BOSCH GUIDE SPECIFICATIONS

TA Series Two Stage R-410A

GENERAL

Units shall be performance certified to ISO standard 13256-1 for Water Loop Heat Pump, Ground Water Heat Pump and Ground Loop Heat Pump applications. Units shall be Underwriter Laboratories (UL and ULc) listed for safety on all models. Each unit shall be run tested at the factory. Each unit shall be pallet mounted and stretch wrapped. The units shall be manufactured in an ISO9001:2000 certified facility.

The units shall be warranted by the manufacturer against defects in materials and workmanship for a period of i) in the case of residentially sold units having the last digit of the serial number as a 'T'; five years on all parts and 10 years on the refrigerant circuit components ii) on all other units; five years on the compressor and one year on all other parts.

The units shall be designed to operate with entering fluid temperatures between 50˚F (10˚C) and 110˚F (43.3˚C) in cooling and temperatures between 20˚F (-6.6˚C) and 80˚F (27˚C) in heating as manufactured by Bosch in Fort Lauderdale, Florida.

CASING & CABINET

The cabinet shall be fabricated from heavy-gauge steel finished with a vinyl coated black cabinet and a silver brushed aluminum front panel. The interior shall be insulated with ½" (12.7mm) thick foil faced glass fiber. All units shall allow sufficient service access to replace the compressor without unit removal. One blower and two compressor compartment access panels shall be removable with supply and return ductwork in place. A duct collar shall be provided on the supply air opening. A filter rack with 2" (50.8 mm) thick disposable filters and a 1" (25.4mm) return air duct collar shall be provided with each unit. Air filters shall be MERV 11 rated. The units shall have an insulated divider panel between the air handling section and the compressor section to minimize the transmission of compressor noise, and to permit service testing without air bypass. Units shall have a stainless steel condensate drain pan. The compressor shall have a floating base pan to minimize noise transmissions.

REFRIGERATION CIRCUITS

All units shall contain a sealed refrigerant circuit including a two stage scroll compressor, bi-directional thermal expansion valve metering device, finned tube air-to-refrigerant heat exchanger, refrigerant reversing valve and service ports. Compressor shall be high efficiency two stage scroll type, designed for heat pump duty, quiet operation and mounted on rubber vibration isolators. Compressor motors shall be equipped with overload protection. Refrigerant reversing valves shall be pilot operated sliding piston type with replaceable encapsulated magnetic coils energized only during the cooling cycle. The finned tube coil shall be constructed of lanced aluminum fins not exceeding fourteen fins per inch bonded to rifled copper tubes in a staggered pattern not less than three rows deep and have a 600 PSIG (4140 Kpa) working pressure. Coils shall have a baked polyester enamel coating for protection against most airborne chemicals. Coil end plates shall be aluminum. The coaxial water-to-refrigerant heat exchanger shall be constructed of a convoluted copper (optional cupronickel) inner tube and steel outer tube with a designed refrigerant working pressure of 600 PSIG (4140 Kpa) and a designed water side working pressure of no less than 400 PSIG (2750 kPa). The water-to-refrigerant heat exchanger shall be insulated to prevent condensation at low fluid temperatures.

FAN MOTOR & ASSEMBLY

The fan shall be direct drive centrifugal forward curved type with a dynamically balanced wheel. The housing and wheel shall be designed for quiet low velocity operation. The fan housing shall be removable from the unit without disconnecting the supply air ductwork for servicing of the fan motor.The fan motor shall be an ECM-2 microprocessor controlled DC type motor with internal programming factory set for the specific unit and featuring soft start/stop and a delay off feature for maximum efficiency and quiet operation. Air flow rates shall be varied according to the staging of the unit. There will further be provisions for adjusting the air delivery of the motor and blower by +/- 15% from rated air flow.

ELECTRICAL

Controls and safety devices will be factory wired and mounted within the unit. Controls shall include comfort alert module, compressor contactor, 24V transformer, reversing valve coil and solid state lock-out controller (UPM). The UPM controller shall include the following features: diagnostic LED's, low pressure bypass time delay (to prevent nuisance low pressure lock-outs during operation with low fluid temperatures), anti short cycle time delay, random start time delay and one time intelligent reset. When the safety controls are activated the lock-out circuit shall reset itself the first time. If the safety controls are subsequently activated within one hour, then the lock-out circuit shall disable the compressor until it is reset at the thermostat or main circuit breaker to prevent compressor operation during fault conditions. A lock-out indicating terminal shall be provided in the low voltage circuit. Safety devices include a low pressure cutout set a 40 PSIG (280 kPa) for loss of charge protection (freezestat and/or high discharge gas temperature sensor is not acceptable) and a high pressure cutout control set at 600 PSIG (4140 Kpa).

The ECM motor interface board shall provide a screw type terminal block for thermostat connection, LED's to indicate thermostat status and air delivery. It shall also provide a means of changing the motor program to any of up to four pre-programmed options. Direct wiring of the motor control harness to the thermostat is not acceptable.

A terminal block with screw terminals shall be provided for control wiring. An optional condensate overflow device shall be factory installed to stop compressor operation if drain pan overflow is imminent. An optional energy management relay to allow unit control by an external source shall be factory installed.

PIPING

Supply, return water and condensate drain connections shall be brass female pipe thread fittings and mounted flush to cabinet exterior.

INTERNAL ELECTRIC HEAT

208/230-1-60 volt units shall be equipped with optional internal electric resistance heat for auxiliary and emergency heat. Electric heater must be Underwriter's Laboratories (UL and ULc) approved for safety when installed in the unit. External heater packages or heater packages not specifically listed for use with the unit are unacceptable. Electric heater packages shall include a heater collar mounted to the blower outlet, individual thermal overload protected heater elements no greater than 5kW each and magnetic contactors. Heater packages shall have a separate power supply connection from the compressor and this power supply shall also power the unit blower motor and control transformer for safe operation.

HEAT RECOVERY PACKAGE

208/230 volt units shall be equipped with an optional factory installed internal heat recovery kit for domestic hot water production. This kit shall include an internally protected pump, double walled coaxial water-to-refrigerant heat exchanger, 140˚F (60˚C) hot water temperature limit switch and an on/off switch/circuit breaker.

FHP Manufacturing Co.
601 N.W. 65th Court
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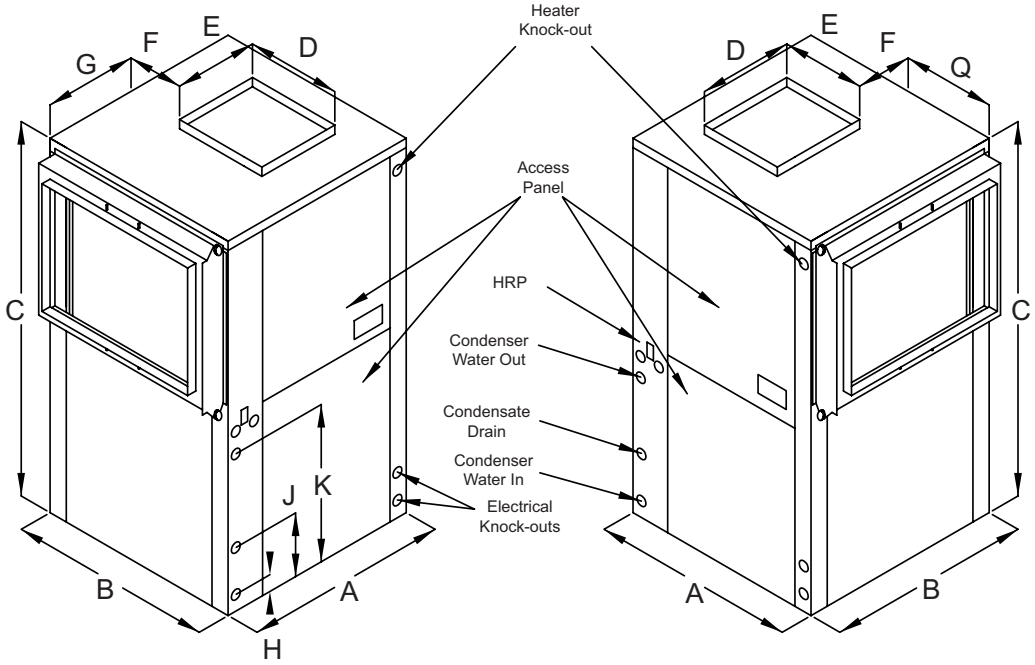
http://www.bosch-climate.us

