



SAPPHIRE

ULTRA HEAT

ULTRA COOL



Superior Performance in Extreme Temperature

Submittal Data: SAP24HP230V1A 24,000 BTU/H Wall Mounted Heat- Pump System

Job Name	Location	Date
Purchaser	Engineer	
Submitted To	For <input type="checkbox"/> Reference <input type="checkbox"/> Approval <input type="checkbox"/> Construction	

Unit Designation Schedule No.

- GENERAL FEATURES**
- Variable Speed (Inverter) Two-Stage Compressor
  - Low Ambient Heating ( down to -22° F)
  - High Ambient Cooling ( up to -129° F)
  - WIFI Included
  - Wireless Remote with LCD Display (included)
  - Wired Controller (Sold Separately) XE71
  - 7 Indoor Fan Speeds /4 Way Airflow Operation
  - Copper Tube/Aluminum Fins w/Acrylic Resin Anti-Corrosion both inside and out
  - I-FEEL Function
  - 5 year Limited Parts Warranty (Residential Only)



**System Ratings**

<b>Cooling</b>	
Rated Capacity	22,000 BTU/H
Capacity Range	6,800 -30,700 BTU/H
Power Input	1700 W
Power Input (Min/Max)	450/3700 W
SEER	21.5
EER	13.0

<b>Heating at 47° F</b>	
Rated Capacity	24,000 BTU/H
Capacity Range	6,800 -32,000 BTU/H
Power Input	2000 W
Power Input (Min/Max)	380/3700 W
HSPF	12.0
COP	3.5

<b>Heating at 17° F</b>	
Rated Capacity	15,500 BTU/H

<b>Operating Range</b>		
Cooling	(Max)	129°F(54°C)
	(Min)	0°F(-18°C)
Heating	(Max)	75°F (24°C)
	(Min)	-22°F(-30°C)

<b>Power Supply</b>	
Normal Operational Voltage	208/230 V, 1 Phase, 60 Hz
Voltage Range	187 - 253 V
Main Power Wire Size	8-2 AWG
Interconnecting Cable Wire Size	14-4 AWG
MCA	22 A
MOCP/Breaker Size	35 A

**Indoor Unit Data**

<b>Fan Motor</b>	Type	Cross-flow
	Output Power	70 W
	FLA	0.38 A
<b>Airflow</b>	(Low/High)	383/824CFM
<b>Air Throw</b>	(Max)	29.5 ft
<b>Sound Pressure Levels for All Settings</b>		
	Cooling & Heating	54/49/46/43/40/37/34 dB(A)
<b>Dehumidification</b>		4.23 pt/hr

**Outdoor Unit Data**

<b>Compressor</b>	Type	DC Inverter Driven 2-Stage Rotary
	RLA	16 A
<b>Fan Motor</b>	Output Power	90 W
	RLA	0.65 A
<b>Sound Pressure Level</b>		59 dB(A)

<b>Refrigerant Piping Data</b>	
Gas Pipe Size (OD)	5/8-in
Liquid Pipe Size (OD)	1/4-in
Connection Method	Flared
Factory Charge	R410A/81.1 oz
Additional Charge	0.50 oz/ft
Pre-Charge Length	25-ft
MAX Refrigerant Pipe Length	164-ft
MIN Refrigerant Pipe Length	10-ft
MAX Refrigerant Pipe Elevation	98.4-ft



**Features & Function Summary****SAP24HP230V1A**

<b>SYSTEM FEATURES</b>	
Inverter Type	G10
Ultra Low Frequency Torque Control	Yes
Power Factor Correction	Yes
Compressor Type	High Eff. Two Stage Rotary
Refrigerant Type	R410A
Basepan With Electric Heater	YES
Compressor With Electric Heater	YES
Indoor & Outdoor Fin Coating	Acrylic Resin/Anti-Corrosion
Intelligent Defrosting	YES
Intelligent Preheating	YES
Low Voltage Startup	YES
Memory/Power Failure Recovery	YES
Self Diagnosis	YES
Wired Controller Interface	NO
WIFI Included	YES
Indoor Fan Type	Crossflow
Multi Fan Speeds	7 Speeds
Indoor Unit Display	YES
Auxiliary Electrical Heater	NO
Ventilation (Outdoor Air)	NO

