PH13-SERIES PACKAGED HEAT PUMPS

Cooling Capacities: ***Heating Capacities:***
SEER: ***HSPF:***

GREEN REFRIGERANT R-410A

BACK (OUTDOOR AIRFLOW) END OF UNIT

FRONT (INDOOR AIRFLOW) END OF UNIT

Standard Engineered Features

Heat Pump Compressor:
Scroll compressors are used on all models and no crankcase heaters are required.

R-410A Refrigerant:
Designed with R-410A (HFC) non-ozone depleting refrigerant in compliance with the Montreal protocol and 2010 EPA requirements.

ECM Indoor Blower Motor:
Features a variable speed motor providing super-high efficiency, low sound levels and soft-start capabilities. The motor is self-adjusting to provide the proper airflow rate for a broad range of static pressure in ducted installations without user adjustment or wiring changes.

Aluminum Finned Copper Coils:
Grooved tubing and enhanced louvered fin for maximum heat transfer and energy efficiency.

Thermal Expansion Valves:
All models contain non-bleed TXV.

Liquid Line Filter Drier:
Bi-directional drier protects system against moisture.

Solid State Electronic Heat Pump Control:
Provides efficient 30, 60 or 90-minute defrost cycle. A thermistor sensor and speed up terminal for service, along with a 10-minute defrost override are standard on the electronic heat pump control.

Five Minute Compressor Time Delay:
Provides short cycle protection for the compressor, which extends compressor life. Built into the electronic heat pump control as standard.

High & Low Pressure Switches are Auto-Reset
Built-in lockout circuit resets from the room thermostat. Provides commercial quality protection to the compressor.

Pre-Painted 20 Gauge Zinc Coated Steel Cabinet:
Cleaned, rinsed, sealed and dried before the polyurethane primer is applied. The cabinet is handsomely finished with a baked on textured enamel, which allows it to withstand 1000 hours of salt spray tests per ASTM B117-03.

Pre-Painted 16 Gauge Zinc Coated Unit Base:
The unit base is treated with the same paint coatings as the cabinet above, insuring years of service.

Top Discharge Outdoor Fan:
Efficiently moves air quietly for effective heat exchange.

Electrical Components and Controls:
Readily accessible for easier service.

Field Installed Accessories

Optional Field Installed Electric Heat Strips:
With automatic limit and thermal cutoff.
- Field installed heater package for all models.
- Features slide-in field assembly with various BTUH outputs.
- Permits stocking of only one unit.

Optional Field Installed Outdoor Thermostat:
Controls compressor operation and supplemental electric heat strips for maximum operating economy.

Optional Field Installed Low Ambient Control:
Cycles outdoor fan motor below 55°F outdoor temperature to maintain acceptable condensing pressure.

ARI PERFORMANCE CERTIFIED ARI Standard 210/240 Unitary Air Conditioners

c UL us LISTED

ISO 9001 UL REGISTERED FIRM FILE NO. A6887

Cooling & Heating Capacities and Efficiency Ratings

MODEL	Phase	COOLING		HEATING 47°F		HEATING 17°F
		BTUH	SEER	BTUH	HSPF *	BTUH
PH13241-A	1	21,000	13.00	20,000	7.7	12,000
PH13301-A	1	28,000	13.00	28,500	7.7	16,200
PH13361-A, -B	1 and 3	33,500	13.00	35,500	7.7	22,000
PH13421-A, -B	1 and 3	41,500	13.00	44,000	7.7	28,000
PH13481-A, -B	1 and 3	45,500	13.00	49,500	7.7	31,000

Tested and Certified in accordance with ARI Standard 210/240-2003.
* Heating Seasonal Performance Factor at Region IV minimum design heating requirement per DOE test procedures in effect at time of printing.

