29.9	24.6	34.1	1.2	24.2
			80/67	31.9	25.5	36.1	1.2	26.3
			85/71	34.1	26.4	38.2	1.2	28.5
	9	3.8	75/63	30.2	24.7	34.4	1.2	25.0
			80/67	32.3	25.6	36.4	1.2	27.2
			85/71	34.5	26.5	38.6	1.2	29.7
70	4.5	1.1	75/63	27.6	23.6	32.5	1.5	19.0
			80/67	29.5	24.6	34.4	1.4	20.4
			85/71	31.5	25.3	36.4	1.4	21.9
	7	2.4	75/63	28.3	24.0	33.0	1.4	20.7
			80/67	30.4	24.8	35.0	1.4	22.4
			85/71	32.4	25.8	37.0	1.3	24.2
	9	3.8	75/63	28.6	24.2	33.2	1.3	21.4
			80/67	30.7	24.9	35.3	1.3	23.3
			85/71	32.8	25.9	37.3	1.3	25.2
80	4.5	1.1	75/63	26.1	23.0	31.6	1.6	15.9
			80/67	27.9	24.0	33.4	1.6	17.1
			85/71	29.7	24.9	35.3	1.6	18.3
	7	2.4	75/63	26.8	23.3	32.0	1.5	17.4
			80/67	28.7	24.3	33.9	1.5	18.7
			85/71	30.7	25.2	35.9	1.5	20.2
	9	3.7	75/63	27.1	23.4	32.2	1.5	17.9
			80/67	29.0	24.4	34.1	1.5	19.5
			85/71	31.1	25.3	36.1	1.5	21.1
90	4.5	1.1	75/63	24.5	22.5	30.7	1.9	13.2
			80/67	26.2	23.4	32.5	1.9	14.2
			85/71	28.0	24.3	34.3	1.9	15.2
	7	2.4	75/63	25.2	22.8	31.1	1.8	14.4
			80/67	27.0	23.7	32.9	1.7	15.5
			85/71	28.9	24.6	34.8	1.7	16.7
	9	3.6	75/63	25.5	22.8	31.2	1.7	14.8
			80/67	27.3	23.8	33.1	1.7	16.1
			85/71	29.3	24.5	35.1	1.7	17.4
100	4.5	1.1	75/63	22.9	21.8	29.9	2.1	10.9
			80/67	24.6	22.8	31.7	2.1	11.7
			85/71	26.3	23.7	33.4	2.1	12.5
	7	2.3	75/63	23.6	22.0	30.2	2.0	11.8
			80/67	25.4	22.9	32.0	2.0	12.8
			85/71	27.2	23.8	33.9	2.0	13.8
	9	3.6	75/63	23.8	22.1	30.4	2.0	12.2
			80/67	25.6	23.1	32.2	1.9	13.2
			85/71	27.5	23.9	34.0	1.9	14.3
110	4.5	1.1	75/63	21.4	21.2	29.3	2.4	9.0
			80/67	23.0	22.1	31.0	2.4	9.7
			85/71	24.6	23.1	32.6	2.4	10.4
	7	2.2	75/63	22.0	21.3	29.6	2.3	9.7
			80/67	23.7	22.3	31.2	2.3	10.4
			85/71	25.3	23.4	32.9	2.3	11.2
	9	3.5	75/63	22.2	21.5	29.6	2.2	9.9
			80/67	23.9	22.5	31.3	2.2	10.7
			85/71	25.6	23.5	33.1	2.2	11.6

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM036 HZ Part Load Heating Performance Data - 1080 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
30	1.2	60	19.4	15.2	1.4	4.02
		70	18.8	14.0	1.6	3.49
		80	18.4	12.8	1.8	3.04
	2.6	60	20.1	15.6	1.4	4.16
		70	19.6	14.7	1.6	3.63
		80	19.2	13.4	1.8	3.16
	4.1	60	20.4	16.1	1.4	4.21
		70	20.0	15.6	1.6	3.7
		80	19.3	13.9	1.8	3.18
40	1.2	60	22.5	17.8	1.4	4.62
		70	21.7	16.8	1.6	3.99
		80	21.4	15.5	1.8	3.51
	2.6	60	23.5	18.9	1.4	4.83
		70	22.9	18.0	1.6	4.22
		80	22.1	16.4	1.8	3.63
	4.0	60	24.0	19.4	1.4	4.92
		70	23.1	18.0	1.6	4.25
		80	22.6	16.9	1.8	3.71
50	1.2	60	25.5	21.3	1.4	5.21
		70	25.1	19.8	1.6	4.59
		80	24.4	18.8	1.8	4
	2.5	60	27.1	22.4	1.4	5.52
		70	26.1	21.0	1.6	4.78
		80	25.4	19.0	1.8	4.15
	3.9	60	27.5	23.0	1.4	5.61
		70	26.6	21.8	1.6	4.86
		80	25.9	20.2	1.8	4.22
60	1.2	60	29.0	24.4	1.4	5.9
		70	28.2	23.2	1.6	5.13
		80	27.5	21.8	1.8	4.46
	2.5	60	30.6	26.1	1.4	6.21
		70	29.7	24.7	1.6	5.39
		80	28.9	23.3	1.8	4.67
	3.8	60	31.3	26.8	1.4	6.36
		70	30.3	25.3	1.6	5.5
		80	29.4	23.9	1.8	4.75
70	1.1	60	32.5	27.9	1.4	6.59
		70	31.6	26.6	1.6	5.71
		80	30.9	25.2	1.8	4.97
	2.4	60	34.4	30.0	1.4	6.97
		70	33.4	28.3	1.6	6.03
		80	32.5	26.9	1.8	5.21
	3.8	60	35.3	30.8	1.4	7.14
		70	34.2	29.3	1.6	6.16
		80	33.3	27.6	1.8	5.34
80	1.1	60	36.1	31.6	1.4	7.31
		70	35.2	30.2	1.6	6.33
		80	34.3	28.6	1.8	5.49
	2.4	60	38.3	34.1	1.4	7.77
		70	37.2	32.5	1.6	6.68
		80	36.2	30.6	1.8	5.77
	3.7	60	39.3	35.1	1.4	7.98
		70	38.2	33.3	1.6	6.86
		80	37.1	31.4	1.8	5.89

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM048 HZ Full Load Cooling Performance Data - 1580 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	1.0	75/63	50.8	39.5	60.0	2.7	18.8
			80/67	54.0	40.7	63.4	2.7	19.7
			85/71	57.4	41.4	66.9	2.8	20.7
	9	2.1	75/63	52.7	40.4	61.3	2.5	21.1
			80/67	56.2	41.4	64.9	2.5	22.3
			85/71	59.8	42.3	68.6	2.5	23.5
	12	3.5	75/63	53.8	40.6	62.1	2.4	22.4
			80/67	57.3	41.9	65.7	2.4	23.7
			85/71	61.1	42.8	69.5	2.4	25.1
60	6	1.0	75/63	48.4	38.6	58.5	3.0	16.4
			80/67	51.6	39.7	61.8	3.0	17.2
			85/71	54.9	40.5	65.2	3.0	18.1
	9	2.1	75/63	50.4	39.3	59.8	2.7	18.4
			80/67	53.8	40.3	63.3	2.8	19.4
			85/71	57.1	41.6	66.8	2.8	20.5
	12	3.4	75/63	51.4	39.7	60.4	2.6	19.5
			80/67	54.9	40.7	64.0	2.7	20.7
			85/71	58.4	42.0	67.6	2.7	21.9
70	6	1.0	75/63	46.1	37.5	57.2	3.2	14.2
			80/67	49.1	38.7	60.3	3.3	15.0
			85/71	52.3	39.6	63.7	3.3	15.7
	9	2.0	75/63	48.1	38.1	58.3	3.0	15.9
			80/67	51.3	39.3	61.6	3.0	16.9
			85/71	54.5	40.7	65.0	3.1	17.8
	12	3.4	75/63	49.0	38.5	58.9	2.9	16.9
			80/67	52.3	40.0	62.3	2.9	17.9
			85/71	55.7	41.1	65.8	2.9	19.0
80	6	1.0	75/63	43.8	36.3	55.9	3.6	12.3
			80/67	46.6	37.8	58.9	3.6	12.9
			85/71	49.6	39.0	62.1	3.7	13.5
	9	2.0	75/63	45.6	37.0	56.8	3.3	13.7
			80/67	48.7	38.3	60.1	3.4	14.5
			85/71	51.8	39.7	63.3	3.4	15.3
	12	3.3	75/63	46.5	37.4	57.4	3.2	14.5
			80/67	49.7	38.7	60.7	3.2	15.4
			85/71	53.1	39.9	64.1	3.2	16.4
90	6	1.0	75/63	41.4	35.6	54.7	3.9	10.5
			80/67	44.2	36.6	57.7	4.0	11.1
			85/71	47.0	38.0	60.8	4.1	11.6
	9	2.0	75/63	43.0	36.2	55.5	3.7	11.7
			80/67	46.0	37.5	58.6	3.7	12.4
			85/71	49.1	38.5	61.8	3.7	13.1
	12	3.2	75/63	43.9	36.6	55.9	3.6	12.4
			80/67	47.0	37.6	59.1	3.6	13.2
			85/71	50.2	38.9	62.5	3.6	14.0
100	6	0.9	75/63	39.0	34.4	53.7	4.4	8.9
			80/67	41.6	35.9	56.6	4.5	9.3
			85/71	44.4	36.8	59.6	4.5	9.8
	9	1.9	75/63	40.5	35.3	54.3	4.1	9.9
			80/67	43.4	36.6	57.3	4.1	10.5
			85/71	46.4	37.5	60.5	4.2	11.1
	12	3.2	75/63	41.3	35.6	54.7	4.0	10.4
			80/67	44.3	36.9	57.8	4.0	11.1
			85/71	47.3	38.2	60.9	4.0	11.8
110	6	0.9	75/63	36.6	33.7	52.9	4.8	7.6
			80/67	39.1	35.1	55.7	4.9	8.0
			85/71	41.8	35.9	58.7	5.0	8.4
	9	1.9	75/63	38.1	34.0	53.4	4.6	8.3
			80/67	40.7	35.5	56.3	4.6	8.8
			85/71	43.4	37.0	59.2	4.7	9.3
	12	3.1	75/63	38.7	34.4	53.6	4.4	8.7
			80/67	41.5	35.9	56.6	4.5	9.3
			85/71	44.4	37.2	59.6	4.5	9.9

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Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM048 HZ Full Load Heating Performance Data - 1580 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
30	1.1	60	35.9	27.2	2.7	3.91
		70	35.5	25.6	3.0	3.46
		80	34.8	24.3	3.3	3.06
	2.2	60	37.9	29.1	2.7	4.06
		70	37.4	27.3	3.0	3.59
		80	36.7	25.8	3.4	3.18
	3.7	60	39.2	30.2	2.8	4.14
		70	38.4	28.4	3.1	3.66
		80	37.7	26.6	3.4	3.25
40	1.1	60	40.6	31.9	2.8	4.24
		70	40.1	30.0	3.1	3.77
		80	39.6	28.5	3.4	3.37
	2.2	60	43.2	34.2	2.9	4.42
		70	42.4	32.4	3.2	3.93
		80	41.8	30.5	3.5	3.51
	3.6	60	44.8	35.6	2.9	4.52
		70	43.9	33.6	3.2	4.03
		80	43.1	31.6	3.5	3.59
50	1.0	60	45.9	36.4	2.9	4.59
		70	45.2	34.8	3.2	4.11
		80	44.5	33.1	3.5	3.68
	2.1	60	49.0	39.5	3.0	4.8
		70	48.1	37.5	3.3	4.3
		80	47.2	35.6	3.6	3.84
	3.5	60	50.9	41.3	3.0	4.92
		70	49.8	39.1	3.3	4.4
		80	48.8	37.0	3.6	3.93
60	1.0	60	51.3	41.7	3.0	4.96
		70	50.5	39.7	3.3	4.45
		80	49.7	38.0	3.7	3.98
	2.1	60	55.1	45.2	3.1	5.19
		70	54.0	43.0	3.4	4.65
		80	53.0	40.9	3.7	4.16
	3.4	60	57.3	47.4	3.2	5.33
		70	56.1	45.0	3.4	4.77
		80	54.9	42.7	3.8	4.26
70	1.0	60	57.1	47.1	3.1	5.31
		70	56.1	45.1	3.4	4.77
		80	55.2	43.0	3.8	4.28
	2.0	60	61.5	51.2	3.2	5.57
		70	60.2	48.9	3.5	4.99
		80	59.1	46.5	3.9	4.46
	3.4	60	64.0	53.7	3.3	5.72
		70	62.6	51.1	3.6	5.11
		80	61.3	48.6	3.9	4.57
80	1.0	60	63.0	52.7	3.3	5.66
		70	61.9	50.6	3.6	5.08
		80	60.9	48.4	3.9	4.55
	2.0	60	68.0	57.4	3.4	5.93
		70	66.7	54.9	3.7	5.31
		80	65.4	52.4	4.0	4.74
	3.3	60	71.0	60.3	3.4	6.08
		70	69.4	57.5	3.7	5.44
		80	67.9	54.7	4.1	4.85

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM048 HZ Part Load Cooling Performance Data - 1380 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	1.0	75/63	39.1	32.1	44.6	1.6	24.3
			80/67	41.6	33.3	47.1	1.6	26.1
			85/71	44.3	34.3	49.8	1.6	28.1
	9	2.1	75/63	40.6	32.7	45.7	1.5	27.4
			80/67	43.2	33.9	48.3	1.5	29.8
			85/71	46.1	34.7	51.0	1.4	32.4
	12	3.5	75/63	41.3	33.0	46.2	1.4	29.2
			80/67	44.1	34.1	48.9	1.4	32.0
			85/71	47.0	35.1	51.7	1.3	34.9
60	6	1.0	75/63	36.8	31.2	43.1	1.8	20.1
			80/67	39.4	32.1	45.6	1.8	21.7
			85/71	41.9	33.4	48.1	1.8	23.3
	9	2.1	75/63	38.2	31.6	44.0	1.7	22.6
			80/67	40.9	32.7	46.6	1.7	24.5
			85/71	43.5	33.9	49.2	1.6	26.6
	12	3.4	75/63	38.9	32.0	44.5	1.6	24.0
			80/67	41.7	33.0	47.2	1.6	26.2
			85/71	44.5	34.0	49.9	1.6	28.5
70	6	1.0	75/63	34.8	30.3	41.7	2.1	16.8
			80/67	37.1	31.6	44.1	2.1	18.0
			85/71	39.6	32.5	46.6	2.0	19.4
	9	2.0	75/63	36.0	30.8	42.6	1.9	18.7
			80/67	38.5	32.1	45.0	1.9	20.3
			85/71	41.1	33.2	47.6	1.9	21.9
	12	3.4	75/63	36.7	31.1	43.0	1.9	19.8
			80/67	39.3	32.4	45.5	1.8	21.5
			85/71	42.0	33.3	48.2	1.8	23.4
80	6	1.0	75/63	32.5	29.5	40.3	2.3	13.9
			80/67	34.7	30.6	42.6	2.3	14.9
			85/71	37.1	31.7	45.0	2.3	16.1
	9	2.0	75/63	33.7	29.9	41.1	2.2	15.4
			80/67	36.1	30.9	43.5	2.2	16.7
			85/71	38.6	32.2	45.9	2.1	18.0
	12	3.3	75/63	34.3	30.2	41.4	2.1	16.3
			80/67	36.8	31.4	43.9	2.1	17.7
			85/71	39.4	32.5	46.5	2.1	19.2
90	6	1.0	75/63	30.3	28.7	39.1	2.6	11.5
			80/67	32.5	29.9	41.3	2.6	12.4
			85/71	34.8	31.1	43.6	2.6	13.3
	9	2.0	75/63	31.4	29.1	39.7	2.5	12.7
			80/67	33.7	30.4	42.0	2.5	13.7
			85/71	36.2	31.5	44.4	2.4	14.8
	12	3.2	75/63	32.0	29.3	40.1	2.4	13.4
			80/67	34.4	30.6	42.4	2.4	14.5
			85/71	36.9	31.8	44.9	2.3	15.7
100	6	0.9	75/63	28.2	27.5	38.0	2.9	9.6
			80/67	30.3	29.0	40.1	2.9	10.3
			85/71	32.5	30.2	42.3	2.9	11.1
	9	1.9	75/63	29.2	27.9	38.5	2.8	10.5
			80/67	31.4	29.2	40.7	2.8	11.3
			85/71	33.7	30.4	43.0	2.8	12.2
	12	3.2	75/63	29.7	28.1	38.8	2.7	11.0
			80/67	32.0	29.6	41.0	2.7	11.9
			85/71	34.3	30.8	43.4	2.7	12.9
110	6	0.9	75/63	26.5	26.5	37.4	3.3	8.0
			80/67	28.2	28.2	39.1	3.3	8.6
			85/71	30.2	29.6	41.2	3.3	9.2
	9	1.9	75/63	27.1	27.1	37.5	3.1	8.7
			80/67	29.1	28.7	39.6	3.1	9.4
			85/71	31.3	29.9	41.7	3.1	10.1
	12	3.1	75/63	27.5	27.5	37.7	3.1	9.0
			80/67	29.7	28.9	39.8	3.0	9.8
			85/71	31.9	30.1	42.1	3.0	10.6

