



EXTENDED RATINGS

Cooling Performance

LIV09HP115V1R32AH / LIV09HP115V1R32AO
LIV12HP115V1R32AH / LIV12HP115V1R32AO
LIV09HP230V1R32AH / LIV09HP230V1R32AO
LIV12HP230V1R32AH / LIV12HP230V1R32AO
LIV18HP230V1R32AH / LIV18HP230V1R32AO
LIV24HP230V1R32AH / LIV24HP230V1R32AO
LIV30HP230V1R32AH / LIV30HP230V1R32AO
LIV36HP230V1R32AH / LIV36HP230V1R32AO

Heating Performance

LIV09HP115V1R32AH / LIV09HP115V1R32AO
LIV12HP115V1R32AH / LIV12HP115V1R32AO
LIV09HP230V1R32AH / LIV09HP230V1R32AO
LIV12HP230V1R32AH / LIV12HP230V1R32AO
LIV18HP230V1R32AH / LIV18HP230V1R32AO
LIV24HP230V1R32AH / LIV24HP230V1R32AO
LIV30HP230V1R32AH / LIV30HP230V1R32AO
LIV36HP230V1R32AH / LIV36HP230V1R32AO

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/our-products/livo-r32>

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)
MAX OUTPUT*	-20°F																				
	-15°F																				
	-10°F																				
	-5°F																				
	0°F	8428	6173	73%	11.82	713	8947	6553	73%	11.92	751	9206	6743	73%	11.65	790	9984	7313	73%	11.46	871
	5°F	8558	6290	74%	11.76	728	9076	6671	74%	11.84	766	9336	6862	74%	11.57	807	10113	7433	74%	11.37	889
	10°F	8752	6455	74%	11.78	743	9271	6837	74%	11.86	782	9530	7028	74%	11.58	823	10308	7602	74%	11.36	907
	15°F	8947	6620	74%	11.81	757	9465	7004	74%	11.87	797	9725	7196	74%	11.59	839	10502	7772	74%	11.35	925
	20°F	9076	6739	74%	11.75	772	9595	7124	74%	11.80	813	9854	7317	74%	11.52	856	10632	7894	74%	11.27	943
	25°F	9206	6858	75%	11.70	787	9725	7245	74%	11.74	828	9984	7438	75%	11.45	872	10762	8018	75%	11.19	961
	30°F	9530	7124	75%	11.89	802	10049	7511	75%	11.91	844	10308	7705	75%	11.60	888	11086	8287	75%	11.32	979
	35°F	9854	7391	75%	12.07	816	10373	7780	75%	12.07	859	10632	7974	75%	11.75	905	11410	8558	75%	11.44	997
	40°F	10049	7562	75%	12.09	831	10567	7952	75%	12.08	875	10827	8147	75%	11.75	921	11605	8732	75%	11.43	1015
	45°F	10243	7734	75%	12.11	846	10762	8125	75%	12.08	891	11021	8321	75%	11.76	937	11799	8908	76%	11.42	1033
	50°F	10567	8005	76%	12.28	861	11086	8398	76%	12.24	906	11345	8594	76%	11.90	954	12123	9183	76%	11.53	1052
	55°F	10891	8277	76%	12.44	876	11410	8672	76%	12.38	922	11669	8869	76%	12.03	970	12447	9460	76%	11.64	1070
	60°F	11216	8552	76%	12.60	890	11734	8947	76%	12.52	937	11994	9145	76%	12.16	986	12772	9738	76%	11.74	1088
	65°F	11540	8828	76%	12.75	905	12058	9225	76%	12.66	953	12318	9423	76%	12.28	1003	13096	10018	77%	11.84	1106
	70°F	12058	9255	77%	13.11	920	12577	9653	77%	12.99	968	12836	9852	77%	12.60	1019	13614	10449	77%	12.12	1124
	75°F	12577	9684	77%	13.46	935	13096	10084	77%	13.31	984	13355	10283	77%	12.90	1036	14133	10882	77%	12.38	1142
	80°F	12772	9866	77%	13.45	949	13290	10267	77%	13.30	999	13549	10467	77%	12.88	1052	14327	11068	77%	12.35	1160
85°F	12966	10049	78%	13.45	964	13485	10451	78%	13.29	1015	13744	10652	78%	12.87	1068	14522	11254	78%	12.33	1178	
90°F	12577	9779	78%	12.91	974	13096	10182	78%	12.77	1025	13355	10384	78%	12.38	1079	14133	10988	78%	11.88	1190	
95°F	12188	9507	78%	12.39	984	12707	9911	78%	12.27	1036	12966	10113	78%	11.90	1090	13744	10720	78%	11.44	1202	
100°F	11864	9283	78%	11.77	1008	12383	9689	78%	11.67	1061	12642	9892	78%	11.32	1117	13420	10501	78%	10.89	1232	
105°F	11540	9059	79%	11.17	1033	12058	9466	79%	11.09	1087	12318	9669	78%	10.76	1145	13096	10280	79%	10.38	1262	
110°F	11345	8934	79%	10.73	1058	11864	9343	79%	10.66	1113	12123	9547	79%	10.35	1172	12901	10160	79%	9.99	1292	
115°F	11151	8809	79%	10.30	1082	11669	9219	79%	10.24	1139	11929	9424	79%	9.95	1199	12707	10038	79%	9.61	1322	
118°F	10697	8477	79%	9.85	1086	11216	8888	79%	9.63	1165	11475	9094	79%	9.36	1226	12253	9710	79%	9.06	1352	
122°F																					
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