General Specifications

Model	PH13241-A	PH13301-A	PH13361-A	PH13361-B	PH13421-A	PH13421-B	PH13481-A	PH13481-B
Electric Rating 60 Hz - Ckt A	230/208-60-1	230/208-60-1	230/208-60-1	230/208-60-3	230/208-60-1	230/208-60-3	230/208-60-1	230/208-60-3
Operating Votage Range	197-253	197-253	197-253	187-253	197-253	187-253	197-253	187-253
Minimum Circuit Ampacity ④	20	22	27	19	30	23	34	24
BCSC	13	14	17.5	11	21	15	22	14
Field Wire Size ③	12	10	10	12	10	10	8	10
Ground Wire Size	12	10	8	12	10	10	8	10
Delay Fuse - Max. ②	30	35	40	30	50	40	55	40
Total Unit Amps - 203-208	11.2/12.2	14.8/16.3	19.4/21.9	13.9/15.4	21.9/22.9	17.1/17.9	24.7/26.6	18.0/19.2
Compressor - Circuit A								
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Volts	230/208	230/208	230/208	230/208	230/208	230/208	230/208	230/208
Rated Load Amps	8/9	11/12.5	15/17.5	9.5/11	16.1/17.1	11.3/12	18.7/20.6	12.0/13.2
Lock Rotor Amps	58.3/58.3	73/73	79/79	88/88	115/115	115/115	117/117	83.1/83.1
Fan Motor and Condenser								
Fan Motor - HP/RPM	1/6 / 825	1/6 / 825	1/6 / 825	1/6 / 825	1/4 / 825	1/4 / 825	1/4 / 825	1/4 / 825
Fan Motor Amps	1.1	1.1	1.1	1.1	1.5	1.5	1.5	1.5
Fan Dia/CFM	24"/2800	24"/2600	24"2600	24"/2600	24"/3400	24"/3400	24"/3400	24"/3400
Motor and Evaporator								
Blower Motor - HP/RPM ①	1/3 Variable	1/2 Variable	1/2 Variable	1/2 Variable	1/2 Variable	1/2 Variable	3/4 Variable	3/4 Variable
Blower Motor - Amps	2.1	2.7	3.3	3.3	4.3	4.3	4.5	4.5
CFM Cooling & ESP	800 @ 0.18	1000 @ 0.23	1000 @ 0.23	1000 @ 0.23	1400 @ 0.23	1400 @ 0.23	1550 @ 0.28	1550 @ 0.28
Charge (R-410A oz.)	75	136	136	136	170	170	180	180
Shipping Weight (pounds)	365	365	365	365				

① VS = Variable Speed Programmable Motor
② Maximum time delay fuse or HACR type circuit breaker for protection of field wiring devices.
③ Based on 75°C copper wire. All wiring must conform to the National Electrical Code and all local codes.
④ These "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to National Electric Code (latest revision), Article 310 for power conductor sizing.

Indoor Blower Performance ①

MODEL	Rated ESP	MAX EXP	② Continuous Airflow	③ Rated Cooling CFM	④ Rated Heating CFM
PH1324	0.10	0.50	600	800	800
PH1330	0.15	0.50	750	1000	1000
PH1336	0.15	0.50	825	1100	1100
PH1342	0.20	0.50	925	1400	1400
PH1348	0.20	0.50	1025	1550	1550

① Motor will deliver consistent CFM through voltage supply range with no deterioration (197-253V for all 230/208V models).
② Continuous CFM is the total air being circulated during continuous (manual fan) mode.
③ Will occur automatically with a call for "Y" for cooling mode operation.
④ Will occur automatically with a call for "W1" for heating mode operation.

Optional Field Installed Electric Heater Packages

Optional field-installed electric heater packages are available for 5 through 15Kw capacities. The heater packages are UL listed to be field-installed into the basic unit. They feature prewired control circuit wiring with plug-in connector. Simply slide the heater into the unit, plug in the pretested control circuit and connect the separate high voltage circuit wiring.

IMPORTANT: While this electrical data is presented as a guide, it is important to electrically connect properly sized fuses and conductor wires in accordance with the National Electrical Code and all existing local codes.

Optional Field Installed Heater Packages Are Only To Be Used With The Models As Indicated Below

Heater Package Model	Volts and Phase	PH13241-A	PH13301-A	PH13361-A	PH13361-B	PH13421-A	PH13421-B	PH13481-A	PH13481-B
EHP313-A05	240/208-1	X	X	X					
EHP313-A10	240/208-1	X	X	X					
EHP313-A15	240/208-1		X ①	X ①					
EHP313-B09	240/208-3				X				
EHP313-B15	240/208-3				X ②				
EHP513-A05	240/208-1					X		X	
EHP513-A10	240/208-1					X		X	
EHP513-A15	240/208-1					X ①		X ①	
EHP513-B09	240/208-3						X	A	X
EHP513-B15	240/208-3						X ②	A ②	X ②

S = Standard application — heater voltage and phase same as basic unit.

