



SAPPHIRE

ULTRA HEAT

ULTRA COOL



Superior Performance in Extreme Temperature

**Submittal Data: SAP18HP230V1A** 18,000 BTU/H Wall Mounted Heat- Pump System

Job Name	Location	Date
Purchaser	Engineer	
Submitted To	For	Reference <input type="checkbox"/> Approval <input type="checkbox"/> Construction <input type="checkbox"/>
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		18,000 BTU/H
Capacity Range		4,094 -21,837 BTU/H
Power Input		1700 W
Power Input (Min/Max)		450/3700 W
SEER		24.5
EER		13.5

<b>Heating at 47° F</b>		
Rated Capacity		18,000 BTU/H
Capacity Range		4,094 -24,566 BTU/H
Power Input		1500 W
Power Input (Min/Max)		350/2500 W
HSPF		12.0
COP		3.5

<b>Heating at 17° F</b>		
Rated Capacity		14,200 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		12-2 AWG
Interconnecting Cable Wire Size		14-4 AWG
MCA		22 A
MOCP/Breaker Size		30 A

**Indoor Unit Data**

<b>Fan Motor</b>	Type	Cross-flow
	Output Power	60 W
	FLA	0.24 A
<b>Airflow</b>	(Low/High)	353/736 CFM
<b>Air Throw</b>	(Max)	29.5 ft
<b>Sound Pressure Levels for All Settings</b>		
Cooling & Heating		51/48/45/42/39/36/34 dB(A)
<b>Dehumidification</b>		3.8 pt/hr

**Outdoor Unit Data**

<b>Compressor</b>	Type	DC Inverter Driven 2-Stage Rotary
	RLA	15.5 A
<b>Fan Motor</b>	Output Power	90 W
	RLA	0.65 A
<b>Sound Pressure Level</b>		59 dB(A)

**Refrigerant Piping Data**

Gas Pipe Size (OD)	5/8-in
Liquid Pipe Size (OD)	1/4-in
Connection Method	Flared
Factory Charge	R410A/70.6 oz
Additional Charge	0.50 oz/ft
Pre-Charge Length	25-ft
MAX Refrigerant Pipe Length	131-ft
MIN Refrigerant Pipe Length	10-ft
MAX Refrigerant Pipe Elevation	66-ft



<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
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 - 180°(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
Fan Speed Control (7 speeds)	YES
I Feel Function	YES
Privacy 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
Freeze Guard Mode	YES
Power Failure Mode	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	7146	74.0%	2.82	742
	5°F	7684	75.0%	2.85	790
	10°F	8263	75.0%	2.88	840
	15°F	8884	76.0%	2.91	894
	20°F	9553	76.0%	2.94	951
	25°F	10163	77.0%	2.94	1011
	30°F	10812	77.0%	2.94	1076
	35°F	11502	78.0%	2.98	1133
	40°F	12236	78.0%	3.01	1192
	45°F	13017	79.0%	3.04	1255
	50°F	13848	79.0%	3.07	1321
	55°F	14577	80.0%	3.10	1376
	60°F	15507	80.0%	3.14	1449
	65°F	16497	81.0%	3.20	1509
	70°F	17931	81.0%	3.34	1572
	75°F	19705	82.0%	3.42	1690
	80°F	20526	82.0%	3.45	1742
	85°F	21836	84.0%	3.52	1815
	90°F	19918	86.0%	3.59	1625
	95°F	18000	86.0%	3.97	1330
	100°F	18918	80.0%	3.47	1596
105°F	19958	75.0%	3.05	1915	
110°F	21410	77.8%	2.94	2134	
115°F	20125	77.0%	2.63	2247	
120°F	18515	77.0%	2.20	2472	
125°F	16664	77.0%	2.06	2373	
129°F	14164	77.0%	1.84	2254	

