



## EXTENDED RATINGS

### Cooling Performance

SAP09H230V1R32AH / SAP09HP230V1R32A0

SAP12H230V1R32AH / SAP12HP230V1R32A0

SAP18H230V1R32AH / SAP18HP230V1R32A0

SAP24H230V1R32AH / SAP24HP230V1R32A0

### Heating Performance

SAP09H230V1R32AH / SAP09HP230V1R32A0

SAP12H230V1R32AH / SAP12HP230V1R32A0

SAP18H230V1R32AH / SAP18HP230V1R32A0

SAP24H230V1R32AH / SAP24HP230V1R32A0

Thank you for choosing our product.  
Please go through this Extended Ratings to design your project and retain it for future reference.

To download an electric version visit  
<https://www.greecomfort.com/system-documentation/#single-zone>

COOLING PERFORMANCE

Outdoor Ambient Temperature (DB)		Return Air Temperature																			
		70°F (DB) / 59°F (WB)					75°F (DB) / 63°F (WB)					80°F (DB) / 67°F (WB)					90°F (DB) / 73°F (WB)				
		TC (Btu/h)	SC (Btu/h)	SHR	EER	Power Input (W)	TC (Btu/h)	SC (Btu/h)	SHR	EER(Btu/(h·W))	Power Input (W)	TC (Btu/h)	SC (Btu/h)	SHR	EER(Btu/(h·W))	Power Input (W)	TC (Btu/h)	SC (Btu/h)	SHR	EER(Btu/(h·W))	Power Input (W)
<b>MAX OUTPUT*</b>	-20°F	7971	5779	72%	11.07	720	8540	6192	73%	11.48	744	8825	6398	72%	11.31	780	9679	7017	73%	11.52	840
	-15°F	8398	6089	72%	11.40	736	8967	6501	73%	11.57	775	9252	6708	72%	11.34	816	10106	7327	73%	11.23	900
	-10°F	8754	6368	73%	11.63	753	9323	6783	73%	11.77	792	9608	6990	73%	11.52	834	10462	7611	73%	11.38	919
	-5°F	9110	6650	73%	11.85	769	9679	7066	73%	11.96	809	9964	7274	73%	11.69	852	10818	7897	73%	11.52	939
	0°F	9252	6777	73%	11.78	785	9821	7194	73%	11.88	827	10106	7403	73%	11.62	870	10960	8028	73%	11.43	959
	5°F	9394	6905	73%	11.72	801	9964	7323	73%	11.81	844	10248	7533	73%	11.54	888	11103	8160	74%	11.34	979
	10°F	9608	7086	74%	11.75	818	10177	7506	74%	11.82	861	10462	7716	74%	11.55	906	11316	8346	74%	11.33	999
	15°F	9821	7268	74%	11.78	834	10391	7689	74%	11.84	878	10676	7900	74%	11.55	924	11530	8532	74%	11.32	1019
	20°F	9964	7398	74%	11.72	850	10533	7821	74%	11.77	895	10818	8032	74%	11.48	942	11672	8666	74%	11.24	1039
	25°F	10106	7529	74%	11.66	866	10676	7953	75%	11.71	912	10960	8165	74%	11.42	960	11814	8802	75%	11.16	1058
	30°F	10462	7820	75%	11.85	883	11031	8246	75%	11.87	929	11316	8459	75%	11.57	978	12170	9097	75%	11.29	1078
	35°F	10818	8113	75%	12.03	899	11387	8540	75%	12.03	946	11672	8754	75%	11.72	996	12526	9394	75%	11.41	1098
	40°F	11031	8301	75%	12.05	915	11601	8730	75%	12.04	963	11885	8944	75%	11.72	1014	12739	9586	75%	11.40	1118
	45°F	11245	8490	76%	12.07	931	11814	8920	76%	12.05	980	12099	9135	76%	11.72	1032	12953	9779	76%	11.38	1138
	50°F	11601	8788	76%	12.24	948	12170	9219	76%	12.20	998	12455	9434	76%	11.86	1050	13309	10081	76%	11.50	1158
	55°F	11957	9087	76%	12.40	964	12526	9520	76%	12.35	1015	12811	9736	76%	11.99	1068	13665	10385	76%	11.61	1177
	60°F	12312	9388	76%	12.56	980	12882	9822	76%	12.49	1032	13166	10039	76%	12.12	1086	14020	10691	76%	11.71	1197
	65°F	12668	9691	77%	12.71	996	13238	10127	77%	12.62	1049	13522	10345	77%	12.25	1104	14376	10998	77%	11.81	1217
	70°F	13238	10160	77%	13.07	1013	13807	10597	77%	12.95	1066	14092	10815	77%	12.56	1122	14946	11471	77%	12.08	1237
	75°F	13807	10631	77%	13.42	1029	14376	11070	77%	13.27	1083	14661	11289	77%	12.86	1140	15515	11947	77%	12.34	1257
80°F	14020	10831	77%	13.42	1045	14590	11271	77%	13.26	1100	14875	11491	77%	12.85	1158	15729	12150	77%	12.32	1277	
85°F	14234	11031	78%	13.41	1061	14803	11473	77%	13.25	1117	15088	11693	77%	12.83	1176	15942	12355	78%	12.30	1297	
90°F	13807	10735	78%	12.88	1072	14376	11178	78%	12.74	1129	14661	11399	78%	12.34	1188	15515	12063	78%	11.85	1310	
95°F	13380	10436	78%	12.35	1083	13949	10880	78%	12.24	1140	14234	11103	78%	11.86	1200	15088	11769	78%	11.40	1323	
100°F	13024	10191	78%	11.73	1110	13593	10637	78%	11.63	1169	13878	10860	78%	11.28	1230	14732	11528	78%	10.86	1356	
105°F	12668	9945	78%	11.14	1137	13238	10392	78%	11.06	1197	13522	10615	79%	10.73	1260	14376	11285	79%	10.35	1389	
110°F	12455	9808	79%	10.70	1164	13024	10256	79%	10.63	1226	13309	10481	79%	10.32	1290	14163	11153	79%	9.96	1422	
115°F	12241	9671	79%	10.28	1191	12811	10120	79%	10.22	1254	13095	10345	79%	9.92	1320	13949	11020	79%	9.59	1455	
120°F	11743	9306	79%	9.82	1196	12312	9758	79%	9.60	1283	12597	9983	79%	9.33	1350	13451	10660	79%	9.04	1488	
122°F	11245	8940	79%	9.37	1200	11814	9392	79%	9.01	1311	12099	9619	80%	8.77	1380	12953	10298	80%	8.51	1521	
125°F																					
129°F																					