<b>REMOTE CONTROLLER FUNCTIONS</b>	
Auto Mode	YES
Auto Fan	YES
Auto Swing (Horizontal Auto Swing)	YES
Auto Swing (Vertical Auto Swing)	YES
Clock on Remote Controller	YES
Dry Mode	YES
Dry Anti-Mildew (X-Fan) Mode	YES
Energy Saving Mode	NO
Dirty Filter Alert	NO
I Feel Function	YES
Lock on Remote Controller	YES
Quiet Mode	YES
Room Temperature Display	NO
Sleep Mode	YES
4 Sleep Modes Options	YES
Timer Mode	YES
Turbo Mode	YES
Display On/Off Control	YES
Freeze Guard Mode	NO
Display On/Off Control	YES

**ULTRA COOL**

**COOLING PERFORMANCE**

Outdoor Ambient Temperature (DB)		Return Air Temperature			
		80°F (DB)			
		TC (Btu/h)	SHR	EER	Power Input (W)
<b>MAX OUTPUT</b>	0°F	8903	72.49%	5.02	1775
	5°F	11666	73.00%	5.24	2227
	10°F	12622	72.91%	5.29	2386
	15°F	12886	75.29%	5.32	2421
	20°F	13425	73.61%	5.50	2443
	25°F	13815	74.00%	5.61	2461
	30°F	14429	74.50%	5.84	2472
	35°F	15128	74.37%	5.90	2563
	40°F	16271	75.00%	5.99	2718
	45°F	17263	75.35%	6.21	2780
	50°F	18113	75.50%	6.36	2847
	55°F	18951	75.11%	6.52	2908
	60°F	19461	77.08%	6.65	2925
	65°F	20262	76.50%	6.81	2975
	70°F	22603	73.70%	7.16	3158
	75°F	24253	76.89%	7.33	3307
	80°F	25554	74.68%	7.54	3389
	85°F	26402	77.50%	7.71	3425
	90°F	25909	78.49%	7.54	3436
	95°F	25788	77.99%	7.48	3446
	100°F	20770	87.72%	7.27	2858
105°F	18269	69.95%	7.13	2562	
110°F	14573	77.25%	6.86	2125	
115°F	12437	88.59%	6.76	1841	
120°F	11300	89.25%	6.55	1725	
125°F	10891	90.05%	6.45	1689	
129°F	9529	100.00%	6.07	1569	

