

GreenSource CDI series Model TW Residential Water to Water Heat Pump

Engineering
Submittal
Sheet



BOSCH

Overview and Certifications



Standard Features, Factory Installed Options and Control Options

Standard Features

- ▶ **White Pre-Painted Sheet Metal Cabinets**
 - No visible screws
 - Appliance white for a clean - durable look
- ▶ **High Efficiency**
 - Up to 25.7 EER @ PL GWHP
 - Up to 21.3 EER @ FL GWHP
 - Compliant with Energy Start Tier 3
 - Scroll compressor(s)
 - Dual-stage refrigerant circuit
- ▶ **Remote Mounted Control RMC with Unit Protection Module UPM**
 - LCD Display - for Easy View of Unit Operation
 - Low Pressure Switch Protection
 - High Pressure Switch Protection
 - Alarm Output
 - Anti-Short Cycling
 - 5 minute Delay
 - Low Pressure Bypass at Start Up
 - Random Start of Unit
 - Brown Out Protection
 - Water Coil/Coaxial Coil/Condenser Freeze Protection
- ▶ **Insulation and Construction**
 - Dual density fiberglass insulation
 - Multi-density sound compressor blanket
 - Patent: Floating Base Pan
 - Front water connections (rear water connections on TW122)
 - Single point electrical connection
 - Insulated coaxial heat exchangers and refrigerant piping
- ▶ **Reliability - Durability - Serviceability**
 - Alert Communicating Circuit Board
 - Schrader access ports
 - High & low pressure switches
 - Lockout circuit
 - Unit protection module (UPM) standard in -CSC, -CSN models
 - Unit mounted controller (UMC) standard on -USC, -USN models
- ▶ **Standard Warranty**
 - 10 Year All Parts Limited Warranty
 - 10 Year Labor Limited Warranty

Standard Features, Factory Installed Options, and Control Options continued..

Factory Installed Options

- ▶ **Cupro-nickel Coil:**
 - Recommended in conditions anticipating moderate scale formation or in brackish water (available on load-side and supply-side).
- ▶ **Domestic Hot Water Heat Recovery Package:**
 - Used to heat domestic hot water using excess heat from the hot compressed gas of the compressor.
- ▶ **Unit Mounted Controller UMC:**
 - Tactile touchpad and digital temperature display
 - LED display provides indication of unit operating mode and fault indication
 - Adjustable temperature set point and differential



UMC option removes Remote Mounted Control and Unit Protection Module.

- ▶ **EMS Relay**
- ▶ **Pump/Valve Relay**
- ▶ **Flow Proving Switch**
- ▶ **Comfort Alert**
- ▶ **DDC Control**

Control Options

There are two main choices when designating controllability for the water-to-water models. There is either a factory installed unit mounted controller or a field supplied remote mounted controller. In deciding which to choose for the project, one factor to consider is if the project entails a building automation system with DDC, if this is the case, the remote mounted controller is mandatory. For further explanation the descriptions are to follow or contact the local sales office to receive a better understanding of the controllability choices.

- ▶ **Unit Mounted Controller (UMC):**

Designed to enhance the unit operation with more flexibility, accurate control and operating modes the unit mounted controller provides an increased level of comfort in the conditioned space together with solid-state reliability and ease of operation. Familiar functionality of our proven UPM module are incorporated into the unit mounted controller for unit protection. The unit mounted controller is available on all Bosch Thermotechnology water-to-water units except for remote controller/thermostat designation.

 - **Tactile Touchpad** for temperature and mode adjustment.
 - **Digital Display** of temperature in either degrees Fahrenheit or Celsius.
 - **LED Display** provides indication for unit operating mode and fault indication for high or low pressure lockout.
 - **Adjustable Temperature Set Point** from 60° F through 80° F (15.5° C through 26.7° C).
 - **Adjustable Temperature Differential** between 1° F and 6° F (0.6° C and 3.3° C).
 - **Selectable Options:**
 - Manual/Automatic changeover
 - **Additional Features**
 - 5 minute anti short cycling delay
 - Random start
 - 90 second low pressure bypass timer prevents nuisance lockouts during cold winter start up
 - Intelligent reset allows the unit to automatically restart after 5 minutes if a fault is no longer active
- ▶ **Remote Mounted Control (RMC):**

This feature provides the flexibility to connect a variety of appropriate remote mounted controllers to a low voltage terminal strip within the water-to-water unit. All water-to-water models come with a water temperature thermistor internal to the unit mounted on the water lines.

Standard Features, Factory Installed Options, and Control Options continued..

► **Unit Protection Module (UPM)**

When selecting the remote mounted controller, the TW Models are built in the factory with a Unit Protection Module (UPM) that controls the unit operation and monitors the safety controls that protect the unit. The UPM interfaces with the appropriate controller. The main purpose of the UPM is to protect the compressor by monitoring the different states of switches and sensors. This module provides time delays and helps protect the unit against freezing of the water-to-water heat exchangers. This level of protection helps provide the peace of mind that comes with offering a Bosch product to the customer.

– **UPM Control Board Features:**

- **Anti-Short Cycle Timer** – 5 minute delay on break timer to prevent compressor short cycling.
- **Random Start** – Each controller has a unique random start delay ranging from 270 to 300 seconds after power is applied to the board. This will prevent the simultaneous start of multiple units after a power outage.
- **Low Pressure Bypass Timer** – The low pressure switch is bypassed for 120 seconds after a call for compressor operation to prevent nuisance low pressure lockouts during cold start-up in the heating mode.
- **Brownout/Surge/Power Interruption Protection**– Prevents compressor operation should the voltage drop below 10% of unit rated value. The unit will restart once the voltage is within tolerance and the random start has timed out.
- **Malfunction (Alarm) Output** – The controller has a set of contacts for remote fault indication. This can be either a steady output or can be set to pulse with the fault code. Two connections are available – one to provide a 24 volt output, the other to provide a dry contact.
- **Test Service Mode** – A dip switch setting is provided to reduce all time delay settings to 10 seconds maximum during troubleshooting for verification of unit operation.
- **LED Fault Indication** – Two LED indicators are provided as follows:
 - **Green:** Power LED indicates 18 – 30 VAC present at the board.
 - **Red:** Fault indicator with blink codes identifying the particular fault. This information is available via the malfunction (alarm) output contacts.

- **Intelligent Reset**–If a fault condition is initiated, the 5 minute delay on break time period is initiated and the unit will restart after this delay expires. The UPM is configurable for either 2 or 4 fault occurrences before going into a hard lockout. The selection is made through a dip switch setting on the board. If the fault condition still exists or reoccurs twice or four times within one hour, the unit will go into a hard lockout and requires a manual lockout reset.
- **Lockout Reset**–A hard lockout can be reset by turning the unit thermostat off and then back on or by shutting off unit power at the circuit breaker. The method of reset

► **DDC Controls (Option)**

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

Water temperatures can be monitored from the central control computer and unit fault indication displayed.

