COMMERCIAL
HEAT PUMP WATER HEATERS

AHPM SERIES
MODULAR WATER SOURCE HEAT PUMP HEAT PUMP WATER HEATER

The A. O. Smith AHPM-1350 is a modular water-to-water heat pump water heater designed to be an energy efficient, zero emissions solution for your commercial water heating needs.

FEATURES

- Up to 160°F maximum water temperature
- Ambient operating range of 40-120°F
- Absorbs heat from water sources, including return chiller water, process and groundwater
- Environmentally-friendly R134a refrigerant
- Double wall condenser for potable water heating
- Suitable for indoor and outdoor applications
- BACnet compatible logic controller optional

APPLICATIONS

- Restaurants
- Hotels
- Apartment buildings
- Laundry facilities
- Healthcare facilities
- Schools
- Sports arenas
- Gyms
- Prisons
- Military barracks
- Manufacturing facilities, etc

ONE-YEAR LIMITED WARRANTY

- Backed by 1-year limited warranty, with an option for additional 5-year Extended Compressor Warranty
- For complete warranty information, consult written warranty or go to hotwater.com

MODEL AHPM-1350

hotwater.com | 800-527-1953 Toll-Free USA | A. O. Smith Corporation | 500 Tennessee Waltz Parkway | Ashland City, TN 37015

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SPECIFICATIONS

Operating Conditions	**Model Number**			**AHPM-1350**	
	Recovery Rate †			1,615 Gal/hr	
	Compressor Type			Scroll	
	Refrigerant			R134a	
	Max Water Temperature			160° F	
	Source Water Range			40° F - 100° F	
	Max Working Water Pressure			150 psig	
Multi-Pass Unit Sizing	Water Connections			2" FPT Copper	
	Condenser Water Flow Rate			250 GPM	
	Condenser Pressure Drop			10.76 ft Head*	
	Evaporator Water Flow Rate			250 GPM	
	Evaporator Pressure Drop			11.19 ft Head*	
	External Head Pressure Allowed by Unit			3.08 ft Head / 50 ft run of 2" pipe	
Single-Pass Unit Sizing	Heated Water Connections			1 1/2" FPT Copper	
	Source Water Connections			2" FPT Copper	
	Average Condenser Water Flow Rate			125 GPM	
	Condenser Pressure Drop			1.92 ft Head*	
	Evaporator Water Flow Rate			250 GPM	
	Evaporator Pressure Drop			11.19 ft Head*	
	External Head Pressure Allowed by Unit			3.46 ft Head / 50 ft run of 1 1/2" pipe	
Unit Specifications	Dry Weight			5,750 lbs	
	Operating Weight			6,500 lbs	
	Standard Sound Rating			85 dB	
	Dimensions (L x W x H)			163 7/8" x 36 1/4" x 67 1/4"	
Power Requirements	**Voltage**	**Compressor LRA**	**RLA Per Compressor**	**Wire and Disconnect Sizing ††**	
				MCA	**MOCP / MFS**
	208-230/3/60	560	92.9	403	450
	440-480/3/60	270	49.3	194	200
	575/3/60	198	28.2	155	175

Note: Pump for heated side provided by A. O. Smith. Customer responsible for providing source side pump.
† Water heated from 50° F to 150° F with 75° F entering source water temperature
†† Single point electric service
*XXXX ft Head per module

Legend
LRA: Locked Rotor Amps
RLA: Rated Load Amps
MCA: Maximum Current Ampacity (used for wire sizing)
MOCP: Minimum Overcurrent Protection (minimum disconnect size to be used)

