



SAPPHIRE

ULTRA HEAT

ULTRA COOL



Superior Performance in Extreme Temperatures

**Submittal Data: SAP18HP230V1A** 18,000 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
  - Limited Warranty: 5 Years, 7 Years Compressor - Residential & Commercial



**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**

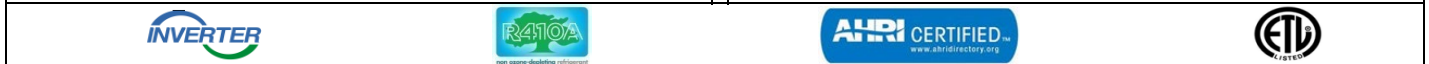
<b>Fan Motor</b>	Type	Cross-flow
	Output Power	60 W
	FLA	0.24 A
<b>Airflow</b>	(Low/High)	353/736 CFM
<b>Air Throw</b>	(Max)	29.5 ft
<b>Sound Pressure Levels for All Settings</b>		
	Cooling & Heating	51/48/45/42/39/36/34 dB(A)
<b>Dehumidification</b>		3.8 pt/hr

**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)	SHR %
0°F	7146	5288	2.82	742	74.0%
5°F	7684	5763	2.85	790	75.0%
10°F	8263	6197	2.88	840	75.0%
15°F	8884	6752	2.91	894	76.0%
20°F	9553	7260	2.94	951	76.0%
25°F	10163	7825	2.94	1011	77.0%
30°F	10812	8325	2.94	1076	77.0%
35°F	11502	8971	2.98	1133	78.0%
40°F	12236	9544	3.01	1192	78.0%
45°F	13017	10283	3.04	1255	79.0%
50°F	13848	10940	3.07	1321	79.0%
55°F	14577	11661	3.10	1376	80.0%
60°F	15507	12406	3.14	1449	80.0%
65°F	16497	13362	3.20	1509	81.0%
70°F	17931	14524	3.34	1572	81.0%
75°F	19705	16158	3.42	1690	82.0%
80°F	20526	16831	3.45	1742	82.0%
85°F	21836	18342	3.52	1815	84.0%
90°F	19918	17120	3.59	1625	86.0%
95°F	18000	15480	3.97	1330	86.0%
100°F	18918	15134	3.47	1596	80.0%
105°F	19958	14968	3.05	1915	75.0%
110°F	21410	16653	2.94	2134	77.8%
115°F	20125	15497	2.63	2247	77.0%
120°F	18515	14257	2.20	2472	77.0%
125°F	16664	12831	2.06	2373	77.0%
129°F	14164	10906	1.84	2254	77.0%

