



SAPPHIRE

ULTRA HEAT

ULTRA COOL



Superior Performance in Extreme Temperatures

**Submittal Data: SAP09HP230V1A** 9,000 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	9,000 BTU/H
Capacity Range	1,535-12,966 BTU/H
Power Input	540 W
Power Input (Min/Max)	50/1400 W
SEER	38.0
EER	16.5

<b>Heating</b>	
Rated Capacity at 47° F	9,000 BTU/H
Capacity Range	2,388-13,648 BTU/H
Power Input	590 W
Power Input (Min/Max)	200/1500 W
HSPF	15.0
COP	4.5

<b>Heating at 17° F</b>	
Rated Capacity	5,600 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	14-2 AWG
Interconnecting Cable Wire Size	14-4 AWG
MCA	9 A
MOCP/Breaker Size	15 A

**Indoor Unit Data**

<b>Fan Motor</b>	Type	Cross-flow
	Output Power	W 60
	FLA	A 0.09
<b>Airflow</b>	(Low/High)	CFM 206/424
<b>Air Throw</b>	(Max)	ft 29.5
<b>Sound Level</b>		
	Cooling (Low/High)	dB(A) 19/45
	Heating (Low/High)	dB(A) 19/45
<b>Dehumidification</b>		pt/hr 1.7

**Outdoor Unit Data**

<b>Compressor</b>	Type	DC Inverter Driven 2-Stage Rotary
	RLA	6.9 A
<b>Fan Motor</b>	Output Power	30 W
	RLA	0.09 A
<b>Sound Level</b>		53 dB(A)

**Refrigerant Piping Data**

Liquid Pipe Size (OD)	1/4-in
Gas Pipe Size (OD)	1/2-in
Connection Method	Flared
Factory Charge	R410A/50.4 oz
Additional Charge	0.2 oz/ft
Pre-Charge Length	25-ft
MAX Refrigerant Pipe Length	49-ft
MIN Refrigerant Pipe Length	10-ft
MAX Refrigerant Pipe Height Difference	33-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 (Blue)	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 - 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	8450	6126	2.62	952	72.5%
5°F	8775	6384	2.64	974	72.8%
10°F	9100	6643	2.64	994	73.0%
15°F	9204	6765	2.64	1015	73.5%
20°F	9680	7038	2.65	1053	72.7%
25°F	9815	7312	2.65	1092	74.5%
30°F	9880	7361	2.66	1106	74.5%
35°F	10010	7457	2.66	1120	74.5%
40°F	10660	7995	2.67	1162	75.0%
45°F	10790	8146	2.67	1183	75.5%
50°F	11050	8343	2.69	1204	75.5%
55°F	11310	8539	2.71	1225	75.5%
60°F	12350	9448	2.81	1288	76.5%
65°F	12220	9348	2.81	1274	76.5%
70°F	12350	9448	2.81	1288	76.5%
75°F	13390	10310	2.95	1330	77.0%
80°F	13650	10579	2.96	1351	77.5%
85°F	13780	10680	2.94	1372	77.5%
90°F	13600	10548	2.88	1385	77.6%
95°F	13000	10140	2.72	1400	78.0%
100°F	12610	9836	2.59	1428	78.0%
105°F	12350	9695	2.46	1470	78.5%
110°F	12090	9551	2.3	1540	79.0%
115°F	11830	9346	2.25	1541	79.0%
120°F	11490	9055	2.11	1596	78.8%
125°F	11050	8785	2.01	1610	79.5%
129°F	10790	8578	1.96	1610	79.5%