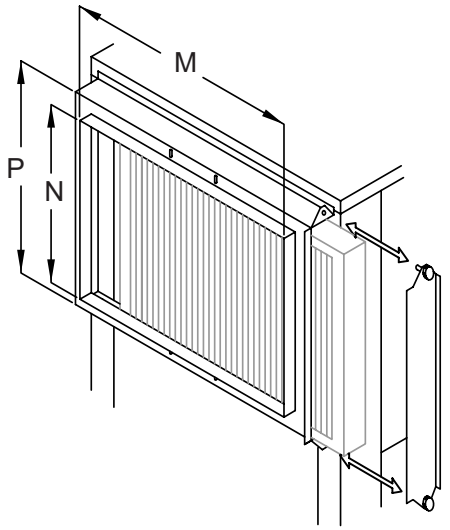
TA Two Stage Series Vertical Dimensions

MODEL	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	Condenser	Recommended
	Width	Depth	Height								R/A Duct Flg Width	R/A Duct Flg Height	Filter Rack Height		Water Connections	Replacement Nominal Filter Size
TA025	21.50	26.00	47.25	13.75	15.75	7.00	4.80	2.47	8.00	14.47	24.00	22.00	24.00	4.00	3/4" F.P.T.	24 X 24 X 2
TA035	24.00	33.25	47.25	15.75	15.75	8.25	6.37	2.47	8.00	14.47	30.00	22.00	24.00	4.00	1" F.P.T.	24 X 30 X 2
TA049	26.00	33.25	58.00	17.75	17.75	8.50	7.25	2.47	8.00	16.47	30.00	30.00	32.00	4.00	1" F.P.T.	16 X 30 X 2 (2)
TA061	26.00	33.25	66.25	17.75	17.75	8.38	6.38	4.25	10.00	16.50	30.00	38.00	40.00	4.00	1" F.P.T.	20 X 30 X 2 (2)
TA071	26.00	33.25	66.25	17.75	17.75	8.38	6.38	4.25	10.00	18.50	30.00	38.00	40.00	4.00	1" F.P.T.	20 X 30 X 2 (2)



Left Hand Return (FLT)

Right Hand Return (FRT)



NOTES: All dimensions within +/- 0.125".
All condensate drain connections are 3/4" FPT.
All Heat Recovery Kit connections are 1/2" FPT.
Internal electric heat available on 208-230/1/60 top discharge units only
Internal Heat Recovery Kit available on 208-230 volt units only.
Specifications subject to change without notice.

BOSCH

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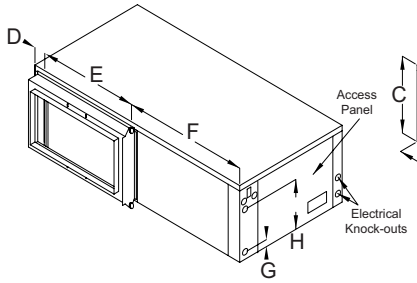
TA Two Stage Series Horizontal Dimensions

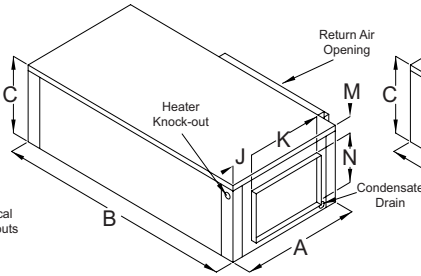
MODEL	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	T	Condenser	Recommended
	Width	Depth	Height		R/A Duct Flg Width										Filter Rack Height	R/A Duct Flg Height	Water Connections	Replacement Nom. Filter Size
TA025*	26.00	54.50	22.00	2.00	30.00	22.50	3.25	15.25	5.25	13.75	4.00	15.75	5.00	3.00	20.00	18.00	3/4" F.P.T.	16 X 20 X 2 (2)
TA035*	30.00	68.00	22.00	2.50	34.00	32.00	2.25	14.38	5.25	15.75	4.00	15.75	5.81	3.00	20.00	18.00	1" F.P.T.	18 X 20 X 2 (2)
TA049	30.00	68.00	22.00	2.50	34.00	32.00	2.75	16.75	4.75	17.75	2.00	17.75	7.66	2.00	20.00	18.00	1" F.P.T.	18 X 20 X 2 (2)
TA061	30.00	89.00	22.00	2.50	54.00	31.50	5.75	16.75	4.50	17.75	3.75	17.75	4.5	2.00	20.00	18.00	1" F.P.T.	20x28x2 (2)
TA071	30.00	89.00	22.00	2.50	54.00	31.50	5.75	16.75	4.50	17.75	3.75	17.75	7.66	2.00	20.00	18.00	1" F.P.T.	20x28x2 (2)

* Add 0.500" height on TA025 and TA035 for base rails.

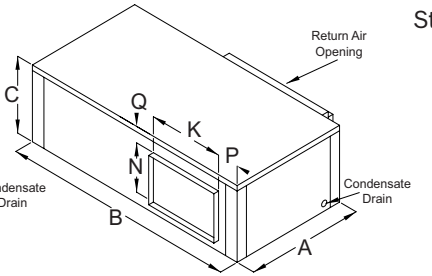
Left Hand Return

Left Hand Return End Blow (FLE)

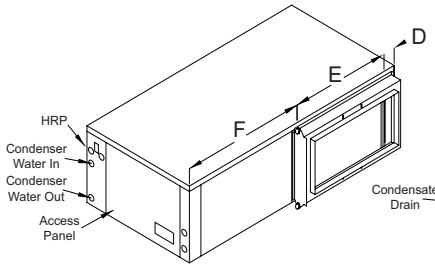


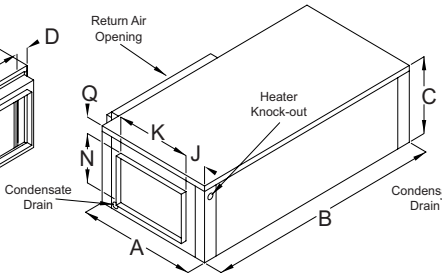


Left Hand Return Straight Through (FLS)

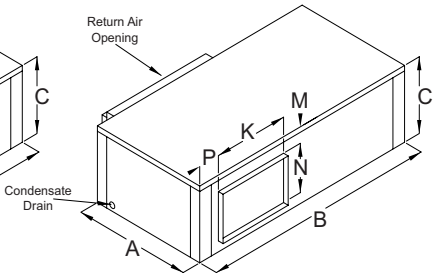


Right Hand Return





Right Hand Return End Blow (FRE)



Right Hand Return Straight Through (FRS)

NOTES:
- All dimensions within +/- 0.125".
- All condensate drain connections are 3/4" FPT.
- All Heat Recovery connections are 1/2" FPT.
- Internal electric heat available on 208-230 volt units only
- Internal Heat Recovery Kit available on 208-230 volt units only.
- Units can be field converted between end blow and straight through supply air configurations.
- Specifications subject to change without notice.

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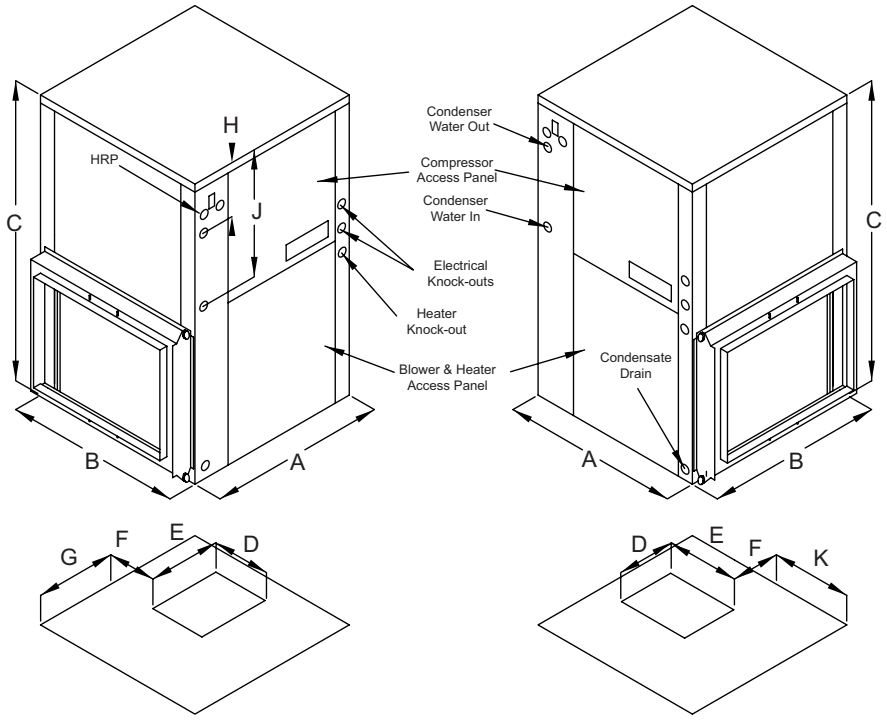
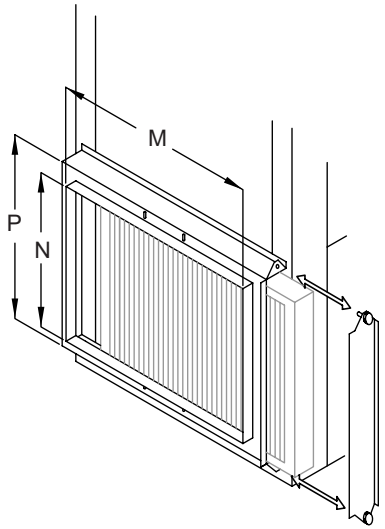
TA Two Stage Series Counterflow Dimensions