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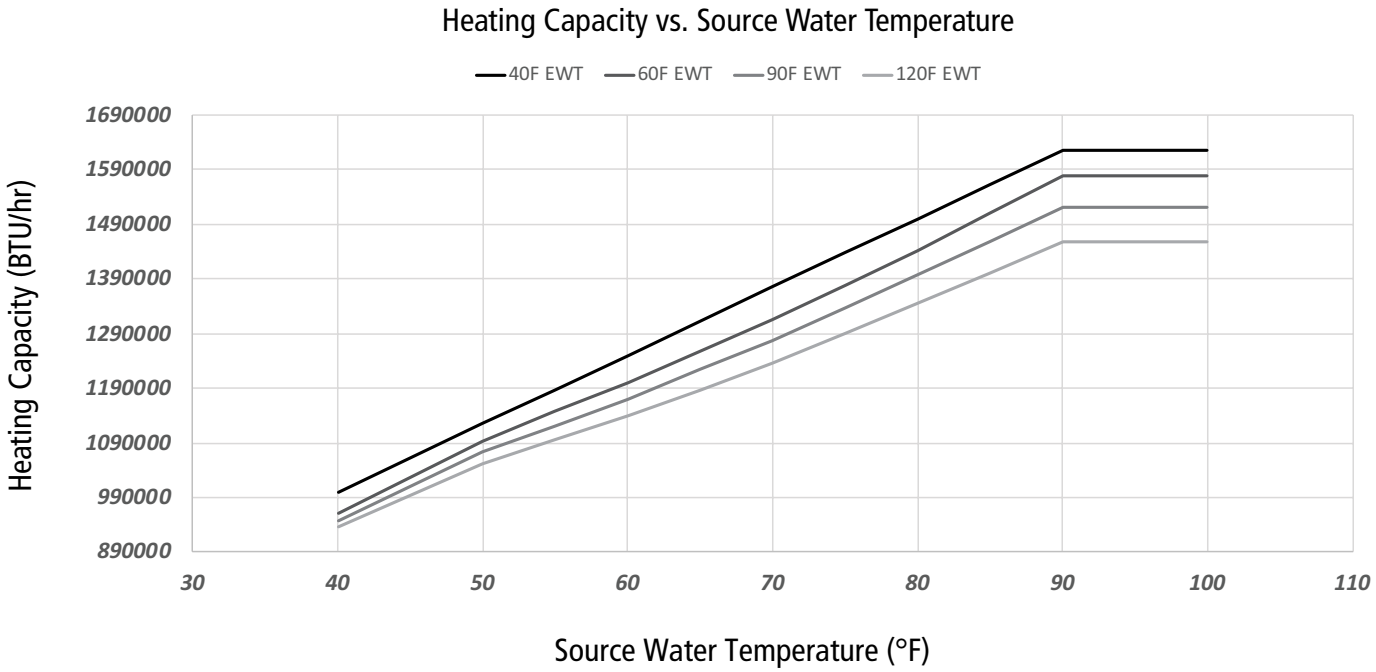
PERFORMANCE DATA

