



13HPP
MERIT® SERIES
Residential - R-410A

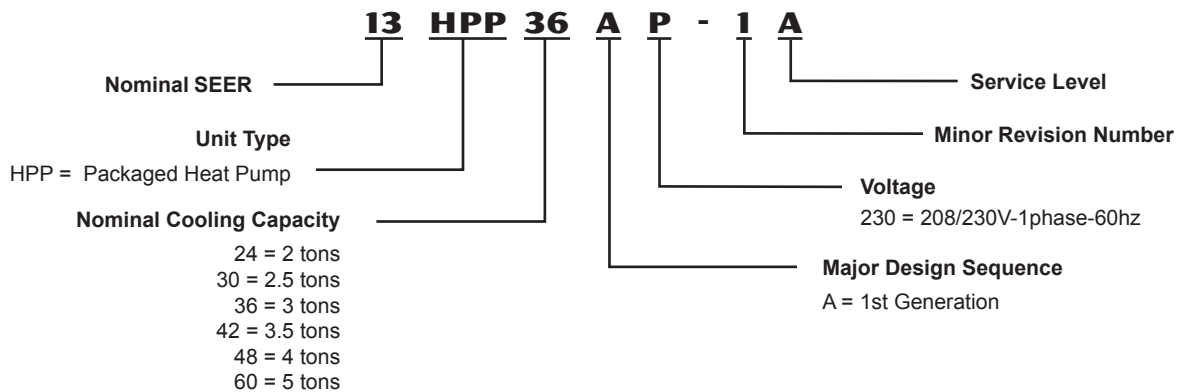
PRODUCT SPECIFICATIONS

Bulletin No. 210603
March 2011



SEER - 13.00
2 to 5 Tons
Cooling Capacity - 23,000 to 56,000 Btuh
Heating Capacity - 21,600 to 54,000 Btuh
Optional Electric Heat - 5 to 20 kW

MODEL NUMBER IDENTIFICATION



FEATURES

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WARRANTY

Compressor - five year limited warranty in residential installations and five years in non-residential installations.

All other covered components - five years in residential installations and one year in non-residential installations.

Refer to Lennox Equipment Limited Warranty certificate included with unit for specific details.

APPROVALS

Units are Certified by AHRI.

Cooling system rated according to DOE test procedures.

Cooling system rated in accordance with AHRI standard 210/240.

Units are listed by ETL for the U.S. and Canada.

Packaged unit and components within bonded for grounding to meet safety standards required by ETL.

Optional electric heaters are UL listed for the U.S. and Canada and are rated and tested according to DOE test procedures and FTC labeling regulations.

Each unit test operated at the factory before shipment ensuring dependable operation at start-up.

APPLICATIONS

Designed for outdoor installations at ground level or rooftop for residential applications.

SUPPLY AIR BLOWER

Direct Drive Blower

Each blower assembly statically and dynamically balanced.

Multi-speed, direct drive blower motor.

Change in blower speed is easily accomplished by simple wiring change on blower motor.

Blower assembly easily removed for servicing.

See Blower Performance tables.

REFRIGERATION SYSTEM

R-410A Refrigerant

Non-chlorine, ozone friendly, R-410A.

Unit pre-charged with refrigerant.

See Specification table.



Indoor and Outdoor Coils

Copper tube with aluminum fin coils.

Indoor Coil Drain Pan

Corrosion resistant plastic drain pan.

Outdoor Coil Fan

Weather protected heavy duty outdoor coil fan motor with coated steel fan blades for long life.

Internally mounted.

Totally enclosed motor.

Fan guard constructed of corrosion-resistant PVC (polyvinyl chloride) coated steel.

Reversing Valve

4-way interchange reversing valve effects a rapid change in direction of refrigerant flow resulting in quick changeover from cooling to heating and vice versa.

High Pressure Switch

Shuts off unit if abnormal operating conditions cause the discharge pressure to rise above setting.

Protects compressor from excessive condensing pressure. Automatic reset.

CONTROLS

Electronic blower control.

Single pole contactor.

Trade available components.

Defrost Control

Defrost control furnished as standard equipment.

Gives a defrost cycle for every 30, 60 or 90 minutes (adjustable) of compressor "on" time at outdoor temperatures below 35°F.

Field-selectable, "quiet shift" setting reduces compressor noise during the defrost cycle.