MODEL	A	B	C	D	E	F	G	H	J	K	M	N	P	Condenser	Recommended
	Width	Depth	Height	Blower Opening	Blower Opening						R/A Duct Flg Width	R/A Duct Flg Height	Filter Rack Height	Water Connections	Replacement Nominal Filter Size
TA025	21.50	26.00	47.25	9.25	10.25	8.38	5.00	8.13	20.13	9.75	24.00	22.00	24.00	3/4" F.P.T.	24 X 24 X 2
TA035*	24.00	33.25	47.25	9.25	10.25	11.13	6.88	8.13	20.13	10.00	30.00	22.00	24.00	1" F.P.T.	24 X 30 X 2
TA049	26.00	33.25	58.00	10.50	11.50	11.25	8.25	9.13	23.13	10.50	30.00	30.00	32.00	1" F.P.T.	16 X 30 X 2 (2)
TA061	26.00	33.25	66.25	12.25	12.50	9.75	6.25	6.84	21.34	11.00	30.00	38.00	40.00	1" F.P.T.	20 X 30 X 2 (2)
TA071	26.00	33.25	66.25	12.25	13.50	9.75	6.25	7.84	20.84	11.00	30.00	38.00	40.00	1" F.P.T.	20 X 30 X 2 (2)





Left Hand Return (FLB)

Right Hand Return (FRB)

NOTES: All dimensions within +/- 0.125".
All condensate drain connections are 3/4" FPT.
All Heat Recovery Kit connections are 1/2" FPT.
Internal electric heat available on 208-230/1/60 bottom discharge units only
Internal Heat Recovery Kit available on 208-230 volt units only.
Specifications subject to change without notice.

BOSCH

PACKAGED UNITS
SPECIFICATION DATA SHEET

TA025

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Blower		Loop Pump		Min. Circuit Amps	Max. Fuse/ Breaker
		RLA	LRA	FLA	HP	FLA	HP		
208/230-1-60	-1	10.3	52.0	2.8	1/3	-	-	15.7	25
265-1-60	-2	9.0	67.0	2.6	1/3	-	-	13.9	20
208/230-3-60	-3	7.1	59.0	2.8	1/3	-	-	11.7	15
460-3-60	-4	3.5	29.7	2.4	1/3	-	-	6.8	15

MECHANICAL SPECIFICATIONS

Refrigerant: R-410A			
Air Coil			
Square Feet	Rows Deep	Tube O.D.	Fins/ Inch
3.5	3	3/8	14
Water Coil			
Type		Work Press	
Coaxial		450 psig	
Blower Size		Compr Type	
9 x 7 DD		Scroll	
Net Weight		Ship Weight	
330 lbs		355 lbs	

BLOWER PERFORMANCE

Available External Static Pressure (Inches of Water, Gauge. Wet Coil and Filter Included)

Blower Speed	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
+				860								
Norm				750								
-				640								

ARI PERFORMANCE CERTIFIED
ANSI/ARI/ASHRAE/ISO Standard 13256-1

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FLUID PRESSURE DROP

Fluid Flow	Pressure Drop	
(GPM)	(FOH)	(PSIG)
5.0	2.0	0.9
7.0	3.6	1.6
9.0	5.7	2.5
11.0	8.2	3.5
13.0	11.0	4.8

ISO 13256-1 CERTIFIED PERFORMANCE DATA Rated at 750 CFM and 8.0 GPM

Water Loop				Ground Water				Ground Loop			
Cooling		Heating		Cooling		Heating		Cooling		Heating	
Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
20,000	19.3	23,000	6.5	22,500	32.5	19,500	5.5	22,000	27.8	16,600	4.7

CAPACITY DATA - PART LOAD

COOLING All performance at 750 CFM and 8.0 GPM

EFT Range (Standard) 50°F to 100°F

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Sensible Capacity (MBtuH)	Sensible to Total Ratio	Power Input (kW)	Heat of Reject (MBtuH)	EER
50°	70°db 61°wb	19.80	12.73	0.64	0.65	22.03	30.4
60°		19.09	12.37	0.65	0.77	21.70	24.9
70°		18.37	12.05	0.66	0.88	21.38	20.9
85°		17.30	11.65	0.67	1.05	20.89	16.4
100°		16.22	11.31	0.70	1.22	20.40	13.3
50°	75°db 63°wb	21.22	15.24	0.72	0.66	23.46	32.4
60°		20.46	14.81	0.72	0.77	23.09	26.6
70°		19.69	14.43	0.73	0.89	22.71	22.2
85°		18.54	13.95	0.75	1.06	22.15	17.5
100°		17.39	13.55	0.78	1.23	21.59	14.1
50°	80°db 67°wb	23.30	16.83	0.72	0.66	25.56	35.3
60°		22.46	16.36	0.73	0.78	25.11	28.9
70°		21.62	15.95	0.74	0.89	24.67	24.2
85°		20.36	15.41	0.76	1.07	24.00	19.1
100°		19.10	14.97	0.78	1.24	23.33	15.4
50°	85°db 71°wb	25.38	18.44	0.73	0.66	27.65	38.2
60°		24.47	17.93	0.73	0.78	27.14	31.3
70°		23.56	17.47	0.74	0.90	26.62	26.2
85°		22.19	16.89	0.76	1.07	25.85	20.7
100°		20.82	16.41	0.79	1.25	25.08	16.7

Units are complete packages containing compressor, reversing valve, expansion valve metering device, ECM fan motor and heat exchangers. Also included are safety controls: Overload protection for motors, high and low refrigerant pressure switches and solid state lock-out circuit. Optional UL approved internal electric heater, factory installed with primary thermal overload protection and magnetic contactors (208/230-1-60 only) optional UL approved internal Heat Recovery Package and/or Ground Loop Pump with purge connections available.

Performance based on ARI/ISO rated air flow, fluid flow and voltage. For conditions other than rated, consult the Bosch EAD selection software. Due to variations in installation actual performance may vary marginally from tabulated values.

As a result of continuing research and development, specifications are subject to change without notice.

TA025.1IP60 Rev: 03-11

HEATING

EFT Range (Standard) 25°F to 80°F

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Power Input (kW)	Heat of Abs. (MBtuH)	COP
50°	60°	20.98	1.12	17.16	5.5
60°		22.83	1.12	19.00	6.0
70°		24.69	1.13	20.83	6.4
80°		26.55	1.14	22.67	6.8
50°	70°	19.84	1.14	15.96	5.1
60°		21.59	1.14	17.69	5.5
70°		23.35	1.15	19.43	6.0
80°		25.10	1.16	21.16	6.4
50°	80°	18.50	1.16	14.54	4.7
60°		20.14	1.17	16.15	5.1
70°		21.77	1.17	17.77	5.4
80°		23.41	1.18	19.38	5.8

LOW TEMP HEATING

Antifreeze Required

25°	60°	16.01	1.10	12.25	4.3
30°		16.92	1.11	13.15	4.5
40°		18.74	1.11	14.95	4.9
25°	70°	15.15	1.12	11.32	4.0
30°		16.01	1.12	12.17	4.2
40°		17.73	1.13	13.87	4.6
25°	80°	14.13	1.15	10.22	3.6
30°		14.93	1.15	11.02	3.8
40°		16.54	1.15	12.60	4.2

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BOSCH PACKAGED UNITS SPECIFICATION DATA SHEET

TA025

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Blower		Loop Pump		Min. Circuit Amps	Max. Fuse/ Breaker
		RLA	LRA	FLA	HP	FLA	HP		
208/230-1-60	-1	10.3	52.0	2.8	1/3	-	-	15.7	25
265-1-60	-2	9.0	67.0	2.6	1/3	-	-	13.9	20
208/230-3-60	-3	7.1	59.0	2.8	1/3	-	-	11.7	15
460-3-60	-4	3.5	29.7	2.4	1/3	-	-	6.8	15

MECHANICAL SPECIFICATIONS

Refrigerant: R-410A			
Air Coil			
Square Feet	Rows Deep	Tube O.D.	Fins/ Inch
3.5	3	3/8	14
Water Coil			
Type		Work Press	
Coaxial		450 psig	
Blower Size		Compr Type	
9 x 7 DD		Scroll	
Net Weight		Ship Weight	
330 lbs		355 lbs	

BLOWER PERFORMANCE

Available External Static Pressure (Inches of Water, Gauge. Wet Coil and Filter Included)

Blower Speed	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
+						1100						
Norm						950						
-						800						

ARI PERFORMANCE CERTIFIED ANSI/AHRI/ASHRAE/ISO Standard 13256-1

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FLUID PRESSURE DROP

Fluid Flow	Pressure Drop	
(GPM)	(FOH)	(PSIG)
5.0	2.0	0.9
7.0	3.6	1.6
9.0	5.7	2.5
11.0	8.2	3.5
13.0	11.0	4.8

ISO 13256-1 CERTIFIED PERFORMANCE DATA Rated at 950 CFM and 8.0 GPM

Water Loop				Ground Water				Ground Loop			
Cooling		Heating		Cooling		Heating		Cooling		Heating	
Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
27,000	16.2	32,500	5.3	31,000	25.1	26,500	4.8	28,500	19.2	20,400	4.1