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM048 HZ Part Load Heating Performance Data - 1380 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
30	1.1	60	27.1	20.8	2.0	3.92
		70	26.2	19.1	2.3	3.41
		80	25.3	17.5	2.5	2.96
	2.2	60	28.3	22.0	2.0	4.09
		70	27.3	20.2	2.3	3.54
		80	26.3	18.4	2.5	3.06
	3.7	60	29.0	22.7	2.0	4.18
		70	27.9	20.8	2.3	3.61
		80	26.9	19.0	2.5	3.12
40	1.1	60	30.8	24.5	2.0	4.42
		70	29.8	22.7	2.3	3.84
		80	28.9	21.0	2.5	3.34
	2.2	60	32.4	26.0	2.1	4.62
		70	31.2	24.1	2.3	4
		80	30.2	22.2	2.6	3.47
	3.6	60	33.2	26.8	2.1	4.74
		70	32.0	24.9	2.3	4.09
		80	30.9	22.9	2.6	3.54
50	1.0	60	34.8	28.4	2.1	4.94
		70	33.8	26.5	2.3	4.29
		80	32.9	24.7	2.6	3.74
	2.1	60	36.7	30.2	2.1	5.19
		70	35.5	28.3	2.3	4.49
		80	34.5	26.2	2.6	3.9
	3.5	60	37.8	31.3	2.1	5.33
		70	36.5	29.2	2.3	4.6
		80	35.4	27.1	2.6	4
60	1.0	60	39.0	32.5	2.1	5.49
		70	37.9	30.6	2.3	4.77
		80	37.0	28.7	2.6	4.17
	2.1	60	41.3	34.8	2.1	5.77
		70	40.0	32.8	2.3	5.01
		80	38.9	30.7	2.6	4.36
	3.4	60	42.6	36.1	2.1	5.95
		70	41.3	33.9	2.3	5.16
		80	40.0	31.8	2.6	4.47
70	1.0	60	43.5	37.0	2.1	6.07
		70	42.4	35.0	2.3	5.28
		80	41.3	33.0	2.6	4.61
	2.0	60	46.2	39.7	2.1	6.43
		70	44.8	37.5	2.4	5.57
		80	43.6	35.4	2.6	4.84
	3.4	60	47.8	41.3	2.1	6.63
		70	46.3	39.0	2.4	5.74
		80	45.0	36.6	2.6	4.98
80	1.0	60	48.2	41.7	2.1	6.69
		70	47.0	39.6	2.4	5.81
		80	45.8	37.5	2.7	5.07
	2.0	60	51.3	44.8	2.1	7.1
		70	49.9	42.5	2.4	6.15
		80	48.5	40.2	2.7	5.34
	3.3	60	53.1	46.7	2.1	7.34
		70	51.6	44.2	2.4	6.34
		80	50.1	41.7	2.7	5.49

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM060 HZ Full Load Cooling Performance Data - 2000 CFM								
Entering Fluid Temp (°F)	Water Flow (GPM)	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	1.2	75/63	64.5	50.2	75.8	3.3	19.7
			80/67	68.7	51.3	80.2	3.3	20.5
			85/71	72.9	52.6	84.6	3.4	21.4
	11	2.5	75/63	66.7	50.8	77.4	3.1	21.4
			80/67	71.0	52.2	81.9	3.2	22.5
			85/71	75.4	53.8	86.5	3.2	23.4
	15	4.4	75/63	67.9	51.3	78.3	3.0	22.5
			80/67	72.3	53.0	82.9	3.1	23.6
			85/71	76.9	54.4	87.8	3.1	24.7
60	7.5	1.2	75/63	61.8	48.7	73.9	3.5	17.4
			80/67	65.7	50.1	78.1	3.6	18.2
			85/71	69.8	51.5	82.3	3.7	19.0
	11	2.5	75/63	63.8	49.6	75.3	3.4	19.0
			80/67	67.9	51.3	79.6	3.4	20.0
			85/71	72.2	52.8	84.1	3.4	20.9
	15	4.3	75/63	64.9	50.3	76.1	3.2	20.0
			80/67	69.2	51.8	80.6	3.3	21.1
			85/71	73.8	52.9	85.3	3.3	22.1
70	7.5	1.2	75/63	58.8	47.7	72.0	3.9	15.3
			80/67	62.7	48.9	76.0	3.9	16.0
			85/71	66.5	50.3	80.1	4.0	16.8
	11	2.4	75/63	60.9	48.3	73.3	3.6	16.7
			80/67	64.9	49.8	77.5	3.7	17.6
			85/71	68.9	51.6	81.8	3.7	18.5
	15	4.2	75/63	61.9	49.1	74.0	3.5	17.6
			80/67	66.1	50.6	78.3	3.6	18.6
			85/71	70.4	52.1	82.8	3.6	19.6
80	7.5	1.2	75/63	56.0	46.3	70.3	4.2	13.3
			80/67	59.6	47.7	74.1	4.3	14.0
			85/71	63.1	49.6	77.9	4.3	14.6
	11	2.4	75/63	57.8	47.3	71.4	4.0	14.5
			80/67	61.7	48.6	75.4	4.0	15.4
			85/71	65.7	50.0	79.5	4.1	16.2
	15	4.1	75/63	59.0	47.5	72.1	3.8	15.3
			80/67	62.8	49.3	76.2	3.9	16.2
			85/71	67.1	50.5	80.5	3.9	17.1
90	7.5	1.2	75/63	53.0	45.1	68.6	4.6	11.5
			80/67	56.1	47.3	72.1	4.7	12.1
			85/71	59.7	48.5	75.9	4.7	12.7
	11	2.3	75/63	54.7	46.1	69.5	4.4	12.6
			80/67	58.5	47.3	73.4	4.4	13.3
			85/71	62.0	49.3	77.3	4.4	14.0
	15	4.0	75/63	55.8	46.2	70.2	4.2	13.2
			80/67	59.6	47.8	74.1	4.3	14.0
			85/71	63.6	49.3	78.2	4.3	14.8
100	7.5	1.2	75/63	49.9	44.2	67.1	5.1	9.9
			80/67	53.1	45.7	70.5	5.1	10.4
			85/71	56.4	47.4	74.1	5.2	10.9
	11	2.3	75/63	51.6	44.5	67.9	4.8	10.8
			80/67	55.0	46.4	71.5	4.8	11.4
			85/71	58.7	47.7	75.3	4.9	12.0
	15	3.9	75/63	52.5	45.2	68.4	4.7	11.3
			80/67	56.1	47.0	72.1	4.7	12.0
			85/71	59.9	48.2	76.0	4.7	12.7
110	7.5	1.2	75/63	46.9	42.8	65.7	5.6	8.4
			80/67	49.9	44.4	69.0	5.6	8.9
			85/71	53.1	45.9	72.4	5.7	9.3
	11	2.2	75/63	48.4	43.5	66.4	5.3	9.1
			80/67	51.7	45.1	69.9	5.3	9.7
			85/71	55.1	46.7	73.4	5.4	10.3
	15	3.8	75/63	49.3	43.8	66.8	5.2	9.6
			80/67	52.8	45.2	70.4	5.2	10.2
			85/71	56.1	47.5	73.9	5.2	10.8

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM060 HZ Full Load Heating Performance Data - 2000 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
30	1.2	60	44.3	33.2	3.4	3.79
		70	43.6	31.4	3.8	3.4
		80	42.7	29.8	4.1	3.03
	2.6	60	46.3	35.0	3.5	3.91
		70	45.5	33.0	3.8	3.5
		80	44.7	31.1	4.2	3.14
	4.6	60	47.6	36.5	3.5	3.99
		70	46.7	34.1	3.8	3.57
		80	45.8	32.2	4.2	3.2
40	1.2	60	49.9	38.5	3.5	4.13
		70	49.1	36.6	3.9	3.71
		80	48.5	34.9	4.3	3.34
	2.6	60	52.5	40.9	3.6	4.28
		70	51.5	38.8	3.9	3.84
		80	50.7	36.7	4.3	3.45
	4.5	60	54.2	42.6	3.6	4.38
		70	53.1	40.2	4.0	3.93
		80	52.0	37.9	4.3	3.53
50	1.2	60	56.1	44.4	3.7	4.48
		70	55.2	42.3	4.0	4.04
		80	54.3	40.5	4.4	3.63
	2.5	60	59.3	47.3	3.7	4.66
		70	58.2	45.0	4.1	4.2
		80	57.0	43.0	4.4	3.77
	4.4	60	61.4	49.2	3.8	4.78
		70	60.1	46.8	4.1	4.3
		80	58.9	44.3	4.5	3.86
60	1.2	60	62.7	50.6	3.8	4.85
		70	61.7	48.4	4.1	4.37
		80	60.8	46.1	4.5	3.94
	2.5	60	66.6	54.1	3.9	5.05
		70	65.2	51.7	4.2	4.54
		80	64.0	49.1	4.6	4.09
	4.3	60	69.1	56.5	3.9	5.17
		70	67.6	53.8	4.3	4.66
		80	66.2	51.1	4.6	4.18
70	1.2	60	69.7	57.1	3.9	5.2
		70	68.5	54.8	4.3	4.69
		80	67.3	52.4	4.7	4.23
	2.4	60	74.2	61.3	4.0	5.41
		70	72.7	58.7	4.4	4.88
		80	71.3	55.8	4.8	4.39
	4.2	60	77.2	64.0	4.1	5.54
		70	75.5	61.1	4.4	5
		80	73.8	58.1	4.8	4.49
80	1.2	60	77.0	63.9	4.1	5.54
		70	75.6	61.4	4.4	5
		80	74.2	58.8	4.8	4.51
	2.4	60	82.2	68.8	4.2	5.76
		70	80.4	65.8	4.5	5.19
		80	78.7	62.9	4.9	4.68
	4.1	60	85.7	72.0	4.3	5.89
		70	83.6	68.7	4.6	5.32
		80	81.7	65.4	5.0	4.78

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Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM060 HZ Part Load Cooling Performance Data - 1790 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	1.2	75/63	50.4	41.4	57.4	2.0	24.7
			80/67	53.6	42.9	60.6	2.0	26.5
			85/71	57.1	43.9	64.0	2.0	28.6
	11	2.5	75/63	51.9	42.2	58.6	1.9	27.1
			80/67	55.5	43.4	62.0	1.9	29.5
			85/71	59.0	44.6	65.5	1.8	32.0
	15	4.4	75/63	52.9	42.6	59.3	1.8	28.8
			80/67	56.5	43.8	62.8	1.8	31.4
			85/71	60.2	45.1	66.4	1.8	34.2
60	7.5	1.2	75/63	47.6	40.2	55.4	2.3	20.8
			80/67	50.7	41.6	58.5	2.3	22.4
			85/71	54.0	42.9	61.7	2.2	24.0
	11	2.5	75/63	49.1	40.8	56.5	2.2	22.8
			80/67	52.4	42.4	59.7	2.1	24.7
			85/71	55.9	43.5	63.1	2.1	26.8
	15	4.3	75/63	50.1	41.2	57.2	2.1	24.2
			80/67	53.5	42.6	60.5	2.0	26.3
			85/71	56.9	44.2	63.9	2.0	28.5
70	7.5	1.2	75/63	44.7	39.0	53.4	2.6	17.4
			80/67	47.8	40.4	56.5	2.6	18.7
			85/71	50.8	42.1	59.5	2.5	20.1
	11	2.4	75/63	46.2	39.6	54.4	2.4	19.1
			80/67	49.4	41.1	57.6	2.4	20.6
			85/71	52.7	42.4	60.8	2.4	22.3
	15	4.2	75/63	47.1	40.0	55.0	2.3	20.1
			80/67	50.4	41.4	58.3	2.3	21.9
			85/71	53.7	43.0	61.5	2.3	23.7
80	7.5	1.2	75/63	41.7	38.1	51.5	2.9	14.4
			80/67	44.6	39.7	54.4	2.9	15.6
			85/71	47.8	40.7	57.5	2.9	16.8
	11	2.4	75/63	43.1	38.6	52.4	2.7	15.8
			80/67	46.2	40.1	55.5	2.7	17.1
			85/71	49.4	41.7	58.5	2.7	18.5
	15	4.1	75/63	43.9	39.0	52.9	2.6	16.6
			80/67	47.1	40.6	56.0	2.6	18.1
			85/71	50.6	41.7	59.3	2.6	19.7
90	7.5	1.2	75/63	38.9	36.6	49.8	3.2	12.0
			80/67	41.6	38.6	52.5	3.2	12.9
			85/71	44.6	39.8	55.5	3.2	13.9
	11	2.3	75/63	40.2	37.2	50.5	3.1	13.0
			80/67	43.1	39.0	53.5	3.1	14.1
			85/71	46.2	40.5	56.5	3.0	15.3
	15	4.0	75/63	40.8	37.8	51.0	3.0	13.7
			80/67	43.9	39.4	54.0	3.0	14.9
			85/71	47.1	40.9	57.0	2.9	16.2
100	7.5	1.2	75/63	36.0	35.8	48.2	3.6	10.0
			80/67	38.7	37.5	50.8	3.6	10.7
			85/71	41.5	38.7	53.7	3.6	11.6
	11	2.3	75/63	37.1	36.3	48.8	3.5	10.7
			80/67	40.0	37.9	51.6	3.4	11.6
			85/71	42.9	39.2	54.5	3.4	12.6
	15	3.9	75/63	37.9	36.4	49.2	3.4	11.2
			80/67	40.8	38.0	52.1	3.3	12.2
			85/71	43.8	39.4	55.0	3.3	13.3
110	7.5	1.2	75/63	33.9	33.9	47.3	4.0	8.4
			80/67	36.0	36.0	49.5	4.0	9.0
			85/71	38.5	37.9	52.0	4.0	9.6
	11	2.2	75/63	34.6	34.6	47.6	3.9	9.0
			80/67	37.0	36.7	49.9	3.8	9.6
			85/71	39.6	38.5	52.6	3.8	10.4
	15	3.8	75/63	35.0	35.0	47.7	3.8	9.3
			80/67	37.7	36.9	50.3	3.8	10.0
			85/71	40.5	38.4	53.1	3.7	10.9

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM060 HZ Part Load Heating Performance Data - 1790 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
30	1.2	60	32.6	24.7	2.5	3.81
		70	31.3	22.6	2.8	3.31
		80	30.2	20.5	3.1	2.88
	2.6	60	34.1	25.8	2.5	3.98
		70	32.8	23.5	2.8	3.46
		80	31.2	21.3	3.1	2.97
	4.6	60	34.9	26.5	2.5	4.06
		70	33.5	24.2	2.8	3.52
		80	31.8	22.0	3.1	3.03
40	1.2	60	37.1	29.2	2.5	4.31
		70	36.2	26.8	2.8	3.79
		80	34.6	24.7	3.1	3.27
	2.6	60	39.0	30.5	2.5	4.51
		70	37.6	28.2	2.8	3.92
		80	35.9	26.0	3.1	3.38
	4.5	60	39.9	31.4	2.5	4.62
		70	38.2	29.2	2.8	3.98
		80	36.7	26.6	3.1	3.45
50	1.2	60	42.0	33.9	2.5	4.83
		70	40.6	31.7	2.8	4.21
		80	39.4	29.3	3.1	3.68
	2.5	60	44.2	35.6	2.6	5.07
		70	42.4	33.4	2.8	4.37
		80	41.0	30.9	3.2	3.82
	4.4	60	45.4	36.8	2.6	5.2
		70	43.5	34.5	2.8	4.48
		80	42.2	31.9	3.2	3.91
60	1.2	60	47.1	38.9	2.6	5.39
		70	45.7	36.6	2.8	4.7
		80	44.4	34.3	3.2	4.11
	2.5	60	49.4	41.2	2.6	5.63
		70	47.8	38.7	2.9	4.91
		80	46.4	36.2	3.2	4.28
	4.3	60	50.9	42.7	2.6	5.8
		70	49.2	40.1	2.9	5.05
		80	47.6	37.4	3.2	4.39
70	1.2	60	52.5	44.3	2.6	5.99
		70	51.1	41.9	2.9	5.23
		80	49.7	39.4	3.2	4.57
	2.4	60	55.2	47.1	2.6	6.3
		70	53.6	44.5	2.9	5.48
		80	52.0	41.7	3.2	4.78
	4.2	60	57.0	48.9	2.6	6.51
		70	55.2	46.1	2.9	5.65
		80	53.5	43.3	3.2	4.91
80	1.2	60	58.1	50.0	2.6	6.64
		70	56.6	47.4	2.9	5.79
		80	55.0	44.8	3.2	5.05
	2.4	60	61.2	53.2	2.6	7.01
		70	59.5	50.4	2.9	6.08
		80	57.7	47.4	3.2	5.29
	4.1	60	63.3	55.3	2.6	7.25
		70	61.3	52.3	2.9	6.28
		80	59.5	49.3	3.2	5.45