**MAX OUTPUT**

**ULTRA HEAT**

**HEATING PERFORMANCE**

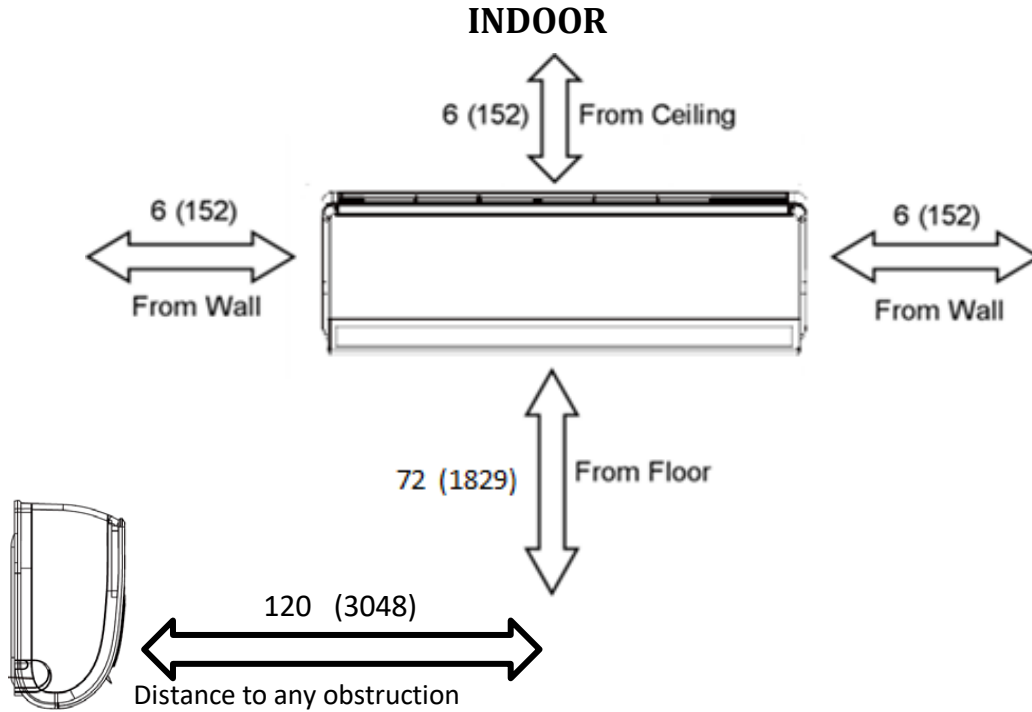
Outdoor Ambient Temperature (DB)	Return Air Temperature		
	70°F (DB)		
	TC (Btu/h)	COP	Power Input (W)
-22°F	12126	1.32	2687
-20°F	12764	1.34	2799
-15°F	13436	1.37	2870
-10°F	13996	1.40	2929
-5°F	15049	1.49	2959
0°F	17705	1.72	3019
5°F	18637	1.78	3065
10°F	19147	1.81	3095
15°F	19739	1.95	2965
17°F	20142	2.03	2915
20°F	20917	2.12	2885
25°F	21564	2.25	2815
30°F	22230	2.32	2805
35°F	22918	2.40	2795
40°F	24468	2.62	2739
45°F	27187	3.29	2425
47°F	28320	3.39	2449
50°F	28603	3.36	2498
55°F	23455	3.44	1998
60°F	21578	3.09	2048
65°F	20499	3.06	1966
70°F	18449	3.02	1789
75°F	16604	2.96	1646

**MAX OUTPUT**

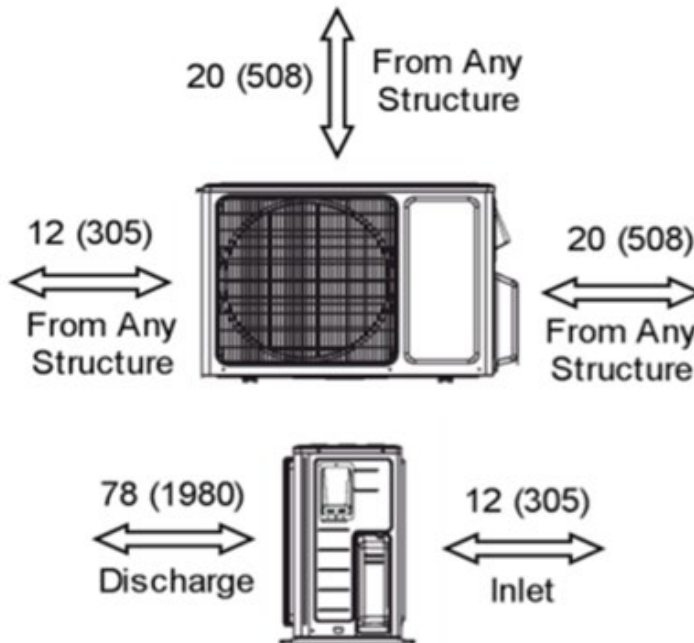
**LEGEND:** W - Watts  
 DB - Dry Bulb  
 TC - Total Capacity  
 SHR - Sensible Heat Ratio  
 COP - Coefficient of Performance

MINIMUM SPACING REQUIREMENTS

Units: inch (mm)