**ULTRA HEAT**

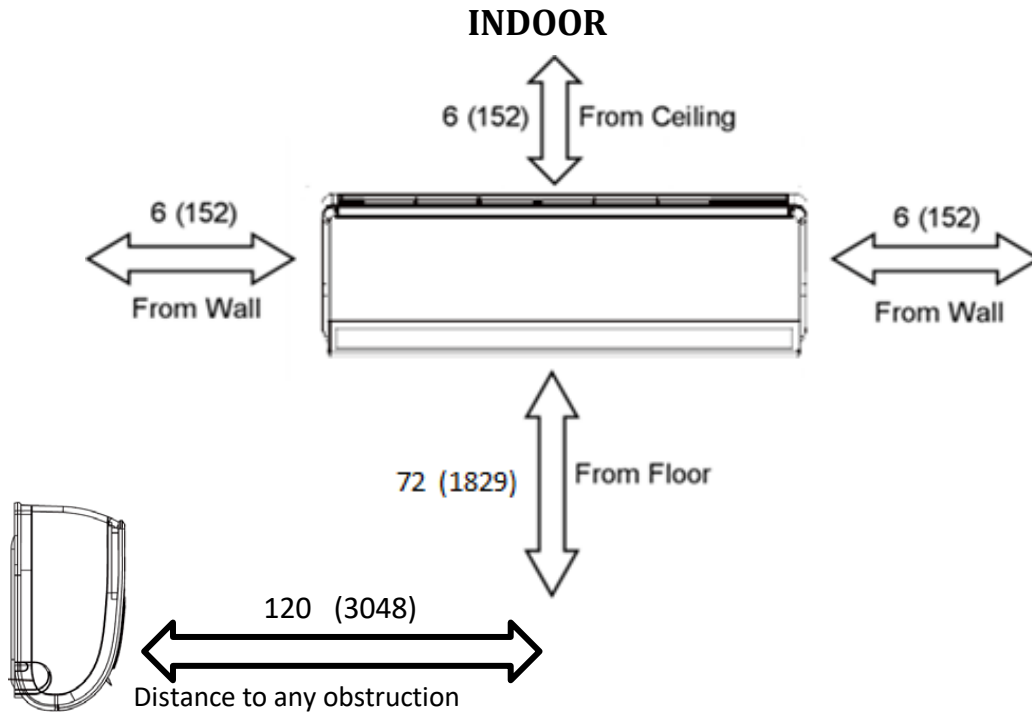
**HEATING PERFORMANCE**

Outdoor Ambient Temperature (DB)		Return Air Temperature		
		70°F (DB)		
		TC (Btu/h)	COP	Power Input (W)
<b>MAX OUTPUT</b>	-22°F	13923	1.41	2885
	-20°F	15470	1.51	3005
	-15°F	16815	1.60	3082
	-10°F	18277	1.70	3145
	-5°F	19653	1.81	3177
	0°F	20908	1.89	3242
	5°F	22008	1.96	3291
	10°F	23114	2.05	3301
	15°F	23851	2.11	3310
	17°F	24146	2.13	3318
	20°F	24589	2.17	3325
	25°F	24687	2.29	3159
	30°F	24761	2.42	2993
	35°F	24875	2.54	2870
	40°F	21890	2.48	2583
	45°F	18000	3.52	1500
	47°F	20320	2.58	2305
	50°F	21618	2.53	2506
	55°F	24566	2.56	2813
	60°F	22109	2.50	2588
	65°F	21004	2.50	2458
70°F	18904	2.56	2163	
75°F	17013	2.71	1839	

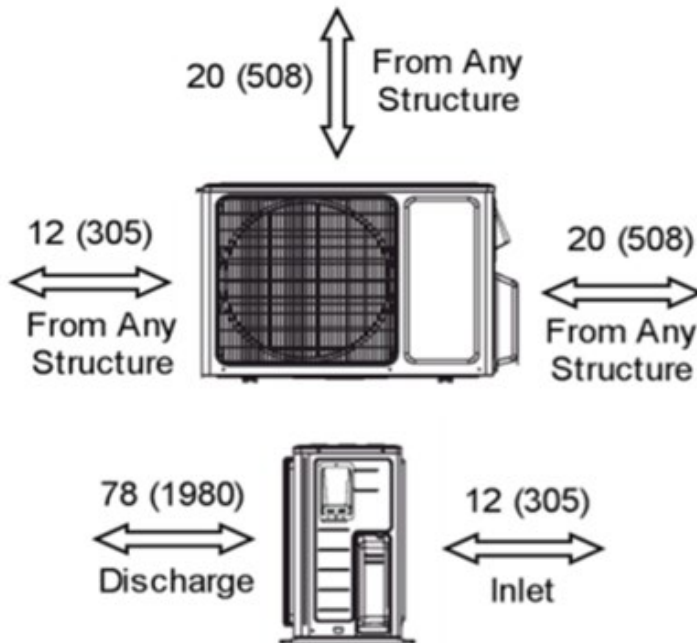
**LEGEND:** W - Watts  
 DB - Dry Bulb  
 TC - Total Capacity  
 SHR - Sensible Heat Ratio  
 COP - Coefficient of Performance