\*Maximum Output values are not based on AHRI test conditions

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

**EXTENDED RATINGS**

**SAP09HP230V1R32AH / SAP09HP230V1R32AO**

**HEATING PERFORMANCE**

Outdoor Ambient Temperature		Return Air Temperature											
		70°F (DB)			75°F (DB)			80°F (DB)			90°F (DB)		
		TC (Btu/h)	COP(W/W)	Power Input (W)	TC (Btu/h)	COP(W/W)	Power Input (W)	TC (Btu/h)	COP(W/W)	Power Input (W)	TC (Btu/h)	COP(W/W)	Power Input (W)
DB	WB												
-22°F	-22.5°F	9130	2.62	1020	8798	2.48	1041	8466	2.34	1061	8134	2.20	1083
-20°F	-20.5°F	9379	2.67	1031	9047	2.52	1051	8715	2.38	1072	8383	2.25	1094
-15°F	-16°F	9628	2.71	1041	9296	2.57	1062	8964	2.43	1083	8632	2.29	1105
-10°F	-11°F	10209	2.85	1052	9877	2.70	1073	9545	2.56	1094	9213	2.42	1116
-5°F	-6°F	10790	2.98	1062	10458	2.83	1083	10126	2.69	1105	9794	2.55	1127
0°F	-1°F	11288	3.05	1084	10956	2.90	1106	10624	2.76	1128	10292	2.62	1150
5°F	3°F	11786	3.12	1106	11454	2.98	1128	11122	2.83	1151	10790	2.69	1174
10°F	8°F	12450	3.23	1129	12118	3.09	1151	11786	2.94	1174	11454	2.80	1198
15°F	13°F	12699	3.26	1140	12699	3.20	1163	12367	3.06	1186	12035	2.92	1210
17°F	15°F	12948	3.30	1152	13280	3.31	1175	12948	3.17	1198	12616	3.03	1222
20°F	17°F	13612	3.39	1175	13280	3.25	1199	12948	3.10	1223	12616	2.97	1247
25°F	22°F	14110	3.45	1199	13778	3.30	1223	13446	3.16	1248	13114	3.02	1272
30°F	27°F	14359	3.47	1211	14027	3.33	1236	13695	3.18	1260	13363	3.05	1285
35°F	33°F	14608	3.50	1224	14276	3.35	1248	13944	3.21	1273	13612	3.07	1298
40°F	36°F	15770	3.70	1249	15438	3.55	1273	15106	3.41	1299	14774	3.27	1325
45°F	41°F	16268	3.74	1274	15936	3.59	1299	15604	3.45	1325	15272	3.31	1352
47°F	43°F	16600	3.74	1300	16268	3.60	1326	15936	3.45	1353	15604	3.31	1380
50°F	46°F	16434	3.69	1307	16102	3.54	1333	15770	3.40	1359	15438	3.26	1386
55°F	50°F	16268	3.63	1313	15936	3.49	1339	15604	3.35	1366	15272	3.21	1393
60°F	55°F	16102	3.56	1326	15770	3.42	1353	15438	3.28	1380	15106	3.15	1407
65°F	60°F	15770	3.63	1274	15438	3.48	1299	15106	3.34	1325	14774	3.20	1352
70°F	64°F	15604	3.61	1268	15272	3.46	1293	14940	3.32	1319	14608	3.18	1345
75°F	69°F	15438	3.59	1261	15106	3.44	1286	14774	3.30	1312	14442	3.16	1338
80°F	74°F	14110	3.38	1222	13778	3.24	1246	13446	3.10	1271	13114	2.96	1297
86°F	80°F	12450	3.05	1196	12118	2.91	1220	11786	2.78	1244	11454	2.64	1269