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM070 HZ Full Load Cooling Performance Data - 2450 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	0.8	75/63	69.7	56.9	84.0	4.2	16.7
			80/67	74.0	58.7	88.7	4.2	17.4
			85/71	78.8	60.0	93.6	4.3	18.3
	13	1.6	75/63	72.1	57.9	85.7	3.9	18.3
			80/67	76.8	59.8	90.6	4.0	19.3
			85/71	81.9	61.1	95.8	4.0	20.3
	17.5	2.7	75/63	73.6	58.5	86.7	3.8	19.4
			80/67	78.5	60.4	91.8	3.8	20.5
			85/71	83.6	62.2	97.1	3.9	21.6
60	9	0.8	75/63	66.6	55.3	82.0	4.5	14.7
			80/67	70.7	57.4	86.4	4.6	15.4
			85/71	74.8	59.8	90.8	4.6	16.1
	13	1.6	75/63	68.9	56.6	83.5	4.3	16.2
			80/67	73.4	58.4	88.2	4.3	17.0
			85/71	78.1	60.2	93.1	4.4	17.9
	17.5	2.7	75/63	70.3	57.1	84.5	4.1	17.1
			80/67	75.2	58.7	89.4	4.2	18.1
			85/71	79.9	60.9	94.4	4.2	19.1
70	9	0.8	75/63	63.4	54.0	80.0	4.9	12.9
			80/67	67.2	56.0	84.2	5.0	13.5
			85/71	71.6	57.6	88.7	5.0	14.2
	13	1.6	75/63	65.6	55.2	81.4	4.6	14.2
			80/67	69.8	57.1	85.9	4.7	14.9
			85/71	74.3	59.1	90.5	4.7	15.8
	17.5	2.7	75/63	67.1	55.5	82.4	4.5	15.0
			80/67	71.5	57.7	86.9	4.5	15.9
			85/71	76.3	59.2	91.9	4.5	16.8
80	9	0.8	75/63	60.0	53.0	78.2	5.3	11.3
			80/67	63.9	54.8	82.2	5.4	11.9
			85/71	67.5	57.4	86.3	5.4	12.4
	13	1.5	75/63	62.3	53.5	79.4	5.0	12.4
			80/67	66.3	55.6	83.7	5.1	13.0
			85/71	70.5	57.9	88.1	5.1	13.8
	17.5	2.7	75/63	63.5	54.4	80.2	4.9	13.1
			80/67	67.9	56.0	84.7	4.9	13.9
			85/71	72.2	58.5	89.2	4.9	14.7
90	9	0.8	75/63	56.9	51.7	76.5	5.8	9.9
			80/67	60.6	53.6	80.5	5.8	10.4
			85/71	64.4	55.4	84.5	5.9	10.9
	13	1.5	75/63	58.9	52.5	77.6	5.5	10.8
			80/67	62.8	54.4	81.7	5.5	11.4
			85/71	66.9	56.3	85.9	5.6	12.0
	17.5	2.7	75/63	60.1	53.0	78.2	5.3	11.3
			80/67	64.1	55.1	82.4	5.3	12.0
			85/71	68.4	57.0	86.8	5.4	12.7
100	9	0.8	75/63	53.5	50.4	75.0	6.3	8.5
			80/67	57.0	52.5	78.7	6.4	8.9
			85/71	60.7	54.2	82.6	6.4	9.4
	13	1.5	75/63	55.6	51.1	75.9	6.0	9.3
			80/67	59.4	53.1	79.9	6.0	9.9
			85/71	63.2	55.1	83.9	6.1	10.4
	17.5	2.7	75/63	56.8	51.7	76.5	5.8	9.8
			80/67	60.8	53.3	80.6	5.8	10.4
			85/71	64.7	55.4	84.7	5.9	11.1
110	9	0.8	75/63	50.3	49.4	73.7	6.9	7.3
			80/67	53.8	51.2	77.3	6.9	7.8
			85/71	57.0	53.6	80.9	7.0	8.1
	13	1.5	75/63	52.1	49.9	74.4	6.6	7.9
			80/67	55.8	51.8	78.2	6.6	8.4
			85/71	59.3	53.9	82.0	6.6	8.9
	17.5	2.7	75/63	53.3	50.1	74.9	6.4	8.4
			80/67	57.0	52.1	78.7	6.4	8.9
			85/71	60.6	54.7	82.5	6.4	9.4

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM070 HZ Full Load Heating Performance Data - 2450 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
30	0.9	60	52.7	38.2	4.4	3.48
		70	52.3	36.5	4.8	3.16
		80	52.1	34.4	5.3	2.88
	1.7	60	55.3	40.8	4.5	3.61
		70	54.7	38.8	4.9	3.27
		80	54.7	37.1	5.4	2.99
	2.7	60	57.3	42.3	4.5	3.71
		70	56.2	40.2	4.9	3.34
		80	56.2	38.7	5.4	3.05
40	0.9	60	59.4	44.5	4.6	3.8
		70	58.8	42.5	5.0	3.45
		80	58.4	40.7	5.4	3.14
	1.7	60	62.7	47.5	4.6	3.96
		70	61.9	45.5	5.1	3.59
		80	61.5	42.8	5.5	3.27
	2.7	60	64.9	49.6	4.7	4.06
		70	63.8	47.7	5.1	3.67
		80	62.8	46.0	5.6	3.31
50	0.8	60	66.7	51.4	4.7	4.15
		70	66.0	49.3	5.1	3.77
		80	65.4	47.1	5.6	3.42
	1.6	60	70.7	55.1	4.8	4.33
		70	69.8	52.9	5.2	3.92
		80	68.9	50.4	5.7	3.55
	2.7	60	73.5	57.6	4.8	4.45
		70	72.2	55.5	5.3	4.01
		80	71.2	52.7	5.7	3.64
60	0.8	60	74.5	58.7	4.9	4.49
		70	73.6	56.4	5.3	4.07
		80	72.8	54.0	5.8	3.69
	1.6	60	79.3	63.3	5.0	4.69
		70	78.1	60.6	5.4	4.25
		80	77.0	58.0	5.9	3.84
	2.7	60	82.6	66.4	5.0	4.82
		70	81.2	63.3	5.5	4.36
		80	79.8	60.7	5.9	3.94
70	0.8	60	82.6	66.3	5.0	4.82
		70	81.5	63.7	5.5	4.37
		80	80.6	61.2	6.0	3.97
	1.6	60	88.3	71.7	5.1	5.03
		70	86.9	68.8	5.6	4.56
		80	85.5	65.9	6.1	4.13
	2.7	60	92.2	75.4	5.2	5.18
		70	90.5	72.3	5.7	4.69
		80	88.9	68.7	6.1	4.24
80	0.8	60	91.1	74.3	5.2	5.14
		70	89.8	71.5	5.6	4.67
		80	88.6	68.6	6.1	4.23
	1.5	60	97.6	80.5	5.3	5.36
		70	95.9	77.3	5.8	4.87
		80	94.3	74.1	6.3	4.41
	2.7	60	102.1	84.7	5.4	5.51
		70	100.1	81.3	5.9	5
		80	98.2	77.7	6.4	4.52

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GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM070 HZ Part Load Cooling Performance Data - 2100 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	0.8	75/63	56.7	47.8	65.9	2.7	21.0
			80/67	60.2	49.6	69.5	2.7	22.3
			85/71	64.1	50.8	73.4	2.7	23.7
	13	1.6	75/63	58.4	48.7	67.1	2.5	23.2
			80/67	62.2	50.3	70.9	2.5	24.8
			85/71	66.2	51.6	74.8	2.5	26.5
	17.5	2.7	75/63	59.5	48.9	67.9	2.4	24.6
			80/67	63.5	50.5	71.8	2.4	26.5
			85/71	67.5	52.1	75.7	2.4	28.4
60	9	0.8	75/63	53.8	46.8	64.1	3.0	18.0
			80/67	57.4	48.2	67.7	3.0	19.1
			85/71	60.9	49.8	71.3	3.0	20.2
	13	1.6	75/63	55.5	47.5	65.2	2.8	19.7
			80/67	59.2	49.0	68.8	2.8	21.1
			85/71	63.0	50.5	72.7	2.8	22.5
	17.5	2.7	75/63	56.6	47.7	65.9	2.7	20.9
			80/67	60.3	49.6	69.6	2.7	22.4
			85/71	64.2	51.2	73.5	2.7	24.0
70	9	0.8	75/63	50.9	45.7	62.3	3.3	15.3
			80/67	54.4	47.1	65.8	3.4	16.2
			85/71	57.8	48.7	69.3	3.4	17.2
	13	1.6	75/63	52.7	46.1	63.4	3.1	16.8
			80/67	56.2	47.8	66.9	3.1	17.9
			85/71	59.7	49.7	70.5	3.1	19.0
	17.5	2.7	75/63	53.7	46.5	64.0	3.0	17.7
			80/67	57.3	48.2	67.6	3.0	19.0
			85/71	61.0	49.8	71.4	3.0	20.3
80	9	0.8	75/63	48.0	44.4	60.7	3.7	12.9
			80/67	51.2	46.2	64.0	3.7	13.7
			85/71	54.5	47.8	67.4	3.8	14.5
	13	1.5	75/63	49.6	45.1	61.6	3.5	14.1
			80/67	53.0	46.7	65.0	3.5	15.1
			85/71	56.4	48.5	68.5	3.5	16.0
	17.5	2.7	75/63	50.6	45.4	62.1	3.4	14.9
			80/67	54.0	47.3	65.6	3.4	16.0
			85/71	57.6	49.0	69.2	3.4	17.1
90	9	0.8	75/63	45.1	43.3	59.2	4.2	10.9
			80/67	48.2	45.1	62.3	4.2	11.5
			85/71	51.2	47.1	65.5	4.2	12.2
	13	1.5	75/63	46.6	43.9	59.9	3.9	11.8
			80/67	49.9	45.5	63.2	3.9	12.7
			85/71	53.2	47.3	66.6	3.9	13.5
	17.5	2.7	75/63	47.5	44.2	60.4	3.8	12.5
			80/67	50.8	46.1	63.8	3.8	13.4
			85/71	54.3	47.7	67.2	3.8	14.3
100	9	0.8	75/63	42.2	42.0	57.8	4.6	9.1
			80/67	45.2	43.8	60.9	4.7	9.7
			85/71	48.2	45.9	64.0	4.7	10.4
	13	1.5	75/63	43.5	42.6	58.4	4.4	9.9
			80/67	46.6	44.6	61.5	4.4	10.6
			85/71	49.7	46.6	64.8	4.4	11.3
	17.5	2.7	75/63	44.4	43.0	58.8	4.3	10.4
			80/67	47.6	44.9	62.0	4.3	11.2
			85/71	50.7	46.9	65.3	4.3	11.9
110	9	0.8	75/63	39.9	39.9	57.3	5.2	7.7
			80/67	42.4	42.4	59.8	5.2	8.2
			85/71	45.0	45.0	62.5	5.2	8.7
	13	1.5	75/63	40.8	40.8	57.4	4.9	8.3
			80/67	43.5	43.5	60.2	4.9	8.9
			85/71	46.5	45.6	63.2	4.9	9.5
	17.5	2.7	75/63	41.4	41.4	57.5	4.8	8.7
			80/67	44.2	44.0	60.4	4.8	9.3
			85/71	47.6	45.5	63.7	4.8	10.0

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM070 HZ Part Load Heating Performance Data - 2100 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
30	0.9	60	38.7	30.4	3.3	3.44
		70	38.6	27.0	3.6	3.11
		80	38.0	24.7	4.0	2.75
	1.7	60	40.9	30.0	3.3	3.62
		70	39.9	27.6	3.7	3.2
		80	39.2	26.4	4.1	2.83
	2.7	60	41.5	31.0	3.3	3.67
		70	41.5	31.0	3.7	3.32
		80	40.7	27.3	4.1	2.93
40	0.9	60	44.6	33.8	3.3	3.92
		70	44.0	30.4	3.7	3.5
		80	43.6	31.4	4.1	3.12
	1.7	60	46.4	35.7	3.3	4.07
		70	45.1	35.1	3.7	3.57
		80	45.0	32.6	4.1	3.21
	2.7	60	47.9	36.1	3.3	4.19
		70	47.6	36.6	3.7	3.74
		80	45.4	32.7	4.1	3.23
50	0.8	60	50.7	39.5	3.4	4.4
		70	49.4	37.3	3.7	3.88
		80	48.4	35.5	4.1	3.42
	1.6	60	52.9	41.9	3.4	4.58
		70	51.8	39.3	3.7	4.05
		80	50.6	37.4	4.2	3.57
	2.7	60	54.6	41.6	3.4	4.72
		70	53.4	40.6	3.8	4.16
		80	51.9	39.3	4.2	3.64
60	0.8	60	56.5	45.4	3.4	4.86
		70	55.5	43.1	3.8	4.31
		80	54.6	41.0	4.2	3.82
	1.6	60	59.5	48.2	3.4	5.1
		70	58.3	45.9	3.8	4.5
		80	57.3	45.0	4.2	3.98
	2.7	60	61.4	50.4	3.4	5.24
		70	60.4	45.8	3.8	4.65
		80	59.0	42.9	4.2	4.1
70	0.8	60	63.0	51.9	3.4	5.37
		70	61.9	49.5	3.8	4.75
		80	60.8	47.0	4.2	4.21
	1.6	60	66.5	55.5	3.5	5.65
		70	65.2	52.6	3.8	4.98
		80	64.0	49.8	4.3	4.4
	2.7	60	68.8	58.2	3.5	5.81
		70	67.4	54.7	3.9	5.13
		80	66.0	51.6	4.3	4.52
80	0.8	60	69.8	58.7	3.5	5.9
		70	68.6	56.2	3.9	5.21
		80	67.4	53.5	4.3	4.6
	1.5	60	74.0	62.8	3.5	6.21
		70	72.4	59.9	3.9	5.46
		80	71.0	56.9	4.3	4.81
	2.7	60	76.9	65.0	3.5	6.43
		70	75.0	62.5	3.9	5.63
		80	73.4	59.2	4.3	4.96

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM024 VT Full Load Cooling Performance Data - 800 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	0.6	75/63	26.9	20.9	29.9	1.1	25.3
			80/67	28.8	21.2	31.9	1.1	26.5
			85/71	30.5	21.8	33.7	1.1	27.6
	4.5	1.2	75/63	27.8	21.1	30.6	1.0	28.2
			80/67	29.6	21.6	32.4	1.0	29.5
			85/71	31.4	22.2	34.4	1.0	30.9
	6	2.0	75/63	28.1	21.3	30.8	0.9	29.7
			80/67	30.1	21.7	32.8	1.0	31.3
			85/71	31.9	22.4	34.7	1.0	32.8
60	3	0.6	75/63	25.9	20.2	29.3	1.2	21.9
			80/67	27.5	20.8	31.0	1.2	22.9
			85/71	29.3	21.4	32.9	1.2	24.0
	4.5	1.2	75/63	26.6	20.5	29.7	1.1	24.0
			80/67	28.4	21.2	31.6	1.1	25.3
			85/71	30.2	21.7	33.5	1.1	26.5
	6	2.0	75/63	26.8	20.9	29.9	1.1	25.0
			80/67	28.8	21.3	31.9	1.1	26.5
			85/71	30.6	21.9	33.8	1.1	27.9
70	3	0.6	75/63	24.9	19.8	28.7	1.3	18.9
			80/67	26.5	20.5	30.5	1.3	19.8
			85/71	28.2	21.0	32.2	1.4	20.7
	4.5	1.1	75/63	25.6	20.1	29.2	1.2	20.6
			80/67	27.3	20.7	31.0	1.3	21.7
			85/71	28.9	21.6	32.7	1.3	22.7
	6	1.9	75/63	26.0	20.2	29.5	1.2	21.4
			80/67	27.6	21.1	31.2	1.2	22.5
			85/71	29.6	21.4	33.2	1.2	23.9
80	3	0.5	75/63	23.6	19.5	27.9	1.5	16.2
			80/67	25.0	20.4	29.4	1.5	17.0
			85/71	27.4	19.5	31.6	1.5	18.2
	4.5	1.1	75/63	24.4	19.6	28.4	1.4	17.7
			80/67	25.9	20.5	30.0	1.4	18.6
			85/71	27.4	21.4	31.7	1.4	19.5
	6	1.9	75/63	24.6	19.7	28.6	1.3	18.3
			80/67	26.2	20.6	30.2	1.4	19.3
			85/71	28.1	20.9	32.2	1.4	20.5
90	3	0.5	75/63	22.2	19.0	27.1	1.6	13.7
			80/67	23.6	19.9	28.6	1.6	14.3
			85/71	24.5	20.6	29.9	1.7	14.7
	4.5	1.1	75/63	22.7	19.4	27.4	1.5	14.7
			80/67	24.4	19.9	29.1	1.6	15.6
			85/71	26.5	19.6	31.1	1.6	16.7
	6	1.8	75/63	23.2	19.2	27.7	1.5	15.3
			80/67	24.9	19.8	29.4	1.5	16.3
			85/71	26.4	20.7	31.1	1.5	17.2
100	3	0.5	75/63	21.0	18.5	26.4	1.8	11.6
			80/67	21.8	19.4	27.6	1.8	11.9
			85/71	22.2	19.8	28.4	1.8	12.1
	4.5	1.1	75/63	21.4	18.9	26.6	1.7	12.4
			80/67	23.5	18.6	28.6	1.7	13.4
			85/71	25.7	17.3	30.5	1.8	14.5
	6	1.8	75/63	21.8	18.8	26.9	1.7	12.9
			80/67	24.0	18.0	28.9	1.7	14.0
			85/71	24.2	20.5	29.7	1.7	14.2
110	3	0.5	75/63	19.3	18.1	25.6	2.0	9.5
			80/67	20.1	18.8	26.7	2.0	9.8
			85/71	21.3	19.5	28.2	2.1	10.3
	4.5	1.0	75/63	19.8	18.3	25.8	1.9	10.2
			80/67	22.8	15.7	28.2	2.0	11.6
			85/71	24.4	15.6	29.7	2.0	12.3
	6	1.7	75/63	21.1	16.5	26.6	1.9	10.9
			80/67	21.0	19.1	27.2	1.9	11.1
			85/71	21.9	19.7	28.4	1.9	11.5