CAPACITY DATA - FULL LOAD

COOLING All performance at 950 CFM and 8.0 GPM

EFT Range (Standard) 50°F to 100°F

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Sensible Capacity (MBtuH)	Sensible to Total Ratio	Power Input (kW)	Heat of Reject (MBtuH)	EER
50°	70°db 61°wb	27.31	18.01	0.66	1.19	31.36	23.0
60°		26.05	17.32	0.67	1.34	30.62	19.5
70°		24.78	16.69	0.67	1.49	29.87	16.6
85°		22.89	15.82	0.69	1.72	28.76	13.3
100°		21.00	15.02	0.72	1.95	27.65	10.8
50°	75°db 63°wb	29.26	21.55	0.74	1.19	33.34	24.5
60°		27.91	20.73	0.74	1.35	32.51	20.7
70°		26.56	19.97	0.75	1.50	31.68	17.7
85°		24.54	18.94	0.77	1.73	30.44	14.2
100°		22.51	17.98	0.80	1.96	29.20	11.5
50°	80°db 67°wb	32.13	23.80	0.74	1.20	36.23	26.7
60°		30.65	22.89	0.75	1.36	35.28	22.6
70°		29.17	22.06	0.76	1.51	34.32	19.3
85°		26.95	20.92	0.78	1.74	32.90	15.5
100°		24.73	19.87	0.80	1.97	31.47	12.5
50°	85°db 71°wb	34.99	26.07	0.75	1.21	39.12	28.9
60°		33.38	25.08	0.75	1.37	38.04	24.4
70°		31.77	24.17	0.76	1.52	36.97	20.9
85°		29.36	22.92	0.78	1.76	35.35	16.7
100°		26.94	21.77	0.81	1.99	33.73	13.5

Units are complete packages containing compressor, reversing valve, expansion valve metering device, ECM fan motor and heat exchangers. Also included are safety controls: Overload protection for motors, high and low refrigerant pressure switches and solid state lock-out circuit. Optional UL approved internal electric heater, factory installed with primary thermal overload protection and magnetic contactors (208/230-1-60 only) optional UL approved internal Heat Recovery Package and/or Ground Loop Pump with purge connections available.

Performance based on ARI/ISO rated air flow, fluid flow and voltage. For conditions other than rated, consult the Bosch EAD selection software. Due to variations in installation actual performance may vary marginally from tabulated values.

As a result of continuing research and development, specifications are subject to change without notice.

TA025.2IP60 Rev: 03-11

HEATING

EFT Range (Standard) 25°F to 80°F

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Power Input (kW)	Heat of Abs. (MBtuH)	COP
50°	60°	28.16	1.71	22.32	4.8
60°		31.67	1.81	25.49	5.1
70°		35.18	1.91	28.66	5.4
80°		38.70	2.01	31.83	5.6
50°	70°	26.63	1.74	20.69	4.5
60°		29.95	1.84	23.66	4.8
70°		33.27	1.95	26.63	5.0
80°		36.59	2.05	29.60	5.2
50°	80°	24.83	1.78	18.76	4.1
60°		27.92	1.88	21.50	4.3
70°		31.02	1.99	24.23	4.6
80°		34.11	2.09	26.97	4.8

LOW TEMP HEATING

Antifreeze Required

25°	60°	18.99	1.46	14.01	3.8
30°		20.72	1.51	15.56	4.0
40°		24.16	1.61	18.66	4.4
25°	70°	17.97	1.48	12.90	3.5
30°		19.60	1.54	14.35	3.7
40°		22.85	1.64	17.26	4.1
25°	80°	16.77	1.52	11.59	3.2
30°		18.28	1.57	12.93	3.4
40°		21.31	1.67	15.60	3.7

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BOSCH PACKAGED UNITS
SPECIFICATION DATA SHEET

TA035

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Blower		Loop Pump		Min. Circuit Amps	Max. Fuse/ Breaker
		RLA	LRA	FLA	HP	FLA	HP		
208/230-1-60	-1	16.7	82.0	4.3	1/2	-	-	25.2	40
208/230-3-60	-3	11.2	58.0	4.3	1/2	-	-	18.3	25
460-3-60	-4	4.5	29.0	4.1	1/2	-	-	9.7	15

MECHANICAL SPECIFICATIONS

Refrigerant: R-410A			
Air Coil			
Square Feet	Rows Deep	Tube O.D.	Fins/ Inch
4.5	3	3/8	14
Water Coil			
Type		Work Press	
Coaxial		450 psig	
Blower Size		Compr Type	
9 x 7 DD		Scroll	
Net Weight		Ship Weight	
365 lbs		400 lbs	

BLOWER PERFORMANCE

Available External Static Pressure (Inches of Water, Gauge. Wet Coil and Filter Included)

Blower Speed	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
+					1000							
Norm					900							
-					800							

ARI PERFORMANCE CERTIFIED ANSI/ARI/ASHRAE/ISO Standard 13256-1

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FLUID PRESSURE DROP

Fluid Flow	Pressure Drop	
(GPM)	(FOH)	(PSIG)
5	2.0	0.9
7	3.6	1.6
9	5.7	2.5
11	8.2	3.5
13	11.1	4.8

ISO 13256-1 CERTIFIED PERFORMANCE DATA Rated at 1000 CFM and 9.0 GPM

Water Loop				Ground Water				Ground Loop			
Cooling		Heating		Cooling		Heating		Cooling		Heating	
Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
25,700	19.8	29,500	6.3	29,500	34.0	24,300	5.3	28,200	28.5	22,000	4.8

CAPACITY DATA - PART LOAD

COOLING All performance at 1000 CFM and 9.0 GPM

EFT Range (Standard) 50°F to 100°F

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Sensible Capacity (MBtuH)	Sensible to Total Ratio	Power Input (kW)	Heat of Reject (MBtuH)	EER
50°	70°db 61°wb	26.07	16.75	0.64	0.81	28.82	32.3
60°		24.94	16.16	0.65	0.95	28.18	26.3
70°		23.82	15.62	0.66	1.09	27.55	21.8
85°		22.13	14.90	0.67	1.31	26.59	16.9
100°		20.44	14.24	0.70	1.52	25.64	13.4
50°	75°db 63°wb	27.94	20.05	0.72	0.81	30.71	34.4
60°		26.74	19.35	0.72	0.95	29.99	28.0
70°		25.53	18.71	0.73	1.10	29.28	23.2
85°		23.73	17.85	0.75	1.31	28.21	18.1
100°		21.92	17.07	0.78	1.53	27.14	14.3
50°	80°db 67°wb	30.68	22.15	0.72	0.82	33.46	37.6
60°		29.36	21.38	0.73	0.96	32.64	30.5
70°		28.04	20.67	0.74	1.11	31.81	25.3
85°		26.06	19.72	0.76	1.32	30.58	19.7
100°		24.08	18.86	0.78	1.54	29.34	15.6
50°	85°db 71°wb	33.42	24.28	0.73	0.82	36.22	40.6
60°		31.98	23.43	0.73	0.97	35.29	33.0
70°		30.55	22.65	0.74	1.11	34.35	27.4
85°		28.39	21.61	0.76	1.33	32.94	21.3
100°		26.24	20.67	0.79	1.55	31.54	16.9

HEATING

EFT Range (Standard) 25°F to 80°F

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Power Input (kW)	Heat of Abs. (MBtuH)	COP
50°	60°	26.93	1.44	22.01	5.5
60°		29.10	1.46	24.13	5.9
70°		31.28	1.47	26.26	6.2
80°		33.46	1.49	28.38	6.6
50°	70°	25.47	1.47	20.46	5.1
60°		27.52	1.48	22.47	5.4
70°		29.58	1.50	24.47	5.8
80°		31.64	1.51	26.48	6.1
50°	80°	23.75	1.50	18.64	4.6
60°		25.67	1.51	20.51	5.0
70°		27.59	1.53	22.37	5.3
80°		29.50	1.54	24.23	5.6

LOW TEMP HEATING

Antifreeze Required

25°	60°	21.06	1.40	16.27	4.4
30°		22.13	1.41	17.31	4.6
40°		24.26	1.43	19.39	5.0
25°	70°	19.93	1.43	15.05	4.1
30°		20.93	1.44	16.03	4.3
40°		22.95	1.45	18.00	4.6
25°	80°	18.59	1.46	13.62	3.7
30°		19.53	1.47	14.53	3.9
40°		21.41	1.48	16.35	4.2

Units are complete packages containing compressor, reversing valve, expansion valve metering device, ECM fan motor and heat exchangers. Also included are safety controls: Overload protection for motors, high and low refrigerant pressure switches and solid state lock-out circuit. Optional UL approved internal electric heater, factory installed with primary thermal overload protection and magnetic contactors (208/230-1-60 only) optional UL approved internal Heat Recovery Package and/or Ground Loop Pump with purge connections available.

Performance based on ARI/ISO rated air flow, fluid flow and voltage. For conditions other than rated, consult the Bosch EAD selection software. Due to variations in installation actual performance may vary marginally from tabulated values.