Available inputs/outputs include:

- Leaving water temperature
- Override time remaining
- Night setback status
- Cooling set point
- Heating set point
- Status of all the alarms
- Occupied heating and cooling set points
- Command for occupied or unoccupied mode
- Command for override of the unoccupied mode (unit resorts to occupied set points)
- Set point adjustment

► **Additional Features:**

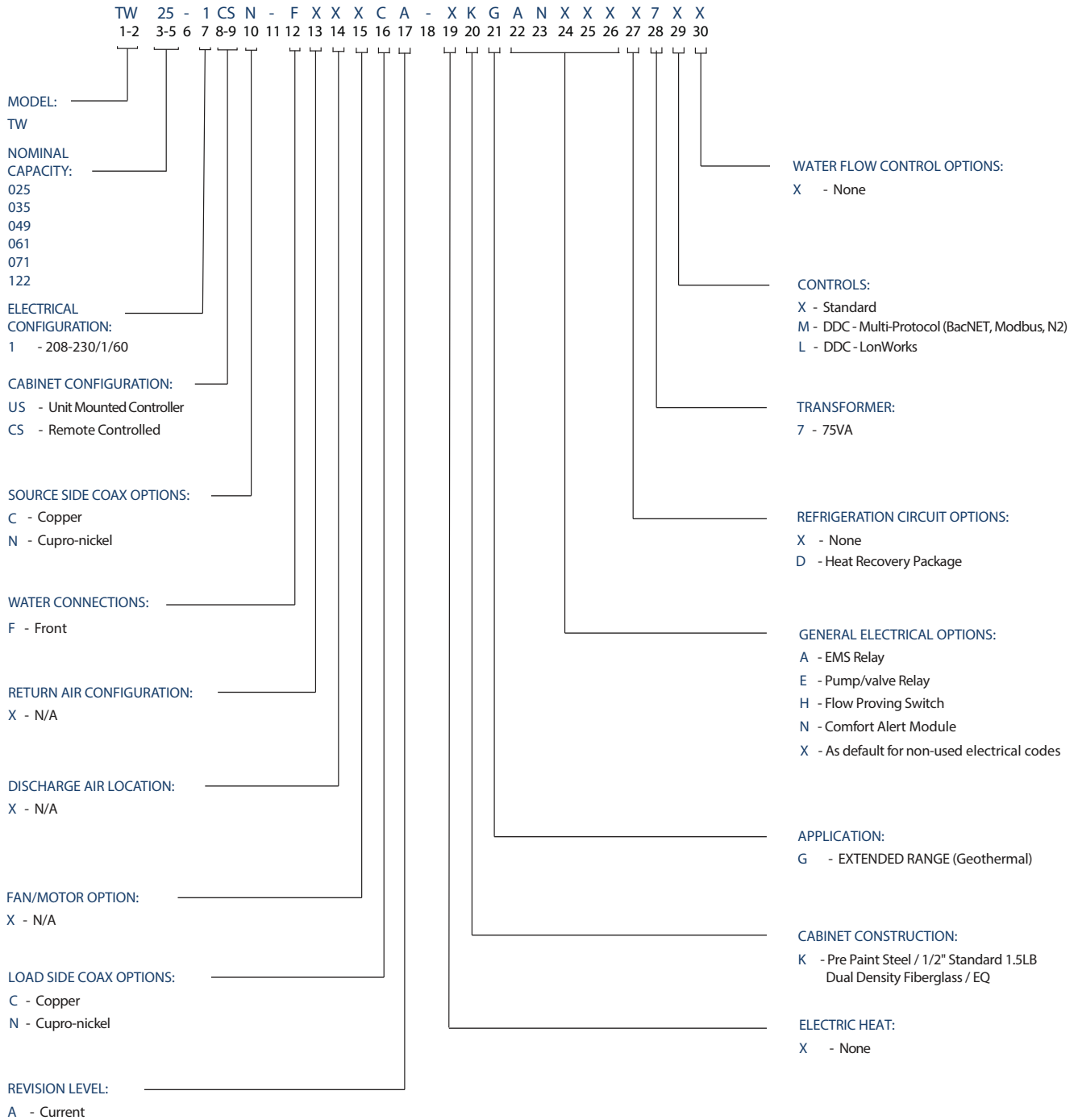
- 75VA transformer
- TXV
- Dual freeze sensor (with RMC)
- Remote reset at thermostat
- Fault LED indication
- Four-way reversing valve
- Filter drier

A BACview® handheld diagnostic tool is available to allow local access to display and modify user defined properties without any computer software.

GreenSource TW Series Residential Water to Water Heat Pumps



Model Nomenclature



GreenSource TW Series

Residential Water to Water Heat Pumps



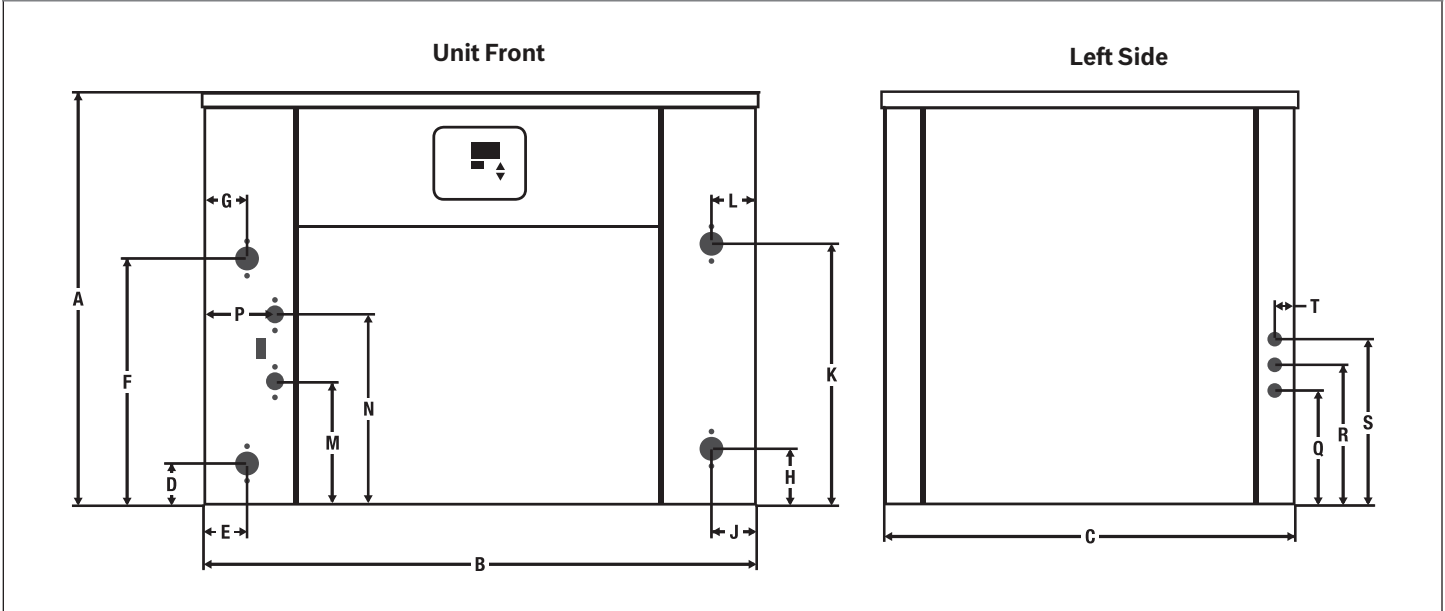
Physical Data							
Description	Unit	TW025	TW035	TW049	TW061	TW071	TW122
Compressor Type (Qty)	—	Scroll (1)	Scroll (1)	Scroll (1)	Scroll (1)	Scroll (1)	Scroll (2)
Refrigeration Charge	Oz.	48	59	62	72	90	170
Max Water Working Pressure	PSIG/kPa	450/3100	450/3100	450/3100	450/3100	450/3100	450/3100
Load - Water Connection Size							
FPT	Inch	3/4	3/4	1.0	1.0	1.0	1-1/4
Coaxial Coil Volume	Gal	0.47	0.50	0.64	0.74	1.05	2.06
Source - Water Connection Size							
FPT	Inch	3/4	3/4	1.0	1.0	1.0	1-1/4
Coaxial Coil Volume	Gal	0.47	0.50	0.39	0.47	0.8	2.06
Cabinet							
Weight - Operating (lbs)	lbs	250	270	290	340	360	700
Weight - Shipping (lbs)	lbs	270	290	310	360	380	720