**MAX OUTPUT\***

\*Maximum Output values are not based on AHRI test conditions

**LEGEND: W - Watts**

DB - Dry Bulb

TC - Total Capacity

SC - Total Capacity

SHR - Sensible Heat Ratio

COP - Coefficient of Performance



COOLING PERFORMANCE																					
Outdoor Ambient Temperature (DB)		Return Air Temperature																			
		70°F (DB) / 59°F (WB)					75°F (DB) / 63°F (WB)					80°F (DB) / 67°F (WB)					90°F (DB) / 73°F (WB)				
		TC (Btu/h)	SC (Btu/h)	SHR	EER	Power Input (W)	TC (Btu/h)	SC (Btu/h)	SHR	EER(Btu/(h·W))	Power Input (W)	TC (Btu/h)	SC (Btu/h)	SHR	EER(Btu/(h·W))	Power Input (W)	TC (Btu/h)	SC (Btu/h)	SHR	EER(Btu/(h·W))	Power Input (W)
<b>MAX OUTPUT*</b>	-20°F	9554	6926	73%	12.25	780	10236	7421	73%	12.70	806	10577	7668	73%	12.52	845	11601	8411	73%	12.75	910
	-15°F	10065	7297	73%	12.62	798	10748	7792	73%	12.80	840	11089	8040	73%	12.54	884	12113	8782	73%	12.43	975
	-10°F	10492	7633	73%	12.87	815	11174	8129	73%	13.02	858	11516	8378	73%	12.75	904	12539	9122	73%	12.59	996
	-5°F	10918	7970	73%	13.11	833	11601	8469	73%	13.23	877	11942	8718	73%	12.94	923	12966	9465	73%	12.74	1018
	0°F	11089	8123	73%	13.04	851	11771	8623	73%	13.15	895	12113	8872	73%	12.85	943	13136	9622	73%	12.64	1039
	5°F	11260	8276	74%	12.97	868	11942	8777	74%	13.07	914	12283	9028	73%	12.77	962	13307	9781	74%	12.55	1061
	10°F	11516	8493	74%	13.00	886	12198	8996	74%	13.08	932	12539	9248	74%	12.78	982	13563	10002	74%	12.53	1082
	15°F	11771	8711	74%	13.03	903	12454	9216	74%	13.10	951	12795	9468	74%	12.78	1001	13819	10226	74%	12.52	1104
	20°F	11942	8867	74%	12.97	921	12624	9374	74%	13.02	969	12966	9627	74%	12.71	1021	13989	10387	74%	12.43	1125
	25°F	12113	9024	75%	12.90	939	12795	9532	75%	12.95	988	13136	9786	75%	12.63	1040	14160	10549	74%	12.35	1147
	30°F	12539	9373	75%	13.11	956	13222	9883	75%	13.14	1007	13563	10138	75%	12.80	1060	14586	10903	75%	12.49	1168
	35°F	12966	9724	75%	13.31	974	13648	10236	75%	13.31	1025	13989	10492	75%	12.96	1079	15013	11260	75%	12.62	1190
	40°F	13222	9949	75%	13.34	991	13904	10463	75%	13.32	1044	14245	10719	75%	12.97	1099	15269	11490	75%	12.61	1211
	45°F	13477	10175	76%	13.36	1009	14160	10691	76%	13.33	1062	14501	10948	76%	12.97	1118	15525	11721	75%	12.60	1233
	50°F	13904	10532	76%	13.54	1027	14586	11049	76%	13.50	1081	14928	11308	76%	13.12	1138	15951	12083	76%	12.72	1254
	55°F	14330	10891	76%	13.72	1044	15013	11410	76%	13.66	1099	15354	11669	76%	13.27	1157	16378	12447	76%	12.84	1276
	60°F	14757	11252	76%	13.90	1062	15439	11772	76%	13.81	1118	15781	12033	76%	13.41	1177	16804	12813	76%	12.96	1297
	65°F	15183	11615	76%	14.07	1079	15866	12137	77%	13.96	1136	16207	12398	77%	13.55	1196	17231	13181	77%	13.07	1319
	70°F	15866	12177	77%	14.46	1097	16548	12701	77%	14.33	1155	16889	12963	77%	13.90	1216	17913	13748	77%	13.37	1340
	75°F	16548	12742	77%	14.85	1115	17231	13268	77%	14.69	1173	17572	13530	77%	14.23	1235	18595	14318	77%	13.66	1362
	80°F	16804	12981	77%	14.84	1132	17487	13508	77%	14.67	1192	17828	13772	77%	14.21	1255	18851	14563	77%	13.63	1383
85°F	17060	13222	78%	14.84	1150	17742	13750	78%	14.66	1210	18084	14015	78%	14.19	1274	19107	14808	78%	13.60	1405	
90°F	16548	12866	78%	14.25	1162	17231	13397	78%	14.09	1223	17572	13662	78%	13.65	1287	18595	14458	78%	13.11	1419	
95°F	16036	12508	78%	13.67	1173	16719	13041	78%	13.54	1235	17060	13307	78%	13.12	1300	18084	14105	78%	12.62	1433	
100°F	15183	11881	78%	12.88	1179	15866	12415	78%	12.78	1241	16036	12548	78%	12.27	1307	17231	13483	78%	11.96	1440	
105°F	14330	11249	78%	12.09	1185	15013	11785	79%	12.04	1247	15354	12053	79%	11.69	1313	16378	12856	79%	11.31	1448	
110°F	12624	9942	79%	11.15	1132	13307	10479	79%	11.17	1192	13648	10748	79%	10.88	1255	14672	11554	79%	10.61	1383	
115°F	10918	8626	79%	10.12	1079	11601	9165	79%	10.21	1136	11942	9434	79%	9.98	1196	12966	10243	79%	9.83	1319	
120°F	11089	8788	79%	10.68	1038	11771	9329	79%	10.77	1093	12113	9599	79%	10.53	1151	13136	10410	79%	10.36	1268	
122°F	11260	8951	79%	11.29	997	11942	9494	80%	11.38	1050	12283	9765	79%	11.12	1105	13307	10579	80%	10.92	1218	
125°F																					
129°F																					