LIV09HP115V1R32AH / LIV09HP115V1R32AO

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												
-20°F	-20.5°F												
-15°F	-16°F	7714	1.88	1201	7448	1.78	1225	7375	1.73	1250	6916	1.59	1275
-10°F	-11°F	8180	1.98	1213	7914	1.87	1238	7853	1.82	1262	7382	1.68	1288
-5°F	-6°F	8645	2.07	1226	8379	1.96	1250	8331	1.91	1275	7847	1.77	1301
0°F	-1°F	9044	2.12	1251	8778	2.02	1276	8741	1.97	1301	8246	1.82	1327
5°F	3°F	9443	2.17	1276	9177	2.07	1302	9151	2.02	1328	8645	1.87	1354
10°F	8°F	9975	2.25	1302	9709	2.14	1328	9697	2.10	1355	9177	1.95	1382
15°F	13°F	10175	2.27	1315	10175	2.22	1342	10175	2.18	1369	9643	2.02	1396
17°F	15°F	10374	2.29	1329	10640	2.30	1355	10653	2.26	1382	10108	2.10	1410
20°F	17°F	10906	2.36	1356	10640	2.25	1383	10653	2.21	1411	10108	2.06	1439
25°F	22°F	11305	2.39	1384	11039	2.29	1411	11063	2.25	1439	10507	2.10	1468
30°F	27°F	11505	2.41	1398	11239	2.31	1426	11268	2.27	1454	10707	2.12	1483
35°F	33°F	11704	2.43	1412	11438	2.33	1440	11473	2.29	1469	10906	2.13	1498
40°F	36°F	12635	2.57	1441	12369	2.47	1469	12429	2.43	1499	11837	2.27	1529
45°F	41°F	13034	2.60	1470	12768	2.50	1499	12839	2.46	1529	12236	2.30	1560
47°F	43°F	13300	2.60	1500	13034	2.50	1530	13112	2.46	1561	12502	2.30	1592
50°F	46°F	13167	2.56	1508	12901	2.46	1538	12975	2.42	1568	12369	2.27	1600
55°F	50°F	13034	2.52	1515	12768	2.42	1545	12839	2.39	1576	12236	2.23	1608
60°F	55°F	12901	2.47	1530	12635	2.37	1561	12702	2.34	1592	12103	2.18	1624
65°F	60°F	12635	2.52	1470	12369	2.42	1499	12429	2.38	1529	11837	2.22	1560
70°F	64°F	12502	2.51	1463	12236	2.40	1492	12292	2.37	1522	11704	2.21	1552
75°F	69°F	12369	2.49	1455	12103	2.39	1484	12156	2.35	1514	11571	2.20	1544
80°F	74°F												
86°F	80°F												