ASHRAE/AHRI/ISO 13256-1. English (I-P) Units													
Models	Load	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
		Cooling 86 deg.F		Heating 68 deg.F		Cooling 59 deg.F		Heating 50 deg.F		Cooling 77 deg.F		Heating 32 deg.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
TW025	Full	21000	13.4	31000	4.4	24500	21.2	25000	3.5	22500	15.9	19500	3.0
	Partial	15500	14.7	22000	4.6	18500	25.7	17000	3.7	18000	22.1	15000	3.2
TW035	Full	29000	12.6	43000	4.3	34000	20.2	34000	3.5	30000	14.6	27000	3.0
	Partial	22500	14.5	31500	4.7	25000	24.8	25000	3.6	24000	20.6	22000	3.2
TW049	Full	39000	12.9	58000	4.1	45000	19.7	47000	3.5	41000	14.9	37500	3.0
	Partial	29000	13.9	42000	4.5	33500	23.6	34500	3.6	32500	20.1	30500	3.2
TW061	Full	49000	12.9	74500	4.2	55500	19.9	59500	3.5	51000	14.8	48000	3.0
	Partial	37000	13.7	55000	4.6	42500	23.3	41500	3.6	41000	19.8	38000	3.3
TW071	Full	57500	13.0	86500	4.2	64000	18.8	70000	3.4	60000	14.8	53500	3.0
	Partial	43500	13.3	65500	4.4	50500	21.8	52000	3.6	48500	18.7	44500	3.2
TW122	Full	114000	13.8	160800	4.6	130000	21.3	129500	3.8	119500	16.1	102500	3.0
	Partial	54900	12.3	78500	4.2	63500	19.0	63600	3.4	61000	16.7	56000	3.2

Electrical Data								
Models	Voltage Code	Rated Voltage	Voltage Min/Max	Compressor				
				QTY	RLA	LRA	Min Circuit Amps	Max Fuse/ HACR
TW025	1	208-230/60/1	197/253	1	11.7	58.3	14.6	25
TW035	1	208-230/60/1	197/253	1	15.3	83.0	19.1	30
TW049	1	208-230/60/1	197/253	1	21.2	104.0	26.5	45
TW061	1	208-230/60/1	197/253	1	27.1	152.9	33.9	60
TW071	1	208-230/60/2	197/254	1	29.7	179.2	37.1	60
TW122	1	208-230/60/1	197/253	2	28.3	178.0	63.7	90

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

TW025-071 Dimensions and Connections



TW025-071 Dimensions and Connections

Model	A Height	B Width	C Depth	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	Water Conn.	HRP Conn.
TW025	24.12	32.5	24	2.7	2.5	13.7	2.5	3.25	1.95	14.25	1.95	7.15	11	4.25	6.55	8.05	9.55	1.25	3/4 FPT	1/2 FPT
TW035	24.12	32.5	24	2.3	2.3	14.3	2.35	3.7	2.55	15.7	2.55	7.15	11	4.25	6.55	8.05	9.55	1.25	3/4 FPT	1/2 FPT
TW049	24.12	32.5	24	2.3	2.6	14.3	2.65	3.7	2.65	15.7	2.65	7.15	11	4.25	6.55	8.05	9.55	1.25	1 FPT	1/2 FPT
TW061	24.12	32.5	24	2.3	2.6	14.3	2.65	3.2	2.65	15.2	2.65	7.15	11	4.25	6.55	8.05	9.55	1.25	1 FPT	1/2 FPT
TW071	24.12	32.5	24	3	2.25	17.25	2.25	3.25	2.25	17	2.25	7.15	11	4.25	6.55	8.05	9.55	1.25	1 FPT	1/2 FPT

TW025-071 Overall Cabinet Dimensions

Models	Units	Width	Depth	Height
TW025 - 071	in	32.5	24.0	24.1
	mm	825	610	613


i All dimensions within +/- 0.125".
Specifications subject to change without notice.

GreenSource TW Series
Residential Water to Water Heat Pumps



BOSCH

Waterside Pressure Drop					
Model	GPM	Chilled Fluid Side (55°F)		Cond. Fluid Side (85°F)	
		Pressure Drop (PSIG)	Pressure Drop (ft of H2O)	Pressure Drop (PSIG)	Pressure Drop (ft of H2O)
TW025	3.0	0.56	1.30	0.51	1.18
	4.0	0.95	2.18	0.86	1.98
	5.0	1.41	3.26	1.28	2.95
	6.0	1.96	4.52	1.78	4.10
	8.0	3.29	7.59	2.98	6.88
TW035	4.5	1.85	4.26	1.67	3.86
	6.0	3.10	7.14	2.81	6.47
	7.5	4.63	10.68	4.19	9.67
	9.0	6.43	14.82	5.82	13.43
	12.0	10.78	24.88	9.77	22.54
TW049	6.0	1.10	2.54	1.00	2.30
	8.0	1.85	4.26	1.67	3.86
	10.0	2.76	6.37	2.50	5.77
	12.0	3.83	8.85	3.47	8.01
	16.0	6.44	14.85	5.83	13.45
TW061	7.5	1.41	3.24	1.27	2.94
	10.0	2.36	5.44	2.14	4.93
	12.5	3.53	8.13	3.19	7.37
	15.0	4.89	11.29	4.43	10.23
	20.0	8.21	18.95	7.44	17.17
TW071	9.0	2.01	4.65	1.83	4.23
	12.0	3.38	7.80	3.08	7.10
	15.0	5.05	11.65	4.60	10.60
	18.0	7.01	16.18	6.38	14.72
	24.0	11.77	27.15	10.71	24.71
TW122	18.0	2.36	5.5	2.05	4.7
	22.0	3.39	7.8	2.94	6.8
	26.0	4.58	10.6	3.97	9.2
	30.0	5.93	13.7	5.14	11.9
	34.0	7.43	17.1	6.44	14.8

 All values based upon pure water at the indicated temperature.