\*Maximum Output values are not based on AHRI test conditions

- LEGEND:** W - Watts  
 DB - Dry Bulb  
 TC - Total Capacity  
 SC - Total Capacity  
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 COP - Coefficient of Performance

**EXTENDED RATINGS**

**SAP12HP230V1R32AH / SAP12HP230V1R32AO**

**HEATING PERFORMANCE**

Outdoor Ambient Temperature		Return Air Temperature											
		70°F (DB)			75°F (DB)			80°F (DB)			90°F (DB)		
		TC (Btu/h)	COP(W/W)	Power Input (W)	TC (Btu/h)	COP(W/W)	Power Input (W)	TC (Btu/h)	COP(W/W)	Power Input (W)	TC (Btu/h)	COP(W/W)	Power Input (W)
DB	WB												
-22°F	-22.5°F	9758	1.81	1581.82	9383	1.70	1613.00	9008	1.60	1646.00	8632	1.51	1679
-20°F	-20.5°F	10040	1.84	1597.96	9665	1.74	1629.92	9289	1.64	1662.51	8914	1.54	1696
-15°F	-16°F	10321	1.87	1614.10	9946	1.77	1646.00	9571	1.67	1679.00	9195	1.57	1713
-10°F	-11°F	10603	1.91	1630.57	10228	1.80	1663.18	9852	1.70	1696.44	9477	1.61	1730
-5°F	-6°F	10884	1.94	1647.04	10509	1.83	1680.00	10134	1.73	1714.00	9758	1.64	1748
0°F	-1°F	11072	1.93	1680.65	10697	1.83	1714.00	10321	1.73	1749.00	9946	1.63	1784
5°F	3°F	12386	2.12	1714.95	12010	2.01	1749.00	11635	1.91	1784.00	11260	1.81	1820
10°F	8°F	12198	2.20	1622.25	11823	2.09	1655.00	11447	1.99	1688.00	11072	1.88	1722
15°F	13°F	12386	2.09	1738.13	12386	2.05	1772.89	12010	1.95	1808.35	11635	1.85	1845
17°F	15°F	12573	1.99	1854.00	12949	2.01	1891.00	12573	1.91	1929.00	12198	1.82	1967
20°F	17°F	15013	2.52	1745.85	14638	2.41	1781.00	14262	2.30	1816.00	13887	2.20	1853
25°F	22°F	15388	2.89	1560.45	15013	2.76	1592.00	14638	2.64	1623.00	14262	2.52	1656
30°F	27°F	15107	2.69	1645.43	14731	2.57	1678.33	14356	2.46	1711.90	13981	2.35	1746
35°F	33°F	14825	2.51	1730.40	14450	2.40	1765.00	14075	2.29	1800.00	13699	2.19	1836
40°F	36°F	17828	3.52	1483.82	17452	3.38	1513.00	17077	3.24	1544.00	16702	3.11	1575
45°F	41°F	18391	3.56	1514.10	18015	3.42	1544.00	17640	3.28	1575.00	17265	3.15	1607
47°F	43°F	18766	3.56	1545.00	18391	3.42	1576.00	18015	3.29	1607.00	17640	3.15	1640
50°F	46°F	18578	3.51	1552.73	18203	3.37	1583.78	17828	3.23	1615.46	17452	3.10	1648
55°F	50°F	18391	3.45	1560.45	18015	3.32	1592.00	17640	3.19	1623.00	17265	3.06	1656
60°F	55°F	18203	3.39	1575.90	17828	3.25	1607.00	17452	3.12	1640.00	17077	2.99	1672
65°F	60°F	17828	3.45	1514.10	17452	3.31	1544.00	17077	3.18	1575.00	16702	3.05	1607
70°F	64°F	17640	3.43	1506.38	17265	3.29	1536.50	16889	3.16	1567.23	16514	3.03	1599
75°F	69°F	17452	3.41	1498.65	17077	3.27	1529.00	16702	3.14	1559.00	16326	3.01	1590
80°F	74°F	15951	3.22	1452.30	15576	3.08	1481.00	15201	2.95	1511.00	14825	2.82	1541
86°F	80°F	14075	2.90	1421.40	13699	2.77	1450.00	13324	2.64	1479.00	12949	2.52	1508