MINIMUM OUTDOOR CLEARANCES



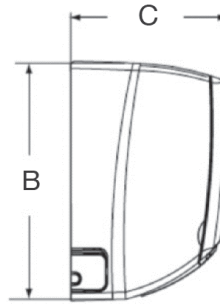
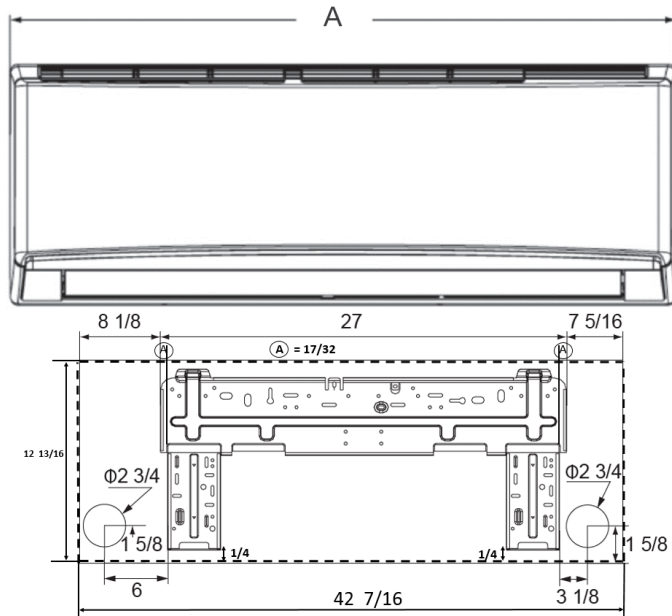
## DIMENSIONAL SPECIFICATIONS

**SAP18HP230V1A**

### INDOOR UNIT DIMENSIONS

Units: inch

Model No: SAP18HP230V1AH



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

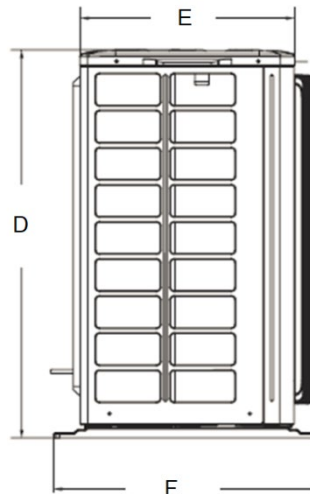
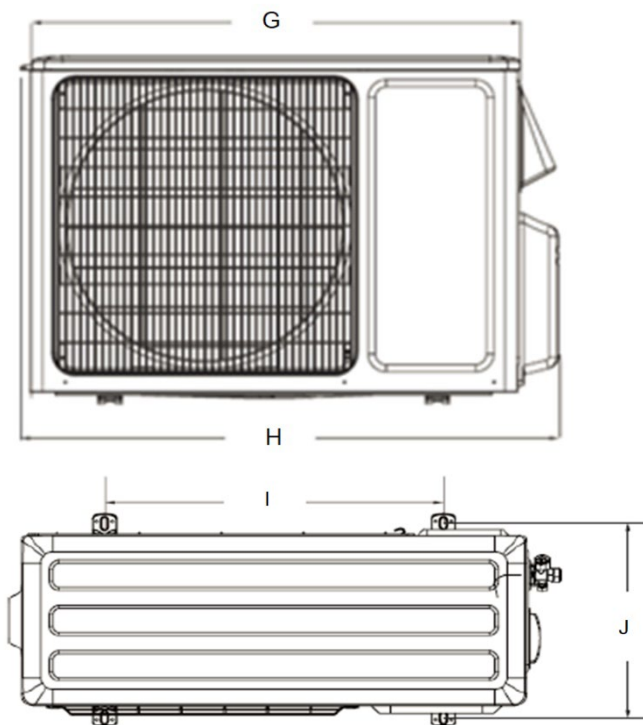
Weight (Net/Shipping) 36 / 44 LBS

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.

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