A = Alternate application — heater voltage and phase different from basic unit.

NA = Not approved.

① Max. KW that can operate with Heat Pump on is 10 KW. 15 KW will operate during emergency heat.

② Max. KW that can operate with Heat Pump on is 9 KW. 15 KW will operate during emergency heat.

Optional Field Installed Electric Heater Table — 2 through 5 Ton

Heater Pkg. Model No.	Unit Volts & Phases	Heater KW & Capacity @ 240 Volts		Heater KW & Capacity @ 208 Volts		240/208V Heater Amps	Heater Internal Fuse	Circuit B				
		KW	BTUH	KW	BTUH			No. Field Circuits	Min. Circuit Ampacity	① Max. Over Current Protection	② Field Power Wiring	③ Ground Wire Size
EHP313-A05	240/208-1	5	17,100	3.75	12,800	20.8/18.1	30/60	1	26/23	30/25	10/10	10
EHP313-A10	240/208-1	10	34,100	7.50	26,000	41.6/36.2		1	53/46	60/50	6/8	10
EHP313-A15	240/208-1	15	51,200	11.25	38,400	62.5/54.1		1	79/68	80/70	4/4	8
EHP513-A05	240/208-1	5	17,100	3.75	12,800	20.8/18.1	30/60	1	26/23	30/25	10/10	10
EHP513-A10	240/208-1	10	34,100	7.50	26,000	41.6/36.2		1	53/46	60/50	6/8	10
EHP513-A15	240/208-1	15	51,200	11.25	38,400	62.5/54.1		1	79/68	80/70	4/4	8
EHP313-B09	240/208-3	9	30,700	6.75	23,000	21.7/18.7	None	1	28/24	30/25	10/10	10
EHP313-B15	240/208-3	15	51,200	11.25	38,400	36.2/31.2		1	46/39	50/40	8/8	10
EHP513-B09	240/208-3	9	30,700	6.75	23,000	21.7/18.7	None	1	28/24	30/25	10/10	10
EHP513-B15	240/208-3	15	51,200	11.25	38,400	36.2/31.2		1	46/39	50/40	8/8	10

① Maximum size of the time delay fuse or HACR circuit breaker for protection of field wiring devices.

② Based on wire suitable for 75°C. Other wiring materials must be rated for marked "Minimum Circuit Ampacity" or greater. Based on 75°C copper wire. All wiring must conform to the National Electric Code and all local codes.

③ These "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to the National Electric Code (latest revision), Article 310 for power conductor sizing.

IMPORTANT: While this electrical data is presented as a guide, it is important to electrically connect properly sized fuses and conductor wires in accordance with the National Electrical Code and all existing local codes.