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

Greensource TW Series

Residential Water to Water Heat Pumps



Capacity Data - TW061 - Part Load - Cooling																								
Entering Fluid Temp (°F)	Water Flow (GPM)	Pressure Drop PSI (FOH)	EWT	7.5 GPM							11.25 GPM							15 GPM						
				Cooling Capacity (MBH)	Power, kW	Loop Rej/Add, MBH	Lvg Water Temp	EER	Pressure Drop (FOH)	Pressure Drop (PSI)	Cooling Capacity (MBH)	Power, kW	Loop Rej/Add, MBH	Lvg Water Temp	EER	Pressure Drop (FOH)	Pressure Drop (PSI)	Cooling Capacity (MBH)	Power, kW	Loop Rej/Add, MBH	Lvg Water Temp	EER	Pressure Drop (FOH)	Pressure Drop (PSI)
50	7.5	3.5 (1.5)	50	34.8	1.82	41.0	40.7	19.1	3.6	1.6	35.7	1.82	41.9	43.7	19.7	7.4	3.2	36.2	1.81	42.4	45.2	20.0	12.5	5.4
			60	40.9	1.77	47.0	49.1	23.1	3.5	1.5	42.1	1.76	48.1	52.5	23.9	7.2	3.1	42.8	1.76	48.8	54.3	24.3	12.1	5.2
			70	47.7	1.72	53.6	57.3	27.7	3.4	1.5	49.3	1.71	55.1	61.2	28.8	7.0	3.0	50.1	1.70	55.9	63.3	29.4	11.7	5.1
			80	55.1	1.66	60.8	65.3	33.1	3.3	1.4	57.1	1.65	62.7	69.9	34.6	6.8	2.9	58.1	1.64	63.7	72.2	35.4	11.3	4.9
	11.25	6.3 (2.7)	50	35.1	1.77	41.1	40.6	19.8	3.6	1.6	36.0	1.76	42.0	43.6	20.5	7.4	3.2	36.5	1.76	42.5	45.1	20.8	12.5	5.4
			60	41.3	1.71	47.1	49.0	24.1	3.5	1.5	42.5	1.70	48.3	52.4	25.1	7.2	3.1	43.2	1.69	49.0	54.2	25.5	12.1	5.2
			70	48.2	1.64	53.8	57.1	29.3	3.4	1.5	49.8	1.63	55.4	61.1	30.6	7.0	3.0	50.7	1.62	56.2	63.2	31.3	11.7	5.1
			80	55.8	1.57	61.1	65.1	35.5	3.3	1.4	57.8	1.55	63.1	69.7	37.2	6.8	2.9	58.9	1.54	64.2	72.1	38.2	11.3	4.9
	15	9.7 (4.2)	50	35.2	1.74	41.2	40.6	20.2	3.6	1.6	36.2	1.73	42.1	43.6	20.9	7.5	3.2	36.7	1.73	42.6	45.1	21.2	12.5	5.4
			60	41.5	1.68	47.2	48.9	24.7	3.5	1.5	42.8	1.66	48.4	52.4	25.7	7.2	3.1	43.4	1.66	49.1	54.2	26.2	12.1	5.2
			70	48.4	1.61	53.9	57.1	30.2	3.4	1.5	50.1	1.59	55.5	61.1	31.5	7.0	3.0	51.0	1.58	56.4	63.2	32.3	11.7	5.1
			80	56.1	1.53	61.3	65.0	36.7	3.3	1.4	58.2	1.51	63.3	69.7	38.6	6.8	2.9	59.3	1.49	64.4	72.1	39.7	11.3	4.9
70	7.5	10.0 (4.3)	50	31.5	2.45	39.9	41.6	12.9	3.6	1.6	32.3	2.44	40.7	44.3	13.2	7.4	3.2	32.7	2.44	41.1	45.6	13.4	12.5	5.4
			60	37.2	2.42	45.5	50.1	15.4	3.5	1.5	38.3	2.41	46.5	53.2	15.9	7.2	3.1	38.8	2.41	47.0	54.8	16.1	12.1	5.2
			70	43.5	2.38	51.6	58.4	18.2	3.4	1.5	44.8	2.38	52.9	62.0	18.8	7.0	3.0	45.5	2.37	53.6	63.9	19.2	11.7	5.1
			80	50.3	2.35	58.3	66.6	21.4	3.3	1.4	51.9	2.34	59.9	70.8	22.2	6.8	2.9	52.8	2.34	60.8	73.0	22.6	11.3	4.9
	11.25	3.2 (1.4)	50	31.8	2.39	40.0	41.5	13.3	3.6	1.6	32.7	2.38	40.8	44.2	13.7	7.4	3.2	33.1	2.38	41.2	45.6	13.9	12.5	5.4
			60	37.6	2.35	45.6	50.0	16.0	3.5	1.5	38.7	2.34	46.7	53.1	16.5	7.2	3.1	39.2	2.34	47.2	54.8	16.8	12.1	5.2
			70	44.0	2.30	51.8	58.3	19.1	3.4	1.5	45.3	2.29	53.2	61.9	19.8	7.0	3.0	46.1	2.29	53.9	63.9	20.1	11.7	5.1
			80	50.9	2.26	58.6	66.4	22.6	3.3	1.4	52.6	2.25	60.3	70.6	23.4	6.8	2.9	53.5	2.24	61.2	72.9	23.9	11.3	4.9
	15	6.8 (2.9)	50	32.0	2.36	40.0	41.5	13.6	3.6	1.6	32.8	2.35	40.8	44.2	13.9	7.4	3.2	33.2	2.35	41.3	45.6	14.1	12.5	5.4
			60	37.8	2.31	45.7	49.9	16.3	3.5	1.5	38.9	2.31	46.8	53.1	16.9	7.2	3.1	39.4	2.30	47.3	54.7	17.1	12.1	5.2
			70	44.2	2.26	52.0	58.2	19.5	3.4	1.5	45.6	2.25	53.3	61.9	20.2	7.0	3.0	46.3	2.25	54.0	63.8	20.6	11.7	5.1
			80	51.2	2.21	58.8	66.3	23.2	3.3	1.4	53.0	2.20	60.5	70.6	24.1	6.8	2.9	53.9	2.19	61.4	72.8	24.6	11.3	4.9
90	7.5	10.3 (4.4)	50	27.7	3.23	38.7	42.6	8.6	3.6	1.6	28.4	3.23	39.4	45.0	8.8	7.4	3.2	28.7	3.22	39.7	46.2	8.9	12.4	5.4
			60	33.1	3.20	44.0	51.2	10.3	3.5	1.5	33.9	3.20	44.8	54.0	10.6	7.2	3.1	34.4	3.20	45.3	55.4	10.8	12.0	5.2
			70	38.9	3.18	49.7	59.6	12.2	3.4	1.5	39.9	3.17	50.7	62.9	12.6	7.0	3.0	40.5	3.17	51.3	64.6	12.8	11.7	5.0
			80	45.1	3.15	55.8	68.0	14.3	3.3	1.4	46.4	3.15	57.2	71.7	14.8	6.8	2.9	47.2	3.14	57.9	73.7	15.0	11.3	4.9
	11.25	7.2 (3.1)	50	28.1	3.15	38.9	42.5	8.9	3.6	1.6	28.8	3.15	39.5	44.9	9.1	7.4	3.2	29.1	3.15	39.9	46.1	9.3	12.4	5.4
			60	33.5	3.12	44.2	51.1	10.8	3.5	1.5	34.4	3.11	45.0	53.9	11.1	7.2	3.1	34.8	3.11	45.4	55.4	11.2	12.0	5.2
			70	39.4	3.08	49.9	59.5	12.8	3.4	1.5	40.5	3.07	51.0	62.8	13.2	7.0	3.0	41.1	3.07	51.6	64.5	13.4	11.7	5.0
			80	45.8	3.04	56.2	67.8	15.1	3.3	1.4	47.2	3.03	57.5	71.6	15.6	6.8	2.9	47.9	3.03	58.3	73.6	15.8	11.3	4.9
	15	3.9 (1.7)	50	28.3	3.11	38.9	42.5	9.1	3.6	1.6	29.0	3.11	39.6	44.9	9.3	7.4	3.2	29.3	3.11	39.9	46.1	9.4	12.4	5.4
			60	33.7	3.07	44.2	51.0	11.0	3.5	1.5	34.6	3.07	45.1	53.8	11.3	7.2	3.1	35.1	3.06	45.5	55.3	11.5	12.0	5.2
			70	39.7	3.03	50.0	59.4	13.1	3.4	1.5	40.8	3.02	51.1	62.7	13.5	7.0	3.0	41.4	3.02	51.7	64.5	13.7	11.7	5.0
			80	46.1	2.99	56.3	67.7	15.4	3.3	1.4	47.6	2.98	57.7	71.5	16.0	6.8	2.9	48.3	2.97	58.5	73.6	16.3	11.3	4.9
110	7.5	6.4 (2.8)	50	22.6	4.28	37.2	44.0	5.3	3.6	1.6	23.2	4.27	37.7	45.9	5.4	7.4	3.2	23.4	4.27	38.0	46.9	5.5	12.4	5.4
			60	27.7	4.24	42.2	52.6	6.5	3.5	1.5	28.4	4.24	42.8	55.0	6.7	7.2	3.1	28.7	4.23	43.2	56.2	6.8	12.0	5.2
			70	33.1	4.21	47.5	61.2	7.9	3.4	1.5	34.0	4.20	48.3	64.0	8.1	7.0	3.0	34.4	4.20	48.7	65.4	8.2	11.6	5.0
			80	38.9	4.18	53.1	69.6	9.3	3.3	1.4	39.9	4.17	54.2	72.9	9.6	6.7	2.9	40.5	4.17	54.7	74.6	9.7	11.3	4.9
	11.25	10.7 (4.6)	50	23.1	4.18	37.4	43.8	5.5	3.6	1.6	23.7	4.17	37.9	45.8	5.7	7.4	3.2	23.9	4.17	38.2	46.8	5.7	12.4	5.4
			60	28.3	4.13	42.4	52.5	6.9	3.5	1.5	29.0	4.12	43.0	54.8	7.0	7.2	3.1	29.3	4.12	43.4	56.1	7.1	12.0	5.2
			70	33.8	4.08	47.7	61.0	8.3	3.4	1.5	34.7	4.07	48.6	63.8	8.5	7.0	3.0	35.1	4.07	49.0	65.3	8.6	11.6	5.0
			80	39.7	4.04	53.5	69.4	9.8	3.3	1.4	40.8	4.03	54.6	72.7	10.1	6.7	2.9	41.4	4.03	55.1	74.5	10.3	11.3	4.9
	15	4.8 (2.1)	50	23.4	4.13	37.5	43.8	5.7	3.6	1.6	23.9	4.12	38.0	45.7	5.8	7.4	3.2	24.2	4.12	38.2	46.8	5.9	12.4	5.4
			60	28.6	4.07	42.5	52.4	7.0	3.5	1.5	29.3	4.07	43.1	54.8	7.2	7.2	3.1	29.6	4.06	43.5	56.0	7.3	12.0	5.2
			70	34.1	4.02	47.8	60.9	8.5	3.4	1.5	35.0	4.01	48.7	63.8	8.7	7.0	3.0	35.5	4.01	49.2	65.3	8.9	11.6	5.0
			80	40.1	3.97	53.6	69.3	10.1	3.3	1.4	41.2	3.96	54.7	72.7	10.4	6.7	2.9	41.8	3.96	55.3	74.4	10.6	11.3	4.9

- Extended Range - Anti-freeze required
- Interpolation is permissible. Not extrapolation
- Operation not recommended

- Tabulated unit performance does not include fan or pump power corrections required for AHRI/ ISO standard performance ratings.
- Unit performance may be interpolated. Extrapolation is not allowed.
- For conditions other than rating conditions provided, consult the BST selection software.
- Ratings below 40°F are with a methanol solution.