**MAX OUTPUT\***

\*Maximum Output values are not based on AHRI test conditions

**LEGEND: W - Watts**

**DB - Dry Bulb**

**TC - Total Capacity**

**SC - Total Capacity**

**SHR - Sensible Heat Ratio**

**COP - Coefficient of Performance**



COOLING PERFORMANCE

Outdoor Ambient Temperature (DB)		Return Air Temperature																			
		70°F (DB) / 59°F (WB)					75°F (DB) / 63°F (WB)					80°F (DB) / 67°F (WB)					90°F (DB) / 73°F (WB)				
		TC (Btu/h)	SC (Btu/h)	SHR	EER	Power Input (W)	TC (Btu/h)	SC (Btu/h)	SHR	EER(Btu/(h·W))	Power Input (W)	TC (Btu/h)	SC (Btu/h)	SHR	EER(Btu/(h·W))	Power Input (W)	TC (Btu/h)	SC (Btu/h)	SHR	EER(Btu/(h·W))	Power Input (W)
<b>MAX OUTPUT*</b>	-20°F	10768	6784	63%	11.57	930	11101	7216	65%	11.69	949	11386	7514	66%	11.75	969	12182	8162	67%	11.98	1017
	-15°F	11101	7105	64%	11.69	949	11444	7553	66%	11.81	969	11738	7864	67%	11.88	988	12559	8540	68%	12.10	1038
	-10°F	11444	7324	64%	11.81	969	11798	7787	66%	11.94	988	12101	8107	67%	12.00	1009	12948	8804	68%	12.23	1059
	-5°F	11798	7551	64%	11.94	988	12163	8028	66%	12.06	1009	12475	8358	67%	12.12	1029	13348	9077	68%	12.35	1081
	0°F	12163	7784	64%	12.06	1009	12539	8276	66%	12.18	1029	12861	8617	67%	12.25	1050	13761	9357	68%	12.48	1103
	5°F	12539	8150	65%	12.18	1029	12927	8661	67%	12.31	1050	13258	9016	68%	12.37	1072	14187	9789	69%	12.61	1125
	10°F	12927	8403	65%	12.31	1050	13327	8929	67%	12.44	1072	13669	9295	68%	12.50	1093	14625	10091	69%	12.74	1148
	15°F	13327	8662	65%	12.44	1072	13739	9205	67%	12.56	1093	14091	9582	68%	12.63	1116	15078	10404	69%	12.87	1172
	20°F	13739	8930	65%	12.56	1093	14164	9490	67%	12.69	1116	14527	9878	68%	12.76	1139	15544	10725	69%	13.00	1195
	25°F	14164	9348	66%	12.69	1116	14602	9929	68%	12.83	1139	14976	10334	69%	12.89	1162	16025	11217	70%	13.14	1220
	30°F	14602	9637	66%	12.83	1139	15054	10236	68%	12.96	1162	15440	10653	69%	13.02	1185	16520	11564	70%	13.27	1245
	35°F	15054	9935	66%	12.96	1162	15519	10553	68%	13.09	1185	15917	10983	69%	13.16	1210	17031	11922	70%	13.41	1270
	40°F	15519	10243	66%	13.09	1185	15999	10879	68%	13.23	1210	16409	11322	69%	13.29	1234	17558	12291	70%	13.55	1296
	45°F	15999	10719	67%	13.23	1210	16494	11381	69%	13.36	1234	16917	11842	70%	13.43	1260	18101	12852	71%	13.69	1323
	50°F	16494	11051	67%	13.36	1234	17004	11733	69%	13.50	1260	17440	12208	70%	13.57	1285	18661	13249	71%	13.83	1350
	55°F	17004	11393	67%	13.50	1260	17530	12096	69%	13.64	1285	17979	12586	70%	13.71	1311	19238	13659	71%	13.97	1377
	60°F	17351	11625	67%	13.64	1272	17888	12343	69%	13.78	1298	18346	12842	70%	13.85	1325	19631	13938	71%	14.11	1391
	65°F	19279	13110	68%	13.79	1398	19875	13913	70%	13.93	1427	20385	14473	71%	14.00	1456	21812	15704	72%	14.27	1529
	70°F	19672	13377	68%	13.93	1412	20281	14197	70%	14.07	1441	20801	14769	71%	14.15	1470	22257	16025	72%	14.42	1544
	75°F	20281	13791	68%	13.79	1471	20908	14636	70%	13.93	1501	21444	15225	71%	14.00	1532	22945	16521	72%	14.27	1608
80°F	21575	14671	68%	13.49	1599	22243	15570	70%	13.63	1632	22813	16197	71%	13.70	1665	24410	17575	72%	13.96	1748	
85°F	21152	14595	69%	12.70	1666	21807	15483	71%	12.83	1700	22366	16103	72%	12.90	1734	23931	17470	73%	13.14	1821	
90°F	22992	15864	69%	12.42	1851	23703	16829	71%	12.55	1888	24311	17504	72%	12.62	1927	26012	18989	73%	12.86	2023	
95°F	24202	16699	69%	10.72	2257	24950	17715	71%	10.83	2303	25590	18425	72%	10.89	2350	27381	19988	73%	11.10	2468	
100°F	23234	16031	69%	9.99	2325	23952	17006	71%	10.10	2372	24566	17688	72%	10.15	2421	26286	19189	73%	10.34	2542	
105°F	22537	15776	70%	9.32	2418	23234	16728	72%	9.42	2467	23829	17395	73%	9.47	2517	25497	18868	74%	9.65	2643	
110°F	20986	14690	70%	8.36	2510	21635	15577	72%	8.45	2562	22190	16199	73%	8.49	2614	23743	17570	74%	8.65	2745	
115°F	18888	13221	70%	7.92	2385	19472	14020	72%	8.00	2434	19971	14579	73%	8.04	2483	21369	15813	74%	8.20	2607	
120°F	15110	10577	70%	7.45	2027	15577	11216	72%	7.53	2069	15977	11663	73%	7.57	2111	17095	12650	74%	7.71	2216	
122°F	14052	9977	71%	7.22	1946	14487	10575	73%	7.30	1986	14858	10995	74%	7.33	2026	15899	11924	75%	7.47	2128	
125°F																					
129°F																					