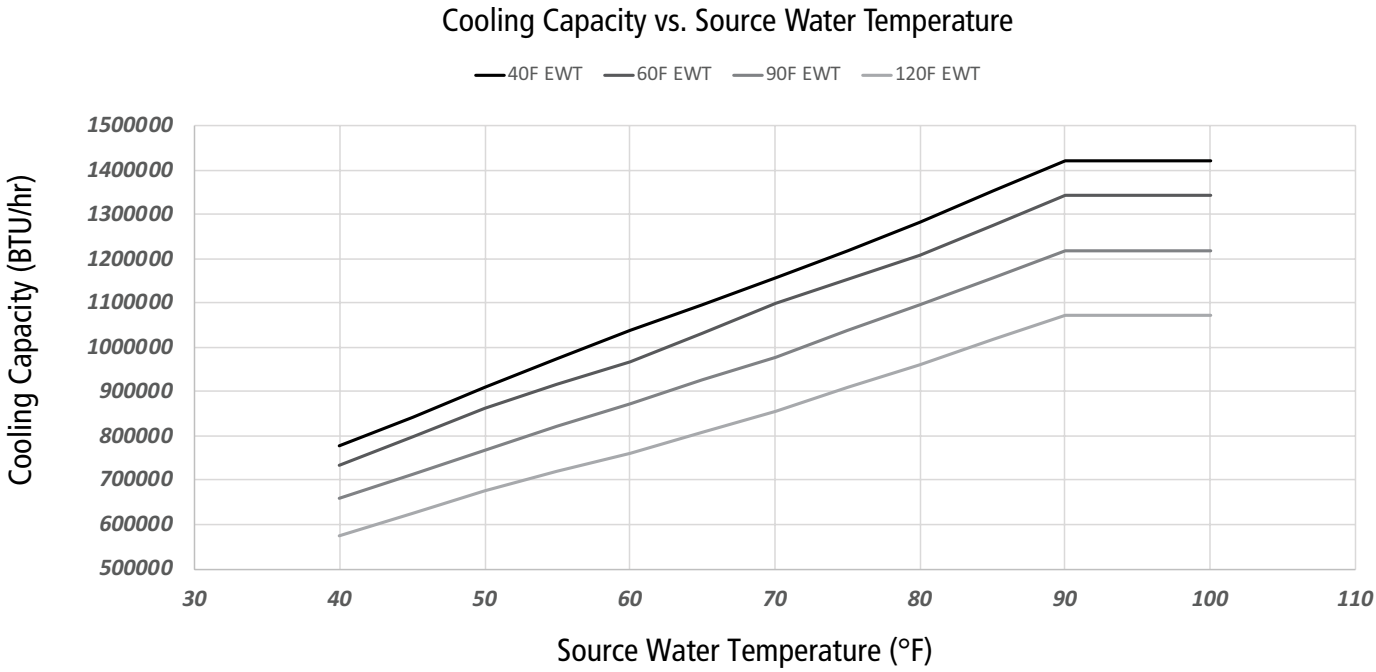
Model	Entering Source Water Temp(F°)	Leaving Source Water Temp(°F)	Source Cooling Capacity (Btu/hr)	Entering Heated Water Temp(°F)	Leaving Heated Water Temp(°F)	Supply Heating Capacity (Btu/hr)	Power Input (kW)
AHPM-1350	42°F	36	756600	50	57.7	966000	61.4
		36.2	733800	60	67.7	961500	66.65
		36.4	709800	70	77.7	957000	72.3
		36.6	684600	80	87.6	952000	78.35
		36.8	659400	90	97.6	948500	84.75
		37	632400	100	107.6	944500	91.6
		37.2	604200	110	117.6	942000	99
		37.4	573600	120	127.6	938500	106.85
		37.7	544080	130	137.6	937500	115.35
		37.7	538800	140	147.6	936000	118.45
	50°F	42.7	890000	50	58.8	1103000	62.3
		43.1	863500	60	68.8	1094000	68.4
		43.4	837500	70	78.7	1088000	73.4
		43.6	809000	80	88.6	1080000	79.6
		43.9	768000	90	98.6	1072500	86.1
		44.1	738000	100	108.6	1065000	93.1
		44.3	714000	110	118.6	1058000	100.4
		44.6	676000	120	128.5	1051000	108.6
		44.9	638000	130	138.5	1046500	117.4
		45.1	609000	140	148.5	1041500	126.0
	60°F	52	997000	50	59.7	1211500	62.8
		52.3	967800	60	69.6	1200500	68.2
		52.5	939000	70	79.6	1191500	74.0
		52.8	906000	80	89.5	1180000	80.3
		53	874200	90	99.4	1170500	86.9
		53.3	840000	100	109.4	1161000	94.1
		53.6	804600	110	119.3	1150500	101.5
		53.9	762000	120	129.3	1138500	110.4
		54.2	726600	130	139.2	1131500	118.6
		54.5	686400	140	149.1	1123500	126.6
	70°F	61.1	1114200	50	60.6	1330000	63.3
		61.2	1098000	60	70.5	1316500	68.8
		61.6	1050000	70	80.5	1304500	74.7
		61.9	1013400	80	90.4	1290000	81.0
		62.2	978000	90	100.4	1277500	87.8
		62.5	940800	100	110.3	1264500	95.0
		62.7	900600	110	120.1	1252500	102.7
		63.1	855000	120	130	1236000	111.8
		63.5	816600	130	139.9	1225000	119.8
		63.8	772200	140	149.9	1213500	129.4