Cooling Application Data — Outdoor Temperature ①

Model	D.B./W.B. ②	Cooling Capacity	Outdoor Temperature°F													
			55°F	60°F	65°F	70°F	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F	120°F
PH13241	75/62	Total Cooling	25,800	25,000	24,200	23,450	22,650	21,850	21,050	20,250	19,450	18,700	17,950	17,250	16,500	15,750
		Sensible Cooling	20,300	19,900	19,500	19,100	18,650	18,250	17,800	17,400	17,000	16,600	16,200	15,800	15,400	15,000
	80/67	Total Cooling	27,300	26,550	25,750	25,000	24,200	23,400	22,600	21,800	21,000	20,300	19,650	18,950	18,300	17,600
		Sensible Cooling	20,500	20,050	19,600	19,100	18,650	18,150	17,650	17,100	16,600	16,300	16,050	15,750	15,500	15,200
	85/72	Total Cooling	30,450	29,650	28,800	27,950	27,150	26,300	25,500	24,700	23,850	23,000	22,100	21,200	20,350	19,450
		Sensible Cooling	20,700	20,200	19,750	19,300	18,850	18,350	17,850	17,350	16,850	16,600	16,300	16,000	15,700	15,450
PH13301	75/62	Total Cooling	34,700	33,600	32,550	31,400	30,350	29,250	28,150	27,050	25,950	24,900	23,850	22,850	21,800	20,750
		Sensible Cooling	25,250	24,850	24,550	24,050	23,600	23,250	22,900	22,550	22,200	21,550	20,900	20,250	19,600	18,950
	80/67	Total Cooling	36,700	35,600	34,550	33,450	32,400	31,300	30,200	29,100	28,000	27,050	26,100	25,100	24,150	23,200
		Sensible Cooling	25,500	25,050	24,550	24,100	23,600	23,150	22,650	22,200	21,700	21,200	20,700	20,200	19,700	19,200
	85/72	Total Cooling	40,950	39,800	38,650	37,500	36,350	35,200	34,050	32,950	31,800	30,600	29,350	28,100	26,900	25,650
		Sensible Cooling	27,700	25,250	24,800	24,300	23,850	23,400	22,950	22,500	22,050	21,550	21,050	20,500	20,000	19,500
PH13361	75/62	Total Cooling	39,500	38,500	37,500	36,500	35,500	34,400	33,250	32,150	31,050	30,450	29,850	29,250	28,650	28,100
		Sensible Cooling	28,300	27,900	27,500	27,100	26,700	26,400	26,050	25,700	25,350	24,750	24,150	23,550	22,950	22,350
	80/67	Total Cooling	41,750	40,800	39,850	38,850	37,900	36,800	35,700	34,600	33,500	33,100	32,650	32,250	31,800	31,400
		Sensible Cooling	28,550	28,100	27,650	27,150	26,700	26,250	25,750	25,300	24,800	24,350	23,900	23,500	23,050	22,600
	85/72	Total Cooling	46,600	45,550	44,550	43,500	42,500	41,400	40,300	39,150	38,050	37,400	36,700	36,050	35,400	34,700
		Sensible Cooling	28,800	28,350	27,900	27,450	27,000	26,550	26,100	25,650	25,200	24,750	24,300	23,850	23,400	22,950
PH13421	75/62	Total Cooling	50,400	48,850	47,350	45,850	44,350	42,850	41,400	39,900	38,450	36,750	35,050	33,350	31,650	29,950
		Sensible Cooling	36,950	36,350	35,750	35,150	34,550	34,150	33,750	33,350	32,950	31,600	30,300	28,950	27,600	26,300
	80/67	Total Cooling	53,300	51,800	50,350	48,850	47,350	45,900	44,450	42,950	41,500	39,900	38,300	36,700	35,100	33,500
		Sensible Cooling	37,350	36,650	35,950	35,250	34,550	33,950	33,400	32,800	32,200	31,100	29,950	28,850	27,700	26,600
	85/72	Total Cooling	53,000	52,150	51,250	50,400	49,500	48,900	48,300	47,750	47,150	45,100	43,100	41,100	39,050	37,050
		Sensible Cooling	37,600	36,950	36,252	35,600	34,950	34,350	33,800	33,250	32,700	31,550	30,450	29,300	28,150	27,000
PH13481	75/62	Total Cooling	54,450	52,850	51,250	49,650	48,050	46,600	45,100	43,650	42,150	40,150	38,100	36,050	34,050	32,000
		Sensible Cooling	39,000	38,450	37,950	37,450	36,950	36,650	36,250	36,100	35,800	34,350	32,900	31,450	30,000	28,550
	80/67	Total Cooling	57,600	56,000	54,450	50,900	51,350	49,900	48,450	46,950	45,500	43,550	41,600	39,650	37,750	35,800
		Sensible Cooling	39,400	38,750	38,150	37,500	36,900	36,450	35,950	35,500	35,000	33,800	32,550	31,350	30,100	28,900
	85/72	Total Cooling	64,250	62,550	60,900	59,250	57,600	56,110	54,650	53,150	51,700	49,250	46,850	44,450	42,000	39,600
		Sensible Cooling	39,700	39,100	38,500	37,900	37,300	36,850	36,450	36,000	35,550	34,300	33,050	31,850	30,600	29,350