\*Maximum Output values are not based on AHRI test conditions

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

**EXTENDED RATINGS**

**SAP18HP230V1R32AH / SAP18HP230V1R32AO**

**HEATING PERFORMANCE**

Outdoor Ambient Temperature		Return Air Temperature												
		70°F (DB)			75°F (DB)			80°F (DB)			90°F (DB)			
		TC (Btu/h)	COP(W/W)	Power Input (W)	TC (Btu/h)	COP(W/W)	Power Input (W)	TC (Btu/h)	COP(W/W)	Power Input (W)	TC (Btu/h)	COP(W/W)	Power Input (W)	
DB	WB													
<b>MAX OUTPUT*</b>	-22°F	-22.5°F	10880	1.24	2579	10608	1.18	2630	10290	1.12	2683	9878	1.06	2737
	-20°F	-20.5°F	12364	1.35	2686	12055	1.29	2740	11693	1.23	2795	11225	1.15	2851
	-15°F	-16°F	14050	1.47	2798	13699	1.41	2854	13288	1.34	2911	12756	1.26	2970
	-10°F	-11°F	15966	1.61	2915	15567	1.53	2973	15100	1.46	3033	14496	1.37	3093
	-5°F	-6°F	17740	1.68	3101	17296	1.60	3163	16777	1.52	3226	16106	1.43	3291
	0°F	-1°F	17919	1.73	3040	17471	1.65	3101	16947	1.57	3163	16269	1.48	3226
	5°F	3°F	18100	1.76	3010	17648	1.68	3070	17118	1.60	3132	16433	1.51	3194
	10°F	8°F	18432	1.78	3033	17971	1.70	3094	17432	1.62	3156	16735	1.52	3219
	15°F	13°F	19251	1.84	3064	18770	1.76	3125	18207	1.67	3187	17479	1.58	3251
	17°F	15°F	19866	1.95	2989	19369	1.86	3049	18788	1.77	3110	18036	1.67	3172
	20°F	17°F	20480	1.97	3050	19968	1.88	3111	19369	1.79	3173	18594	1.68	3237
	25°F	22°F	20105	2.10	2805	19602	2.01	2861	19014	1.91	2918	18254	1.80	2977
	30°F	27°F	19711	2.20	2621	19218	2.11	2674	18642	2.00	2727	17896	1.89	2782
	35°F	33°F	19910	2.27	2570	19412	2.17	2621	18830	2.06	2674	18077	1.94	2727
	40°F	36°F	24958	2.96	2475	24334	2.83	2524	23604	2.69	2574	22660	2.53	2626
	45°F	41°F	26272	3.14	2450	25615	3.00	2499	24847	2.86	2549	23853	2.69	2600
	47°F	43°F	26666	3.16	2475	25999	3.02	2524	25219	2.87	2574	24211	2.70	2626
	50°F	46°F	27199	3.25	2450	26519	3.11	2499	25724	2.96	2549	24695	2.78	2600
55°F	50°F	27743	3.35	2425	27050	3.20	2474	26238	3.05	2523	25189	2.87	2574	
60°F	55°F	24969	3.39	2158	24345	3.24	2202	23614	3.08	2246	22670	2.90	2291	
65°F	60°F	24220	3.43	2072	23614	3.27	2114	22906	3.11	2156	21990	2.93	2199	
70°F	64°F	22282	3.50	1865	21725	3.35	1902	21074	3.18	1940	20231	3.00	1979	
75°F	69°F	21391	3.74	1678	20856	3.57	1712	20231	3.40	1746	19421	3.20	1781	
80°F	74°F	19252	3.69	1527	18771	3.53	1558	18208	3.36	1589	17479	3.16	1621	
86°F	80°F	17327	3.65	1390	16894	3.49	1418	16387	3.32	1446	15731	3.13	1475	