Sensor mounted on liquid line determines when defrost cycle is required and also when to terminate cycle.

Anti-short cycle, timed-off control incorporated into the board.

24 Volt Transformer

40VA transformer furnished and factory installed in control area.

OPTIONS

Thermostat

See Thermostat bulletins in Controls section and Lennox Price Book for a complete list of thermostats.

FEATURES

COMPRESSOR

Scroll compressor on all models.
 Overload protected.
 Resiliently mounted on rubber mounts.

CABINET

Conditioned areas insulated with foil faced insulation to minimize heat loss and reduce operating sound levels.
 Powder paint for maximum durability.
 Easy service access.
 PVC (polyvinyl chloride) coated steel wire guard provides complete coil protection.
 Interchangeable panels for horizontal to downflow airflow conversion furnished (shipped for horizontal).

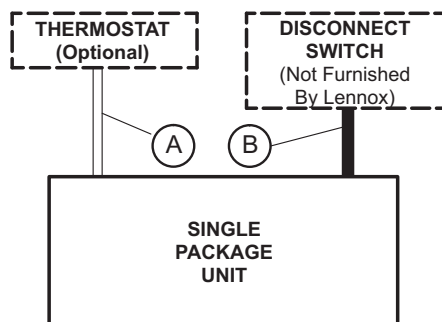
ELECTRIC HEAT (5-20 KW)

Field install internal to unit cabinet.
 Available in several voltages and kw sizes.
 Helix wound nichrome heating elements exposed directly in air stream resulting in instant heat transfer, low element temperatures and long service life.
 Cutoff limit control provides positive protection in case of excessive temperatures.
 Easy plug-in connections for low voltage control wiring.

AIR FILTER (NOT FURNISHED - REQUIRED)

Filter rails for mounting 1 inch filter are furnished in cabinet. Filter is not furnished and must be field provided.
 See Specifications Table for sizes.

FIELD WIRING



A – Four Wire Low Voltage (Electro-mechanical)
 – Five Wire Low Voltage (Electronic)
 B – Two Wire Power (See Electrical Data Table)
 If multiple disconnects are used on units with electric heat; there must be two-wire power provided for each disconnect
 – Field Wiring Not Furnished –

INSTALLATION CLEARANCES

	in.	mm
Front (electric heat access)	24	610
Right Side (blower access)	24	610
Left Side (indoor coil access)	24	610
Back	0	0
Top	48	1219

SPECIFICATIONS

General Data		Model No.	13HPP24A	13HPP30A	13HPP36A	13HPP42A	13HPP48A	13HPP60A
Nominal Tonnage			2	2.5	3	3.5	4	5
Cooling Performance	Total capacity - Btuh		23,000	28,000	34,600	40,000	46,000	56,000
	Total unit watts		2090	2545	3145	3636	4181	5090
	¹ SEER (Btuh/Watt)		13.00	13.00	13.00	13.00	13.00	13.00
	EER (Btuh/Watt)		11.00	11.00	11.00	11.00	11.00	11.00
Heating Performance (High Temp)	Total capacity - Btuh		21,600	27,000	33,600	39,000	44,000	54,000
	Total unit watts		1810	2262	2815	3363	3910	4798
	COP		3.5	3.5	3.5	3.4	3.3	3.3
	HSPF Region IV		7.7	7.7	7.7	7.7	7.7	7.7
Heating Performance (Low Temp)	Total capacity - Btuh		13,000	16,000	20,200	22,400	26,800	34,000
	Total unit watts		1733	2040	2575	2985	3742	4335
	COP		2.2	2.3	2.3	2.2	2.1	2.3
² Sound Rating Number (dB)			77	77	77	80	80	80
Refrigerant	Type		R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
	Charge		5 lbs. 0 oz.	7 lbs. 3 oz.	7 lbs. 6 oz.	10 lbs. 4 oz.	9 lbs. 10 oz.	9 lbs. 6 oz.
Condensate drain size (fpt) - in.			3/4	3/4	3/4	3/4	3/4	3/4
Outdoor Coil Fan	Motor horsepower		1/4	1/4	1/4	1/3	1/3	1/3
	Diameter - in. & No. of blades		18 - 4	18 - 4	18 - 4	22 - 4	22 - 4	22 - 4
Indoor Blower	Blower wheel size dia. x width - in.		10 x 8	10 x 8	10 x 8	10 x 10	10 x 10	10 x 10
	Motor horsepower		1/2	1/2	1/2	3/4	3/4	3/4
⁵ Filter Dimensions (filter and rails not furnished)			(1) 24 x 28 x 1			(1) 30 x 30 x 1		
Net weight of basic unit - lbs.			325	352	352	450	455	455
Shipping weight of basic unit (1 Pkg.) - lbs.			338	365	365	465	470	470
Electrical characteristics (60 hz)			208/230V-1ph-60hz					