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SPECIFICATION DATA SHEET

TA035

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Blower		Loop Pump		Min. Circuit Amps	Max. Fuse/ Breaker
		RLA	LRA	FLA	HP	FLA	HP		
208/230-1-60	-1	16.7	82.0	4.3	1/2	-	-	25.2	40
208/230-3-60	-3	11.2	58.0	4.3	1/2	-	-	18.3	25
460-3-60	-4	4.5	29.0	4.1	1/2	-	-	9.7	15

MECHANICAL SPECIFICATIONS

Refrigerant: R-410A			
Air Coil			
Square Feet	Rows Deep	Tube O.D.	Fins/ Inch
4.5	3	3/8	14
Water Coil			
Type		Work Press	
Coaxial		450 psig	
Blower Size		Compr Type	
9 x 7 DD		Scroll	
Net Weight		Ship Weight	
365 lbs		400 lbs	

BLOWER PERFORMANCE

Available External Static Pressure (Inches of Water, Gauge. Wet Coil and Filter Included)

Blower Speed	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
+						1380						
Norm						1200						
-						1020						

FLUID PRESSURE DROP

Fluid Flow	Pressure Drop	
(GPM)	(FOH)	(PSIG)
5	2.0	0.9
7	3.6	1.6
9	5.7	2.5
11	8.2	3.5
13	11.1	4.8

ISO 13256-1 CERTIFIED PERFORMANCE DATA Rated at 1200 CFM and 9.0 GPM

Water Loop				Ground Water				Ground Loop			
Cooling		Heating		Cooling		Heating		Cooling		Heating	
Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
36,600	16.0	43,000	5.1	41,200	23.5	36,200	4.7	38,200	18.4	28,200	4.1

CAPACITY DATA - FULL LOAD

COOLING All performance at 1200 CFM and 9.0 GPM

EFT Range (Standard) 50°F to 100°F

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Sensible Capacity (MBtuH)	Sensible to Total Ratio	Power Input (kW)	Heat of Reject (MBtuH)	EER
50°	70°db 61°wb	36.10	23.53	0.65	1.67	41.81	21.6
60°		34.64	22.76	0.66	1.86	41.00	18.6
70°		33.18	22.08	0.67	2.05	40.19	16.2
85°		30.99	21.16	0.68	2.34	38.97	13.3
100°		28.80	20.36	0.71	2.62	37.75	11.0
50°	75°db 63°wb	38.68	28.14	0.73	1.68	44.43	23.0
60°		37.12	27.23	0.73	1.87	43.52	19.8
70°		35.56	26.41	0.74	2.06	42.61	17.2
85°		33.22	25.33	0.76	2.35	41.24	14.1
100°		30.87	24.37	0.79	2.64	39.87	11.7
50°	80°db 67°wb	42.47	31.08	0.73	1.70	48.26	25.0
60°		40.75	30.08	0.74	1.89	47.20	21.6
70°		39.04	29.17	0.75	2.08	46.14	18.8
85°		36.47	27.98	0.77	2.37	44.56	15.4
100°		33.91	26.92	0.79	2.66	42.97	12.8
50°	85°db 71°wb	46.25	34.05	0.74	1.71	52.08	27.1
60°		44.39	32.95	0.74	1.90	50.88	23.3
70°		42.52	31.96	0.75	2.10	49.68	20.3
85°		39.73	30.65	0.77	2.39	47.88	16.6
100°		36.94	29.49	0.80	2.68	46.08	13.8

HEATING

EFT Range (Standard) 25°F to 80°F

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Power Input (kW)	Heat of Abs. (MBtuH)	COP
50°	60°	38.04	2.33	30.08	4.8
60°		42.34	2.47	33.92	5.0
70°		46.64	2.60	37.75	5.2
80°		50.93	2.74	41.59	5.5
50°	70°	35.97	2.37	27.87	4.4
60°		40.03	2.51	31.46	4.7
70°		44.09	2.65	35.05	4.9
80°		48.16	2.79	38.64	5.1
50°	80°	33.55	2.42	25.27	4.1
60°		37.33	2.57	28.57	4.3
70°		41.11	2.71	31.87	4.4
80°		44.89	2.85	35.17	4.6

LOW TEMP HEATING

Antifreeze Required

25°	60°	26.76	1.99	19.96	3.9
30°		28.87	2.06	21.83	4.1
40°		33.08	2.20	25.58	4.4
25°	70°	25.32	2.03	18.39	3.7
30°		27.31	2.10	20.15	3.8
40°		31.29	2.24	23.66	4.1
25°	80°	23.62	2.07	16.55	3.3
30°		25.47	2.14	18.16	3.5
40°		29.18	2.28	21.39	3.7

Units are complete packages containing compressor, reversing valve, expansion valve metering device, ECM fan motor and heat exchangers. Also included are safety controls: Overload protection for motors, high and low refrigerant pressure switches and solid state lock-out circuit. Optional UL approved internal electric heater, factory installed with primary thermal overload protection and magnetic contactors (208/230-1-60 only) optional UL approved internal Heat Recovery Package and/or Ground Loop Pump with purge connections available.

Performance based on ARI/ISO rated air flow, fluid flow and voltage. For conditions other than rated, consult the Bosch EAD selection software. Due to variations in installation actual performance may vary marginally from tabulated values.

As a result of continuing research and development, specifications are subject to change without notice.

TA035.2IP60 Rev: 03-11

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BOSCH PACKAGED UNITS
SPECIFICATION DATA SHEET

TA049

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Blower		Loop Pump		Min. Circuit Amps	Max. Fuse/ Breaker
		RLA	LRA	FLA	HP	FLA	HP		
208/230-1-60	-1	21.2	96.0	6.8	3/4	-	-	33.3	50
208/230-3-60	-3	13.5	88.0	6.8	3/4	-	-	23.7	35
460-3-60	-4	6.4	41.0	5.5	3/4	-	-	13.5	15

MECHANICAL SPECIFICATIONS

Refrigerant: R-410A			
Air Coil			
Square Feet	Rows Deep	Tube O.D.	Fins/ Inch
6	3	3/8	14
Water Coil			
Type		Work Press	
Coaxial		450 psig	
Blower Size		Compr Type	
10x 8 DD		Scroll	
Net Weight		Ship Weight	
445 lbs		475 lbs	

BLOWER PERFORMANCE

Available External Static Pressure (Inches of Water, Gauge. Wet Coil and Filter Included)												
Blower Speed	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
+						1490						
Norm						1300						
-						1100						

FLUID PRESSURE DROP

Fluid Flow	Pressure Drop	
(GPM)	(FOH)	(PSIG)
6.0	2.3	1.0
7.0	3.0	1.3
9.5	5.3	2.3
12.0	8.0	3.5
16.0	13.4	5.8

ISO 13256-1 CERTIFIED PERFORMANCE DATA Rated at 1300 CFM and 12.0 GPM

Water Loop				Ground Water				Ground Loop			
Cooling		Heating		Cooling		Heating		Cooling		Heating	
Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
37,000	20	38,500	5.9	41,200	32.5	31,500	5.0	40,200	28.0	28,000	4.6

CAPACITY DATA - PART LOAD

COOLING All performance at 1300 CFM and 12.0 GPM **EFT Range (Standard) 50°F to 100°F**

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Sensible Capacity (MBtuH)	Sensible to Total Ratio	Power Input (kW)	Heat of Reject (MBtuH)	EER
50°	70°db 61°wb	37.65	28.42	0.75	1.17	41.65	32.1
60°		36.39	27.70	0.76	1.37	41.06	26.6
70°		35.12	27.08	0.77	1.57	40.47	22.4
85°		33.23	26.30	0.79	1.86	39.58	17.9
100°		31.34	25.67	0.82	2.15	38.69	14.6
50°	75°db 63°wb	40.35	33.98	0.84	1.18	44.37	34.2
60°		39.00	33.12	0.85	1.38	43.69	28.3
70°		37.65	32.38	0.86	1.57	43.02	23.9
85°		35.62	31.45	0.88	1.87	42.00	19.1
100°		33.59	30.71	0.91	2.16	40.98	15.5
50°	80°db 67°wb	44.30	37.52	0.85	1.19	48.35	37.3
60°		42.81	36.57	0.85	1.39	47.55	30.9
70°		41.33	35.76	0.87	1.59	46.74	26.1
85°		39.11	34.73	0.89	1.88	45.54	20.8
100°		36.89	33.91	0.92	2.18	44.33	16.9
50°	85°db 71°wb	48.24	41.10	0.85	1.20	52.32	40.3
60°		46.63	40.06	0.86	1.40	51.40	33.4
70°		45.02	39.16	0.87	1.60	50.47	28.2
85°		42.60	38.05	0.89	1.90	49.08	22.5
100°		40.19	37.15	0.92	2.20	47.69	18.3

Units are complete packages containing compressor, reversing valve, expansion valve metering device, ECM fan motor and heat exchangers. Also included are safety controls: Overload protection for motors, high and low refrigerant pressure switches and solid state lock-out circuit. Optional UL approved internal electric heater, factory installed with primary thermal overload protection and magnetic contactors (208/230-1-60 only) optional UL approved internal Heat Recovery Package and/or Ground Loop Pump with purge connections available.

Performance based on ARI/ISO rated air flow, fluid flow and voltage. For conditions other than rated, consult the Bosch EAD selection software. Due to variations in installation actual performance may vary marginally from tabulated values.