**ULTRA HEAT**

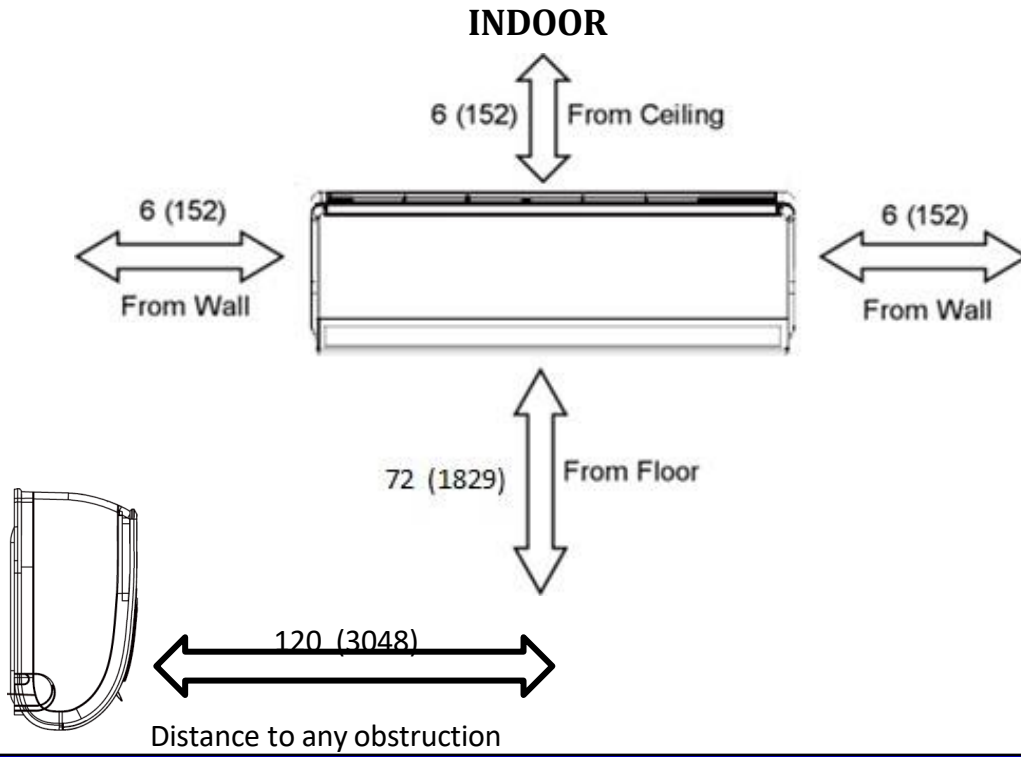
**HEATING PERFORMANCE**

Outdoor Ambient Temperature (DB)		Return Air Temperature		
		70°F (DB)		
		TC (Btu/h)	COP	Power Input (W)
<b>MAX OUTPUT</b>	-22°F	12854	1.30	2903
	-20°F	13391	1.33	2951
	-15°F	13749	1.36	2963
	-10°F	14379	1.41	2989
	-5°F	15360	1.49	3023
	0°F	17600	1.67	3085
	5°F	18560	1.73	3148
	10°F	19200	1.75	3212
	15°F	20480	1.83	3278
	17°F	20942	1.85	3317
	20°F	21440	1.88	3345
	25°F	24000	2.06	3413
	30°F	24320	2.05	3482
	35°F	26504	2.21	3515
	40°F	30400	2.51	3553
	47°F	30988	2.52	3603
	45°F	31360	2.53	3626
	50°F	32000	2.53	3700
	55°F	24240	3.45	2060
	60°F	24480	3.38	2122
	65°F	25200	3.38	2185
70°F	25920	3.37	2251	
75°F	26640	3.37	2319	

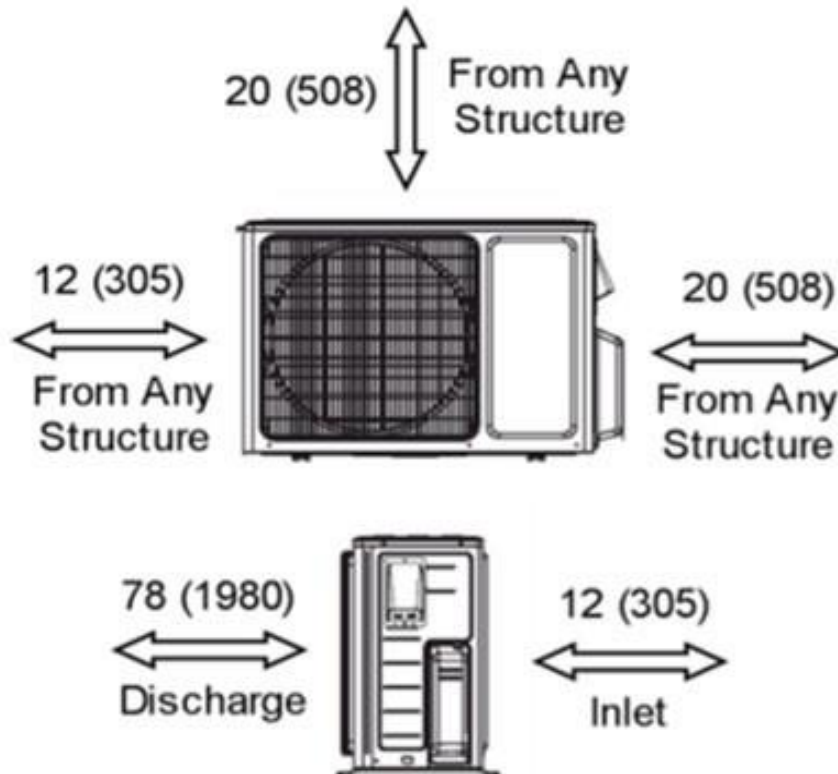
**LEGEND:** W - Watts  
 DB - Dry Bulb  
 TC - Total Capacity  
 SHR - Sensible Heat Ratio  
 COP - Coefficient of Performance

MINIMUM SPACING REQUIREMENTS

Units: inch (mm)