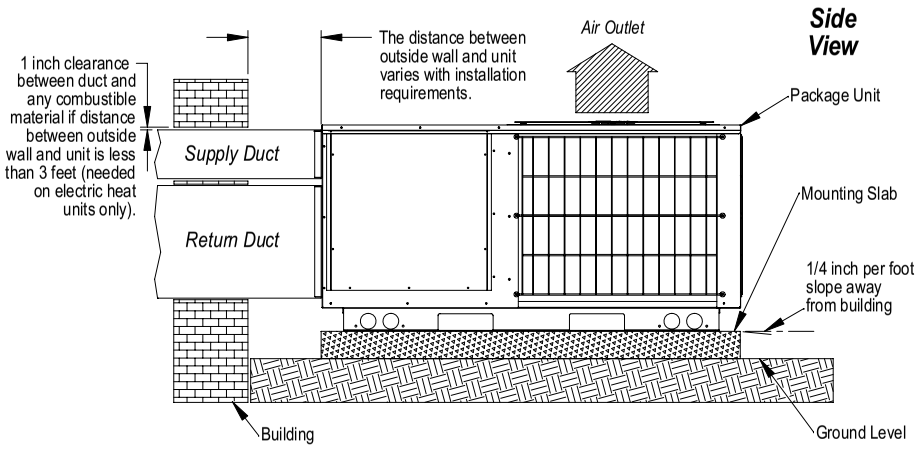
① Below 55°F, unit requires a field installed low ambient control model CMH-15.
② Return air temperature °F.

*Heating Application Data — 2 through 5 Ton Outdoor Temperature °F**

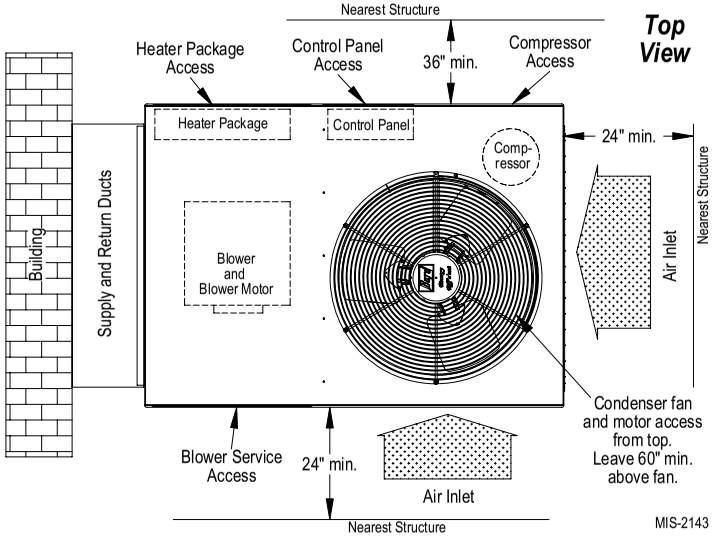
Model		-5°F	0°F	5°F	10°F	15°F	20°F	25°F	30°F	35°F	40°F	45°F	50°F	55°F	60°F	65°F	70°F
PH13241	Btuh	5,350	6,650	8,000	9,350	10,650	12,800	14,150	15,450	16,800	18,150	19,450	20,800	22,100	23,450	24,750	26,100
	Watts	1540	1580	1620	1640	1660	1682	1690	1700	1710	1720	1720	1770	1850	1930	2000	2070
	COP	1.02	1.23	1.45	1.67	1.88	2.23	2.45	2.66	2.88	3.10	3.31	3.44	3.50	3.57	3.63	3.70
PH13301	Btuh	5,700	7,800	9,900	12,000	14,100	17,450	19,550	21,650	23,750	25,850	27,950	30,250	32,650	35,000	37,400	39,800
	Watts	1510	1740	1900	2030	2130	2250	2310	2360	2400	2440	2470	2560	2680	2790	2890	2990
	COP	1.11	1.32	1.53	1.73	1.94	2.28	2.48	2.69	2.90	3.10	3.32	3.47	3.57	3.68	3.79	3.90
PH13361	Btuh	10,750	13,000	15,250	17,500	19,750	23,350	25,600	27,850	30,100	32,350	34,600	36,900	39,300	41,650	44,050	46,400
	Watts	2280	2430	2550	2650	2730	2840	2890	2940	2980	3020	3050	3150	3300	3450	3590	3730
	COP	1.38	1.57	1.75	1.93	2.12	2.41	2.59	2.78	2.96	3.14	3.33	3.43	3.49	3.54	3.60	3.65
PH13421	Btuh	14,350	17,050	19,800	22,550	25,250	29,650	32,350	35,100	37,850	40,550	43,300	45,950	48,500	51,050	53,650	56,200
	Watts	2850	3030	3180	3300	3400	3540	3610	3670	3720	3770	3810	3900	4020	4130	4230	4330
	COP	1.48	1.65	1.83	2.00	2.18	2.46	2.63	2.81	2.98	3.16	3.33	3.45	3.54	3.63	3.71	3.80
PH13481	Btuh	15,200	18,300	21,450	24,550	27,700	32,650	35,800	38,900	42,000	45,150	48,250	51,350	54,450	57,550	60,600	63,700
	Watts	3020	3260	3440	3600	3730	3900	3990	4060	4130	4190	4250	4380	4570	4760	4940	5110
	COP	1.48	1.65	1.83	2.00	2.18	2.46	2.63	2.81	2.98	3.16	3.33	3.43	3.49	3.54	3.60	3.65