PERFORMANCE DATA

Model	Entering Source Water Temp(F°)	Leaving Source Water Temp(°F)	Source Cooling Capacity (Btu/hr)	Entering Heated Water Temp(°F)	Leaving Heated Water Temp(°F)	Supply Heating Capacity (Btu/hr)	Power Input (kW)
AHPM-1350	80°F	70	1242000	50	61.7	1459000	63.7
		70.3	1206000	60	71.5	1442500	69.3
		70.6	1171200	70	81.4	1428000	75.3
		70.9	1132800	80	91.3	1411500	81.7
		71.2	1096200	90	101.2	1397000	88.0
		71.7	1049400	100	111.1	1376500	95.8
		72	1007400	110	121	1360500	103.6
		72.4	962400	120	131	1344500	112.0
		72.8	915000	130	140.9	1327500	120.9
		73.1	866400	140	150.7	1312000	130.6
	90°F	78.9	1380600	50	62.8	1599500	64.2
		79.35	1341600	60	72.7	1579500	69.8
		79.8	1303200	70	82.5	1562000	78.1
		80.25	1259400	80	92.3	1540000	82.3
		80.7	1217400	90	102.1	1521500	89.0
		81.15	1170000	100	111.9	1499500	96.5
		81.6	1124500	110	121.5	1481000	104.2
		82.05	1073400	120	131.1	1458500	112.8
		82.5	1023000	130	140.9	1438500	121.5
		83	969600	140	150.7	1416500	131.7