As a result of continuing research and development, specifications are subject to change without notice.

TA049.1IP60 Rev: 03-11

HEATING **EFT Range (Standard) 25°F to 80°F**

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Power Input (kW)	Heat of Abs. (MBtuH)	COP
50°	60°	36.30	1.93	29.72	5.5
60°		39.48	1.97	32.75	5.9
70°		42.66	2.02	35.78	6.2
80°		45.84	2.06	38.82	6.5
50°	70°	34.33	1.96	27.64	5.1
60°		37.34	2.01	30.49	5.5
70°		40.34	2.05	33.35	5.8
80°		43.35	2.10	36.20	6.1
50°	80°	32.02	2.00	25.19	4.7
60°		34.82	2.05	27.83	5.0
70°		37.62	2.09	30.47	5.3
80°		40.42	2.14	33.11	5.5

LOW TEMP HEATING **Antifreeze Required**

25°	60°	27.79	1.82	21.59	4.5
30°		29.35	1.84	23.08	4.7
40°		32.47	1.88	26.04	5.1
25°	70°	26.29	1.85	19.99	4.2
30°		27.77	1.87	21.38	4.4
40°		30.71	1.92	24.18	4.7
25°	80°	24.53	1.89	18.09	3.8
30°		25.90	1.91	19.39	4.0
40°		28.65	1.96	21.97	4.3

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BOSCH PACKAGED UNITS
SPECIFICATION DATA SHEET

TA049

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Blower		Loop Pump		Min. Circuit Amps	Max. Fuse/ Breaker
		RLA	LRA	FLA	HP	FLA	HP		
208/230-1-60	-1	21.2	96.0	6.8	3/4	-	-	33.3	50
208/230-3-60	-3	13.5	88.0	6.8	3/4	-	-	23.7	35
460-3-60	-4	6.4	41.0	5.5	3/4	-	-	13.5	15

MECHANICAL SPECIFICATIONS

Refrigerant: R-410A			
Air Coil			
Square Feet	Rows Deep	Tube O.D.	Fins/ Inch
6.0	3	3/8	14
Water Coil			
Type		Work Press	
Coaxial		450 psig	
Blower Size		Compr Type	
10x 8 DD		Scroll	
Net Weight		Ship Weight	
445 lbs		475 lbs	

BLOWER PERFORMANCE

Available External Static Pressure (Inches of Water, Gauge. Wet Coil and Filter Included)												
Blower Speed	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
+						1950						
Norm						1700						
-						1450						

FLUID PRESSURE DROP

Fluid Flow	Pressure Drop	
(GPM)	(FOH)	(PSIG)
6.0	2.3	1.0
7.0	3.0	1.3
9.5	5.3	2.3
12.0	8.0	3.5
16.0	13.4	5.8

ISO 13256-1 CERTIFIED PERFORMANCE DATA Rated at 1700 CFM and 12.0 GPM

Water Loop				Ground Water				Ground Loop			
Cooling		Heating		Cooling		Heating		Cooling		Heating	
Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
50,000	16.9	53,000	5.2	56,000	24.0	45,500	4.8	52,000	19.0	38,000	4.1

CAPACITY DATA - FULL LOAD

COOLING All performance at 1700 CFM and 12.0 GPM **EFT Range (Standard) 50°F to 100°F**

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Sensible Capacity (MBtuH)	Sensible to Total Ratio	Power Input (kW)	Heat of Reject (MBtuH)	EER
50°	70°db 61°wb	48.95	31.89	0.65	2.28	56.74	21.4
60°		47.04	30.90	0.66	2.51	55.59	18.8
70°		45.13	30.01	0.67	2.73	54.45	16.5
85°		42.27	28.85	0.68	3.06	52.72	13.8
100°		39.40	27.84	0.71	3.40	51.00	11.6
50°	75°db 63°wb	52.46	38.15	0.73	2.30	60.29	22.9
60°		50.41	36.97	0.73	2.52	59.01	20.0
70°		48.37	35.92	0.74	2.74	57.74	17.6
85°		45.31	34.54	0.76	3.08	55.82	14.7
100°		42.24	33.33	0.79	3.42	53.90	12.4
50°	80°db 67°wb	57.59	42.14	0.73	2.31	65.48	24.9
60°		55.35	40.84	0.74	2.54	64.01	21.8
70°		53.11	39.68	0.75	2.76	62.55	19.2
85°		49.75	38.15	0.77	3.10	60.35	16.0
100°		46.39	36.82	0.79	3.44	58.14	13.5
50°	85°db 71°wb	62.72	46.16	0.74	2.33	70.67	26.9
60°		60.29	44.74	0.74	2.56	69.01	23.6
70°		57.85	43.47	0.75	2.79	67.36	20.8
85°		54.20	41.80	0.77	3.13	64.87	17.3
100°		50.54	40.35	0.80	3.47	62.38	14.6

HEATING **EFT Range (Standard) 25°F to 80°F**

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Power Input (kW)	Heat of Abs. (MBtuH)	COP
50°	60°	48.44	2.96	38.32	4.8
60°		52.79	3.05	42.38	5.1
70°		57.15	3.14	46.43	5.3
80°		61.50	3.23	50.48	5.6
50°	70°	45.81	3.02	35.52	4.5
60°		49.92	3.11	39.32	4.7
70°		54.04	3.20	43.13	5.0
80°		58.15	3.29	46.94	5.2
50°	80°	42.72	3.08	32.21	4.1
60°		46.55	3.17	35.73	4.3
70°		50.39	3.26	39.25	4.5
80°		54.22	3.36	42.76	4.7

LOW TEMP HEATING **Antifreeze Required**

25°	60°	36.81	2.74	27.45	3.9
30°		38.95	2.79	29.44	4.1
40°		43.22	2.87	33.41	4.4
25°	70°	34.83	2.79	25.31	3.7
30°		36.84	2.83	27.17	3.8
40°		40.88	2.93	30.89	4.1
25°	80°	32.49	2.85	22.77	3.3
30°		34.37	2.89	24.49	3.5
40°		38.13	2.99	27.93	3.7

Units are complete packages containing compressor, reversing valve, expansion valve metering device, ECM fan motor and heat exchangers. Also included are safety controls: Overload protection for motors, high and low refrigerant pressure switches and solid state lock-out circuit. Optional UL approved internal electric heater, factory installed with primary thermal overload protection and magnetic contactors (208/230-1-60 only) optional UL approved internal Heat Recovery Package and/or Ground Loop Pump with purge connections available.

Performance based on ARI/ISO rated air flow, fluid flow and voltage. For conditions other than rated, consult the Bosch EAD selection software. Due to variations in installation actual performance may vary marginally from tabulated values.

As a result of continuing research and development, specifications are subject to change without notice.

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BOSCH PACKAGED UNITS SPECIFICATION DATA SHEET

TA061

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Blower		Loop Pump		Min. Circuit Amps	Max. Fuse/ Breaker
		RLA	LRA	FLA	HP	FLA	HP		
208/230-1-60	-1	25.6	118.0	6.8	3/4	-	-	38.8	60
208/230-3-60	-3	17.6	123.0	6.8	3/4	-	-	28.8	45
460-3-60	-4	9.0	62.0	5.5	3/4	-	-	16.8	25

MECHANICAL SPECIFICATIONS

Refrigerant: R-410A			
Air Coil			
Square Feet	Rows Deep	Tube O.D.	Fins/ Inch
7.5	3	3/8	14
Water Coil			
Type		Work Press	
Coaxial		450 psig	
Blower Size		Compr Type	
11x 9 DD		Scroll	
Net Weight		Ship Weight	
555 lbs		580 lbs	

BLOWER PERFORMANCE

Available External Static Pressure (Inches of Water, Gauge. Wet Coil and Filter Included)

Blower Speed	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
+						1725						
Norm						1500						
-						1275						

ARI PERFORMANCE CERTIFIED ANSI/ARI/ASHRAE/ISO Standard 13256-1

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FLUID PRESSURE DROP

Fluid Flow	Pressure Drop	
(GPM)	(FOH)	(PSIG)
8	3.5	1.5
12	7.2	3.1
16	12.1	5.3
18	15.0	6.5
22	21.5	9.3

ISO 13256-1 CERTIFIED PERFORMANCE DATA Rated at 1500 CFM and 14.0 GPM

Water Loop				Ground Water				Ground Loop			
Cooling		Heating		Cooling		Heating		Cooling		Heating	
Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
47,000	19.0	56,500	6.2	53,000	33.0	45,000	5.2	51,000	27.7	39,000	4.6

CAPACITY DATA - PART LOAD

COOLING All performance at 1500 CFM and 14.0 GPM **EFT Range (Standard) 50°F to 100°F**