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM024 VT Full Load Heating Performance Data - 800 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
20	0.7	60	15.5	12.1	1.1	3.97
		70	15.3	11.6	1.3	3.48
		80	14.9	10.7	1.4	3.06
	1.4	60	16.4	13.0	1.2	4.12
		70	16.0	12.1	1.3	3.59
		80	15.5	11.2	1.4	3.14
	2.4	60	16.8	13.4	1.2	4.17
		70	16.3	12.5	1.3	3.64
		80	15.8	11.5	1.5	3.19
30	0.7	60	17.4	13.8	1.2	4.31
		70	17.4	13.2	1.3	3.85
		80	17.1	12.6	1.5	3.39
	1.4	60	18.9	15.3	1.2	4.55
		70	18.4	14.4	1.4	3.98
		80	18.0	13.4	1.5	3.52
	2.3	60	19.4	15.8	1.2	4.61
		70	18.9	14.8	1.4	4.04
		80	18.5	13.8	1.5	3.57
40	0.6	60	20.0	16.4	1.2	4.73
		70	19.6	15.4	1.4	4.17
		80	19.0	14.5	1.5	3.66
	1.3	60	21.4	17.6	1.3	4.94
		70	21.1	17.0	1.4	4.38
		80	20.6	15.9	1.6	3.86
	2.2	60	22.3	18.5	1.3	5.05
		70	21.7	17.5	1.4	4.44
		80	21.2	16.4	1.6	3.91
50	0.6	60	23.3	19.4	1.3	5.23
		70	22.8	18.4	1.4	4.62
		80	22.3	17.4	1.6	4.08
	1.3	60	24.9	20.9	1.3	5.44
		70	24.7	19.8	1.5	4.87
		80	23.8	18.7	1.6	4.26
	2.1	60	26.0	22.0	1.4	5.55
		70	25.4	20.9	1.5	4.93
		80	24.8	19.7	1.7	4.38
60	0.6	60	26.6	22.4	1.4	5.57
		70	26.0	21.3	1.5	4.95
		80	25.5	20.3	1.7	4.40
	1.2	60	27.9	23.8	1.4	5.73
		70	27.2	22.4	1.6	5.10
		80	27.5	21.4	1.7	4.64
	2.0	60	29.8	25.3	1.5	5.97
		70	28.8	23.9	1.6	5.27
		80	28.3	23.0	1.8	4.70
70	0.6	60	29.8	25.4	1.5	5.99
		70	29.2	24.3	1.6	5.34
		80	28.5	23.2	1.8	4.74
	1.2	60	31.6	26.9	1.5	6.20
		70	30.8	26.0	1.6	5.51
		80	29.9	24.6	1.8	4.88
	2.0	60	32.8	28.9	1.5	6.30
		70	31.9	26.9	1.7	5.63
		80	31.3	25.8	1.8	5.02
80	0.6	60	33.2	28.6	1.5	6.39
		70	32.4	27.4	1.7	5.70
		80	31.7	26.2	1.8	5.08
	1.2	60	35.2	30.7	1.6	6.60
		70	34.3	29.2	1.7	5.89
		80	33.5	27.6	1.9	5.25
	1.9	60	36.3	31.2	1.6	6.70
		70	35.2	29.9	1.7	5.97
		80	35.3	29.0	1.9	5.41

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM024 VT Part Load Cooling Performance Data - 700 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	0.6	75/63	20.7	16.9	22.3	0.6	32.2
			80/67	22.1	17.4	23.8	0.6	34.9
			85/71	23.5	18.0	25.1	0.6	37.5
	4.5	1.2	75/63	21.3	17.0	22.9	0.6	35.4
			80/67	22.7	17.6	24.2	0.6	38.2
			85/71	24.1	18.2	25.6	0.6	41.3
	6	2.1	75/63	21.5	17.2	23.0	0.6	36.6
			80/67	22.9	17.8	24.4	0.6	39.7
			85/71	24.6	18.1	26.0	0.6	43.5
60	3	0.6	75/63	19.7	16.5	21.6	0.7	27.0
			80/67	21.0	17.1	22.9	0.7	29.1
			85/71	22.3	17.7	24.2	0.7	31.3
	4.5	1.2	75/63	20.2	16.7	22.0	0.7	29.4
			80/67	21.5	17.2	23.3	0.7	31.8
			85/71	23.0	17.7	24.8	0.7	34.7
	6	2.0	75/63	20.4	16.8	22.2	0.7	30.5
			80/67	21.7	17.5	23.5	0.7	33.0
			85/71	23.3	18.0	25.0	0.6	36.2
70	3	0.6	75/63	19.1	16.2	21.4	0.8	22.6
			80/67	20.3	16.9	22.7	0.8	24.3
			85/71	20.2	17.6	23.0	0.8	24.3
	4.5	1.1	75/63	19.5	16.5	21.7	0.8	24.5
			80/67	21.0	17.1	23.1	0.8	26.7
			85/71	21.9	18.2	24.2	0.8	28.2
	6	1.9	75/63	19.7	16.7	21.8	0.8	25.3
			80/67	21.2	17.1	23.3	0.8	27.8
			85/71	22.5	17.9	24.6	0.8	30.0
80	3	0.5	75/63	17.9	16.0	20.6	1.0	18.5
			80/67	18.4	16.7	21.3	1.0	19.1
			85/71	19.2	17.3	22.3	1.0	20.1
	4.5	1.1	75/63	18.5	16.0	21.0	0.9	20.2
			80/67	19.4	17.1	22.0	0.9	21.3
			85/71	19.8	17.5	22.7	0.9	22.0
	6	1.9	75/63	18.7	16.1	21.2	0.9	20.9
			80/67	20.0	16.6	22.5	0.9	22.7
			85/71	20.0	17.5	22.9	0.9	22.8
90	3	0.5	75/63	16.2	15.6	19.6	1.1	14.4
			80/67	17.1	16.2	20.6	1.1	15.2
			85/71	18.1	16.9	21.7	1.1	16.2
	4.5	1.1	75/63	16.6	15.7	19.8	1.1	15.4
			80/67	17.6	16.4	20.9	1.1	16.5
			85/71	18.4	17.0	21.9	1.1	17.4
	6	1.8	75/63	17.3	15.5	20.2	1.1	16.4
			80/67	19.3	14.1	21.9	1.0	18.7
			85/71	20.9	13.9	23.3	1.0	20.4
100	3	0.5	75/63	15.9	14.3	19.4	1.3	12.4
			80/67	16.3	15.9	20.1	1.3	12.6
			85/71	17.2	16.6	21.2	1.3	13.4
	4.5	1.1	75/63	15.6	15.3	19.2	1.2	12.6
			80/67	16.6	16.1	20.3	1.2	13.5
			85/71	19.1	14.2	22.2	1.2	15.8
	6	1.8	75/63	15.8	15.4	19.4	1.2	13.0
			80/67	16.7	16.1	20.4	1.2	13.9
			85/71	17.7	16.8	21.5	1.2	14.9
110	3	0.5	75/63	14.5	14.5	18.7	1.5	9.9
			80/67	15.4	15.2	19.7	1.5	10.5
			85/71	17.0	14.7	21.1	1.5	11.7
	4.5	1.0	75/63	14.7	14.6	18.8	1.4	10.4
			80/67	16.2	14.5	20.2	1.4	11.6
			85/71	16.6	16.4	20.9	1.4	11.9
	6	1.7	75/63	14.9	14.5	18.9	1.4	10.7
			80/67	15.8	15.8	19.9	1.4	11.4
			85/71	17.8	14.5	21.5	1.4	13.0

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Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



SM024 VT Part Load Heating Performance Data - 700 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
20	0.7	60	11.1	8.7	0.9	3.80
		70	10.7	7.9	1.0	3.19
		80	10.2	7.2	1.1	2.69
	1.4	60	11.6	9.1	0.9	3.92
		70	11.1	8.3	1.0	3.29
		80	10.6	7.5	1.1	2.77
	2.4	60	11.8	9.3	0.9	3.96
		70	11.3	8.5	1.0	3.33
		80	10.8	7.7	1.1	2.81
30	0.6	60	19.5	16.7	0.9	6.20
		70	19.0	15.6	1.1	5.28
		80	18.9	15.2	1.2	4.63
	1.2	60	21.0	18.4	0.9	6.61
		70	20.4	17.3	1.1	5.62
		80	19.8	16.3	1.2	4.81
	2.0	60	21.6	18.9	0.9	6.74
		70	20.9	17.8	1.1	5.73
		80	20.3	16.8	1.2	4.90
40	0.6	60	15.2	12.7	0.9	4.95
		70	14.9	11.9	1.0	4.24
		80	14.4	11.1	1.2	3.64
	1.3	60	16.0	13.4	0.9	5.16
		70	15.5	12.5	1.0	4.40
		80	15.0	11.7	1.2	3.77
	2.2	60	16.4	13.8	0.9	5.25
		70	15.9	12.9	1.0	4.47
		80	15.4	12.0	1.2	3.83
50	0.6	60	17.7	16.2	0.9	5.72
		70	16.8	13.9	1.0	4.79
		80	16.7	13.3	1.2	4.18
	1.3	60	18.5	15.9	0.9	5.94
		70	17.9	15.0	1.0	5.06
		80	17.5	14.0	1.2	4.35
	2.1	60	19.0	16.4	0.9	6.05
		70	18.4	15.4	1.0	5.15
		80	17.9	14.4	1.2	4.42
60	0.6	60	19.6	17.0	0.9	6.24
		70	19.0	16.0	1.0	5.31
		80	18.4	14.9	1.2	4.53
	1.2	60	21.1	18.5	0.9	6.67
		70	20.5	17.4	1.1	5.68
		80	19.9	16.4	1.2	4.86
	2.0	60	21.7	19.1	0.9	6.80
		70	21.0	18.0	1.1	5.78
		80	20.4	16.9	1.2	4.95
70	0.6	60	22.2	19.4	0.9	7.00
		70	21.8	19.5	1.1	6.03
		80	20.9	17.4	1.2	5.09
	1.2	60	23.4	20.9	0.9	7.35
		70	23.0	20.0	1.1	6.33
		80	22.4	18.9	1.2	5.43
	2.0	60	24.4	21.8	0.9	7.63
		70	23.6	20.6	1.1	6.48
		80	23.0	19.4	1.2	5.54
80	0.6	60	24.7	22.2	0.9	7.78
		70	24.0	21.1	1.1	6.62
		80	23.2	20.7	1.2	5.63
	1.2	60	26.2	23.8	0.9	8.24
		70	25.2	22.4	1.1	6.92
		80	24.8	21.3	1.2	5.98
	1.9	60	27.2	24.6	0.9	8.53
		70	26.4	23.3	1.1	7.22
		80	25.6	22.0	1.2	6.12

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM036 VT Full Load Cooling Performance Data - 1200 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	1.2	75/63	41.1	31.4	45.4	1.5	27.3
			80/67	43.6	32.3	48.1	1.5	28.3
			85/71	46.5	33.1	51.2	1.6	29.3
	6.75	2.4	75/63	42.2	31.9	46.3	1.4	29.5
			80/67	45.0	32.9	49.2	1.5	30.7
			85/71	47.8	33.9	52.2	1.5	31.8
	9	4.1	75/63	42.7	32.2	46.7	1.4	30.5
			80/67	45.6	33.1	49.7	1.4	31.7
			85/71	48.8	33.8	53.1	1.5	32.9
60	4.5	1.1	75/63	39.4	30.7	44.2	1.6	23.9
			80/67	41.9	31.6	46.9	1.7	24.9
			85/71	44.6	32.3	49.7	1.7	25.9
	6.75	2.4	75/63	40.4	31.1	44.9	1.6	25.9
			80/67	43.1	32.0	47.7	1.6	27.1
			85/71	45.8	33.2	50.6	1.6	28.2
	9	4.0	75/63	40.9	31.5	45.3	1.5	26.8
			80/67	43.7	32.3	48.2	1.6	28.0
			85/71	46.7	33.2	51.4	1.6	29.3
70	4.5	1.1	75/63	37.6	29.8	43.0	1.8	20.4
			80/67	40.1	30.7	45.6	1.9	21.3
			85/71	42.6	31.7	48.3	1.9	22.2
	6.75	2.3	75/63	38.6	30.2	43.7	1.7	22.1
			80/67	41.1	31.2	46.4	1.8	23.2
			85/71	43.8	32.1	49.2	1.8	24.3
	9	3.8	75/63	39.1	30.5	44.0	1.7	22.9
			80/67	41.7	31.5	46.8	1.7	24.1
			85/71	44.5	32.3	49.7	1.8	25.2
80	4.5	1.1	75/63	35.8	29.1	41.9	2.0	17.5
			80/67	38.2	30.0	44.4	2.1	18.4
			85/71	40.7	30.9	47.0	2.1	19.3
	6.75	2.2	75/63	36.6	29.7	42.4	1.9	18.9
			80/67	39.2	30.5	45.0	2.0	19.9
			85/71	41.7	31.5	47.7	2.0	20.9
	9	3.7	75/63	37.3	29.7	42.9	1.9	19.7
			80/67	39.8	30.7	45.5	1.9	20.8
			85/71	42.2	31.9	48.1	1.9	21.8
90	4.5	1.0	75/63	34.5	28.6	41.3	2.3	15.2
			80/67	36.9	29.5	43.8	2.3	16.1
			85/71	39.3	30.6	46.3	2.3	17.0
	6.75	2.2	75/63	35.4	28.9	41.8	2.2	16.5
			80/67	37.8	30.0	44.4	2.2	17.4
			85/71	40.4	30.9	47.0	2.2	18.5
	9	3.6	75/63	35.9	29.1	42.1	2.1	17.0
			80/67	38.3	30.2	44.7	2.1	18.1
			85/71	41.0	31.0	47.4	2.1	19.2
100	4.5	1.0	75/63	32.7	28.0	40.4	2.5	13.0
			80/67	34.9	29.0	42.7	2.5	13.7
			85/71	37.3	29.9	45.2	2.6	14.5
	6.75	2.1	75/63	33.6	28.2	40.9	2.4	14.0
			80/67	36.0	29.3	43.3	2.4	14.9
			85/71	38.5	30.1	45.9	2.4	15.8
	9	3.5	75/63	34.0	28.4	41.1	2.4	14.4
			80/67	36.5	29.3	43.6	2.4	15.4
			85/71	38.9	30.5	46.2	2.4	16.4
110	4.5	1.0	75/63	31.0	27.1	39.6	2.8	11.0
			80/67	33.1	28.2	41.8	2.8	11.7
			85/71	35.2	29.2	44.1	2.9	12.3
	6.75	2.1	75/63	31.7	27.5	39.9	2.7	11.8
			80/67	33.9	28.5	42.2	2.7	12.6
			85/71	36.3	29.5	44.7	2.7	13.4
	9	3.4	75/63	32.1	27.7	40.1	2.6	12.2
			80/67	34.4	28.7	42.5	2.6	13.0
			85/71	36.8	29.8	45.0	2.7	13.9