PERFORMANCE CHARTS

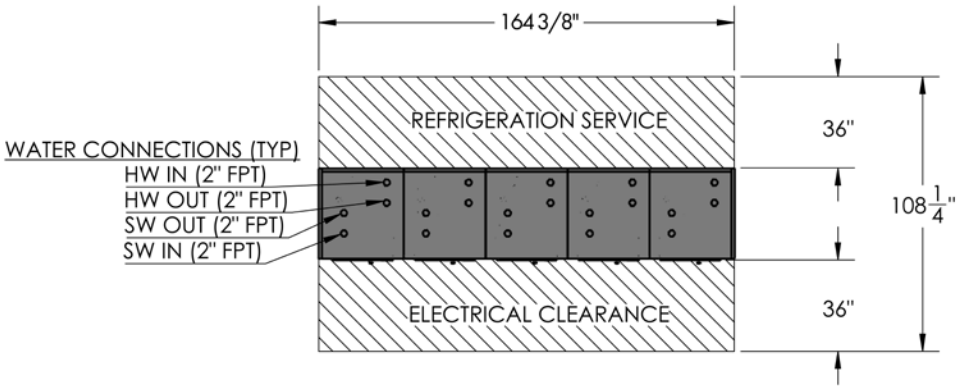


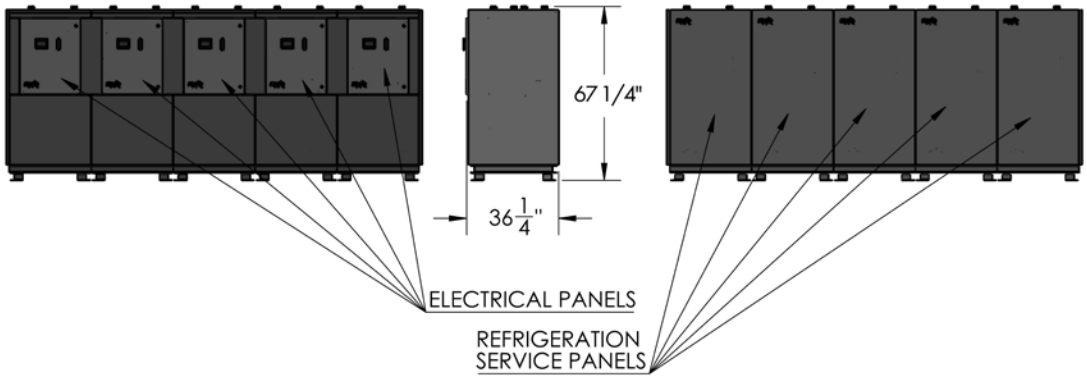


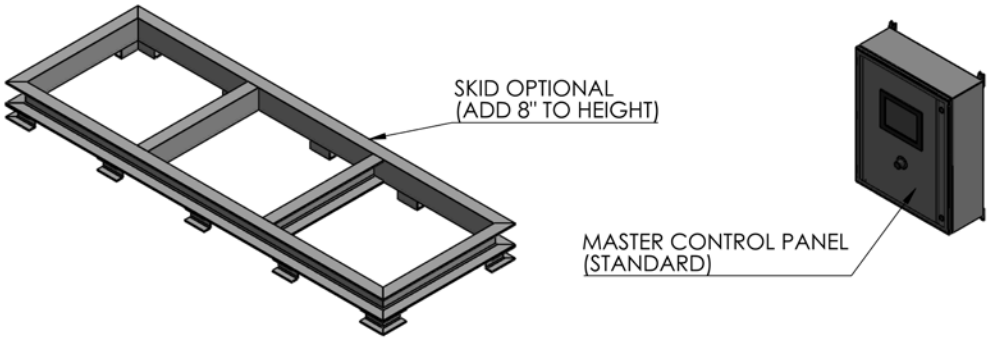
Water heated from 50°F to 150°F with 75°F entering source water temperature

DIMENSIONS

Customer specific layout available utilizing a combination of five (5) AHPM-270 modules