\*Maximum Output values are not based on AHRI test conditions

**LEGEND: W - Watts**

DB - Dry Bulb

TC - Total Capacity

SC - Total Capacity

SHR - Sensible Heat Ratio

COP - Coefficient of Performance



COOLING PERFORMANCE

Outdoor Ambient Temperature (DB)		Return Air Temperature																			
		70°F (DB) / 59°F (WB)					75°F (DB) / 63°F (WB)					80°F (DB) / 67°F (WB)					90°F (DB) / 73°F (WB)				
		TC (Btu/h)	SC (Btu/h)	SHR	EER	Power Input (W)	TC (Btu/h)	SC (Btu/h)	SHR	EER(Btu/(h·W))	Power Input (W)	TC (Btu/h)	SC (Btu/h)	SHR	EER(Btu/(h·W))	Power Input (W)	TC (Btu/h)	SC (Btu/h)	SHR	EER(Btu/(h·W))	Power Input (W)
<b>MAX OUTPUT*</b>	-20°F	17654	12799	72.50%	10.68	1652	18915	13713	72.50%	11.08	1707	19546	14170	72.50%	10.92	1790	21437	15542	72.50%	11.12	1928
	-15°F	18600	13485	72.50%	11.00	1690	19861	14399	72.50%	11.16	1779	20491	14856	72.50%	10.94	1873	22383	16227	72.50%	10.84	2065
	-10°F	19388	14056	72.50%	11.22	1727	20649	14970	72.50%	11.36	1818	21279	15428	72.50%	11.12	1914	23171	16799	72.50%	10.98	2110
	-5°F	20176	14628	72.50%	11.43	1765	21437	15542	72.50%	11.54	1858	22068	15999	72.50%	11.29	1955	23959	17370	72.50%	11.11	2156
	0°F	20491	14856	72.50%	11.37	1802	21752	15770	72.50%	11.47	1897	22383	16227	72.50%	11.21	1997	24274	17599	72.50%	11.03	2201
	5°F	20807	15085	72.50%	11.31	1839	22068	15999	72.50%	11.40	1936	22698	16456	72.50%	11.14	2038	24590	17827	72.50%	10.94	2247
	10°F	21279	15428	72.50%	11.34	1877	22540	16342	72.50%	11.41	1975	23171	16799	72.50%	11.14	2079	25062	18170	72.50%	10.93	2292
	15°F	21752	15770	72.50%	11.37	1914	23013	16685	72.50%	11.42	2015	23644	17142	72.50%	11.15	2121	25535	18513	72.50%	10.92	2338
	20°F	22068	15999	72.50%	11.31	1951	23329	16913	72.50%	11.36	2054	23959	17370	72.50%	11.08	2162	25851	18742	72.50%	10.85	2383
	25°F	22383	16227	72.50%	11.26	1988	23644	17142	72.50%	11.30	2093	24274	17599	72.50%	11.02	2203	26166	18970	72.50%	10.77	2429
	30°F	23171	16799	72.50%	11.44	2026	24432	17713	72.50%	11.46	2132	25062	18170	72.50%	11.17	2245	26954	19542	72.50%	10.89	2475
	35°F	23959	17370	72.50%	11.61	2063	25220	18285	72.50%	11.61	2172	25851	18742	72.50%	11.31	2286	27742	20113	72.50%	11.01	2520
	40°F	24432	17713	72.50%	11.63	2100	25693	18627	72.50%	11.62	2211	26323	19084	72.50%	11.31	2327	28215	20456	72.50%	11.00	2566
	45°F	24905	18056	72.50%	11.65	2138	26166	18970	72.50%	11.63	2250	26796	19427	72.50%	11.31	2368	28688	20799	72.50%	10.99	2611
	50°F	25693	18627	72.50%	11.81	2175	26954	19542	72.50%	11.77	2289	27584	19999	72.50%	11.45	2410	29476	21370	72.50%	11.09	2657
	55°F	26481	19199	72.50%	11.97	2212	27742	20113	72.50%	11.91	2329	28373	20570	72.50%	11.58	2451	30264	21941	72.50%	11.20	2702
	60°F	27269	19770	72.50%	12.12	2249	28530	20684	72.50%	12.05	2368	29161	21141	72.50%	11.70	2492	31052	22513	72.50%	11.30	2748
	65°F	28057	20342	72.50%	12.27	2287	29318	21256	72.50%	12.18	2407	29949	21713	72.50%	11.82	2534	31840	23084	72.50%	11.40	2793
	70°F	29318	21256	72.50%	12.62	2324	30579	22170	72.50%	12.50	2446	31210	22627	72.50%	12.12	2575	33101	23998	72.50%	11.66	2839
	75°F	30579	22170	72.50%	12.95	2361	31840	23084	72.50%	12.81	2485	32471	23541	72.50%	12.41	2616	34362	24913	72.50%	11.91	2884
	80°F	31052	22513	72.50%	12.95	2398	32313	23427	72.50%	12.80	2525	32944	23884	72.50%	12.40	2658	34835	25255	72.50%	11.89	2930
85°F	31525	22856	72.50%	12.94	2436	32786	23770	72.50%	12.79	2564	33417	24227	72.50%	12.38	2699	35308	25598	72.50%	11.87	2976	
90°F	30579	22170	72.50%	12.43	2461	31840	23084	72.50%	12.29	2590	32471	23541	72.50%	11.91	2726	34362	24913	72.50%	11.43	3006	
95°F	29634	21484	72.50%	11.92	2485	30895	22399	72.50%	11.81	2616	31525	22856	72.50%	11.45	2754	33417	24227	72.50%	11.01	3036	
100°F	28845	20913	72.50%	11.32	2548	30106	21827	72.50%	11.23	2682	30737	22284	72.50%	10.89	2823	32628	23656	72.50%	10.48	3112	
105°F	28057	20342	72.50%	10.75	2610	29318	21256	72.50%	10.67	2747	29949	21713	72.50%	10.36	2892	31840	23084	72.50%	9.99	3188	
110°F	27584	19999	72.50%	10.32	2672	28845	20913	72.50%	10.26	2813	29476	21370	72.50%	9.96	2961	31367	22741	72.50%	9.61	3264	
115°F	27112	19656	72.50%	9.92	2734	28373	20570	72.50%	9.86	2878	29003	21027	72.50%	9.57	3029	30895	22399	72.50%	9.25	3340	
120°F	26008	18856	72.50%	9.48	2744	27269	19770	72.50%	9.26	2943	27900	20227	72.50%	9.00	3098	29791	21599	72.50%	8.72	3416	
122°F	24905	18056	72.50%	9.04	2754	26166	18970	72.50%	8.70	3009	26796	19427	72.50%	8.46	3167	28688	20799	72.50%	8.22	3492	
125°F																					
129°F																					

