



SAPPHIRE

ULTRA HEAT

ULTRA COOL



Superior Performance in Extreme Temperature

Submittal Data: SAP12HP230V1A 12,000 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

Cooling		
Rated Capacity		12,000 BTU/H
Capacity Range		2,900 -15,354 BTU/H
Power Input		784 W
Power Input (Min/Max)		75/1500 W
SEER		30.5
EER		15.3

Heating at 47° F		
Rated Capacity		12,200 BTU/H
Capacity Range		3,071 -18,766 BTU/H
Power Input		940 W
Power Input (Min/Max)		250/1600 W
HSPF		14.0
COP		3.8

Heating at 17° F		
Rated Capacity		8,100 BTU/H

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

Power Supply		
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		9 A
MOCP/Breaker Size		15 A

Indoor Unit Data

Fan Motor	Type	Cross-flow
	Output Power	60 W
	FLA	0.09 A
Airflow	(Low/High)	235/500 CFM
Air Throw	(Max)	29.5 ft
Sound Level		
	Cooling (Low/High)	22/49 dB(A)
	Heating (Low/High)	22/49 dB(A)
Dehumidification		3.0 pt/hr

Outdoor Unit Data

Compressor	Type	DC Inverter Driven 2-Stage Rotary
	RLA	6.9 A
Fan Motor	Output Power	30 W
	RLA	0.24 A
Sound Level		53 dB(A)

Refrigerant Piping Data

Gas Pipe Size (OD)	1/2-in
Liquid Pipe Size (OD)	1/4-in
Connection Method	Flared
Factory Charge	R410A/49.4 oz
Additional Charge	0.20 oz/ft
Pre-Charge Length	25-ft
MAX Refrigerant Pipe Length	98-ft
MIN Refrigerant Pipe Length	10-ft
MAX Refrigerant Pipe Elevation	49-ft



SYSTEM FEATURES	
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
REMOTE CONTROLLER FUNCTIONS	
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)
MAX OUTPUT	0°F	7000	72.50%	10.99	637
	5°F	7280	73.00%	11.20	650
	10°F	7490	73.26%	11.19	670
	15°F	7700	73.50%	11.18	689
	20°F	8050	73.76%	11.26	715
	25°F	8400	74.00%	11.34	741
	30°F	8680	74.26%	11.41	761
	35°F	8960	74.50%	11.49	780
	40°F	9800	75.00%	11.60	845
	45°F	10220	75.26%	11.15	917
	50°F	10640	75.50%	10.77	988
	55°F	11340	76.00%	10.90	1040
	60°F	12110	76.27%	10.96	1105
	65°F	12880	76.50%	11.01	1170
	70°F	13510	76.76%	11.23	1203
	75°F	14140	77.00%	11.45	1235
	80°F	14700	77.26%	11.72	1255
	85°F	15260	77.50%	11.98	1274
	90°F	14630	77.74%	11.37	1287
	95°F	14000	78.00%	10.77	1300
	100°F	13300	78.24%	9.84	1352
105°F	12600	78.50%	8.97	1404	
110°F	12180	78.74%	8.40	1450	
115°F	11760	79.00%	7.87	1495	
120°F	10360	79.50%	6.87	1508	
125°F	9380	79.72%	6.19	1515	
129°F	8400	80.00%	5.52	1521	