ELECTRICAL DATA

Line voltage data - 60hz 1 phase		208/230V	208/230V	208/230V	208/230V	208/230V	208/230V
³ Maximum overcurrent protection (amps)		30	30	35	40	50	60
⁴ Minimum Circuit Ampacity		21.3	21.3	26.1	29.9	34.7	40.5
Compressor	Rated load amps	12.8	12.8	16.6	17.9	21.8	26.4
	Locked rotor amps	58.3	64	79	112	117	134
Outdoor Coil Fan Motor	Full load amps	1.2	1.2	1.2	1.7	1.7	1.7
Indoor Blower Motor	Full load amps	4.1	4.1	4.1	5.8	5.8	5.8

OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

Electric Heat Size - 208/240V-1ph	5 kW	40K65	•	•	•	•	•
	7 kW	40K66	•	•	•	•	•
	10 kW	40K67	•	•	•	•	•
	15 kW	40K68	•	•	•	•	•
	20 kW	40K69				•	•

NOTE-Extremes of operating range are plus and minus 10% of line voltage.

¹ Rated in accordance with AHRI Standard 210/240; 95°F outdoor air temperature, 80°F db/67°F wb entering evaporator air.

² Sound Rating Number rated in accordance with test conditions included in AHRI Standard 270.

³ HACR type circuit breaker or fuse.

⁴ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

⁵ Filters are not furnished and must be field provided.

ELECTRIC HEAT DATA

Packaged Unit Model No.	Electric Heat Description		Input		¹ Minimum Circuit Ampacity	¹ Minimum Circuit Ampacity	² Maximum Overcurrent Protection	² Maximum Overcurrent Protection
	kW	Catalog No.	Volt	kW	Circuit 1	Circuit 2	Circuit 1	Circuit 2
13HPP24A 13HPP30A 13HPP36A	5 kW	40K65	240	5.0	31.2	---	35	---
			208	3.7	27.8	---	30	---
	7 kW	40K66	240	7.0	41.7	---	50	---
			208	5.3	36.8	---	40	---
	10 kW	40K67	240	10.0	57.3	---	60	---
			208	7.5	50.3	---	60	---
15 kW	40K68	240	15.0	57.3	26	60	30	
		208	11.3	50.3	22.5	60	25	
13HPP42A 13HPP48A 13HPP60A	5 kW	40K65	240	5.0	33.3	---	35	---
			208	3.7	29.9	---	30	---
	7 kW	40K66	240	7.0	43.8	---	50	---
			208	5.3	38.9	---	40	---
	10 kW	40K67	240	10.0	59.4	---	60	---
			208	7.5	52.4	---	60	---
	15 kW	40K68	240	15.0	59.4	26	60	30
			208	11.3	52.4	22.5	60	25
	20 kW	40K69	240	20.0	59.4	52.1	60	60
			208	15.0	52.4	45.1	60	50

¹ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

² HACR type breaker or fuse.

HEATING RATINGS

Model	Outdoor Temp - DB/WB °F									
	0/0		17/15		35/33		47/43		62/56	
	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW
13HPP24A	10,100	1.71	13,000	1.73	15,400	1.71	21,600	1.80	26,200	1.87
13HPP30A	10,700	2.03	16,000	2.04	21,100	2.14	27,000	2.26	32,700	2.33
13HPP36A	15,900	2.53	20,200	2.58	24,900	2.66	33,600	2.82	40,200	2.93
13HPP42A	19,600	2.92	22,400	2.99	26,600	3.20	39,000	3.36	46,800	3.48
13HPP48A	23,900	3.57	26,800	3.74	29,300	3.73	44,000	3.91	52,900	4.08
13HPP60A	25,200	4.30	34,000	4.34	41,200	4.32	54,000	4.78	64,800	5.03