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GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



SM036 VT Full Load Heating Performance Data - 1200 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
20	1.4	60	23.2	18.2	1.6	4.14
		70	22.9	17.2	1.9	3.62
		80	22.6	16.2	2.1	3.18
	2.9	60	24.3	19.2	1.7	4.26
		70	23.9	18.2	1.9	3.72
		80	23.6	17.1	2.1	3.27
	4.8	60	24.9	19.8	1.7	4.30
		70	24.5	18.7	1.9	3.76
		80	24.1	17.5	2.1	3.30
30	1.4	60	27.0	21.8	1.7	4.62
		70	26.6	20.6	1.9	4.05
		80	26.3	19.5	2.2	3.56
	2.8	60	28.4	23.1	1.7	4.76
		70	27.9	21.8	2.0	4.16
		80	27.5	20.6	2.2	3.67
	4.6	60	29.2	23.8	1.8	4.82
		70	28.6	22.5	2.0	4.21
		80	28.2	21.2	2.2	3.71
40	1.3	60	31.4	24.9	1.8	5.15
		70	30.5	24.3	2.0	4.45
		80	30.0	23.0	2.2	3.92
	2.6	60	32.9	27.2	1.8	5.26
		70	32.1	25.8	2.0	4.60
		80	31.5	24.4	2.3	4.04
	4.4	60	33.8	28.2	1.9	5.32
		70	33.1	26.7	2.1	4.66
		80	32.4	25.2	2.3	4.09
50	1.3	60	33.9	28.2	1.9	5.29
		70	33.1	27.5	2.1	4.61
		80	34.1	26.1	2.4	4.22
	2.6	60	37.4	31.4	2.0	5.60
		70	36.6	29.8	2.2	4.94
		80	35.9	28.3	2.4	4.36
	4.2	60	38.6	32.5	2.0	5.67
		70	37.7	30.9	2.2	5.00
		80	36.9	29.3	2.4	4.42
60	1.2	60	38.6	31.2	2.0	5.65
		70	37.5	30.5	2.2	4.92
		80	37.2	30.7	2.5	4.37
	2.5	60	41.4	33.9	2.1	5.85
		70	41.1	34.2	2.3	5.21
		80	40.3	32.2	2.6	4.62
	4.1	60	43.4	37.1	2.1	5.97
		70	42.3	35.1	2.3	5.28
		80	41.3	33.3	2.6	4.67
70	1.2	60	43.3	36.8	2.1	6.02
		70	42.4	35.0	2.3	5.34
		80	41.4	33.6	2.6	4.71
	2.4	60	45.4	38.2	2.2	6.18
		70	46.2	38.7	2.4	5.62
		80	45.3	36.6	2.7	4.99
	4.0	60	48.8	42.3	2.2	6.38
		70	47.6	40.1	2.5	5.68
		80	46.4	38.1	2.7	5.03
80	1.1	60	48.4	41.6	2.2	6.40
		70	47.3	39.8	2.4	5.71
		80	46.3	37.9	2.7	5.07
	2.3	60	50.8	44.2	2.3	6.54
		70	50.5	43.0	2.5	5.91
		80	50.2	41.1	2.8	5.31
	3.8	60	53.9	46.8	2.4	6.70
		70	53.1	45.2	2.6	6.03
		80	51.8	43.0	2.8	5.38

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM036 VT Part Load Cooling Performance Data - 1050 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	1.2	75/63	30.8	25.3	32.8	0.8	37.9
			80/67	32.9	26.2	34.9	0.8	40.9
			85/71	35.1	27.0	37.1	0.8	44.3
	6.75	2.5	75/63	31.4	25.6	33.4	0.8	40.3
			80/67	33.7	26.4	35.6	0.8	43.8
			85/71	35.9	27.3	37.8	0.8	47.7
	9	4.1	75/63	31.8	25.8	33.7	0.8	41.0
			80/67	34.1	26.6	36.0	0.8	44.7
			85/71	36.4	27.4	38.2	0.7	48.8
60	4.5	1.2	75/63	29.3	24.7	31.7	0.9	32.3
			80/67	31.4	25.6	33.7	0.9	34.8
			85/71	33.5	26.4	35.8	0.9	37.4
	6.75	2.4	75/63	30.0	25.0	32.2	0.9	34.5
			80/67	32.1	25.9	34.3	0.9	37.5
			85/71	34.2	26.9	36.4	0.8	40.5
	9	4.0	75/63	30.3	25.1	32.5	0.9	35.3
			80/67	32.6	25.8	34.8	0.8	38.7
			85/71	34.6	27.1	36.8	0.8	41.7
70	4.5	1.1	75/63	28.0	24.1	30.8	1.1	25.9
			80/67	29.9	25.1	32.8	1.1	27.8
			85/71	31.8	26.2	34.7	1.1	29.8
	6.75	2.3	75/63	28.7	24.3	31.4	1.0	28.0
			80/67	30.7	25.3	33.4	1.0	30.2
			85/71	32.8	26.2	35.5	1.0	32.6
	9	3.9	75/63	28.9	24.6	31.6	1.0	28.7
			80/67	31.0	25.5	33.7	1.0	31.1
			85/71	33.2	26.3	35.8	1.0	33.8
80	4.5	1.1	75/63	26.4	23.5	29.8	1.2	21.4
			80/67	28.2	24.7	31.7	1.2	22.9
			85/71	30.3	25.3	33.7	1.2	24.6
	6.75	2.2	75/63	26.9	24.0	30.2	1.2	22.9
			80/67	29.0	24.8	32.2	1.2	24.9
			85/71	31.0	25.6	34.2	1.2	26.8
	9	3.7	75/63	27.4	23.9	30.5	1.2	23.7
			80/67	29.4	24.8	32.5	1.1	25.7
			85/71	31.4	25.8	34.5	1.1	27.7
90	4.5	1.1	75/63	25.3	23.3	29.5	1.5	17.3
			80/67	27.0	24.6	31.3	1.5	18.5
			85/71	29.0	25.3	33.3	1.5	19.9
	6.75	2.2	75/63	26.0	23.4	29.9	1.4	18.7
			80/67	27.8	24.6	31.8	1.4	20.1
			85/71	29.8	25.5	33.8	1.4	21.6
	9	3.6	75/63	26.3	23.5	30.2	1.4	19.2
			80/67	28.4	24.2	32.2	1.4	20.9
			85/71	30.3	25.4	34.2	1.3	22.5
100	4.5	1.0	75/63	23.3	23.0	28.3	1.7	13.9
			80/67	26.3	21.8	30.8	1.7	15.7
			85/71	28.4	21.8	32.8	1.7	16.9
	6.75	2.1	75/63	23.7	23.1	28.5	1.6	14.7
			80/67	26.1	24.0	30.8	1.6	16.3
			85/71	27.6	25.5	32.4	1.6	17.2
	9	3.5	75/63	24.4	23.2	29.0	1.6	15.4
			80/67	26.4	24.1	31.0	1.6	16.8
			85/71	28.8	24.0	33.2	1.6	18.5
110	4.5	1.0	75/63	20.4	20.4	26.6	1.9	10.6
			80/67	21.7	21.7	28.2	1.9	11.3
			85/71	23.1	23.1	29.8	1.9	12.0
	6.75	2.1	75/63	22.4	22.4	27.9	1.9	12.1
			80/67	23.9	23.7	29.5	1.8	12.9
			85/71	25.4	24.8	31.2	1.8	13.8
	9	3.5	75/63	20.9	20.9	26.8	1.8	11.4
			80/67	25.3	21.9	30.4	1.8	14.0
			85/71	27.5	21.9	32.3	1.8	15.2

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Bosch Thermotechnology Corp.
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GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



SM036 VT Part Load Heating Performance Data - 1050 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
20	1.4	60	15.8	12.3	1.2	3.84
		70	15.4	11.3	1.4	3.25
		80	15.0	10.3	1.6	2.75
	2.9	60	16.4	12.8	1.2	3.94
		70	15.9	11.8	1.4	3.33
		80	15.5	10.8	1.6	2.83
	4.8	60	16.8	13.1	1.2	3.97
		70	16.2	12.1	1.4	3.36
		80	15.7	11.0	1.6	2.85
30	1.3	60	18.8	15.2	1.2	4.49
		70	18.3	14.1	1.4	3.83
		80	18.0	13.1	1.6	3.29
	2.7	60	19.6	15.9	1.2	4.63
		70	19.0	14.8	1.4	3.95
		80	18.5	13.7	1.6	3.37
	4.6	60	20.0	16.4	1.3	4.67
		70	19.4	15.2	1.4	3.99
		80	18.9	14.1	1.6	3.40
40	1.3	60	22.1	18.4	1.2	5.20
		70	21.5	17.3	1.4	4.46
		80	21.0	16.1	1.6	3.82
	2.6	60	23.1	19.4	1.3	5.39
		70	22.4	18.2	1.4	4.61
		80	21.8	16.9	1.6	3.94
	4.4	60	23.6	19.9	1.3	5.45
		70	22.9	18.7	1.4	4.66
		80	22.3	17.4	1.6	3.98
50	1.2	60	25.5	21.7	1.3	5.83
		70	24.8	20.5	1.5	5.00
		80	24.4	19.2	1.7	4.30
	2.5	60	26.7	22.9	1.3	6.06
		70	26.0	21.6	1.5	5.18
		80	25.4	20.2	1.7	4.44
	4.2	60	27.4	23.6	1.3	6.14
		70	26.6	22.2	1.5	5.25
		80	25.9	20.8	1.7	4.50
60	1.2	60	28.5	24.8	1.3	6.52
		70	28.1	23.8	1.5	5.65
		80	27.5	22.4	1.7	4.83
	2.5	60	30.3	26.5	1.3	6.87
		70	29.4	25.1	1.5	5.86
		80	28.6	23.6	1.7	4.99
	4.1	60	31.1	27.3	1.3	6.98
		70	30.1	25.8	1.5	5.94
		80	29.3	24.2	1.7	5.07
70	1.2	60	31.1	27.0	1.3	7.09
		70	31.0	25.6	1.5	6.18
		80	30.9	25.8	1.7	5.38
	2.4	60	34.3	30.5	1.3	7.74
		70	33.4	29.0	1.5	6.58
		80	32.5	27.4	1.7	5.61
	3.9	60	35.2	31.5	1.3	7.84
		70	34.2	29.8	1.5	6.68
		80	33.3	28.2	1.7	5.69
80	1.1	60	35.4	31.4	1.3	8.02
		70	33.3	33.2	1.5	6.55
		80	33.0	28.5	1.7	5.70
	2.3	60	38.5	34.8	1.3	8.66
		70	37.5	33.1	1.5	7.32
		80	36.5	31.3	1.7	6.21
	3.8	60	39.6	35.8	1.3	8.82
		70	38.5	34.1	1.5	7.44
		80	37.4	32.3	1.7	6.30

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM048 VT Full Load Cooling Performance Data - 1600 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	2.3	75/63	53.3	41.3	59.1	2.0	26.2
			80/67	56.7	42.6	62.7	2.1	27.5
			85/71	60.2	43.7	66.3	2.1	28.9
	9	4.9	75/63	54.9	41.8	60.3	1.9	28.7
			80/67	58.5	43.1	64.0	1.9	30.3
			85/71	62.2	44.3	67.8	1.9	32.0
	12	8.1	75/63	55.6	42.3	60.9	1.9	29.7
			80/67	59.4	43.4	64.8	1.9	31.4
			85/71	63.2	44.6	68.6	1.9	33.2
60	6	2.3	75/63	51.2	40.3	57.7	2.3	22.7
			80/67	54.5	41.4	61.2	2.3	23.9
			85/71	58.0	42.5	64.7	2.3	25.1
	9	4.7	75/63	52.6	40.8	58.7	2.1	24.7
			80/67	56.1	42.0	62.3	2.1	26.1
			85/71	59.6	43.5	65.9	2.2	27.6
	12	7.9	75/63	53.3	41.2	59.3	2.1	25.5
			80/67	56.8	42.6	62.9	2.1	27.0
			85/71	60.5	43.8	66.7	2.1	28.7
70	6	2.2	75/63	49.1	39.7	56.6	2.5	19.3
			80/67	52.5	40.6	60.1	2.6	20.4
			85/71	55.8	41.9	63.5	2.6	21.4
	9	4.6	75/63	50.6	40.0	57.7	2.4	21.0
			80/67	54.0	41.4	61.1	2.4	22.2
			85/71	57.6	42.4	64.8	2.4	23.6
	12	7.6	75/63	51.3	40.4	58.2	2.4	21.7
			80/67	54.8	41.7	61.8	2.4	23.0
			85/71	58.4	42.9	65.4	2.4	24.5
80	6	2.1	75/63	46.8	38.5	55.2	2.8	16.5
			80/67	49.9	39.8	58.5	2.9	17.4
			85/71	53.0	41.2	61.8	2.9	18.4
	9	4.4	75/63	48.2	38.9	56.1	2.7	17.9
			80/67	51.3	40.5	59.4	2.7	19.0
			85/71	54.9	41.4	63.0	2.7	20.2
	12	7.4	75/63	48.7	39.5	56.5	2.6	18.5
			80/67	52.2	40.7	60.1	2.6	19.7
			85/71	55.7	41.9	63.6	2.7	21.0
90	6	2.1	75/63	44.4	37.6	54.1	3.2	13.9
			80/67	47.6	38.7	57.3	3.2	14.7
			85/71	50.6	39.9	60.6	3.3	15.5
	9	4.3	75/63	45.7	38.2	54.9	3.0	15.0
			80/67	48.9	39.3	58.1	3.1	16.0
			85/71	52.1	40.7	61.5	3.1	16.9
	12	7.2	75/63	46.4	38.2	55.4	3.0	15.5
			80/67	49.7	39.5	58.7	3.0	16.5
			85/71	52.9	40.9	62.0	3.0	17.6
100	6	2.0	75/63	40.6	37.1	52.0	3.6	11.4
			80/67	46.4	33.5	56.6	3.6	12.8
			85/71	50.1	31.9	60.0	3.7	13.6
	9	4.2	75/63	43.2	36.9	53.5	3.4	12.6
			80/67	46.2	38.3	56.6	3.4	13.4
			85/71	49.4	39.6	60.0	3.5	14.3
	12	7.0	75/63	43.8	37.1	53.9	3.4	13.0
			80/67	46.7	38.8	57.0	3.4	13.9
			85/71	50.2	39.7	60.5	3.4	14.8
110	6	2.0	75/63	40.6	32.5	52.3	4.0	10.0
			80/67	40.3	37.5	53.6	4.1	9.9
			85/71	47.1	31.8	58.5	4.1	11.4
	9	4.1	75/63	39.2	36.5	51.5	3.8	10.2
			80/67	41.8	38.1	54.4	3.9	10.8
			85/71	43.9	39.5	57.0	3.9	11.3
	12	6.8	75/63	39.7	36.7	51.8	3.8	10.5
			80/67	42.4	38.3	54.7	3.8	11.2
			85/71	44.9	39.8	57.5	3.8	11.8

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



SM048 VT Full Load Heating Performance Data - 1600 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
20	2.8	60	31.0	24.4	2.1	4.29
		70	30.6	22.7	2.4	3.71
		80	29.9	21.3	2.7	3.21
	5.7	60	32.2	25.6	2.2	4.35
		70	31.9	24.6	2.5	3.79
		80	32.0	22.9	2.8	3.35
	9.5	60	33.7	26.5	2.2	4.42
		70	33.2	25.6	2.5	3.84
		80	32.8	23.8	2.9	3.37
30	2.7	60	36.1	29.1	2.2	4.74
		70	35.4	27.5	2.5	4.11
		80	34.8	25.8	2.8	3.59
	5.5	60	37.8	30.6	2.3	4.84
		70	36.9	28.9	2.6	4.19
		80	36.0	26.9	2.9	3.65
	9.1	60	38.9	31.4	2.3	4.85
		70	37.6	29.7	2.6	4.19
		80	37.4	28.0	2.9	3.72
40	2.6	60	41.7	34.3	2.4	5.18
		70	40.8	32.5	2.6	4.53
		80	40.1	30.7	2.9	3.99
	5.3	60	43.8	36.3	2.4	5.29
		70	42.7	34.4	2.7	4.64
		80	41.7	32.4	3.0	4.08
	8.7	60	44.9	37.5	2.5	5.30
		70	43.8	35.3	2.8	4.66
		80	42.8	32.8	3.1	4.12
50	2.5	60	47.0	39.5	2.5	5.62
		70	46.1	37.4	2.7	4.95
		80	45.1	35.8	3.0	4.35
	5.1	60	49.7	41.9	2.5	5.77
		70	48.4	39.7	2.8	5.08
		80	47.3	37.6	3.1	4.48
	8.4	60	51.0	43.3	2.6	5.79
		70	49.7	41.1	2.9	5.10
		80	48.6	38.1	3.2	4.52
60	2.4	60	52.7	44.6	2.6	5.96
		70	51.6	42.6	2.9	5.26
		80	50.6	40.4	3.2	4.65
	4.9	60	55.8	47.5	2.7	6.13
		70	54.4	45.2	2.9	5.41
		80	53.1	42.9	3.3	4.77
	8.1	60	57.3	49.1	2.7	6.15
		70	55.8	46.7	3.0	5.43
		80	54.4	44.2	3.3	4.79
70	2.3	60	59.2	50.8	2.7	6.40
		70	58.0	48.6	3.0	5.66
		80	56.8	46.4	3.3	5.00
	4.7	60	62.9	54.2	2.8	6.59
		70	61.3	51.7	3.1	5.82
		80	59.8	49.2	3.4	5.13
	7.9	60	64.7	56.1	2.9	6.62
		70	63.0	53.4	3.2	5.85
		80	61.4	50.7	3.5	5.16
80	2.3	60	66.1	57.3	2.8	6.82
		70	64.6	54.9	3.1	6.03
		80	63.3	52.4	3.5	5.33
	4.6	60	70.3	61.2	2.9	7.01
		70	68.5	58.5	3.2	6.19
		80	66.9	55.7	3.6	5.46
	7.6	60	72.4	63.3	3.0	7.05
		70	70.6	60.4	3.3	6.23
		80	68.8	57.4	3.7	5.50