MINIMUM OUTDOOR CLEARANCES

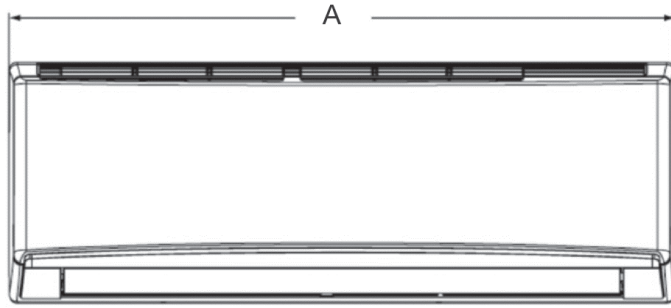


## DIMENSIONAL SPECIFICATIONS

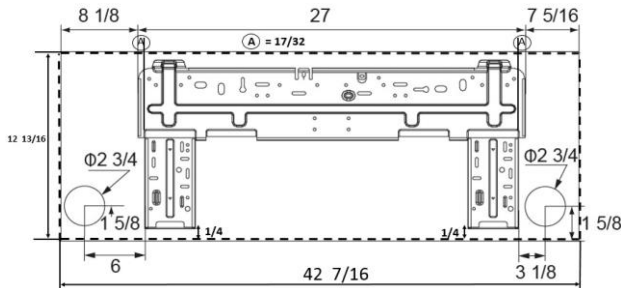
### INDOOR UNIT DIMENSIONS

Units: inch

Model No: SAP24HP230V1AH



Dimensions	
A	44 1/2
B	13
C	9 3/4



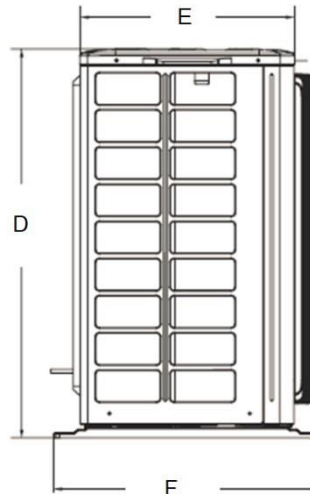
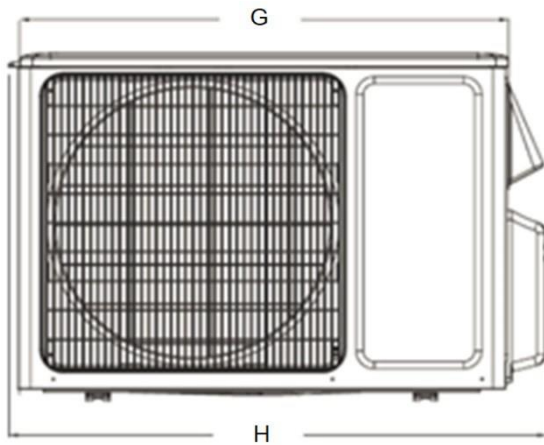
Weight (Net/Shipping) 36 / 43 LBS

Liquid Line Valve	1/4-in OD Flared
Gas Line Valve	5/8-in OD Flared
Drain Connector	5/8-in OD

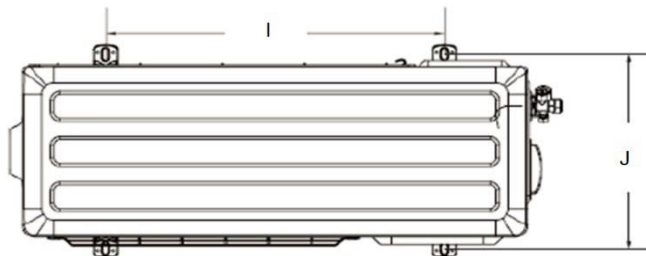
### OUTDOOR UNIT DIMENSIONS

Units: inch

Model No: SAP24HP230V1AO



Dimensions	
D	31 3/8
E	14 5/8
F	17
G	36 1/4
H	39 3/8
I	24
J	15 3/8



Liquid Line Valve	1/4-in OD Flared
Gas Line Valve	5/8-in OD Flared

Weight (Net/Shipping) 148 /158 LBS

**Notes:**

1. Recommended Interconnecting Cable Type 14 AWG 4 Stranded Copper Conductors THHN 600V Wire
2. Power wiring cable size must comply with applicable national and local codes.
3. Test conditions are based on AHRI 210/240.

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