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Sensible Capacity (MBtuH)	Sensible to Total Ratio	Power Input (kW)	Heat of Reject (MBtuH)	EER
50°	70°db 61°wb	47.18	30.54	0.65	1.27	51.51	37.3
60°		45.41	29.64	0.65	1.55	50.71	29.2
70°		43.64	28.84	0.66	1.84	49.92	23.7
85°		40.98	27.79	0.68	2.27	48.73	18.0
100°		38.32	26.89	0.70	2.70	47.55	14.2
50°	75°db 63°wb	50.53	36.44	0.72	1.27	54.87	39.7
60°		48.63	35.37	0.73	1.56	53.96	31.1
70°		46.73	34.41	0.74	1.85	53.05	25.2
85°		43.89	33.17	0.76	2.28	51.69	19.2
100°		41.04	32.10	0.78	2.72	50.32	15.1
50°	80°db 67°wb	55.42	40.19	0.73	1.28	59.80	43.2
60°		53.34	39.01	0.73	1.57	58.72	33.9
70°		51.26	37.96	0.74	1.87	57.63	27.5
85°		48.14	36.59	0.76	2.30	56.00	20.9
100°		45.02	35.40	0.79	2.74	54.38	16.4
50°	85°db 71°wb	60.31	43.98	0.73	1.29	64.73	46.6
60°		58.05	42.69	0.74	1.59	63.47	36.6
70°		55.79	41.54	0.74	1.88	62.21	29.7
85°		52.40	40.04	0.76	2.32	60.32	22.6
100°		49.00	38.75	0.79	2.76	58.43	17.7

HEATING **EFT Range (Standard) 25°F to 80°F**

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Power Input (kW)	Heat of Abs. (MBtuH)	COP
50°	60°	49.27	2.53	40.63	5.7
60°		54.35	2.59	45.50	6.1
70°		59.43	2.66	50.36	6.6
80°		64.51	2.72	55.22	6.9
50°	70°	46.56	2.58	37.77	5.3
60°		51.36	2.64	42.35	5.7
70°		56.16	2.71	46.92	6.1
80°		60.97	2.77	51.50	6.4
50°	80°	43.39	2.63	34.39	4.8
60°		47.86	2.70	38.64	5.2
70°		52.33	2.77	42.88	5.5
80°		56.80	2.83	47.12	5.9

LOW TEMP HEATING **Antifreeze Required**

25°	60°	35.85	2.37	27.76	4.4
30°		38.34	2.40	30.14	4.7
40°		43.32	2.47	34.91	5.1
25°	70°	33.88	2.41	25.65	4.1
30°		36.24	2.45	27.89	4.3
40°		40.94	2.51	32.37	4.8
25°	80°	31.58	2.47	23.16	3.8
30°		33.77	2.50	25.23	4.0
40°		38.15	2.57	29.39	4.4

Units are complete packages containing compressor, reversing valve, expansion valve metering device, ECM fan motor and heat exchangers. Also included are safety controls: Overload protection for motors, high and low refrigerant pressure switches and solid state lock-out circuit. Optional UL approved internal electric heater, factory installed with primary thermal overload protection and magnetic contactors (208/230-1-60 only) optional UL approved internal Heat Recovery Package and/or Ground Loop Pump with purge connections available.

Performance based on ARI/ISO rated air flow, fluid flow and voltage. For conditions other than rated, consult the Bosch EAD selection software. Due to variations in installation actual performance may vary marginally from tabulated values.

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BOSCH PACKAGED UNITS SPECIFICATION DATA SHEET

TA061

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Blower		Loop Pump		Min. Circuit Amps	Max. Fuse/ Breaker
		RLA	LRA	FLA	HP	FLA	HP		
208/230-1-60	-1	25.6	118.0	6.8	3/4	-	-	38.8	60
208/230-3-60	-3	17.6	123.0	6.8	3/4	-	-	28.8	45
460-3-60	-4	9.0	62.0	5.5	3/4	-	-	16.8	25

MECHANICAL SPECIFICATIONS

Refrigerant: R-410A			
Air Coil			
Square Feet	Rows Deep	Tube O.D.	Fins/ Inch
7.5	3	3/8	14
Water Coil			
Type		Work Press	
Coaxial		450 psig	
Blower Size		Compr Type	
11x 9 DD		Scroll	
Net Weight		Ship Weight	
555 lbs		580 lbs	

BLOWER PERFORMANCE

Available External Static Pressure (Inches of Water, Gauge. Wet Coil and Filter Included)												
Blower Speed	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
+						2200						
Norm						2000						
-						1700						

ARI PERFORMANCE CERTIFIED ANSI/ARI/ASHRAE/ISO Standard 13256-1

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FLUID PRESSURE DROP

Fluid Flow	Pressure Drop	
(GPM)	(FOH)	(PSIG)
8	3.5	1.5
12	7.2	3.1
16	12.1	5.3
18	15.0	6.5
22	21.5	9.3

ISO 13256-1 CERTIFIED PERFORMANCE DATA Rated at 2000 CFM and 14.0 GPM

Water Loop				Ground Water				Ground Loop			
Cooling		Heating		Cooling		Heating		Cooling		Heating	
Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
64,000	16.2	78,500	5.4	71,000	23.8	65,000	5.0	67,000	18.5	49,000	4.1

CAPACITY DATA - FULL LOAD

COOLING All performance at 2000 CFM and 14.0 GPM **EFT Range (Standard) 50°F to 100°F**

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Sensible Capacity (MBtuH)	Sensible to Total Ratio	Power Input (kW)	Heat of Reject (MBtuH)	EER
50°	70°db 61°wb	62.67	40.56	0.65	2.66	71.76	23.5
60°		60.48	39.48	0.65	3.01	70.76	20.1
70°		58.30	38.53	0.66	3.36	69.77	17.4
85°		55.03	37.33	0.68	3.88	68.27	14.2
100°		51.76	36.33	0.70	4.40	66.78	11.8
50°	75°db 63°wb	67.11	48.40	0.72	2.68	76.25	25.0
60°		64.77	47.11	0.73	3.03	75.11	21.4
70°		62.44	45.98	0.74	3.38	73.97	18.5
85°		58.94	44.54	0.76	3.90	72.25	15.1
100°		55.43	43.35	0.78	4.43	70.54	12.5
50°	80°db 67°wb	73.61	53.38	0.73	2.70	82.82	27.3
60°		71.05	51.96	0.73	3.05	81.47	23.3
70°		68.49	50.71	0.74	3.41	80.11	20.1
85°		64.65	49.13	0.76	3.93	78.08	16.4
100°		60.81	47.82	0.79	4.46	76.04	13.6
50°	85°db 71°wb	80.11	58.42	0.73	2.72	89.40	29.4
60°		77.32	56.86	0.74	3.08	87.82	25.1
70°		74.54	55.50	0.74	3.43	86.25	21.7
85°		70.36	53.77	0.76	3.97	83.90	17.7
100°		66.19	52.33	0.79	4.50	81.54	14.7

HEATING **EFT Range (Standard) 25°F to 80°F**

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Power Input (kW)	Heat of Abs. (MBtuH)	COP
50°	60°	67.49	3.83	54.43	5.2
60°		76.05	4.05	62.22	5.5
70°		84.62	4.28	70.01	5.8
80°		93.19	4.51	77.81	6.1
50°	70°	63.78	3.90	50.48	4.8
60°		71.88	4.13	57.78	5.1
70°		79.97	4.36	65.09	5.4
80°		88.06	4.59	72.40	5.6
50°	80°	59.43	3.99	45.82	4.4
60°		66.97	4.22	52.56	4.6
70°		74.50	4.46	59.29	4.9
80°		82.04	4.69	66.02	5.1

LOW TEMP HEATING **Antifreeze Required**

25°	60°	45.17	3.26	34.04	4.1
30°		49.37	3.38	37.85	4.3
40°		57.77	3.60	45.48	4.7
25°	70°	42.70	3.32	31.36	3.8
30°		46.66	3.44	34.93	4.0
40°		54.60	3.67	42.08	4.4
25°	80°	39.79	3.40	28.20	3.4
30°		43.49	3.52	31.49	3.6
40°		50.88	3.75	38.07	4.0

Units are complete packages containing compressor, reversing valve, expansion valve metering device, ECM fan motor and heat exchangers. Also included are safety controls: Overload protection for motors, high and low refrigerant pressure switches and solid state lock-out circuit. Optional UL approved internal electric heater, factory installed with primary thermal overload protection and magnetic contactors (208/230-1-60 only) optional UL approved internal Heat Recovery Package and/or Ground Loop Pump with purge connections available.

Performance based on ARI/ISO rated air flow, fluid flow and voltage. For conditions other than rated, consult the Bosch EAD selection software. Due to variations in installation actual performance may vary marginally from tabulated values.