COOLING RATINGS

Model	Indoor Temp DB/WB °F	Outdoor Temp - DB°F														
		65°			82°			95°			105°			115°		
		Btuh	S/T	kW	Btuh	S/T	kW	Btuh	S/T	kW	Btuh	S/T	kW	Btuh	S/T	kW
13HPP24A	85/72	28,100	0.59	1.60	26,500	0.62	1.89	25,300	0.65	2.10	23,700	0.68	2.33	21,800	0.71	2.31
	80/67	26,500	0.67	1.59	25,000	0.70	1.85	23,000	0.74	2.09	21,400	0.76	2.31	19,100	0.81	2.30
	75/63	25,000	0.71	1.58	22,600	0.74	1.87	20,700	0.76	2.08	19,100	0.81	2.30	17,100	0.85	2.29
	75/57	23,100	1.00	1.56	21,600	1.00	1.84	20,500	1.00	2.05	18,800	1.00	2.27	16,900	1.00	2.25
13HPP30A	85/72	33,700	0.61	1.97	31,900	0.64	2.30	30,500	0.67	2.56	28,200	0.70	2.84	25,900	0.73	2.82
	80/67	32,100	0.68	1.96	29,900	0.72	2.27	28,000	0.75	2.55	25,700	0.79	2.81	22,500	0.84	2.79
	75/63	30,200	0.72	1.95	27,400	0.76	2.28	25,200	0.79	2.53	22,600	0.84	2.79	19,900	0.88	2.77
	75/57	27,900	1.00	1.92	26,200	1.00	2.25	24,900	1.00	2.50	22,500	1.00	2.76	20,000	1.00	2.73
13HPP36A	85/72	41,800	0.61	2.39	39,400	0.63	2.82	37,500	0.65	3.15	35,700	0.68	3.50	33,100	0.70	3.49
	80/67	39,400	0.68	2.37	37,500	0.71	2.80	34,600	0.74	3.14	32,000	0.76	3.47	29,500	0.80	3.43
	75/63	37,100	0.72	2.36	33,900	0.75	2.79	31,500	0.77	3.12	29,400	0.82	3.45	26,200	0.86	3.42
	75/57	34,300	1.00	2.32	32,300	1.00	2.75	30,800	1.00	3.08	28,900	1.00	3.40	26,100	1.00	3.36
13HPP42A	85/72	46,300	0.64	2.69	44,600	0.66	3.22	43,200	0.68	3.64	40,600	0.70	4.06	37,800	0.72	4.10
	80/67	44,000	0.71	2.68	43,200	0.74	3.18	40,000	0.76	3.63	38,000	0.78	3.98	34,000	0.81	4.03
	75/63	42,100	0.74	2.67	39,200	0.77	3.17	36,900	0.79	3.56	33,800	0.83	3.96	30,600	0.87	3.98
	75/57	38,300	1.00	2.63	38,800	1.00	3.15	35,600	1.00	3.56	33,100	1.00	3.94	30,400	1.00	3.95
13HPP48A	85/72	54,400	0.65	3.10	52,100	0.66	3.72	50,200	0.67	4.19	47,200	0.69	4.66	43,500	0.71	4.71
	80/67	51,900	0.71	3.08	49,500	0.73	3.64	46,000	0.76	4.18	43,500	0.78	4.55	38,400	0.80	4.65
	75/63	49,900	0.73	3.06	45,600	0.76	3.64	42,300	0.78	4.09	38,700	0.82	4.55	34,300	0.85	4.60
	75/57	45,200	1.00	3.02	42,800	1.00	3.63	40,900	1.00	4.10	37,900	1.00	4.53	34,200	1.00	4.56
13HPP60A	85/72	68,500	0.60	3.87	64,500	0.62	4.61	61,300	0.63	5.17	57,500	0.65	5.76	52,300	0.66	5.75
	80/67	64,800	0.66	3.83	60,800	0.68	4.49	56,000	0.70	5.09	53,000	0.72	5.62	45,300	0.77	5.61
	75/63	60,900	0.69	3.81	54,500	0.72	4.50	49,600	0.75	5.03	45,800	0.78	5.56	40,500	0.81	5.52
	75/57	56,400	1.00	3.75	52,700	1.00	4.45	49,800	1.00	4.99	45,500	1.00	5.53	40,300	1.00	5.50