\*Maximum Output values are not based on AHRI test conditions

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



**EXTENDED RATINGS**

**SAP24HP230V1R32AH / SAP24HP230V1R32AO**

**HEATING PERFORMANCE**

Outdoor Ambient Temperature		Return Air Temperature											
		70°F (DB)			75°F (DB)			80°F (DB)			90°F (DB)		
		TC (Btu/h)	COP(W/W)	Power Input (W)	TC (Btu/h)	COP(W/W)	Power Input (W)	TC (Btu/h)	COP(W/W)	Power Input (W)	TC (Btu/h)	COP(W/W)	Power Input (W)
DB	WB												
-22°F	-22.5°F	18083	6.65	2718	17426	6.28	2773	16768	5.93	2828	16111	5.59	2885
-20°F	-20.5°F	18577	6.76	2746	17919	6.40	2801	17261	6.04	2857	16604	5.70	2914
-15°F	-16°F	19070	6.88	2774	18412	6.51	2829	17755	6.15	2886	17097	5.81	2944
-10°F	-11°F	20221	7.22	2802	19563	6.84	2858	18905	6.49	2915	18248	6.14	2974
-5°F	-6°F	21371	7.55	2830	20714	7.17	2887	20056	6.81	2945	19399	6.46	3004
0°F	-1°F	22358	7.74	2888	21700	7.37	2946	21043	7.00	3005	20385	6.65	3065
5°F	3°F	23344	7.92	2947	22687	7.55	3006	22029	7.18	3066	21371	6.83	3127
10°F	8°F	24659	8.20	3007	24002	7.82	3067	23344	7.46	3129	22687	7.11	3191
15°F	13°F	25152	8.28	3038	25152	8.12	3099	24495	7.75	3161	23837	7.39	3224
17°F	15°F	25646	8.36	3069	26303	8.40	3130	25646	8.03	3193	24988	7.67	3256
20°F	17°F	26961	8.61	3131	26303	8.24	3194	25646	7.87	3258	24988	7.52	3323
25°F	22°F	27947	8.75	3195	27290	8.37	3259	26632	8.01	3324	25974	7.66	3391
30°F	27°F	28440	8.81	3228	27783	8.44	3292	27125	8.08	3358	26468	7.73	3425
35°F	33°F	28934	8.87	3260	28276	8.50	3325	27618	8.14	3392	26961	7.79	3460
40°F	36°F	31235	9.39	3327	30577	9.01	3393	29920	8.64	3461	29262	8.29	3530
45°F	41°F	32221	9.49	3395	31564	9.12	3463	30906	8.75	3532	30249	8.40	3603
47°F	43°F	32879	9.49	3464	32221	9.12	3533	31564	8.76	3604	30906	8.41	3676
50°F	46°F	32550	9.35	3481	31893	8.98	3551	31235	8.62	3622	30577	8.28	3694
55°F	50°F	32221	9.21	3499	31564	8.84	3569	30906	8.49	3640	30249	8.15	3713
60°F	55°F	31893	9.03	3533	31235	8.67	3604	30577	8.32	3676	29920	7.98	3750
65°F	60°F	31235	9.20	3395	30577	8.83	3463	29920	8.47	3532	29262	8.12	3603
70°F	64°F	30906	9.15	3377	30249	8.78	3445	29591	8.42	3514	28934	8.07	3584
75°F	69°F	30577	9.10	3360	29920	8.73	3427	29262	8.37	3496	28605	8.02	3566
80°F	74°F	27947	8.58	3256	27290	8.22	3321	26632	7.86	3388	25974	7.52	3455
86°F	80°F	24659	7.74	3187	24002	7.38	3251	23344	7.04	3316	22687	6.71	3382

**MAX OUTPUT\***

\*Maximum Output values are not based on AHRI test conditions

**LEGEND: W - Watts**

DB - Dry Bulb

TC - Total Capacity

SC - Total Capacity

SHR - Sensible Heat Ratio

COP - Coefficient of Performance





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