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BOSCH PACKAGED UNITS
SPECIFICATION DATA SHEET

TA071

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Blower		Loop Pump		Min. Circuit Amps	Max. Fuse/ Breaker
		RLA	LRA	FLA	HP	FLA	HP		
208/230-1-60	-1	27.2	150.0	6.8	1.0	-	-	40.8	60
208/230-3-60	-3	19.7	123.0	6.8	1.0	-	-	31.4	50
460-3-60	-4	9.9	62.0	6.9	1.0	-	-	19.3	25

MECHANICAL SPECIFICATIONS

Refrigerant: R-410A			
Air Coil			
Square Feet	Rows Deep	Tube O.D.	Fins/ Inch
7.5	3	3/8	14
Water Coil			
Type		Work Press	
Coaxial		450 psig	
Blower Size		Compr Type	
12 x 9 DD		Scroll	
Net Weight		Ship Weight	
645 lbs		690 lbs	

BLOWER PERFORMANCE

Available External Static Pressure (Inches of Water, Gauge. Wet Coil and Filter Included)

Blower Speed	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
+						1600						
Norm						1500						
-						1200						

ARI PERFORMANCE CERTIFIED ANSI/ARI/ASHRAE/ISO Standard 13256-1

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FLUID PRESSURE DROP

Fluid Flow	Pressure Drop	
(GPM)	(FOH)	(PSIG)
8	2.5	1.1
12	3.6	1.6
16	4.3	1.9
18	6.9	3.0
22	8.2	3.6

ISO 13256-1 CERTIFIED PERFORMANCE DATA Rated at 1500 CFM and 18.0 GPM

Water Loop				Ground Water				Ground Loop			
Cooling		Heating		Cooling		Heating		Cooling		Heating	
Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
53,000	18.2	65,800	5.2	59,000	28.8	53,700	4.6	57,500	25.2	47,000	4.1

CAPACITY DATA - PART LOAD

COOLING All performance at 1500 CFM and 18.0 GPM **EFT Range (Standard) 50°F to 100°F**

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Sensible Capacity (MBtuH)	Sensible to Total Ratio	Power Input (kW)	Heat of Reject (MBtuH)	EER
50°	70°db 61°wb	51.94	33.47	0.64	1.74	57.88	29.8
60°		50.20	32.62	0.65	2.03	57.11	24.8
70°		48.46	31.88	0.66	2.31	56.35	21.0
85°		45.85	30.96	0.68	2.74	55.20	16.7
100°		43.25	30.23	0.70	3.17	54.05	13.7
50°	75°db 63°wb	55.65	40.01	0.72	1.75	61.62	31.8
60°		53.79	39.00	0.73	2.04	60.74	26.4
70°		51.93	38.13	0.73	2.32	59.86	22.4
85°		49.14	37.03	0.75	2.75	58.54	17.8
100°		46.35	36.15	0.78	3.18	57.21	14.6
50°	80°db 67°wb	61.08	44.18	0.72	1.76	67.09	34.7
60°		59.04	43.06	0.73	2.05	66.04	28.8
70°		57.00	42.10	0.74	2.34	64.99	24.4
85°		53.94	40.89	0.76	2.77	63.41	19.4
100°		50.88	39.92	0.78	3.21	61.83	15.9
50°	85°db 71°wb	66.51	48.39	0.73	1.78	72.57	37.5
60°		64.29	47.16	0.73	2.07	71.35	31.1
70°		62.07	46.11	0.74	2.36	70.12	26.3
85°		58.75	44.79	0.76	2.80	68.29	21.0
100°		55.42	43.73	0.79	3.23	66.45	17.1

HEATING **EFT Range (Standard) 25°F to 80°F**

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Power Input (kW)	Heat of Abs. (MBtuH)	COP
50°	60°	58.79	3.48	46.91	4.9
60°		64.25	3.59	51.98	5.2
70°		69.71	3.71	57.05	5.5
80°		75.17	3.82	62.13	5.8
50°	70°	55.58	3.54	43.49	4.6
60°		60.74	3.66	48.25	4.9
70°		65.90	3.77	53.02	5.1
80°		71.06	3.89	57.78	5.4
50°	80°	51.82	3.62	39.46	4.2
60°		56.62	3.74	43.86	4.4
70°		61.43	3.86	48.26	4.7
80°		66.23	3.98	52.66	4.9

LOW TEMP HEATING **Antifreeze Required**

25°	60°	44.26	3.20	33.35	4.1
30°		46.93	3.25	35.83	4.2
40°		52.28	3.37	40.79	4.5
25°	70°	41.85	3.25	30.75	3.8
30°		44.38	3.31	33.08	3.9
40°		49.44	3.43	37.74	4.2
25°	80°	39.03	3.32	27.68	3.4
30°		41.39	3.38	29.84	3.6
40°		46.09	3.50	34.14	3.9

Units are complete packages containing compressor, reversing valve, expansion valve metering device, ECM fan motor and heat exchangers. Also included are safety controls: Overload protection for motors, high and low refrigerant pressure switches and solid state lock-out circuit. Optional UL approved internal electric heater, factory installed with primary thermal overload protection and magnetic contactors (208/230-1-60 only) optional UL approved internal Heat Recovery Package and/or Ground Loop Pump with purge connections available.

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BOSCH PACKAGED UNITS
SPECIFICATION DATA SHEET

TA071

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Blower		Loop Pump		Min. Circuit Amps	Max. Fuse/ Breaker
		RLA	LRA	FLA	HP	FLA	HP		
208/230-1-60	-1	27.2	150.0	6.8	1.0	-	-	40.8	60
208/230-3-60	-3	19.7	123.0	6.8	1.0	-	-	31.4	50
460-3-60	-4	9.9	62.0	6.9	1.0	-	-	19.3	25

MECHANICAL SPECIFICATIONS

Refrigerant: R-410A			
Air Coil			
Square Feet	Rows Deep	Tube O.D.	Fins/ Inch
7.5	3	3/8	14
Water Coil			
Type		Work Press	
Coaxial		450 psig	
Blower Size		Compr Type	
12x 9 DD		Scroll	
Net Weight		Ship Weight	
645 lbs		690 lbs	

BLOWER PERFORMANCE

Available External Static Pressure (Inches of Water, Gauge. Wet Coil and Filter Included)

Blower Speed	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
+												
Norm						2300						
-						1900						

FLUID PRESSURE DROP

Fluid Flow	Pressure Drop	
(GPM)	(FOH)	(PSIG)
8	2.5	1.1
12	3.6	1.6
16	4.3	1.9
18	6.9	3.0
22	8.2	3.6

ISO 13256-1 CERTIFIED PERFORMANCE DATA Rated at 2300 CFM and 18.0 GPM

Water Loop				Ground Water				Ground Loop			
Cooling		Heating		Cooling		Heating		Cooling		Heating	
Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
72,000	16.0	89,000	5.2	78,000	21.8	73,000	4.7	74,000	18.0	58,000	3.9

CAPACITY DATA - FULL LOAD

COOLING All performance at 2300 CFM and 18.0 GPM **EFT Range (Standard) 50°F to 100°F**

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Sensible Capacity (MBtuH)	Sensible to Total Ratio	Power Input (kW)	Heat of Reject (MBtuH)	EER
50°	70°db 61°wb	67.02	42.08	0.63	3.45	78.78	19.4
60°		65.13	41.23	0.63	3.77	77.99	17.3
70°		63.23	40.53	0.64	4.09	77.20	15.5
85°		60.40	39.74	0.66	4.58	76.01	13.2
100°		57.56	39.20	0.68	5.06	74.82	11.4
50°	75°db 63°wb	71.82	50.34	0.70	3.46	83.65	20.7
60°		69.79	49.33	0.71	3.79	82.73	18.4
70°		67.77	48.50	0.72	4.11	81.81	16.5
85°		64.73	47.55	0.73	4.60	80.43	14.1
100°		61.69	46.91	0.76	5.09	79.05	12.1
50°	80°db 67°wb	78.84	55.59	0.71	3.49	90.76	22.6
60°		76.62	54.48	0.71	3.82	89.65	20.1
70°		74.40	53.57	0.72	4.15	88.55	17.9
85°		71.07	52.52	0.74	4.64	86.89	15.3
100°		67.74	51.82	0.76	5.13	85.24	13.2
50°	85°db 71°wb	85.86	60.90	0.71	3.52	97.87	24.4
60°		83.45	59.68	0.72	3.85	96.58	21.7
70°		81.03	58.68	0.72	4.18	95.29	19.4
85°		77.41	57.55	0.74	4.67	93.35	16.6
100°		73.78	56.77	0.77	5.17	91.42	14.3

HEATING **EFT Range (Standard) 25°F to 80°F**

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Power Input (kW)	Heat of Abs. (MBtuH)	COP
50°	60°	77.31	4.74	61.12	4.8
60°		86.25	5.00	69.17	5.0
70°		95.20	5.27	77.22	5.3
80°		104.14	5.53	85.28	5.5
50°	70°	73.10	4.83	56.62	4.4
60°		81.55	5.09	64.16	4.7
70°		90.00	5.36	71.70	4.9
80°		98.45	5.63	79.25	5.1
50°	80°	68.15	4.93	51.32	4.0
60°		76.02	5.21	58.26	4.3
70°		83.89	5.48	65.20	4.5
80°		91.76	5.75	72.14	4.7

LOW TEMP HEATING **Antifreeze Required**

25°	60°	53.87	4.09	39.91	3.9
30°		58.25	4.22	43.85	4.0
40°		67.02	4.48	51.72	4.4
25°	70°	50.95	4.16	36.74	3.6
30°		55.10	4.30	40.43	3.8
40°		63.38	4.56	47.81	4.1
25°	80°	47.53	4.25	33.02	3.3
30°		51.39	4.39	36.41	3.4
40°		59.10	4.66	43.20	3.7

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