**MAX OUTPUT**

**ULTRA HEAT**

**HEATING PERFORMANCE**

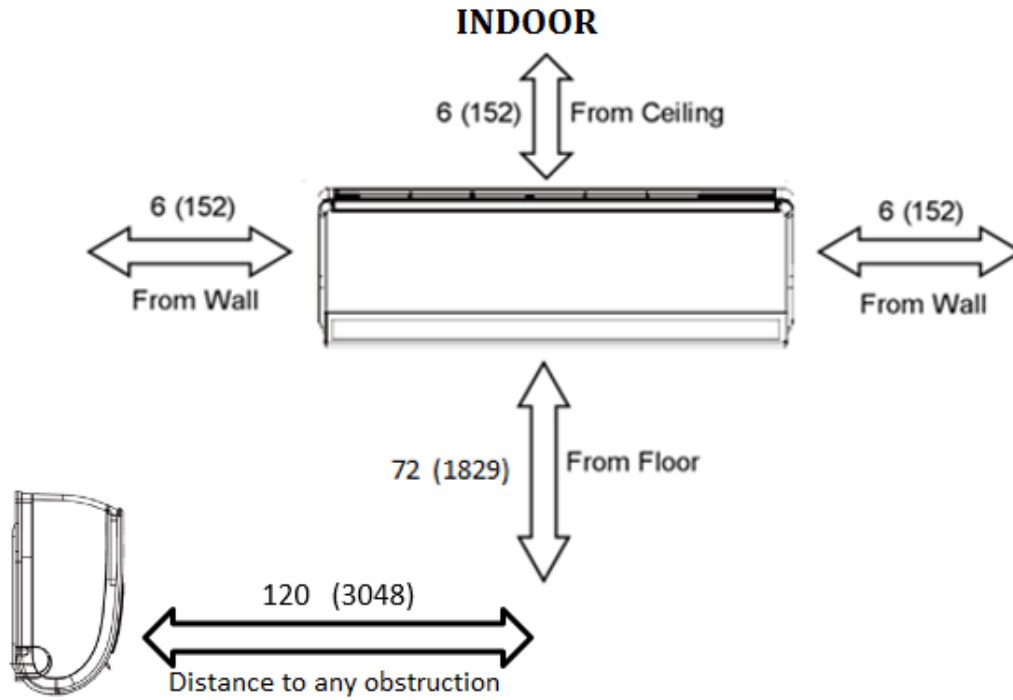
Outdoor Ambient Temperature (DB)	Return Air Temperature		
	70°F (DB)		
	TC (Btu/h)	COP	Power Input (W)
-22°F	7506	1.40	1576
-20°F	7655	1.35	1660
-15°F	8055	1.35	1743
-10°F	8470	1.41	1766
-5°F	8871	1.45	1789
0°F	9281	1.66	1643
5°F	9690	1.84	1547
10°F	10236	2.30	1302
15°F	10836	2.40	1326
17°F	10998	2.41	1331
20°F	11191	2.42	1356
25°F	11601	2.46	1384
30°F	12010	2.49	1412
35°F	12465	2.56	1429
40°F	12966	2.64	1441
45°F	13325	2.66	1468
47°F	13525	2.67	1482
50°F	13648	2.67	1500
55°F	13921	2.69	1515
60°F	14057	2.69	1530
65°F	13512	2.69	1470
70°F	12693	2.56	1455
75°F	12010	2.50	1410

**MAX OUTPUT**

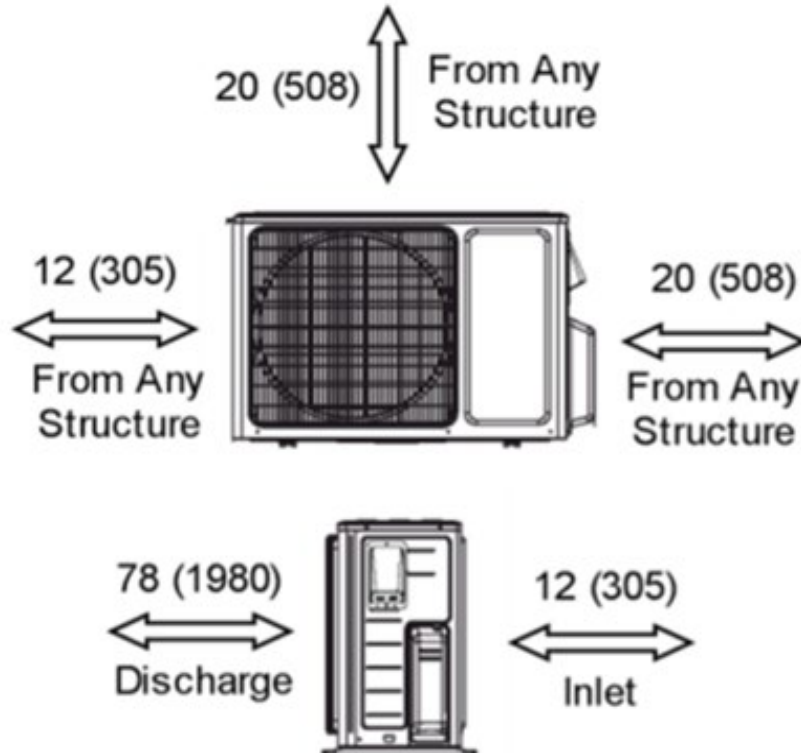
**LEGEND:** W - Watts  
 DB - Dry Bulb  
 TC - Total Capacity  
 SHR - Sensible Heat Ratio  
 COP - Coefficient of Performance

MINIMUM SPACING REQUIREMENTS

Units: inch (mm)