ULTRA HEAT

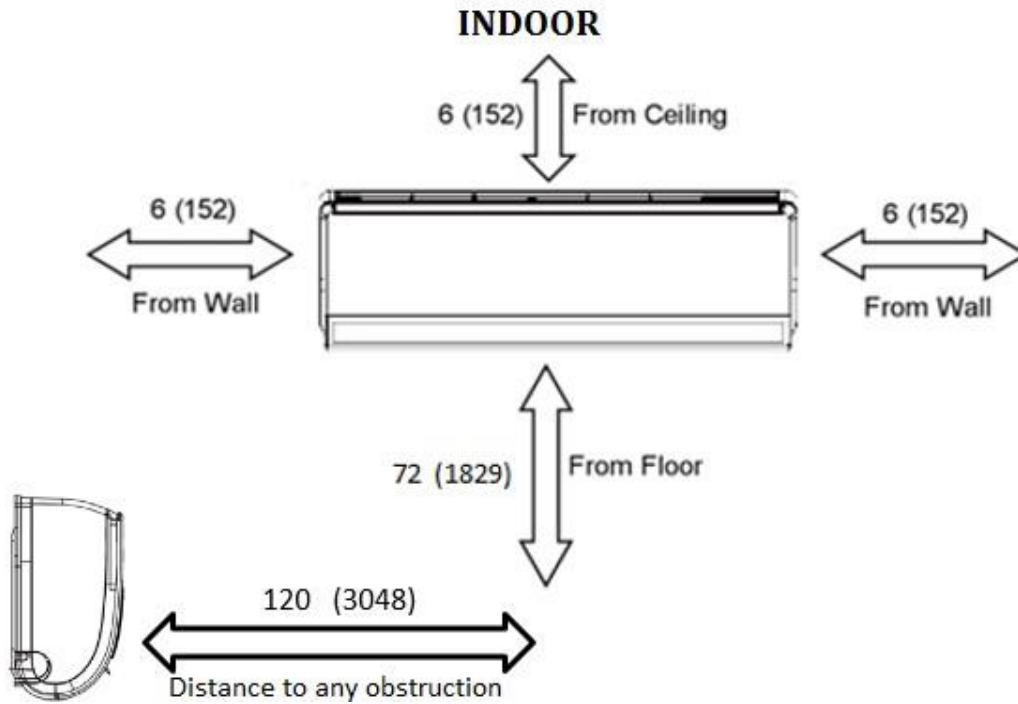
HEATING PERFORMANCE

Outdoor Ambient Temperature (DB)		Return Air Temperature		
		70°F (DB)		
		TC (Btu/h)	COP	Power Input (W)
MAX OUTPUT	-22°F	6400	1.23	1523
	-20°F	6640	1.26	1544
	-15°F	6880	1.29	1566
	-10°F	7280	1.35	1588
	-5°F	7680	1.40	1610
	0°F	10400	1.86	1639
	5°F	12000	2.11	1668
	10°F	12800	2.33	1610
	15°F	13520	2.48	1602
	17°F	14240	2.62	1595
	20°F	14400	2.77	1523
	25°F	14560	2.89	1479
	30°F	14880	2.98	1465
	35°F	15040	3.09	1428
	40°F	15200	3.20	1392
	45°F	15680	3.23	1421
	47°F	16000	3.23	1450
	50°F	16640	3.31	1472
	55°F	17280	3.39	1494
	60°F	18400	3.51	1537
	65°F	17600	3.26	1581
70°F	16960	3.12	1595	
75°F	15840	2.88	1610	

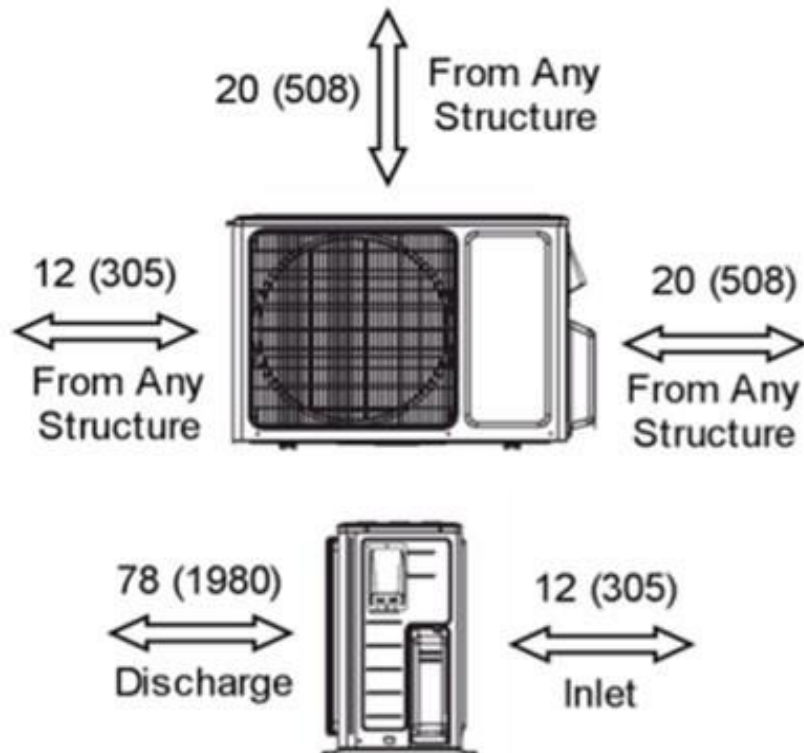
LEGEND: W - Watts
 DB - Dry Bulb
 TC - Total Capacity
 SHR - Sensible Heat Ratio
 COP - Coefficient of Performance