DISCLAIMER: The performance reported herein is based on testing by FHP. Variations in the installation and operational environment may alter performance. Bosch disclaims all warranties, express and implied, that the performance will be as reported, including the warranty of merchantability and fitness for purpose. In addition, continuous research and development may result in a change to an appliances design and specifications at the time of order, which Bosch may change without notice. Before purchase, confirm the design specifications of the appliance.

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

GreenSource TW Series

Residential Water to Water Heat Pumps



Capacity Data - TW061 - Part Load - Heating																									
Entering Fluid Temp (°F)	Water Flow (GPM)	Pressure Drop PSI (FOH)	EWT	7.5 GPM						11.25 GPM						15 GPM									
				Heating Capacity, MBH	Power, kW	Heat Absorb, MBH	Lvg Water Temp	COP	Pressure Drop (ft of Water)	Pressure Drop (PSI)	Heating Capacity, MBH	Power, kW	Heat Absorb, MBH	Lvg Water Temp	COP	Pressure Drop (ft of water)	Pressure Drop (psi)	Heating Capacity, MBH	Power, kW	Heat Absorb, MBH	Lvg Water Temp	COP	Pressure Drop (ft of Water)	Pressure Drop (psi)	
30	7.5	1.7 (3.8)	60																						
			80																						
			100																						
			120	27.4	5.04	10.2	127.3	1.6	1.2	2.8	27.6	4.9	10.87	123.7	1.6	4.3	9.9	27.6	4.9	10.87	123.7	1.6	4.3	9.9	
	11.25	3.4 (7.9)	60																						
			80																						
			100																						
			120	27.6	5.04	10.4	127.4	1.6	1.2	2.8	27.8	4.90	11.1	123.7	1.7	4.3	9.9	27.8	4.90	11.1	123.7	1.7	4.3	9.9	
	15	5.8 (13.3)	60																						
			80																						
			100	29.4	3.77	16.6	107.9	2.3	1.3	3.0	29.6	3.66	17.1	103.9	2.4	4.5	10.5	29.6	3.66	17.1	103.9	2.4	4.5	10.5	
			120	27.7	5.04	10.5	127.4	1.6	1.2	2.8	27.9	4.90	11.2	123.7	1.7	4.3	9.9	27.9	4.90	11.2	123.7	1.7	4.3	9.9	
50	7.5	1.6 (3.6)	60	40.4	2.12	33.2	70.8	5.6	1.5	3.4	40.6	2.04	33.6	65.4	5.8	5.1	11.8	40.6	2.04	33.6	65.4	5.8	5.1	11.8	
			80	39.4	2.81	29.8	90.5	4.1	1.4	3.2	39.5	2.71	30.2	85.3	4.3	4.8	11.1	39.5	2.71	30.2	85.3	4.3	4.8	11.1	
			100	38.1	3.71	25.4	110.1	3.0	1.3	3.0	38.2	3.58	26.0	105.1	3.1	4.5	10.4	38.2	3.58	26.0	105.1	3.1	4.5	10.4	
			120	36.3	4.94	19.4	129.7	2.2	1.2	2.8	36.5	4.77	20.3	124.9	2.2	4.3	9.9	36.5	4.77	20.3	124.9	2.2	4.3	9.9	
	11.25	3.2 (7.4)	60	41.3	2.12	34.0	71.0	5.7	1.5	3.4	41.4	2.03	34.5	65.5	6.0	5.1	11.8	41.4	2.03	34.5	65.5	6.0	5.1	11.8	
			80	40.1	2.81	30.5	90.7	4.2	1.4	3.2	40.2	2.71	31.0	85.4	4.4	4.8	11.1	40.2	2.71	31.0	85.4	4.4	4.8	11.1	
			100	38.6	3.71	26.0	110.3	3.1	1.3	3.0	38.8	3.58	26.6	105.2	3.2	4.5	10.4	38.8	3.58	26.6	105.2	3.2	4.5	10.4	
			120	36.7	4.93	19.8	129.8	2.2	1.2	2.8	37.0	4.76	20.7	124.9	2.3	4.3	9.9	37.0	4.76	20.7	124.9	2.3	4.3	9.9	
	15	5.4 (12.4)	60	41.7	2.12	34.5	71.1	5.8	1.5	3.4	41.9	2.03	35.0	65.6	6.1	5.1	11.8	41.9	2.03	35.0	65.6	6.1	5.1	11.8	
			80	40.4	2.81	30.8	90.8	4.2	1.4	3.2	40.6	2.70	31.4	85.4	4.4	4.8	11.1	40.6	2.70	31.4	85.4	4.4	4.8	11.1	
			100	38.9	3.71	26.3	110.4	3.1	1.3	3.0	39.1	3.57	26.9	105.2	3.2	4.5	10.4	39.1	3.57	26.9	105.2	3.2	4.5	10.4	
			120	36.9	4.93	20.1	129.8	2.2	1.2	2.8	37.2	4.76	20.9	125.0	2.3	4.3	9.9	37.2	4.76	20.9	125.0	2.3	4.3	9.9	
70	7.5	1.5 (3.4)	60	52.6	2.04	45.6	74.0	7.5	1.5	3.4	52.9	1.93	46.3	67.1	8.0	5.1	11.8	52.9	1.93	46.3	67.1	8.0	5.1	11.8	
			80	50.7	2.76	41.3	93.5	5.4	1.4	3.1	51.0	2.63	42.0	86.8	5.7	4.8	11.1	51.0	2.63	42.0	86.8	5.7	4.8	11.1	
			100	48.6	3.65	36.2	113.0	3.9	1.3	3.0	49.0	3.49	37.1	106.5	4.1	4.5	10.4	49.0	3.49	37.1	106.5	4.1	4.5	10.4	
			120	46.1	4.85	29.6	132.3	2.8	1.2	2.8	46.6	4.64	30.8	126.2	2.9	4.3	9.9	46.6	4.64	30.8	126.2	2.9	4.3	9.9	
	11.25	3.0 (7.0)	60	54.0	2.03	47.0	74.4	7.8	1.5	3.3	54.4	1.92	47.8	67.2	8.3	5.1	11.8	54.4	1.92	47.8	67.2	8.3	5.1	11.8	
			80	51.8	2.75	42.5	93.8	5.5	1.4	3.1	52.2	2.62	43.3	87.0	5.8	4.8	11.1	52.2	2.62	43.3	87.0	5.8	4.8	11.1	
			100	49.6	3.65	37.1	113.2	4.0	1.3	3.0	50.0	3.48	38.1	106.7	4.2	4.5	10.4	50.0	3.48	38.1	106.7	4.2	4.5	10.4	
			120	46.9	4.84	30.3	132.5	2.8	1.2	2.8	47.3	4.63	31.5	126.3	3.0	4.3	9.9	47.3	4.63	31.5	126.3	3.0	4.3	9.9	
	15	5.0 (11.7)	60	54.7	2.03	47.8	74.6	7.9	1.4	3.3	55.1	1.91	48.6	67.4	8.5	5.1	11.8	55.1	1.91	48.6	67.4	8.5	5.1	11.8	
			80	52.5	2.75	43.1	94.0	5.6	1.4	3.1	52.9	2.61	44.0	87.0	5.9	4.8	11.1	52.9	2.61	44.0	87.0	5.9	4.8	11.1	
			100	50.1	3.65	37.6	113.4	4.0	1.3	3.0	50.5	3.48	38.6	106.7	4.3	4.5	10.4	50.5	3.48	38.6	106.7	4.3	4.5	10.4	
			120	47.2	4.84	30.7	132.6	2.9	1.2	2.8	47.7	4.62	32.0	126.4	3.0	4.3	9.9	47.7	4.62	32.0	126.4	3.0	4.3	9.9	
90	7.5	1.4 (3.2)	60	67.1	1.96	60.4	77.9	10.1	1.4	3.3	67.8	1.80	61.6	69.0	11.1	5.1	11.8	67.8	1.80	61.6	69.0	11.1	5.1	11.8	
			80	64.0	2.70	54.8	97.1	6.9	1.4	3.1	64.7	2.53	56.0	88.6	7.5	4.8	11.0	64.7	2.53	56.0	88.6	7.5	4.8	11.0	
			100	60.9	3.61	48.6	116.2	4.9	1.3	2.9	61.5	3.40	49.9	108.2	5.3	4.5	10.4	61.5	3.40	49.9	108.2	5.3	4.5	10.4	
			120																						
	11.25	2.8 (6.6)	60	69.3	1.94	62.6	78.5	10.4	1.4	3.3															
			80	65.9	2.70	56.7	97.6	7.2	1.4	3.1	66.6	2.52	58.0	88.9	7.7	4.8	11.0	66.6	2.52	58.0	88.9	7.7	4.8	11.0	
			100																						
			120																						
	15	4.7 (11.0)	60	70.5	1.94	63.9	78.8	10.7	1.4	3.3															
			80																						
			100																						
			120																						