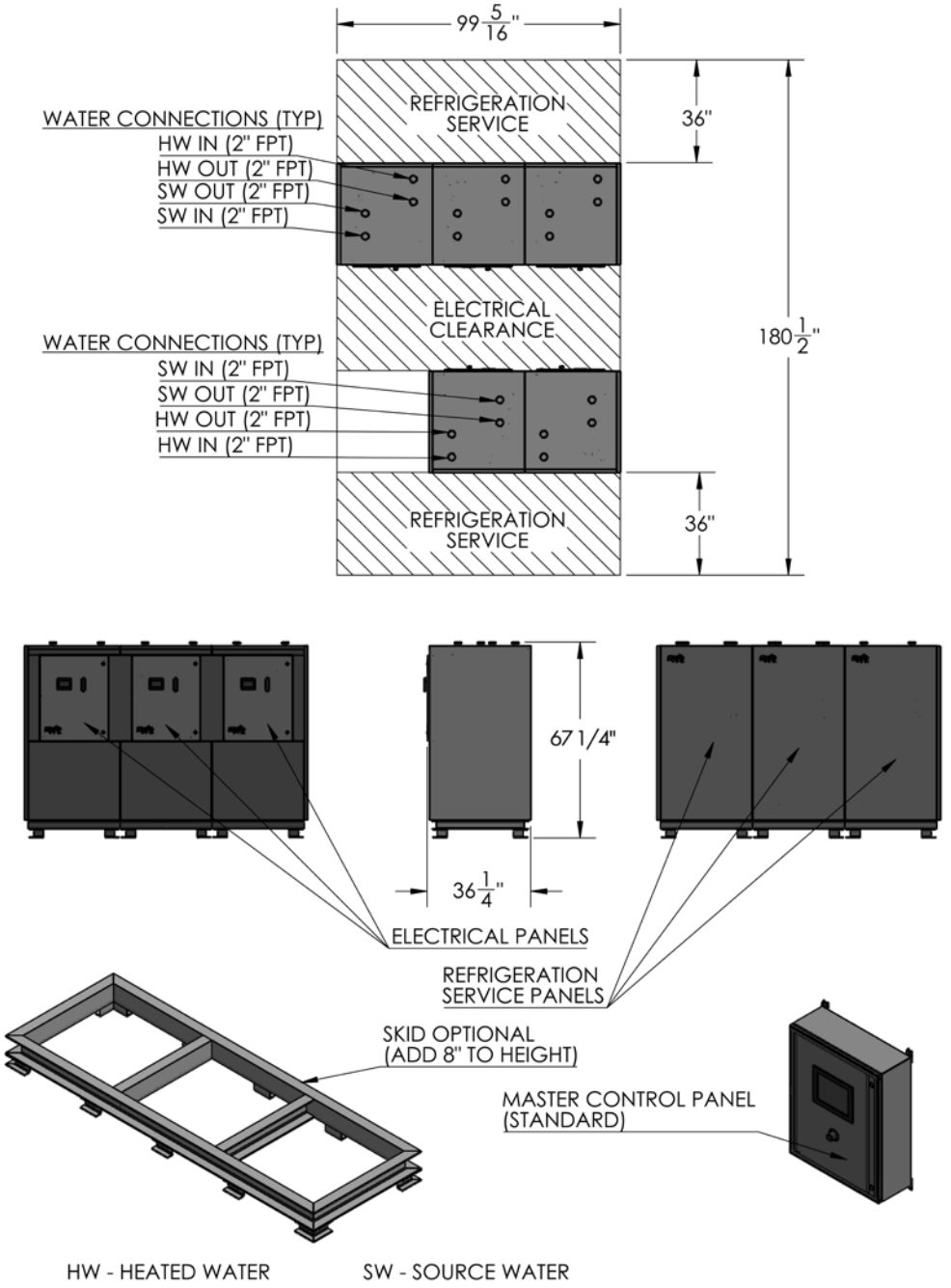






NOTE: 36" electrical service clearance per NEC 110.26(A)(1) Working Spaces for "Condition 1."
Check with local codes for additional requirements.

DIMENSIONS



NOTE: 36" electrical service clearance per NEC 110.26(A)(1) Working Spaces for "Condition 1." Check with local codes for additional requirements.

SUGGESTED SPECIFICATION

The HEAT PUMP shall be A. O. Smith Model AHPM-1350 having a heating capacity capable of 1,385,500 BTU/h and cooling capacity of 1,054,200 BTU/h.

The HEAT PUMP shall have a scroll compressor, factory charged with R134a refrigerant, NSF61-approved stainless steel circulator pump, and double-wall stainless steel condenser for potable water applications. The HEAT PUMP shall be equipped with a stainless steel single-wall heat exchanger evaporator. The complete heat pump assembly shall carry a one (1) year limited warranty.

The HEAT PUMP refrigerant circuit shall contain an adjustable thermal expansion valve, receiver, accumulator, serviceable filter drier and service ports for refrigerant gauges.

The HEAT PUMP shall be certified and listed by TUV to CSA C22.2 No. 236:2015, UL 1995:2015-07 standards. The HEAT PUMP shall be certified for indoor and/or outdoor installation.

The HEAT PUMP shall be constructed with a heavy gauge aluminum jacket assembly and painted on both sides.

The HEAT PUMP shall utilize a 24 VDC control circuit and components. The control system shall have a display (PLC Option) for HEAT PUMP set-up, HEAT PUMP status, and HEAT PUMP diagnostics. All components shall be easily accessed and serviceable. The HEAT PUMP shall be equipped with low and high refrigerant pressure switches short-cycle control outlet water temperature sensor and return water temperature sensor.

The HEAT PUMP shall have an optional control for "Cascade" to sequence and rotate while maintaining operation of up to eight HEAT PUMPs of same BTU inputs. The HEAT PUMP shall be capable of controlling a valve (single pass option) that maintains constant delivery temperature to the storage tank. The HEAT PUMP shall have an optional gateway device which will allow integration with BACnet.

The HEAT PUMP shall be equipped with terminal strips for electrical connections. A low voltage connection board shall have connection points for safety and operating controls, i.e., alarm contacts, runtime contacts and tank thermostat. A high voltage terminal strip shall be provided for supply voltage connection. Supply voltage shall be 208-230V/3PH/60Hz, 440-480V/3PH/60Hz, or 575V/3PH/60Hz.

The HEAT PUMP shall be suitable for use with polypropylene glycol, up to 50% concentration. The de-rate associated with the glycol will vary per glycol manufacturer.

STANDARD CONSTRUCTION

The HEAT PUMP shall be constructed in accordance with the code requirements as standard equipment.

For technical information, call 800-527-1953. A. O. Smith Corporation reserves the right to make product changes or improvements without prior notice.

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