MINIMUM SPACING REQUIREMENTS

Units: inch (mm)



MINIMUM OUTDOOR CLEARANCES



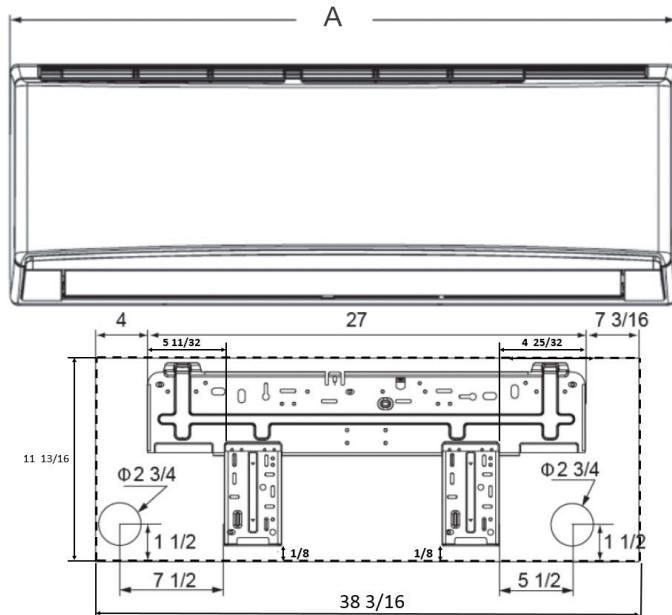
DIMENSIONAL SPECIFICATIONS

SAP12HP230V1A

INDOOR UNIT DIMENSIONS

Units: inch

Model No: SAP12HP230V1AH



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

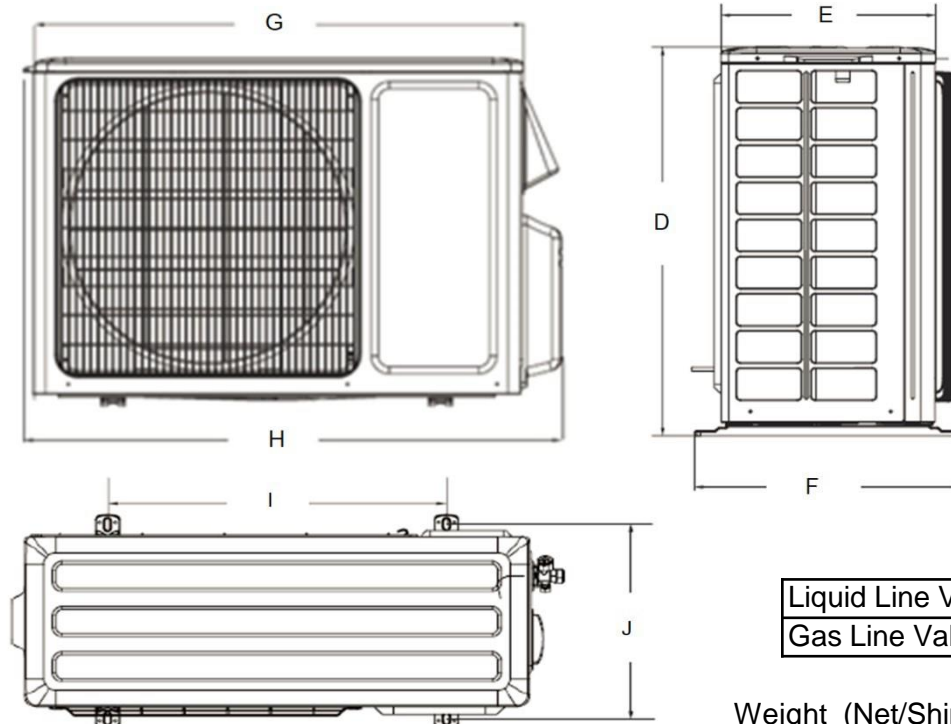
Weight (Net/Shipping) 29 / 36 LBS

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: SAP12HP230V1AO



Dimensions	
D	23 1/2
E	12
F	14 7/8
G	33 1/4
H	34 5/8
I	19 3/8
J	13 1/2

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

Weight (Net/Shipping) 98 /104 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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