- Extended Range - Anti-freeze required
- Interpolation is permissible. Not extrapolation
- Operation not recommended

- Tabulated unit performance does not include fan or pump power corrections required for AHRI/ ISO standard performance ratings.
- Unit performance may be interpolated. Extrapolation is not allowed.
- For conditions other than rating conditions provided, consult the BST selection software.
- Ratings below 40°F are with a methanol solution.

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

GreenSource TW Series

Residential Water to Water Heat Pumps



Capacity Data - TW061 - Full Load - Cooling																								
Entering Fluid Temp (°F)	Water Flow (GPM)	Pressure Drop (FOH)	EWT	7.5 GPM							11.25 GPM							15 GPM						
				Cooling Capacity (MBH)	Power, kW	Loop Rej/Add, MBH	Lvg Water Temp	EER	Pressure Drop (FOH)	Pressure Drop (PSI)	Cooling Capacity (MBH)	Power, kW	Loop Rej/Add, MBH	Lvg Water Temp	EER	Pressure Drop (FOH)	Pressure Drop (PSI)	Cooling Capacity (MBH)	Power, kW	Loop Rej/Add, MBH	Lvg Water Temp	EER	Pressure Drop (FOH)	Pressure Drop (PSI)
50	7.5	3.4 (1.5)	50	49.1	2.46	57.5	36.9	20.0	3.6	1.6	50.9	2.47	59.3	41.0	20.6	7.5	3.2	51.8	2.48	60.2	43.1	20.9	12.5	5.4
			60	57.0	2.52	65.6	44.8	22.6	3.5	1.5	59.1	2.54	67.8	49.5	23.3	7.2	3.1	60.3	2.55	69.0	52.0	23.7	12.1	5.2
			70	65.4	2.59	74.2	52.6	25.3	3.4	1.5	68.1	2.61	77.0	57.9	26.1	7.0	3.0	69.5	2.62	78.4	60.7	26.5	11.7	5.1
			80	74.3	2.67	83.4	60.2	27.9	3.3	1.4	77.5	2.70	86.7	66.2	28.8	6.8	3.0	79.3	2.71	88.5	69.4	29.2	11.4	4.9
			90	83.8	2.76	93.2	67.7	30.4	3.2	1.4	87.6	2.80	97.1	74.4	31.3	6.6	2.9							
	11.25	6.3 (2.7)	50	49.5	2.39	57.7	36.8	20.7	3.6	1.6	51.3	2.40	59.5	40.9	21.4	7.5	3.2	52.2	2.41	60.4	43.0	21.7	12.5	5.4
			60	57.5	2.44	65.8	44.7	23.6	3.5	1.5	59.7	2.45	68.1	49.4	24.4	7.2	3.1	60.9	2.46	69.3	51.9	24.8	12.1	5.2
			70	66.1	2.50	74.6	52.4	26.5	3.4	1.5	68.8	2.52	77.4	57.8	27.3	7.0	3.0	70.3	2.53	78.9	60.6	27.8	11.7	5.1
			80	75.2	2.57	84.0	59.9	29.3	3.3	1.4	78.5	2.59	87.4	66.0	30.3	6.8	3.0	80.3	2.61	89.2	69.3	30.8	11.4	4.9
			90																					
	15	9.7 (4.2)	50	49.7	2.35	57.7	36.7	21.1	3.6	1.6	51.5	2.36	59.6	40.8	21.8	7.5	3.2	52.5	2.37	60.5	43.0	22.1	12.5	5.4
			60	57.8	2.40	65.9	44.6	24.1	3.5	1.5	60.0	2.41	68.2	49.3	24.9	7.3	3.1	61.2	2.42	69.5	51.8	25.3	12.1	5.2
			70	66.4	2.45	74.8	52.3	27.1	3.4	1.5	69.2	2.47	77.6	57.7	28.0	7.0	3.0	70.7	2.48	79.2	60.6	28.5	11.7	5.1
			80	75.6	2.52	84.2	59.8	30.0	3.3	1.4	79.0	2.54	87.7	66.0	31.1	6.8	3.0	80.8	2.56	89.6	69.2	31.6	11.4	4.9
			90																					
70	7.5	9.9 (4.3)	50	45.8	3.10	56.3	37.8	14.7	3.6	1.6	47.2	3.12	57.9	41.6	15.2	7.5	3.2	48.0	3.12	58.7	43.6	15.4	12.5	5.4
			60	53.1	3.16	63.8	45.9	16.8	3.5	1.5	54.9	3.18	65.8	50.2	17.3	7.2	3.1	55.9	3.18	66.8	52.5	17.6	12.1	5.2
			70	60.9	3.23	71.9	53.8	18.9	3.4	1.5	63.2	3.25	74.3	58.8	19.5	7.0	3.0	64.4	3.26	75.5	61.4	19.8	11.7	5.1
			80	69.2	3.30	80.5	61.5	21.0	3.3	1.4	72.0	3.32	83.4	67.2	21.7	6.8	2.9	73.5	3.34	84.9	70.2	22.0	11.4	4.9
			90	78.0	3.38	89.6	69.2	23.1	3.2	1.4	81.3	3.42	93.0	75.5	23.8	6.6	2.9	83.1	3.44	94.8	78.9	24.2	11.0	4.8
	11.25	3.2 (1.4)	50	46.2	3.01	56.5	37.7	15.3	3.6	1.6	47.7	3.02	58.1	41.5	15.8	7.5	3.2	48.6	3.03	58.9	43.5	16.0	12.5	5.4
			60	53.7	3.06	64.1	45.7	17.5	3.5	1.5	55.6	3.07	66.1	50.1	18.1	7.2	3.1	56.6	3.08	67.1	52.4	18.4	12.1	5.2