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM048 VT Part Load Cooling Performance Data - 1300 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	2.4	75/63	40.7	32.5	43.6	1.1	36.0
			80/67	43.3	33.4	46.2	1.1	39.2
			85/71	46.0	34.5	48.9	1.1	42.6
	9	4.9	75/63	41.7	32.9	44.4	1.1	39.4
			80/67	44.6	33.8	47.2	1.0	43.5
			85/71	47.5	34.8	50.0	1.0	47.9
	12	8.2	75/63	42.3	33.1	45.0	1.0	40.5
			80/67	45.2	34.1	47.8	1.0	44.9
			85/71	48.1	35.1	50.6	1.0	49.7
60	6	2.3	75/63	38.5	31.6	42.1	1.3	29.1
			80/67	41.0	32.7	44.6	1.3	31.5
			85/71	43.8	33.7	47.3	1.3	34.2
	9	4.7	75/63	39.5	32.0	42.8	1.2	31.6
			80/67	42.2	33.1	45.5	1.2	34.6
			85/71	45.1	33.9	48.3	1.2	38.0
	12	7.9	75/63	40.1	32.2	43.4	1.2	32.5
			80/67	42.9	33.2	46.1	1.2	35.7
			85/71	45.7	34.4	48.8	1.2	39.2
70	6	2.2	75/63	36.8	30.9	41.1	1.6	23.6
			80/67	39.2	32.0	43.6	1.5	25.4
			85/71	41.9	33.0	46.2	1.5	27.6
	9	4.6	75/63	37.7	31.3	41.8	1.5	25.5
			80/67	40.4	32.3	44.4	1.5	27.8
			85/71	43.1	33.5	47.1	1.4	30.3
	12	7.7	75/63	38.3	31.5	42.3	1.5	26.2
			80/67	40.9	32.6	44.9	1.4	28.6
			85/71	43.8	33.6	47.7	1.4	31.4
80	6	2.2	75/63	34.5	29.9	39.6	1.8	19.1
			80/67	35.9	31.7	41.3	1.8	20.0
			85/71	40.9	28.6	45.3	1.8	23.2
	9	4.5	75/63	35.4	30.4	40.3	1.7	20.6
			80/67	38.0	31.3	42.8	1.7	22.4
			85/71	40.5	32.8	45.3	1.7	24.3
	12	7.4	75/63	35.9	30.5	40.7	1.7	21.1
			80/67	38.5	31.7	43.2	1.7	23.0
			85/71	41.3	32.6	45.9	1.6	25.2
90	6	2.1	75/63	33.8	28.7	39.9	2.2	15.7
			80/67	34.9	31.3	41.5	2.2	16.2
			85/71	37.1	32.6	43.9	2.1	17.4
	9	4.3	75/63	34.3	29.8	40.3	2.1	16.6
			80/67	36.7	31.2	42.7	2.0	18.0
			85/71	37.8	32.8	44.4	2.0	18.7
	12	7.2	75/63	34.8	30.0	40.7	2.0	17.1
			80/67	37.4	31.2	43.2	2.0	18.6
			85/71	38.4	33.0	44.8	2.0	19.3
100	6	2.0	75/63	31.1	28.5	38.4	2.5	12.6
			80/67	33.8	29.0	40.9	2.5	13.7
			85/71	34.5	31.7	42.4	2.5	14.1
	9	4.2	75/63	31.8	28.9	38.8	2.4	13.4
			80/67	34.8	29.0	41.5	2.4	14.8
			85/71	35.9	32.2	43.3	2.3	15.4
	12	7.0	75/63	32.1	29.3	39.1	2.4	13.6
			80/67	34.2	31.1	41.3	2.3	14.7
			85/71	36.4	32.3	43.6	2.3	15.8
110	6	2.0	75/63	28.7	27.6	37.1	2.8	10.2
			80/67	31.0	28.9	39.4	2.8	11.1
			85/71	32.5	31.0	41.4	2.8	11.6
	9	4.1	75/63	29.5	27.9	37.6	2.7	10.8
			80/67	31.9	29.2	40.0	2.7	11.8
			85/71	33.2	31.2	41.8	2.7	12.4
	12	6.9	75/63	29.8	28.1	37.9	2.7	11.1
			80/67	32.3	29.2	40.2	2.7	12.1
			85/71	33.6	31.4	42.1	2.7	12.7

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Bosch Thermotechnology Corp.
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GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



SM048 VT Part Load Heating Performance Data - 1300 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
20	2.8	60	23.4	18.4	1.6	4.19
		70	22.3	16.8	1.8	3.54
		80	21.3	15.1	2.1	3.00
	5.7	60	24.2	19.2	1.7	4.27
		70	23.1	17.4	1.9	3.62
		80	22.0	15.7	2.1	3.05
	9.4	60	24.6	19.6	1.7	4.24
		70	23.5	17.8	1.9	3.60
		80	22.4	16.1	2.2	3.04
30	2.7	60	27.0	21.7	1.7	4.78
		70	26.0	20.3	1.9	4.06
		80	25.0	18.5	2.1	3.45
	5.4	60	28.1	23.1	1.7	4.89
		70	26.9	21.2	1.9	4.15
		80	25.8	19.4	2.2	3.52
	9.0	60	28.7	23.7	1.7	4.88
		70	27.5	21.8	1.9	4.14
		80	26.3	19.8	2.2	3.52
40	2.6	60	30.4	26.5	1.7	5.32
		70	29.6	24.0	1.9	4.56
		80	28.8	22.3	2.2	3.90
	5.2	60	32.4	27.4	1.7	5.57
		70	31.2	25.4	1.9	4.72
		80	30.0	23.4	2.2	4.01
	8.7	60	33.1	28.1	1.7	5.56
		70	31.9	26.0	2.0	4.72
		80	30.6	24.0	2.2	4.02
50	2.5	60	34.5	29.5	1.7	6.00
		70	33.3	27.2	1.9	5.08
		80	33.0	26.1	2.2	4.42
	5.0	60	36.7	31.4	1.7	6.27
		70	35.6	29.9	2.0	5.33
		80	34.6	27.7	2.2	4.57
	8.4	60	37.9	32.8	1.8	6.31
		70	36.6	30.5	2.0	5.37
		80	35.3	28.4	2.3	4.59
60	2.4	60	39.8	34.6	1.7	6.72
		70	38.5	32.3	2.0	5.73
		80	37.2	30.5	2.2	4.88
	4.9	60	41.4	36.1	1.8	6.89
		70	39.9	33.7	2.0	5.84
		80	39.7	32.4	2.3	5.12
	8.1	60	43.1	38.1	1.8	7.01
		70	42.3	36.2	2.0	6.05
		80	40.9	33.8	2.3	5.18
70	2.3	60	45.0	39.7	1.8	7.50
		70	43.6	37.5	2.0	6.38
		80	42.3	35.1	2.3	5.45
	4.7	60	46.9	41.9	1.8	7.71
		70	45.1	39.2	2.0	6.50
		80	44.9	37.8	2.3	5.70
	7.8	60	48.1	44.1	1.8	7.73
		70	47.4	41.3	2.1	6.70
		80	46.1	39.3	2.4	5.75
80	2.2	60	50.3	45.0	1.8	8.29
		70	48.9	42.6	2.0	7.04
		80	47.4	40.3	2.3	6.02
	4.6	60	52.6	47.5	1.8	8.53
		70	50.9	45.0	2.1	7.23
		80	49.3	42.5	2.3	6.16
	7.6	60	51.7	48.4	1.8	8.40
		70	52.0	44.7	2.1	7.26
		80	50.3	42.8	2.4	6.19

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Bosch Thermotechnology Corp.
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GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM060 VT Full Load Cooling Performance Data - 1950 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	2.7	75/63	66.3	50.7	73.8	2.6	25.4
			80/67	70.6	52.2	78.3	2.7	26.5
			85/71	75.1	53.5	83.0	2.7	27.6
	11.25	5.7	75/63	68.0	51.3	75.1	2.5	27.2
			80/67	72.5	52.7	79.8	2.5	28.5
			85/71	77.1	54.2	84.7	2.6	29.7
	15	9.6	75/63	68.7	51.6	75.8	2.5	27.6
			80/67	73.3	53.3	80.6	2.5	29.0
			85/71	78.5	54.3	85.9	2.6	30.5
60	7.5	2.7	75/63	63.7	49.6	72.0	2.9	22.3
			80/67	67.8	51.0	76.3	2.9	23.4
			85/71	72.0	52.9	80.8	2.9	24.4
	11.25	5.5	75/63	65.1	50.5	73.1	2.7	23.9
			80/67	69.7	51.8	77.8	2.8	25.2
			85/71	74.3	52.9	82.5	2.8	26.4
	15	9.2	75/63	66.1	50.5	73.9	2.7	24.4
			80/67	70.6	52.1	78.6	2.7	25.7
			85/71	75.3	53.2	83.4	2.8	27.0
70	7.5	2.6	75/63	60.6	48.4	70.0	3.2	19.1
			80/67	64.7	49.9	74.3	3.2	20.1
			85/71	68.8	51.2	78.6	3.3	21.1
	11.25	5.3	75/63	62.3	48.7	71.2	3.0	20.5
			80/67	66.4	50.4	75.5	3.1	21.6
			85/71	70.8	51.6	80.0	3.1	22.8
	15	9.0	75/63	63.0	49.0	71.8	3.0	20.9
			80/67	67.3	50.5	76.2	3.0	22.1
			85/71	71.7	52.2	80.8	3.1	23.4
80	7.5	2.5	75/63	58.0	47.2	68.4	3.5	16.5
			80/67	61.8	48.6	72.4	3.5	17.4
			85/71	65.8	49.9	76.6	3.6	18.3
	11.25	5.2	75/63	59.3	47.8	69.3	3.4	17.7
			80/67	63.3	49.3	73.5	3.4	18.7
			85/71	67.6	50.8	77.9	3.4	19.8
	15	8.7	75/63	60.0	47.7	69.9	3.3	18.0
			80/67	64.0	49.8	74.1	3.3	19.2
			85/71	68.5	51.1	78.6	3.4	20.3
90	7.5	2.4	75/63	55.1	46.0	67.0	3.9	14.0
			80/67	58.8	47.4	70.8	4.0	14.8
			85/71	62.6	49.2	74.9	4.0	15.6
	11.25	5.0	75/63	56.3	46.8	67.7	3.8	15.0
			80/67	60.3	48.2	71.8	3.8	15.9
			85/71	64.4	49.5	75.9	3.8	16.8
	15	8.5	75/63	56.9	46.6	68.2	3.7	15.2
			80/67	61.0	48.5	72.3	3.7	16.3
			85/71	65.2	49.6	76.6	3.8	17.3
100	7.5	2.4	75/63	52.1	44.8	65.5	4.4	11.9
			80/67	55.7	46.4	69.3	4.4	12.6
			85/71	58.5	49.6	72.6	4.4	13.2
	11.25	4.9	75/63	53.1	45.7	66.0	4.2	12.6
			80/67	57.2	46.6	70.1	4.2	13.5
			85/71	60.8	48.6	73.9	4.2	14.3
	15	8.2	75/63	53.5	46.4	66.3	4.1	12.9
			80/67	57.0	48.6	70.1	4.2	13.7
			85/71	60.8	50.6	74.0	4.2	14.6
110	7.5	2.3	75/63	49.0	43.7	64.1	4.9	10.1
			80/67	50.2	46.2	66.2	4.9	10.3
			85/71	53.2	48.0	69.6	4.9	10.8
	11.25	4.8	75/63	49.7	44.9	64.4	4.7	10.6
			80/67	51.4	46.6	66.8	4.7	10.9
			85/71	60.2	37.6	73.1	4.8	12.5
	15	8.0	75/63	49.0	44.9	63.9	4.6	10.5
			80/67	52.0	46.8	67.3	4.6	11.2
			85/71	55.0	48.6	70.6	4.6	11.8

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM060 VT Full Load Heating Performance Data - 1950 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
20	3.3	60	39.1	30.7	2.8	4.14
		70	38.2	28.2	3.1	3.63
		80	38.7	27.4	3.5	3.28
	6.7	60	42.4	33.0	2.9	4.34
		70	41.6	31.3	3.2	3.82
		80	40.7	29.6	3.5	3.36
	11.1	60	43.5	34.1	2.9	4.33
		70	42.5	32.1	3.3	3.81
		80	41.6	30.0	3.6	3.37
30	3.1	60	45.1	36.1	2.9	4.58
		70	44.4	33.7	3.2	4.05
		80	43.7	32.0	3.6	3.58
	6.4	60	46.5	37.0	2.9	4.63
		70	47.3	36.9	3.3	4.18
		80	47.0	34.8	3.7	3.75
	10.6	60	50.1	40.2	3.1	4.78
		70	49.0	38.4	3.4	4.22
		80	48.0	36.0	3.8	3.75
40	3.0	60	51.9	42.1	3.0	5.03
		70	50.7	40.1	3.4	4.43
		80	49.8	38.1	3.7	3.93
	6.2	60	54.1	44.3	3.1	5.11
		70	53.0	42.4	3.4	4.53
		80	51.4	39.6	3.8	3.98
	10.2	60	56.5	46.5	3.2	5.19
		70	55.9	43.5	3.5	4.64
		80	55.2	42.3	3.9	4.14
50	2.9	60	60.6	50.4	3.2	5.47
		70	59.5	48.2	3.6	4.86
		80	58.4	45.7	4.0	4.31
	5.9	60	63.7	53.3	3.3	5.59
		70	62.3	50.8	3.7	4.96
		80	61.0	48.4	4.1	4.40
	9.8	60	65.5	55.0	3.4	5.61
		70	63.8	52.6	3.8	4.96
		80	62.6	49.5	4.1	4.43
60	2.8	60	68.2	57.2	3.5	5.77
		70	66.9	54.9	3.8	5.13
		80	65.8	52.2	4.2	4.57
	5.7	60	71.9	60.7	3.6	5.91
		70	70.4	58.0	3.9	5.25
		80	68.9	55.3	4.3	4.67
	9.5	60	73.8	62.9	3.7	5.91
		70	72.2	60.0	4.0	5.27
		80	70.7	56.7	4.4	4.69
70	2.7	60	76.6	65.1	3.6	6.17
		70	75.1	62.5	4.0	5.50
		80	73.8	59.8	4.4	4.89
	5.6	60	81.1	69.2	3.8	6.32
		70	79.3	66.2	4.1	5.63
		80	77.6	63.2	4.5	5.01
	9.2	60	83.4	71.6	3.9	6.33
		70	81.4	68.5	4.2	5.64
		80	79.4	65.3	4.6	5.02
80	2.7	60	85.3	73.2	3.8	6.53
		70	83.7	70.3	4.2	5.83
		80	82.1	67.4	4.6	5.19
	5.4	60	90.7	78.1	4.0	6.69
		70	88.6	74.7	4.4	5.96
		80	86.6	71.4	4.8	5.31
	8.9	60	93.3	80.7	4.1	6.69
		70	91.0	77.2	4.5	5.97
		80	88.7	73.6	4.9	5.32