* 70°F DB Indoor Return Air at rated CFM, includes defrost operation below 45°F.

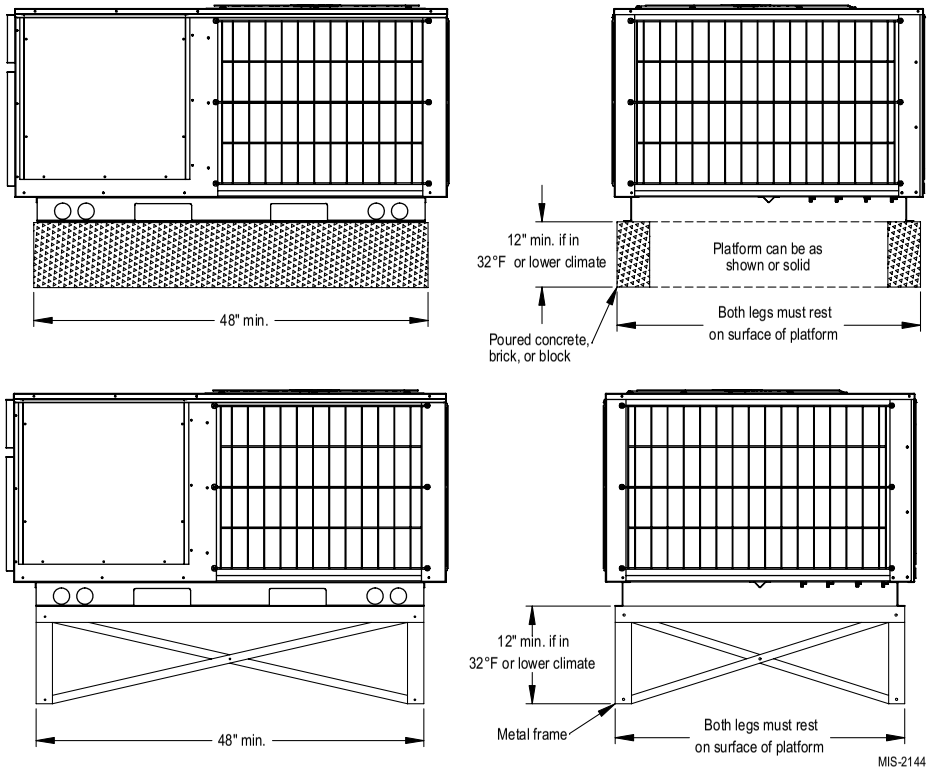
Slab Mounting at Ground Level



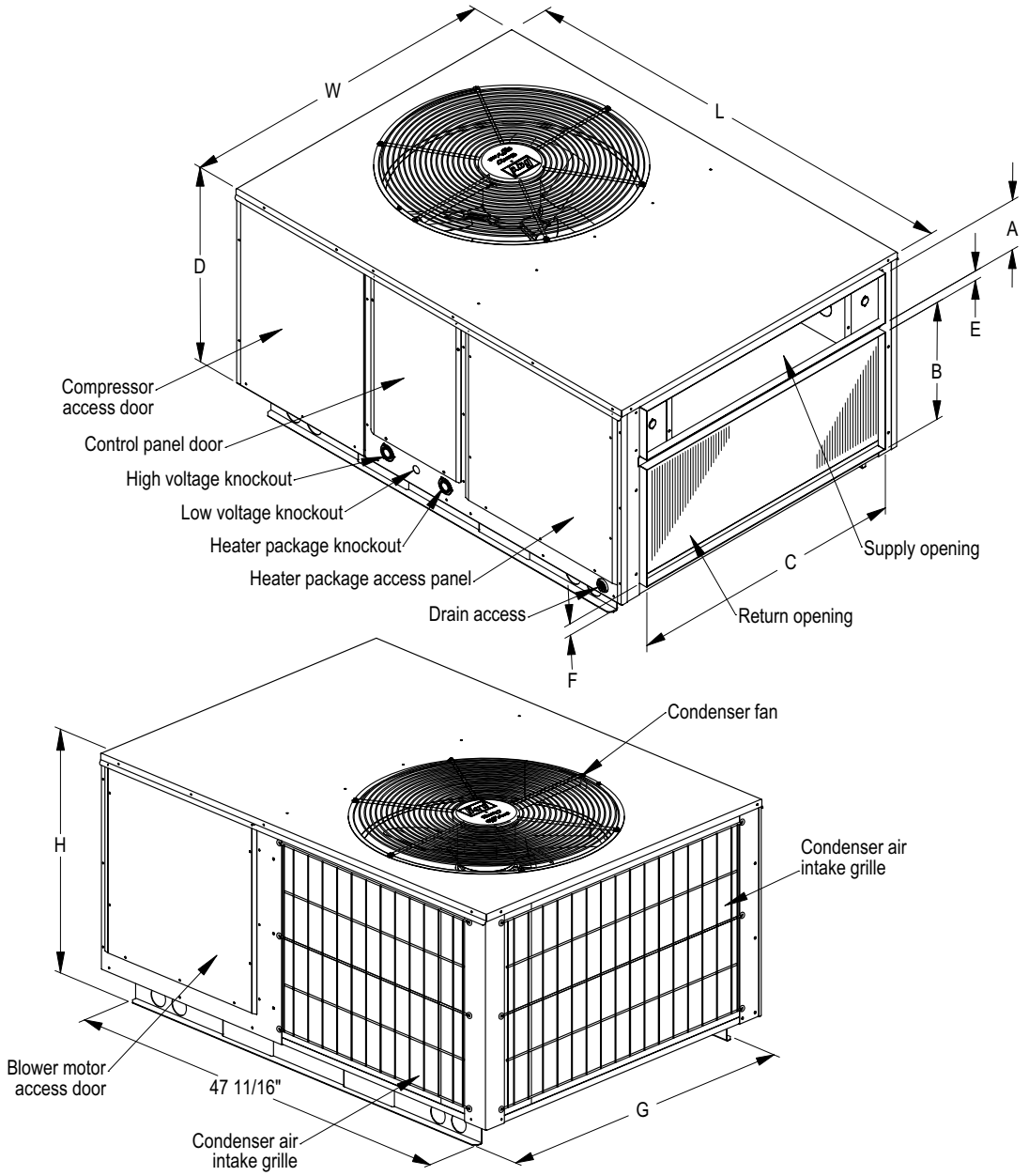
Airflow & Service Access Clearances



Elevated Mounting Platforms (Field Constructed)



Unit Dimensions



Unit Dimension Chart

Unit	Supply Size		Return Size		Unit Overall Dimensions			Unit General Dimensions			
	A	C	B	C	H (height)	L (length)	W (width)	D	E	F	G
PA/PH1324,1330,1336	5.875	32.875	13.875	32.875	26.25	53.25	38.125	23.25	1.125	1.375	35.625
PA/PH1342,1348,1360	9.875	37.875	15.875	37.875	33.25	55.25	42.375	30.25	1.5	2.375	38.125

MIS-2142

Optional Control Modules — Field Installed

Field Installed Part	Applicable To	Description
CMH-15	All Models	Low Ambient Control with Relay
CMH-16	All Models	Outdoor Thermostat with Relay

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