			70	61.7	3.11	72.3	53.6	19.8	3.4	1.5	64.1	3.13	74.7	58.6	20.5	7.0	3.0	65.3	3.14	76.0	61.3	20.8	11.7	5.1
			80	70.2	3.17	81.0	61.3	22.2	3.3	1.4	73.1	3.19	84.0	67.0	22.9	6.8	2.9	74.7	3.20	85.6	70.0	23.3	11.4	4.9
			90	79.3	3.24	90.3	68.9	24.5	3.2	1.4	82.7	3.27	93.9	75.3	25.3	6.6	2.9	84.6	3.29	95.8	78.7	25.7	11.0	4.8
	15	6.7 (2.9)	50	46.4	2.97	56.6	37.6	15.6	3.6	1.6	48.0	2.98	58.2	41.5	16.1	7.5	3.2	48.8	2.98	59.0	43.5	16.4	12.5	5.4
			60	54.0	3.01	64.2	45.6	17.9	3.5	1.5	55.9	3.02	66.2	50.1	18.5	7.2	3.1	57.0	3.03	67.3	52.4	18.8	12.1	5.2
			70	62.1	3.05	72.5	53.4	20.3	3.4	1.5	64.5	3.07	75.0	58.5	21.0	7.0	3.0	65.8	3.08	76.3	61.2	21.4	11.7	5.1
			80	70.7	3.11	81.3	61.1	22.8	3.3	1.4	73.7	3.13	84.3	66.9	23.6	6.8	2.9	75.3	3.14	86.0	70.0	24.0	11.4	4.9
			90	79.9	3.17	90.7	68.7	25.2	3.2	1.4	83.4	3.20	94.3	75.2	26.1	6.6	2.9	85.3	3.22	96.3	78.6	26.5	11.0	4.8
90	7.5	10.2 (4.4)	50	41.6	3.95	55.0	38.9	10.5	3.6	1.6	42.8	3.96	56.3	42.4	10.8	7.5	3.2	43.4	3.97	57.0	44.2	10.9	12.5	5.4
			60	48.3	4.02	62.0	47.1	12.0	3.5	1.5	49.8	4.03	63.6	51.1	12.4	7.2	3.1	50.6	4.04	64.4	53.2	12.5	12.1	5.2
			70	55.5	4.08	69.4	55.2	13.6	3.4	1.5	57.4	4.10	71.4	59.8	14.0	7.0	3.0	58.4	4.11	72.4	62.2	14.2	11.7	5.1
			80	63.1	4.16	77.3	63.2	15.2	3.3	1.4	65.5	4.18	79.7	68.4	15.6	6.8	2.9	66.7	4.20	81.0	71.1	15.9	11.3	4.9
			90	71.3	4.24	85.7	71.0	16.8	3.2	1.4	74.0	4.27	88.6	76.8	17.3	6.6	2.9	75.5	4.29	90.1	79.9	17.6	11.0	4.8
	11.25	7.2 (3.1)	50	42.1	3.83	55.2	38.8	11.0	3.6	1.6	43.4	3.84	56.5	42.3	11.3	7.5	3.2	44.1	3.85	57.2	44.1	11.5	12.5	5.4
			60	49.0	3.88	62.2	46.9	12.6	3.5	1.5	50.6	3.89	63.9	51.0	13.0	7.2	3.1	51.5	3.90	64.8	53.1	13.2	12.1	5.2
			70	56.4	3.93	69.8	55.0	14.3	3.4	1.5	58.4	3.95	71.9	59.6	14.8	7.0	3.0	59.5	3.96	73.0	62.1	15.0	11.7	5.1
			80	64.3	3.99	77.9	62.9	16.1	3.3	1.4	66.7	4.01	80.4	68.1	16.6	6.8	2.9	68.0	4.02	81.7	70.9	16.9	11.4	4.9
			90	72.7	4.06	86.5	70.6	17.9	3.2	1.4	75.6	4.08	89.5	76.6	18.5	6.6	2.9	77.1	4.10	91.1	79.7	18.8	11.0	4.8
	15	3.9 (1.7)	50	42.4	3.78	55.3	38.7	11.2	3.6	1.6	43.7	3.78	56.6	42.2	11.6	7.5	3.2	44.4	3.79	57.3	44.1	11.7	12.5	5.4
			60	49.3	3.82	62.4	46.8	12.9	3.5	1.5	51.0	3.83	64.0	50.9	13.3	7.2	3.1	51.9	3.83	64.9	53.1	13.5	12.1	5.2
			70	56.8	3.86	70.0	54.8	14.7	3.4	1.5	58.9	3.87	72.1	59.5	15.2	7.0	3.0	60.0	3.88	73.2	62.0	15.5	11.7	5.1
			80	64.8	3.91	78.2	62.7	16.6	3.3	1.4	67.3	3.93	80.7	68.0	17.2	6.8	2.9	68.7	3.93	82.1	70.8	17.5	11.4	4.9
			90	73.3	3.97	86.9	70.4	18.5	3.2	1.4	76.3	3.99	89.9	76.4	19.1	6.6	2.9	77.9	4.00	91.6	79.6	19.5	11.0	4.8
110	7.5	6.3 (2.7)	50	36.3	5.08	53.7	40.3	7.1	3.6	1.6	37.3	5.10	54.7	43.4	7.3	7.5	3.2	37.8	5.10	55.2	45.0	7.4	12.5	5.4
			60	42.4	5.16	60.0	48.7	8.2	3.5	1.5	43.6	5.18	61.2	52.3	8.4	7.2	3.1	44.2	5.18	61.9	54.1	8.5	12.1	5.2
			70	48.9	5.24	66.8	57.0	9.3	3.4	1.5	50.4	5.26	68.3	61.0	9.6	7.0	3.0	51.2	5.27	69.2	63.2	9.7	11.7	5.1
			80	55.8	5.33	74.0	65.1	10.5	3.3	1.4	57.7	5.35	75.9	69.7	10.8	6.8	2.9	58.7	5.36	77.0	72.2	10.9	11.3	4.9
			90	63.2	5.42	81.7	73.1	11.7	3.2	1.4	65.4	5.44	84.0	78.4	12.0	6.6	2.8							
	11.25	10.7 (4.6)	50	37.0	4.93	53.8	40.1	7.5	3.6	1.6	38.0	4.94	54.9	43.2	7.7	7.5	3.2	38.6	4.94	55.4	44.9	7.8	12.5	5.4
			60	43.2	4.99	60.2	48.5	8.7	3.5	1.5	44.5	5.00	61.6	52.1	8.9	7.2	3.1	45.2	5.01	62.3	54.0	9.0	12.1	5.2
			70	49.9	5.05	67.2	56.7	9.9	3.4	1.5	51.6	5.06	68.8	60.8	10.2	7.0	3.0	52.4	5.07	69.7	63.0	10.3	11.7	5.1
			80	57.1	5.11	74.6	64.8	11.2	3.3	1.4	59.1	5.12	76.6	69.5	11.5									