MINIMUM OUTDOOR CLEARANCES



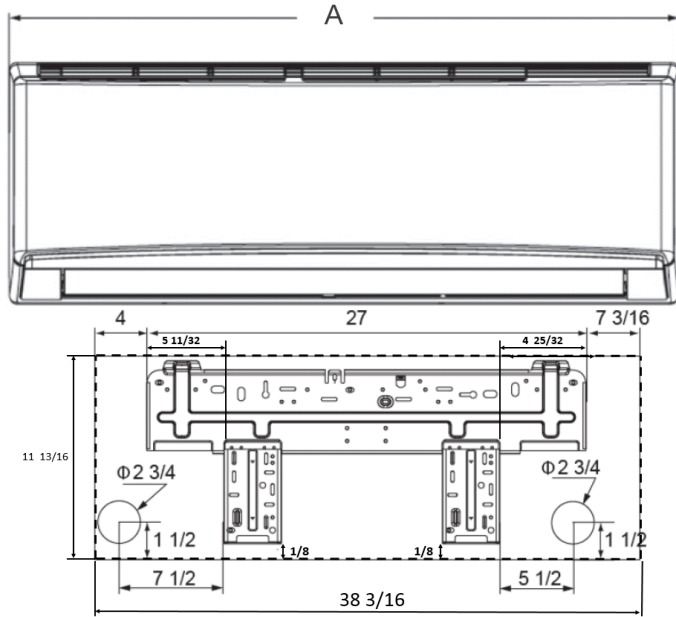
## DIMENSIONAL SPECIFICATIONS

**SAP09HP230V1A**

### INDOOR UNIT DIMENSIONS

Units: inch

Model No: SAP09HP230V1AH



Dimensions	
A	39 1/2
B	12
C	8 7/8

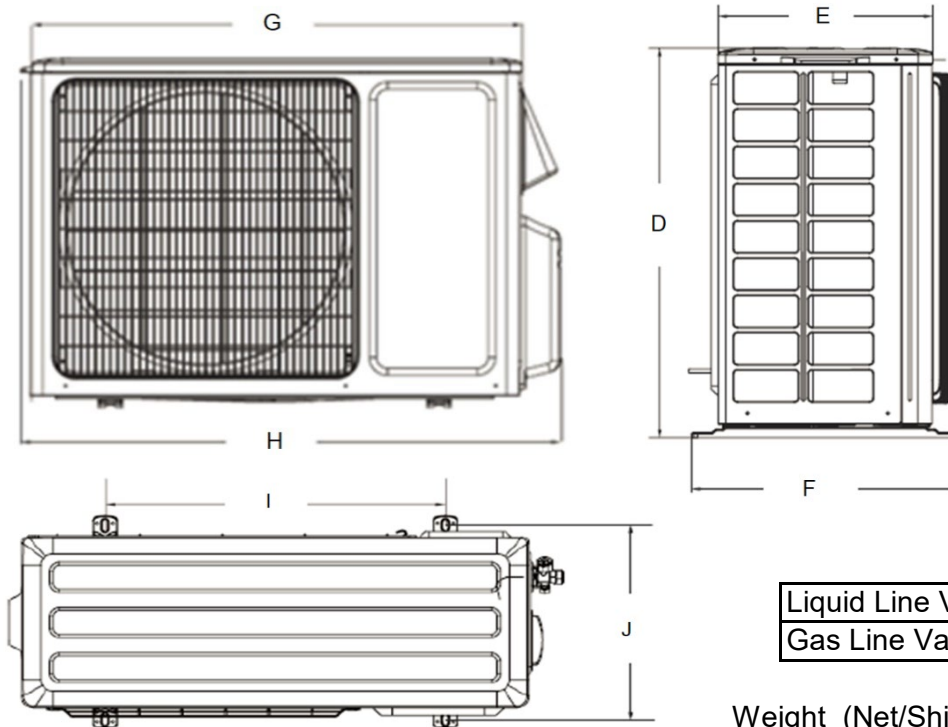
Weight (Net/Shipping) 29 / 35 LBS

Liquid Line Valve	1/4-in OD Flared
Gas Line Valve	1/2-in OD Flared
Drain Connector	5/8-in OD

### OUTDOOR UNIT DIMENSIONS

Units: inch

Model No: SAP09HP230V1AO



Dimensions	
D	23 1/2
E	12
F	14 3/4
G	33 1/4
H	35
I	19 1/4
J	13 1/2

Liquid Line Valve	1/4-in OD Flared
Gas Line Valve	1/2-in OD Flared

Weight (Net/Shipping) 100 /106 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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