MINIMUM SPACING REQUIREMENTS

Units: inch (mm)



MINIMUM OUTDOOR CLEARANCES



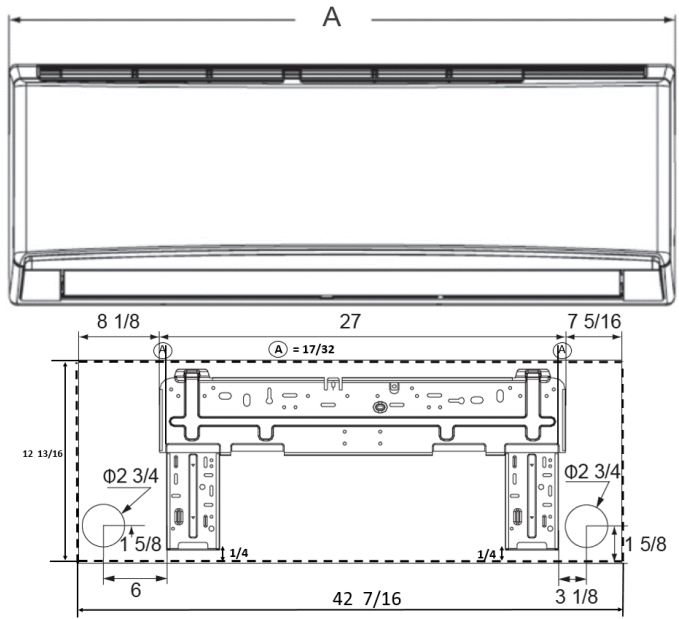
## DIMENSIONAL SPECIFICATIONS

**SAP18HP230V1A**

### INDOOR UNIT DIMENSIONS

Units: inch

Model No: SAP18HP230V1AH



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

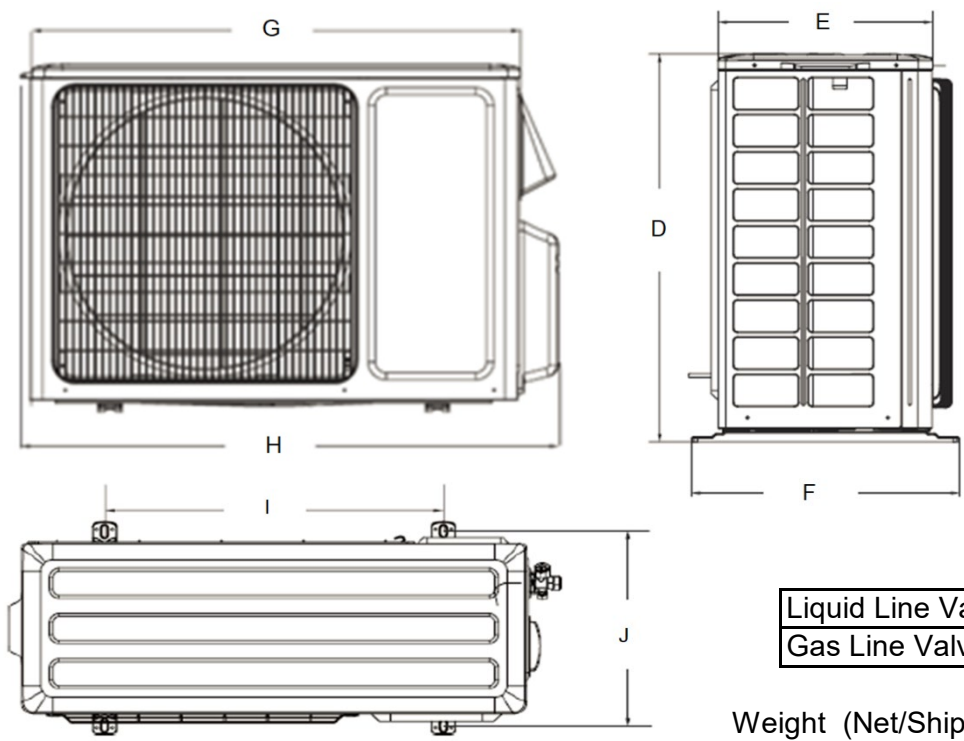
Weight (Net/Shipping) 36 / 44 LBS

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: SAP18HP230V1AO



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) 141 /151 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.