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM060 VT Part Load Cooling Performance Data - 1550 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	75/63	50.5	39.3	54.4	1.5	34.0
			80/67	53.7	40.7	57.6	1.5	36.8
			85/71	57.3	41.6	61.1	1.4	40.1
	11.25	5.7	75/63	51.7	40.0	55.4	1.4	36.5
			80/67	55.2	41.1	58.9	1.4	40.0
			85/71	58.9	42.3	62.4	1.3	43.8
	15	9.6	75/63	52.3	40.2	56.1	1.4	36.9
			80/67	56.0	41.4	59.7	1.4	40.6
			85/71	59.7	42.6	63.2	1.3	44.5
60	7.5	2.7	75/63	47.7	38.1	52.4	1.7	27.9
			80/67	51.0	39.6	55.7	1.7	30.4
			85/71	54.5	40.6	59.0	1.7	33.0
	11.25	5.5	75/63	48.9	38.8	53.3	1.6	30.0
			80/67	52.3	40.1	56.7	1.6	32.8
			85/71	55.9	41.2	60.2	1.6	35.8
	15	9.3	75/63	49.6	39.1	54.0	1.6	30.5
			80/67	53.0	40.3	57.4	1.6	33.3
			85/71	56.8	41.4	61.0	1.6	36.6
70	7.5	2.6	75/63	45.3	37.2	50.9	2.0	22.8
			80/67	48.6	38.5	54.1	2.0	24.8
			85/71	51.6	40.2	57.2	1.9	26.7
	11.25	5.4	75/63	46.3	37.8	51.7	1.9	24.3
			80/67	49.7	39.1	55.0	1.9	26.6
			85/71	53.3	40.2	58.5	1.8	29.2
	15	9.0	75/63	47.0	38.0	52.3	1.9	24.8
			80/67	50.7	38.9	55.8	1.9	27.3
			85/71	53.9	40.6	59.0	1.8	29.7
80	7.5	2.5	75/63	42.3	36.1	48.9	2.3	18.6
			80/67	44.8	38.5	51.6	2.3	19.9
			85/71	48.0	40.1	54.7	2.2	21.5
	11.25	5.2	75/63	43.5	36.4	49.7	2.2	19.9
			80/67	46.8	37.7	52.9	2.2	21.7
			85/71	49.6	40.1	55.9	2.1	23.4
	15	8.7	75/63	43.9	36.8	50.2	2.2	20.1
			80/67	47.3	38.0	53.4	2.1	22.1
			85/71	50.6	39.9	56.7	2.1	24.1
90	7.5	2.5	75/63	40.4	36.0	49.2	2.9	13.8
			80/67	45.5	33.1	53.4	2.9	15.7
			85/71	43.9	38.7	53.7	2.9	15.2
	11.25	5.1	75/63	41.7	35.9	50.1	2.8	14.8
			80/67	44.4	38.3	52.9	2.8	15.9
			85/71	47.6	40.0	56.1	2.7	17.3
	15	8.5	75/63	42.1	36.3	50.4	2.8	15.0
			80/67	45.6	37.5	53.9	2.8	16.6
			85/71	48.6	39.8	56.9	2.7	17.9
100	7.5	2.4	75/63	36.6	34.8	47.0	3.3	11.0
			80/67	42.6	31.2	51.7	3.3	12.9
			85/71	41.2	37.8	52.3	3.3	12.5
	11.25	4.9	75/63	37.3	35.0	47.4	3.2	11.6
			80/67	40.1	36.8	50.4	3.2	12.5
			85/71	42.1	38.1	52.8	3.2	13.3
	15	8.2	75/63	37.6	35.2	47.7	3.2	11.7
			80/67	43.7	31.0	52.5	3.2	13.5
			85/71	42.8	38.3	53.3	3.1	13.6
110	7.5	2.3	75/63	35.7	31.5	46.7	3.8	9.5
			80/67	36.6	35.5	48.6	3.8	9.8
			85/71	42.4	31.4	52.9	3.7	11.4
	11.25	4.8	75/63	34.8	34.1	46.3	3.7	9.5
			80/67	39.9	31.4	50.4	3.6	11.0
			85/71	43.5	31.0	53.5	3.6	12.1
	15	8.0	75/63	35.1	34.2	46.6	3.6	9.6
			80/67	37.6	35.9	49.3	3.6	10.4
			85/71	40.1	37.4	52.1	3.6	11.2

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Bosch Thermotechnology Corp.
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GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



SM060 VT Part Load Heating Performance Data - 1550 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
20	3.3	60	29.1	22.4	2.1	4.08
		70	27.8	20.4	2.3	3.46
		80	26.5	18.2	2.6	2.94
	6.7	60	30.1	23.5	2.1	4.14
		70	28.7	21.2	2.4	3.51
		80	27.3	19.0	2.7	2.99
	11.1	60	30.7	24.0	2.2	4.09
		70	29.2	21.7	2.5	3.49
		80	27.7	19.3	2.7	2.97
30	3.1	60	33.2	26.5	2.1	4.58
		70	32.0	24.6	2.4	3.92
		80	31.0	22.6	2.7	3.37
	6.4	60	34.9	28.4	2.2	4.72
		70	33.4	26.0	2.4	4.02
		80	32.0	23.6	2.7	3.43
	10.6	60	35.7	29.1	2.2	4.68
		70	34.1	26.6	2.5	3.99
		80	32.6	24.2	2.8	3.41
40	3.0	60	37.7	30.7	2.2	5.10
		70	36.4	30.9	2.4	4.36
		80	35.6	26.6	2.7	3.79
	6.1	60	40.0	33.1	2.2	5.30
		70	38.8	31.1	2.5	4.55
		80	37.3	28.7	2.8	3.90
	10.2	60	41.2	34.5	2.3	5.31
		70	39.6	31.9	2.6	4.54
		80	38.0	29.4	2.9	3.89
50	2.9	60	43.7	36.8	2.2	5.75
		70	42.1	34.3	2.5	4.91
		80	40.5	31.8	2.8	4.21
	5.9	60	45.4	37.4	2.3	5.87
		70	44.7	37.7	2.6	5.11
		80	43.5	34.2	2.9	4.43
	9.8	60	47.6	40.3	2.3	5.98
		70	46.1	37.9	2.6	5.15
		80	44.5	35.2	2.9	4.44
60	2.8	60	50.8	43.5	2.4	6.33
		70	49.2	40.7	2.6	5.45
		80	47.6	38.0	3.0	4.69
	5.7	60	52.9	45.8	2.4	6.48
		70	51.1	42.3	2.7	5.56
		80	49.4	40.6	3.0	4.78
	9.5	60	53.7	46.4	2.4	6.43
		70	52.9	43.9	2.8	5.63
		80	51.9	42.0	3.1	4.92
70	2.7	60	57.3	49.7	2.4	7.01
		70	55.5	46.9	2.7	6.02
		80	53.8	44.1	3.0	5.19
	5.5	60	59.8	52.4	2.4	7.19
		70	57.7	49.4	2.7	6.16
		80	55.7	46.5	3.1	5.29
	9.2	60	61.2	53.1	2.5	7.20
		70	58.9	49.9	2.8	6.16
		80	57.6	48.4	3.2	5.36
80	2.6	60	63.9	56.3	2.4	7.70
		70	62.1	53.4	2.8	6.61
		80	60.2	50.4	3.1	5.69
	5.4	60	66.9	59.4	2.5	7.92
		70	64.7	56.2	2.8	6.78
		80	62.6	53.0	3.1	5.83
	8.9	60	68.4	61.1	2.5	7.92
		70	66.1	57.1	2.9	6.80
		80	63.7	54.1	3.2	5.83

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GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM070 VT Full Load Cooling Performance Data - 2250 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	3.8	75/63	74.5	57.4	83.7	3.2	23.4
			80/67	79.3	59.2	88.7	3.2	24.5
			85/71	84.3	60.6	94.0	3.3	25.6
	13.5	7.9	75/63	76.3	58.1	85.0	3.0	25.1
			80/67	81.3	59.9	90.2	3.1	26.4
			85/71	86.6	61.4	95.7	3.1	27.7
	18	13.2	75/63	77.1	58.5	85.8	3.0	25.5
			80/67	82.2	60.4	91.1	3.1	26.9
			85/71	87.7	61.9	96.7	3.1	28.3
60	9	3.7	75/63	71.6	56.4	81.9	3.5	20.4
			80/67	76.2	58.2	86.8	3.6	21.4
			85/71	81.0	59.8	91.8	3.6	22.4
	13.5	7.6	75/63	73.3	57.0	83.1	3.4	21.8
			80/67	78.1	58.9	88.1	3.4	23.0
			85/71	83.2	60.5	93.4	3.4	24.2
	18	12.8	75/63	74.1	57.4	83.9	3.3	22.2
			80/67	79.1	59.2	89.0	3.4	23.4
			85/71	84.4	60.6	94.4	3.4	24.7
70	9	3.6	75/63	67.6	54.5	77.9	3.5	19.1
			80/67	71.9	56.4	82.4	3.6	20.1
			85/71	76.4	58.1	87.2	3.6	21.1
	13.5	7.4	75/63	69.1	55.1	79.0	3.4	20.3
			80/67	73.7	56.8	83.8	3.4	21.5
			85/71	78.6	58.5	88.7	3.5	22.7
	18	12.4	75/63	69.8	55.6	79.7	3.4	20.6
			80/67	74.5	57.4	84.5	3.4	21.8
			85/71	79.4	59.2	89.6	3.4	23.1
80	9	3.5	75/63	64.5	53.2	76.1	3.9	16.5
			80/67	68.7	55.2	80.4	3.9	17.4
			85/71	73.1	56.6	85.0	4.0	18.4
	13.5	7.2	75/63	66.0	53.8	77.1	3.8	17.5
			80/67	70.4	55.6	81.7	3.8	18.6
			85/71	75.1	57.2	86.4	3.8	19.7
	18	12.0	75/63	66.6	54.4	77.7	3.7	17.8
			80/67	71.1	56.1	82.3	3.8	18.9
			85/71	75.8	57.9	87.2	3.8	20.0
90	9	3.4	75/63	61.1	52.0	75.2	4.7	13.1
			80/67	64.9	54.4	79.3	4.7	13.8
			85/71	69.9	54.2	84.2	4.8	14.7
	13.5	7.0	75/63	62.8	51.9	76.3	4.5	14.0
			80/67	66.9	54.3	80.6	4.5	14.8
			85/71	71.1	56.6	85.0	4.5	15.7
	18	11.7	75/63	63.2	53.2	76.7	4.5	14.1
			80/67	67.6	54.5	81.2	4.5	15.0
			85/71	72.1	56.4	85.8	4.5	16.0
100	9	3.3	75/63	55.8	51.5	72.4	5.2	10.8
			80/67	61.7	52.6	77.8	5.2	11.8
			85/71	65.8	54.0	82.0	5.3	12.5
	13.5	6.8	75/63	59.1	51.2	74.4	5.0	11.8
			80/67	63.2	52.8	78.7	5.0	12.6
			85/71	67.2	55.4	82.8	5.0	13.3
	18	11.4	75/63	59.6	51.6	74.9	5.0	11.9
			80/67	63.9	53.0	79.2	5.0	12.7
			85/71	68.0	55.4	83.5	5.0	13.6
110	9	3.2	75/63	56.0	45.1	73.1	5.8	9.6
			80/67	55.8	52.5	74.9	5.8	9.6
			85/71	58.6	54.5	78.3	5.8	10.0
	13.5	6.6	75/63	53.7	50.7	71.7	5.6	9.6
			80/67	61.4	44.8	77.7	5.7	10.7
			85/71	60.6	55.1	79.3	5.6	10.8
	18	11.1	75/63	54.0	50.8	72.0	5.5	9.7
			80/67	57.5	53.1	75.8	5.5	10.4
			85/71	66.7	44.4	82.4	5.7	11.7

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM070 VT Full Load Heating Performance Data - 2250 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
20	4.5	60	46.8	35.4	3.5	3.91
		70	46.3	33.6	3.9	3.47
		80	45.7	31.5	4.4	3.07
	9.2	60	48.5	37.0	3.6	3.96
		70	47.9	35.0	4.0	3.50
		80	47.3	33.0	4.5	3.11
	15.3	60	49.5	37.9	3.7	3.91
		70	48.8	35.8	4.1	3.47
		80	48.1	33.8	4.6	3.09
30	4.3	60	53.4	41.8	3.7	4.28
		70	52.7	39.4	4.1	3.79
		80	52.3	37.6	4.5	3.39
	8.8	60	55.7	43.7	3.8	4.34
		70	54.7	41.2	4.2	3.85
		80	54.3	39.3	4.6	3.44
	14.7	60	57.0	44.9	3.9	4.31
		70	56.1	42.6	4.3	3.83
		80	55.3	40.3	4.7	3.42
40	4.2	60	61.0	48.8	3.8	4.68
		70	60.2	46.4	4.2	4.16
		80	59.4	43.9	4.7	3.70
	8.5	60	63.9	51.3	3.9	4.77
		70	63.0	49.1	4.4	4.24
		80	61.8	46.0	4.8	3.76
	14.1	60	65.6	52.8	4.1	4.74
		70	64.4	50.2	4.5	4.22
		80	63.4	47.9	5.0	3.75
50	4.0	60	69.1	56.0	4.0	5.03
		70	68.2	53.6	4.5	4.47
		80	67.3	51.1	5.0	3.98
	8.2	60	72.8	59.6	4.2	5.14
		70	71.5	56.4	4.6	4.56
		80	70.4	53.9	5.1	4.06
	13.6	60	74.9	61.4	4.3	5.13
		70	73.2	58.0	4.7	4.55
		80	72.1	55.3	5.2	4.05
60	3.9	60	77.4	63.5	4.3	5.33
		70	76.2	60.8	4.7	4.74
		80	75.2	58.1	5.2	4.22
	7.9	60	81.7	67.7	4.4	5.44
		70	80.2	64.7	4.9	4.84
		80	78.8	61.3	5.4	4.30
	13.1	60	84.1	69.8	4.5	5.44
		70	82.4	66.6	5.0	4.84
		80	80.6	62.8	5.5	4.30
70	3.8	60	86.8	72.2	4.5	5.69
		70	85.4	69.3	4.9	5.07
		80	84.1	66.2	5.5	4.51
	7.7	60	91.8	77.1	4.6	5.81
		70	90.0	73.7	5.1	5.17
		80	88.3	70.3	5.6	4.60
	12.7	60	94.7	79.5	4.8	5.81
		70	92.6	75.9	5.2	5.18
		80	90.7	72.2	5.8	4.61
80	3.7	60	96.6	81.5	4.7	6.02
		70	94.9	78.0	5.2	5.37
		80	93.4	74.7	5.7	4.79
	7.4	60	102.4	86.9	4.9	6.15
		70	100.3	83.1	5.4	5.48
		80	98.2	79.3	5.9	4.89
	12.3	60	105.7	89.7	5.0	6.15
		70	103.3	85.6	5.5	5.49
		80	101.0	81.6	6.0	4.90

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Bosch Thermotechnology Corp.
Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM070 VT Part Load Cooling Performance Data - 1800 CFM