BLOWER DATA

13HPP24A BLOWER PERFORMANCE

¹ Horizontal Airflow

External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)				
	Tap 1 (Fan Only)	Tap 2 (Low Static)	Tap 3 (High Static)	² Tap 4 (Low Static Electric Heat)	² Tap 5 (High Static Electric Heat)
0.20	640	830	950	900	1060
0.30	460	800	910	870	1030
0.40	370	760	880	830	980
0.50	---	710	840	800	960
0.60	---	640	800	730	930
0.70	---	600	750	690	910
0.80	---	570	700	640	860

NOTE - All air data measured external to unit with dry coil and less filter.

¹ For downflow air volume, add 0.10 in. w.g. to duct static.

² Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection

13HPP30A BLOWER PERFORMANCE

¹ Horizontal Airflow

External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)				
	Tap 1 (Fan Only)	Tap 2 (Low Static)	Tap 3 (High Static)	² Tap 4 (Low Static Electric Heat)	² Tap 5 (High Static Electric Heat)
0.20	650	1030	1150	1110	1150
0.30	550	1000	1110	1070	1110
0.40	490	970	1080	1040	1080
0.50	430	930	1050	1000	1050
0.60	---	900	1010	970	1010
0.70	---	860	980	950	980
0.80	---	820	960	920	960

NOTE - All air data measured external to unit with dry coil and less filter.

¹ For downflow air volume, add 0.10 in. w.g. to duct static.

² Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection

13HPP36A BLOWER PERFORMANCE

¹ Horizontal Airflow

External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)				
	Tap 1 (Fan Only)	Tap 2 (Low Static)	Tap 3 (High Static)	² Tap 4 (Low Static Electric Heat)	² Tap 5 (High Static Electric Heat)
0.20	650	1240	1320	1240	1320
0.30	590	1200	1260	1200	1260
0.40	500	1150	1230	1150	1230
0.50	430	1100	1200	1100	1200
0.60	---	1060	1160	1060	1160
0.70	---	1020	1120	1020	1120
0.80	---	980	1080	980	1080

NOTE - All air data measured external to unit with dry coil and less filter.

¹ For downflow air volume, add 0.10 in. w.g. to duct static.

² Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection

BLOWER DATA

13HPP42A BLOWER PERFORMANCE

¹ Horizontal Airflow

External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)				
	Tap 1 (Fan Only)	Tap 2 (Low Static)	Tap 3 (High Static)	² Tap 4 (Low Static Electric Heat)	² Tap 5 (High Static Electric Heat)
0.20	780	1450	1650	1510	1650
0.30	690	1370	1570	1430	1570
0.40	610	1280	1510	1380	1510
0.50	540	1200	1440	1290	1440
0.60	---	1120	1360	1220	1360
0.70	---	1060	1260	1150	1260
0.80	---	990	1160	1090	1160

NOTE - All air data measured external to unit with dry coil and less filter.

¹ For downflow air volume, add 0.10 in. w.g. to duct static.

² Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection

13HPP48A BLOWER PERFORMANCE

¹ Horizontal Airflow

External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)				
	Tap 1 (Fan Only)	Tap 2 (Low Static)	Tap 3 (High Static)	² Tap 4 (Low Static Electric Heat)	² Tap 5 (High Static Electric Heat)
0.20	860	1650	1800	1650	1800
0.30	760	1600	1750	1600	1750
0.40	690	1550	1690	1550	1690
0.50	640	1500	1630	1500	1630
0.60	---	1440	1570	1440	1570
0.70	---	1370	1470	1370	1470
0.80	---	1290	1330	1290	1330

NOTE - All air data measured external to unit with dry coil and less filter.

¹ For downflow air volume, add 0.10 in. w.g. to duct static.

² Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection

13HPP60A BLOWER PERFORMANCE

¹ Horizontal Airflow

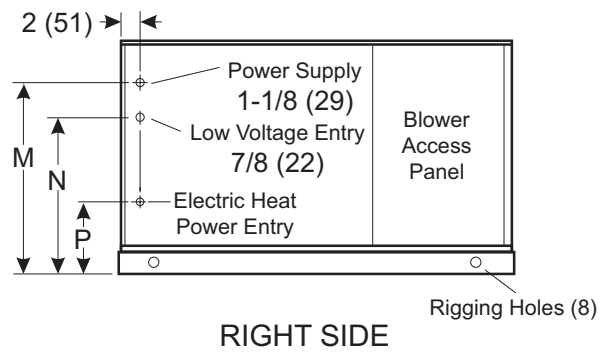
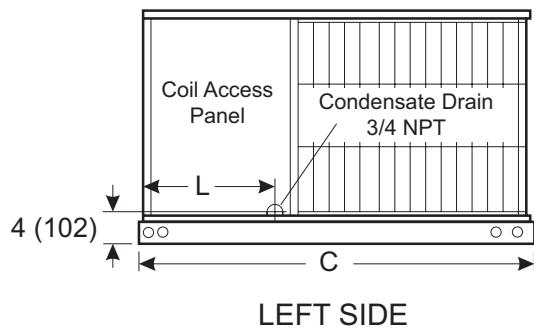
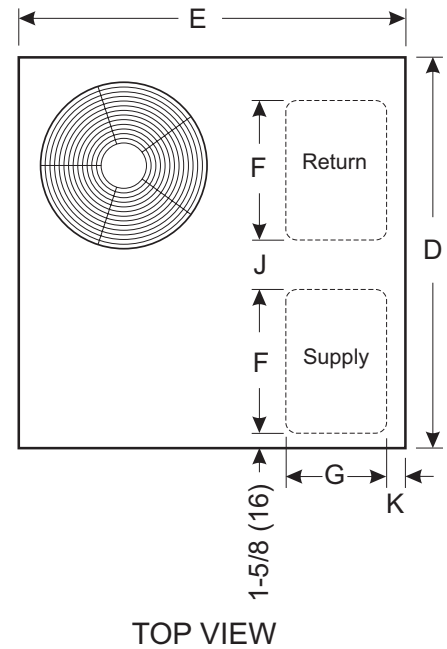
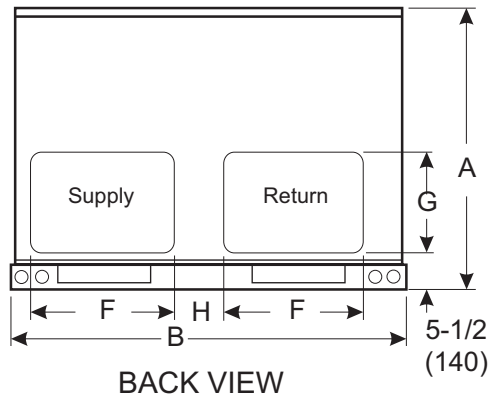
External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)				
	Tap 1 (Fan Only)	Tap 2 (Low Static)	Tap 3 (High Static)	² Tap 4 (Low Static Electric Heat)	² Tap 5 (High Static Electric Heat)
0.20	1000	1820	1950	1820	1950
0.30	900	1790	1910	1790	1910
0.40	800	1730	1860	1730	1860
0.50	750	1670	1800	1670	1800
0.60	---	1630	1700	1630	1700
0.70	---	1530	1560	1530	1560
0.80	---	1380	1360	1380	1360

NOTE - All air data measured external to unit with dry coil and less filter.

¹ For downflow air volume, add 0.10 in. w.g. to duct static.

² Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection

DIMENSIONS - INCHES (MM)



Model No.	A		B		C		D		E		F		G	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
13HPP24A 13HPP30A 13HPP36A	32-1/2	826	46-1/2	1181	46-1/2	1181	45-5/8	1159	45-5/8	1159	17-1/2	445	11-1/2	292
13HPP42A 13HPP48A 13HPP60A	34-1/2	876	55-1/2	1410	50-1/2	1283	54-5/8	1387	49-5/8	1260	21-1/2	546	12	305

Model No.	H		J		K		L		M		N		P	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
13HPP24A 13HPP30A 13HPP36A	4	102	4	102	1-3/4	44	15-5/8	397	27-3/4	705	24-7/8	857	9-3/4	248
13HPP42A 13HPP48A 13HPP60A	6-1/4	159	5-5/8	143	2-3/8	60	17-1/8	435	29-3/4	756	26-7/8	661	15-1/2	394



Visit us at www.lennox.com

For the latest technical information, www.lennoxdavenet.com

Contact us at 1-800-4-LENNOX

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

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