GreenSource TW Series

Residential Water to Water Heat Pumps



Capacity Data - TW061 – Full Load – Heating																									
Entering Fluid Temp (°F)	Water Flow (GPM)	Pressure Drop PSI (FOH)	EWT	7.5 GPM						11.25 GPM						15 GPM									
				Heating Capacity, MBH	Power, kW	Heat Absorb, MBH	Lvg Water Temp	COP	Pressure Drop (ft of Water)	Pressure Drop (PSI)	Heating Capacity, MBH	Power, kW	Heat Absorb, MBH	Lvg Water Temp	COP	Pressure Drop (ft of water)	Pressure Drop (psi)	Heating Capacity, MBH	Power, kW	Heat Absorb, MBH	Lvg Water Temp	COP	Pressure Drop (ft of Water)	Pressure Drop (psi)	
30	7.5	1.7 (3.9)	60																						
			80																						
			100																						
			120	42.7	5.59	23.6	131.4	2.2	1.2	2.8	42.7	5.4	24.29	125.7	2.3	4.3	9.9	42.7	5.4	24.29	125.7	2.3	4.3	9.9	
	11.25	3.5 (8.0)	60																						
			80																						
			100	43.5	4.34	28.7	111.6	2.9	1.3	3.0	43.6	4.18	29.3	105.8	3.1	4.5	10.4	43.6	4.18	29.3	105.8	3.1	4.5	10.4	
			120	43.2	5.60	24.0	131.5	2.3	1.2	2.8	43.2	5.40	24.8	125.8	2.3	4.3	9.9	43.2	5.40	24.8	125.8	2.3	4.3	9.9	
	15	5.8 (13.4)	60																						
			80																						
			100	43.9	4.35	29.0	111.7	3.0	1.3	3.0	43.9	4.19	29.6	105.9	3.1	4.5	10.4	43.9	4.19	29.6	105.9	3.1	4.5	10.4	
			120	43.4	5.61	24.3	131.6	2.3	1.2	2.8	43.5	5.40	25.0	125.8	2.4	4.3	9.9	43.5	5.40	25.0	125.8	2.4	4.3	9.9	
50	7.5	1.6 (3.6)	60	57.0	2.76	47.5	75.2	6.0	1.4	3.3	57.2	2.64	48.2	67.6	6.3	5.1	11.8	57.2	2.64	48.2	67.6	6.3	5.1	11.8	
			80	55.7	3.50	43.8	94.9	4.7	1.4	3.1	55.9	3.34	44.5	87.5	4.9	4.8	11.1	55.9	3.34	44.5	87.5	4.9	4.8	11.1	
			100	54.4	4.48	39.1	114.5	3.6	1.3	3.0	54.6	4.28	40.0	107.3	3.7	4.5	10.4	54.6	4.28	40.0	107.3	3.7	4.5	10.4	
			120	53.0	5.78	33.3	134.1	2.7	1.2	2.8	53.2	5.52	34.4	127.1	2.8	4.3	9.8	53.2	5.52	34.4	127.1	2.8	4.3	9.8	
	11.25	3.2 (7.5)	60	58.6	2.77	49.1	75.6	6.2	1.4	3.3	58.9	2.65	49.8	67.9	6.5	5.1	11.8	58.9	2.65	49.8	67.9	6.5	5.1	11.8	
			80	57.1	3.51	45.1	95.2	4.8	1.4	3.1	57.4	3.35	46.0	87.7	5.0	4.8	11.1	57.4	3.35	46.0	87.7	5.0	4.8	11.1	
			100	55.5	4.49	40.2	114.8	3.6	1.3	3.0	55.8	4.28	41.2	107.4	3.8	4.5	10.4	55.8	4.28	41.2	107.4	3.8	4.5	10.4	
			120	53.9	5.79	34.1	134.4	2.7	1.2	2.8	54.2	5.53	35.3	127.2	2.9	4.3	9.8	54.2	5.53	35.3	127.2	2.9	4.3	9.8	
	15	5.4 (12.5)	60	59.5	2.78	50.0	75.9	6.3	1.4	3.3	59.8	2.66	50.7	68.0	6.6	5.1	11.8	59.8	2.66	50.7	68.0	6.6	5.1	11.8	
			80	57.8	3.52	45.9	95.4	4.8	1.4	3.1	58.2	3.36	46.7	87.8	5.1	4.8	11.0	58.2	3.36	46.7	87.8	5.1	4.8	11.0	
			100	56.1	4.50	40.8	115.0	3.7	1.3	3.0	56.4	4.29	41.8	107.5	3.9	4.5	10.4	56.4	4.29	41.8	107.5	3.9	4.5	10.4	
			120	54.3	5.80	34.5	134.5	2.7	1.2	2.8	54.7	5.54	35.8	127.3	2.9	4.3	9.8	54.7	5.54	35.8	127.3	2.9	4.3	9.8	
70	7.5	1.5 (3.4)	60	73.1	2.88	63.3	79.5	7.4	1.4	3.3	73.7	2.73	64.3	69.8	7.9	5.1	11.8	73.7	2.73	64.3	69.8	7.9	5.1	11.8	
			80	70.7	3.62	58.3	98.8	5.7	1.4	3.1	71.3	3.43	59.6	89.5	6.1	4.8	11.0	71.3	3.43	59.6	89.5	6.1	4.8	11.0	
			100	68.1	4.62	52.3	118.2	4.3	1.3	2.9	68.7	4.36	53.8	109.2	4.6	4.5	10.4	68.7	4.36	53.8	109.2	4.6	4.5	10.4	
			120																						
	11.25	3.0 (7.0)	60	75.6	2.90	65.7	80.2	7.6	1.4	3.3	76.3	2.75	66.9	70.2	8.1	5.1	11.7	76.3	2.75	66.9	70.2	8.1	5.1	11.7	
			80	72.8	3.64	60.4	99.4	5.9	1.3	3.1	73.6	3.44	61.8	89.8	6.3	4.8	11.0	73.6	3.44	61.8	89.8	6.3	4.8	11.0	
			100	69.9	4.64	54.0	118.6	4.4	1.3	2.9	70.6	4.38	55.7	109.4	4.7	4.5	10.4	70.6	4.38	55.7	109.4	4.7	4.5	10.4	
			120																						
	15	5.1 (11.7)	60	77.0	2.92	67.1	80.5	7.7	1.4	3.3	77.8	2.76	68.3	70.4	8.3	5.1	11.7	77.8	2.76	68.3	70.4	8.3	5.1	11.7	
			80	74.0	3.65	61.5	99.7	5.9	1.3	3.1	74.8	3.45	63.0	90.0	6.4	4.8	11.0	74.8	3.45	63.0	90.0	6.4	4.8	11.0	
			100	70.8	4.65	55.0	118.9	4.5	1.3	2.9	71.6	4.38	56.6	109.5	4.8	4.5	10.4	71.6	4.38	56.6	109.5	4.8	4.5	10.4	
			120																						
90	7.5	1.4 (3.2)	60	91.4	3.05	81.0	84.4	8.8	1.4	3.3	92.5	2.86	82.7	72.3	9.5	5.1	11.7	92.5	2.86	82.7	72.3	9.5	5.1	11.7	
			80	87.7	3.78	74.8	103.4	6.8	1.3	3.1	88.8	3.54	76.8	91.8	7.4	4.8	11.0	88.8	3.54	76.8	91.8	7.4	4.8	11.0	
			100	83.7	4.79	67.4	122.3	5.1	1.3	2.9	84.9	4.47	69.6	111.3	5.6	4.5	10.3	84.9	4.47	69.6	111.3	5.6	4.5	10.3	
			120																						
	11.25	2.9 (6.6)	60	95.1	3.08	84.6	85.4	9.0	1.4	3.3	96.4	2.89	86.5	72.9	9.8	5.1	11.7	96.4	2.89	86.5	72.9	9.8	5.1	11.7	
			80	90.8	3.81	77.8	104.2	7.0	1.3	3.1	92.2	3.56	80.0	92.3	7.6	4.7	11.0	92.2	3.56	80.0	92.3	7.6	4.7	11.0	
			100	86.3	4.82	69.9	123.0	5.3	1.3	2.9	87.7	4.49	72.3	111.7	5.7	4.5	10.3	87.7	4.49	72.3	111.7	5.7	4.5	10.3	
			120																						
	15	4.8 (11.0)	60	97.1	3.10	86.5	85.9	9.2	1.4	3.3	98.5	2.91	88.6	73.1	9.9	5.1	11.7	98.5	2.91	88.6	73.1	9.9	5.1	11.7	
			80	92.5	3.83	79.4	104.7	7.1	1.3	3.1	94.0	3.58	81.8	92.5	7.7	4.7	11.0	94.0	3.58	81.8	92.5	7.7	4.7	11.0	
			100	87.7	4.83	71.2	123.4	5.3	1.3	2.9	89.2	4.50	73.8	111.9	5.8	4.5	10.3	89.2	4.50	73.8	111.9	5.8	4.5	10.3	
			120																						

- Extended Range - Anti-freeze required
- Interpolation is permissible. Not extrapolation
- Operation not recommended

- Tabulated unit performance does not include fan or pump power corrections required for AHRI/ ISO standard performance ratings.
- Unit performance may be interpolated. Extrapolation is not allowed.
- For conditions other than rating conditions provided, consult the BST selection software.
- Ratings below 40°F are with a methanol solution.

DISCLAIMER: The performance reported herein is based on testing by FHP. Variations in the installation and operational environment may alter performance. Bosch disclaims all warranties, express and implied, that the performance will be as reported, including the warranty of merchantability and fitness for purpose. In addition, continuous research and development may result in a change to an appliances design and specifications at the time of order, which Bosch may change without notice. Before purchase, confirm the design specifications of the appliance.

Bosch Thermotechnology Corp.
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