Entering Fluid Temp (°F)	Water Flow (GPM)	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	3.8	75/63	58.3	45.7	63.7	2.0	29.7
			80/67	62.1	47.3	67.5	1.9	32.2
			85/71	66.2	48.4	71.4	1.9	34.9
	13.5	7.9	75/63	59.6	46.3	64.7	1.9	31.8
			80/67	63.6	47.6	68.6	1.8	34.8
			85/71	67.7	49.2	72.6	1.8	38.0
	18	13.2	75/63	60.1	46.7	65.3	1.9	31.8
			80/67	64.3	47.9	69.3	1.8	35.0
			85/71	68.5	49.5	73.4	1.8	38.4
60	9	3.7	75/63	55.5	44.9	62.0	2.3	24.5
			80/67	59.3	46.3	65.7	2.2	26.5
			85/71	63.1	47.7	69.5	2.2	28.6
	13.5	7.7	75/63	56.9	45.1	63.0	2.2	26.2
			80/67	60.7	46.7	66.7	2.1	28.5
			85/71	64.7	48.1	70.7	2.1	31.0
	18	12.8	75/63	57.5	45.6	63.6	2.2	26.4
			80/67	61.5	46.8	67.5	2.1	28.8
			85/71	65.6	48.2	71.5	2.1	31.5
70	9	3.6	75/63	52.8	43.6	60.3	2.6	20.3
			80/67	56.4	45.1	63.9	2.6	21.9
			85/71	60.1	46.4	67.6	2.6	23.5
	13.5	7.4	75/63	53.9	44.1	61.1	2.5	21.6
			80/67	57.6	45.5	64.7	2.5	23.4
			85/71	61.5	47.0	68.5	2.4	25.4
	18	12.4	75/63	54.5	44.3	61.7	2.5	21.8
			80/67	58.4	45.6	65.4	2.5	23.7
			85/71	62.3	47.0	69.3	2.4	25.8
80	9	3.5	75/63	50.0	42.5	58.9	3.0	16.7
			80/67	53.5	44.0	62.3	3.0	18.0
			85/71	57.2	45.2	65.9	3.0	19.4
	13.5	7.2	75/63	51.2	42.8	59.6	2.9	17.8
			80/67	54.8	44.2	63.1	2.8	19.2
			85/71	58.5	45.8	66.8	2.8	20.8
	18	12.0	75/63	51.7	43.0	60.1	2.9	18.0
			80/67	55.4	44.5	63.7	2.8	19.5
			85/71	59.1	46.2	67.4	2.8	21.2
90	9	3.4	75/63	45.1	41.4	55.4	3.4	13.5
			80/67	48.2	43.3	58.5	3.3	14.5
			85/71	51.3	45.1	61.7	3.3	15.5
	13.5	7.0	75/63	46.0	41.9	55.9	3.2	14.2
			80/67	49.2	43.7	59.2	3.2	15.4
			85/71	55.0	41.0	63.8	3.2	17.4
	18	11.7	75/63	46.5	42.0	56.4	3.2	14.4
			80/67	50.7	43.3	60.3	3.2	15.9
			85/71	54.5	44.5	63.9	3.1	17.3
100	9	3.3	75/63	42.9	39.7	54.6	3.8	11.2
			80/67	46.1	41.0	57.7	3.8	12.1
			85/71	47.9	43.9	60.2	3.8	12.6
	13.5	6.8	75/63	43.8	40.0	55.0	3.7	11.7
			80/67	47.0	41.5	58.2	3.7	12.7
			85/71	49.4	44.4	61.0	3.7	13.5
	18	11.4	75/63	44.2	40.0	55.4	3.7	11.9
			80/67	46.8	42.8	58.3	3.7	12.7
			85/71	52.5	39.7	62.8	3.6	14.5
110	9	3.2	75/63	40.4	38.3	53.7	4.4	9.2
			80/67	43.2	40.2	56.6	4.4	9.9
			85/71	47.9	37.5	60.3	4.3	11.1
	13.5	6.7	75/63	41.0	38.8	54.0	4.3	9.6
			80/67	44.1	40.4	57.0	4.2	10.4
			85/71	45.9	43.2	59.5	4.2	10.9
	18	11.1	75/63	41.5	38.8	54.4	4.3	9.7
			80/67	44.5	40.6	57.4	4.2	10.5
			85/71	49.5	37.3	61.3	4.2	11.9

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Londonderry, NH • Watertown, MA • Ft. Lauderdale, FL

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

SM070 VT Part Load Heating Performance Data - 1800 CFM

Entering Fluid Temp (°F)	Pressure Drop (PSI)	Entering Air Temp (°F)	Total Capacity (MBTUH)	Heat of Absorption (MBTUH)	Power Input (kW)	COP
20	4.5	60	34.6	26.2	2.7	3.80
		70	33.9	24.4	3.0	3.29
		80	33.2	22.7	3.4	2.84
	9.2	60	35.6	27.2	2.7	3.82
		70	34.8	25.3	3.1	3.31
		80	33.9	23.5	3.5	2.85
	15.3	60	36.2	27.7	2.8	3.74
		70	35.2	25.7	3.2	3.24
		80	34.8	23.4	3.6	2.84
30	4.3	60	39.8	31.5	2.7	4.28
		70	39.1	29.3	3.1	3.72
		80	38.5	27.2	3.5	3.23
	8.8	60	41.2	32.9	2.8	4.33
		70	40.3	30.4	3.2	3.75
		80	39.5	28.5	3.6	3.25
	14.6	60	42.0	33.3	2.9	4.26
		70	40.9	31.3	3.3	3.69
		80	40.1	28.9	3.7	3.21
40	4.1	60	45.7	37.1	2.8	4.80
		70	44.7	34.9	3.2	4.14
		80	44.1	32.5	3.6	3.61
	8.5	60	47.5	38.9	2.9	4.87
		70	46.4	36.5	3.2	4.20
		80	45.4	34.2	3.6	3.65
	14.1	60	48.4	39.9	3.0	4.81
		70	47.3	37.4	3.3	4.16
		80	46.2	35.0	3.7	3.61
50	4.0	60	52.5	43.2	2.9	5.33
		70	51.5	40.8	3.3	4.62
		80	50.5	38.5	3.7	4.01
	8.2	60	54.6	45.8	3.0	5.42
		70	53.4	42.9	3.3	4.69
		80	52.3	40.5	3.8	4.07
	13.5	60	55.8	47.0	3.1	5.36
		70	54.5	44.1	3.4	4.65
		80	53.4	41.3	3.9	4.04
60	3.9	60	59.9	50.7	3.0	5.88
		70	58.8	47.9	3.4	5.09
		80	57.7	45.2	3.8	4.42
	7.9	60	62.6	53.5	3.1	6.00
		70	61.2	50.7	3.5	5.18
		80	59.9	47.5	3.9	4.50
	13.1	60	64.1	55.0	3.2	5.96
		70	62.5	52.1	3.6	5.15
		80	61.1	48.9	4.0	4.47
70	3.7	60	67.4	57.9	3.1	6.45
		70	66.0	55.2	3.5	5.57
		80	64.8	52.0	3.9	4.84
	7.6	60	70.7	61.2	3.1	6.59
		70	69.0	58.2	3.6	5.68
		80	67.4	55.1	4.0	4.92
	12.7	60	72.4	63.1	3.2	6.54
		70	70.6	59.9	3.7	5.65
		80	68.9	56.7	4.1	4.91
80	3.6	60	75.3	65.5	3.2	7.00
		70	73.7	62.5	3.6	6.04
		80	72.2	59.5	4.0	5.24
	7.4	60	79.0	69.3	3.2	7.15
		70	77.2	66.0	3.7	6.17
		80	75.4	62.7	4.1	5.35
	12.3	60	81.1	71.5	3.3	7.12
		70	79.0	68.0	3.8	6.15
		80	77.1	64.5	4.2	5.34

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GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



BOSCH

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
Propylene Glycol	5	0.997	0.997	1.004	0.989	0.997	1.060
	10	0.994	0.994	1.006	0.986	0.995	1.125
	15	0.990	0.990	1.009	0.978	0.988	1.190
	25	0.983	0.983	1.016	0.960	0.979	1.300
Methanol	5	0.997	0.997	1.003	0.990	0.997	1.060
	10	0.996	0.996	1.005	0.979	0.993	1.100
	15	0.994	0.994	1.008	0.970	0.990	1.140
Ethanol	5	0.998	0.998	1.002	0.981	0.994	1.160
	10	0.996	0.996	1.004	0.960	0.988	1.230
	15	0.992	0.992	1.006	0.944	0.983	1.280
	25	0.986	0.986	1.009	0.917	0.974	1.400
Ethylene Glycol	5	0.997	0.997	1.003	0.993	0.998	1.060
	10	0.995	0.995	1.004	0.986	0.996	1.120
	15	0.992	0.992	1.005	0.980	0.993	1.190
	25	0.988	0.988	1.009	0.970	0.990	1.330
	30	0.985	0.985	1.012	0.965	0.987	1.400

Blower Performance Data							
Model	Rated Airflow at default 400 CFM/Ton	Fan Only Ventilation 50%	DeHum Reduction Percent	Effective DeHum Airflow	Most efficient effective Airflow Config SCT	Min Airflow/ton Heater	Static in. WC
SM024 Full Load	800	400	15.00%	680	800	400	0-0.8
SM024 Part Load	704	352	15.00%	598	704	400	0-0.8
SM036 Full Load	1200	600	15.00%	1020	1350	400	0-1.2
SM036 Part Load	1056	528	15.00%	898	1188	400	0-1.2
SM048 Full Load	1600	800	15.00%	1360	1600	400	0-1.2
SM048 Part Load	1408	704	15.00%	1197	1408	400	0-1.2
SM060 Full Load	2000	1000	15.00%	1700	2050	400	0-1.2
SM060 Part Load	1760	880	15.00%	1496	1804	400	0-1.2
SM070 Full Load	2400	1200	15.00%	2040	2250	400	0-1.2
SM070 Part Load	2112	1056	15.00%	1795	1980	400	0-1.2

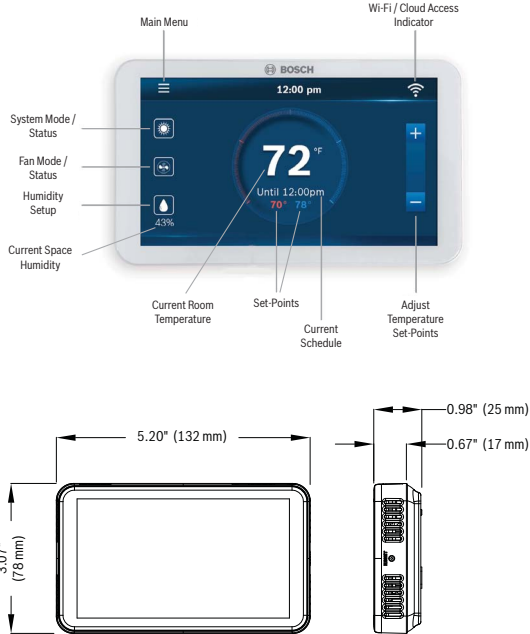


Min CFM/ton in cooling is 270 CFM/ton;
If calculated values fall below this limit, the control will
default to this minimum limit.

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



Field Installed Accessory - Bosch Connected Control Wi-Fi Thermostat



Description	Part Number	Heat	Cool	Humidity
Bosch Connected Control (BCC100)	8-733-948-009	4	2	Yes

Specifications

- 5 Inch Touch Screen 854 x 480 Pixels
- 7 Relay Outputs (Terminals) G, Y1, Y2, W1, W2, O/B, H/dH
- 1 Data Input (Pulse signals from Bosch WSHP)
- Displays Bosch Water Source Heat Pump Fault Messages
- Wi-Fi (802.11a/b/g/n) 2.4GHz (not compatible with 5GHz)
- FCC and IC Certification
- 5 Year Limited Warranty (see website for details)

Compatibility

- Conventional (Gas, Oil, Electric): Up to 2 Heat / 2 Cool
- Heat Pump (O/B to energize reversing valve in cool/heat): Up to 4 Heat / 2 Cool
- Supports up to 1 Accessory Unit: Humidifier or Dehumidifier (not provided by Bosch)
- Unit Modes: Heat, Cool, Auto, Off, Emergency Heat
- Fan Modes: Auto, On, Circulate
- Supports 2 Transformer Systems (Rh and Rc)
- C-Wire Required for Installation
- Supports Active and Passive Dehumidification without the need for external relays, such as Bosch Water Source Heat Pump products equipped with a Hot Gas Reheat Coil and/or ECM motor
- Supports dual fuel applications

Field Installed Accessory - SmartStart Assist Kit

Part Number	SM024		SM036		SM048		SM060		SM070	
	VT	HZ	VT	HZ	VT	HZ	VT	HZ	VT	HZ
8733957159	•	•	•	•						
8733957160					•	•	•	•	•	•

Field Installed Accessory - Internally Mounted Electric Heat Kits

Part Number	Kilowatt Heater - 208/230V	Availability per Unit				
		SM024	SM036	SM048	SM060	SM070
7738003204	Electric Heat - 3.6/4.8 kW	•	•	•	•	•
7738003205	Electric Heat - 7.8/9.6 kW	•	•	•	•	•
7738003206	Electric Heat - 10.8/14.4 kW		•	•	•	•
7738003207	Electric Heat - 14.4/19.2 kW			•	•	•

Field Installed Accessory - Pump/Valve Relay Kit

Part Number	SM024		SM036		SM048		SM060		SM070	
	VT	HZ	VT	HZ	VT	HZ	VT	HZ	VT	HZ
8733951906	•	•	•	•	•	•	•	•	•	•

GreenSource SM Rev C Series - Residential Geothermal Heat Pumps



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Field Installed Accessory - Duct Mounted Electric Heaters 208/230V

Nominal BTUH	Order #				Nominal CFM	Duct Flange Connection in Inches	Nominal Dimension in Inches
	5 kW	10 kW	15 kW	20 kW			
18000	7738002745	N/A	N/A	N/A	600	13.75 x 13.75	14 x 14
24000	7738002746	7738002747	N/A	N/A	800	13.75 x 13.75	14 x 14
30000	7738002748	7738002749	N/A	N/A	1000	15.75 x 15.75	16 x 16
36000	7738002748	7738002749	N/A	N/A	1200	15.75 x 15.75	16 x 16
42000	7738002747	7738002751	7738002752	N/A	1400	17.75 x 17.75	18 x 18
48000	7738002747	7738002751	7738002752	N/A	1600	17.75 x 17.75	18 x 18
60000	7738002747	7738002751	7738002752	7738002753	2000	17.75 x 17.75	18 x 18
70000	7738002747	7738002751	7738002752	7738002753	2200	17.75 x 17.75	18 x 18



Duct mounted heaters are only available in single phase 208/230 V. Please refer to Manufacturer's Installation and Operation Manual for proper installation and guidelines. It is recommended to use a seven (7) conductor cables for thermostat interface. It is required for the duct mounted heater to have an independent power supply. In fiberglass duct systems, a metal sleeve **MUST** be used as an insert and support to the heater.

Field Installed Accessory - Swivel Connector Kit (two connectors shipped loose with each unit)

Order Number	Type and Size	SM024		SM036		SM048		SM060		SM070	
		VT	HZ	VT	HZ	VT	HZ	VT	HZ	VT	HZ
8733927179	Male 3/4" NPT MPT to 1" swivel FPT	●									
8733927180	Male 1" NPT MPT to 1" swivel FPT		●	●	●	●	●	●	●	●	●



Swivel fittings are used in typical residential installations where water pressure ratings are below 125 psi. For higher pressure ratings which are typical to commercial installations, swivel fittings **MUST NOT** be used.

Replacement Air Filter Information

Nominal Filter Size (MERV8 filters recommended MERV13 filters used only with horizontal units)	SM024		SM036		SM048		SM060		SM070	
	VT	HZ	VT	HZ	VT	HZ	VT	HZ	VT	HZ
	Quantity Need per Unit									
16 X 30 X 2			2		2					
18 X 18 X 2		2								
18 X 20 X 2							3		3	
20 X 24 X 2				2	2					
20 X 30 X 2						2		2		
24 X 24 X 2	1									

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Field Installed Accessory - Stainless Steel Hose Kits

Options	Option 1	Option 2	Option 3**	Option 4**,***	Option 5**, ***	Option 6**, ***
Hose Size (Length, Diameter)	Hoses Only with Swivel	Hose Kit Hoses with Ported Ball Valves, Swivel and One P/T*	Hose Kit with Automatic Flow Valve (AFV)*	Hose kit with AFV, Y-Strainer & Blow Down Valve*	Hose Kit with AFV and Electric Valve*	Hose Kit with AFV, Y-Strainer, BDV and Electric Valve*
	Part #	Part #	Part #	Part #	Part #	Part #
12 Inch						
1/2" L	T111H02121	T111H02122	T111H02123	T111H02124	T111H02125	T111H02126
24 Inch						
3/4" S	T111H03241	T111H03242	T111H03243	T111H03244	T111H03245	T111H03246
1" L	T111H04241	T111H04242	T111H04243	T111H04244	T111H04245	T111H04246
1" S	T111H04241	T111H04242	T111H04247	T111H04248	T111H04249	T111H04240
1 - 1/4" S	T111H05241	T111H05242	T111H05243	T111H05244	T111H05245	T111H05246
1 - 1/2" L	T111H06241	T111H06242	T111H06243	T111H06244	T111H06245	T111H06246
1 - 1/2" S	T111H06241	T111H06242	T111H06247	T111H06248	T111H06249	T111H06240
2" S	T111H08241	T111H08242	T111H08243	T111H08244	T111H08245	T111H08246
36 Inch						
3/4" S	T111H03361	T111H03362	T111H03363	T111H03364	T111H03365	T111H03366
1" L	T111H04361	T111H04362	T111H04363	T111H04364	T111H04365	T111H04366
1" S	T111H04361	T111H04362	T111H04367	T111H04368	T111H04369	T111H04360
1 - 1/4" S	T111H05361	T111H05362	T111H05363	T111H05364	T111H05365	T111H05366
1 - 1/2" L	T111H06361	T111H06362	T111H06363	T111H06364	T111H06365	T111H06366
1 - 1/2" S	T111H06361	T111H06362	T111H06367	T111H06368	T111H06369	T111H06360
2" S	T111H08361	T111H08362	T111H08363	T111H08364	T111H08365	T111H08366

* All Hose Kits include S/R ported ball valves with swivel and P/T port.

** 'L' and 'S' only apply to kit options 3 through 6

*** GMP's are required for hose kits in options 3-6

Hose Kit Flow Rates by Size

Please see Technical Service Bulletin: Heat Pump Hose Kits – Water Flow Rates.

This document is located at www.bosch-climate.us under Support Center > Downloads > Downloads for Bosch Products > Service Bulletins.