MAX OUTPUT*

*Maximum Output values are not based on AHRI test conditions

LEGEND: W - Watts

DB - Dry Bulb

TC - Total Capacity

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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)
MAX OUTPUT*	-20°F																				
	-15°F																				
	-10°F																				
	-5°F																				
	0°F	8650	6336	73%	10.58	818	9182	6726	73%	10.66	861	9448	6921	73%	942.50	906	10246	7505	73%	10.26	999
	5°F	8783	6455	74%	10.52	835	9315	6846	73%	10.60	879	9581	7042	73%	962.00	925	10379	7629	73%	10.18	1020
	10°F	8982	6624	74%	10.55	852	9515	7017	74%	10.61	897	9781	7213	74%	981.50	944	10579	7802	74%	10.17	1040
	15°F	9182	6795	74%	10.57	869	9714	7188	74%	10.62	914	9980	7385	74%	1001.00	963	10779	7976	74%	10.16	1061
	20°F	9315	6916	74%	10.52	886	9847	7312	74%	10.56	932	10113	7509	74%	1020.50	981	10912	8102	74%	10.09	1082
	25°F	9448	7039	75%	10.47	903	9980	7435	75%	10.51	950	10246	7634	74%	1040.00	1000	11045	8228	74%	10.02	1103
	30°F	9781	7311	75%	10.64	919	10313	7709	75%	10.66	968	10579	7908	75%	1059.50	1019	11377	8505	75%	10.13	1123
	35°F	10113	7585	75%	10.80	936	10646	7984	75%	10.80	986	10912	8184	75%	1079.00	1038	11710	8783	75%	10.24	1144
	40°F	10313	7760	75%	10.82	953	10845	8161	75%	10.81	1003	11111	8361	75%	1098.50	1056	11910	8962	75%	10.23	1165
	45°F	10513	7937	75%	10.84	970	11045	8339	75%	10.81	1021	11311	8540	76%	1118.00	1075	12109	9143	75%	10.22	1185
	50°F	10845	8215	76%	10.99	987	11377	8618	76%	10.95	1039	11644	8820	76%	1137.50	1094	12442	9425	76%	10.32	1206
	55°F	11178	8495	76%	11.13	1004	11710	8900	76%	11.08	1057	11976	9102	76%	1157.00	1113	12775	9709	76%	10.42	1227
	60°F	11511	8777	76%	11.27	1021	12043	9183	76%	11.21	1075	12309	9386	76%	1176.50	1131	13107	9994	76%	10.51	1247
	65°F	11843	9060	76%	11.41	1038	12376	9467	77%	11.33	1093	12642	9671	76%	1196.00	1150	13440	10282	76%	10.60	1268
	70°F	12376	9498	77%	11.73	1055	12908	9907	77%	11.63	1110	13174	10111	77%	1215.50	1169	13972	10724	77%	10.84	1289
	75°F	12908	9939	77%	12.04	1072	13440	10349	77%	11.91	1128	13706	10554	77%	1235.00	1188	14505	11169	77%	11.08	1309
80°F	13107	10125	77%	12.04	1089	13640	10537	77%	11.90	1146	13906	10742	77%	1254.50	1206	14704	11359	77%	11.06	1330	
85°F	13307	10313	78%	12.04	1106	13839	10725	77%	11.89	1164	14105	10932	77%	1274.00	1225	14904	11550	78%	11.04	1351	
90°F	12908	10036	78%	11.56	1117	13440	10450	78%	11.43	1176	13706	10657	78%	1287.00	1238	14505	11277	78%	10.63	1364	
95°F	12509	9757	78%	11.09	1128	13041	10172	78%	10.98	1188	13307	10379	78%	1300.00	1250	14105	11002	78%	10.24	1378	
100°F	12176	9528	78%	10.53	1156	12708	9944	78%	10.44	1217	12974	10152	78%	1332.50	1281	13773	10777	78%	9.75	1413	
105°F	11843	9297	79%	10.00	1185	12376	9715	79%	9.93	1247	12642	9924	79%	1365.00	1313	13440	10550	78%	9.29	1447	
110°F	11644	9169	79%	9.60	1213	12176	9589	79%	9.54	1277	12442	9798	79%	1397.50	1344	13240	10427	79%	8.94	1481	
115°F	11444	9041	79%	9.22	1241	11976	9461	79%	9.17	1306	12242	9672	79%	1430.00	1375	13041	10302	79%	8.60	1516	
118°F	10978	8700	79%	8.81	1245	11511	9122	79%	8.62	1336	11777	9333	79%	1462.50	1406	12575	9966	79%	8.11	1550	
122°F																					
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

LIV12HP115V1R32AH / LIV12HP115V1R32AO

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												
-20°F	-20.5°F												
-15°F	-16°F	8030	1.85	1271	7738	1.75	1296	7446	1.65	1322	7154	1.55	1349
-10°F	-11°F	8249	1.88	1284	7957	1.78	1309	7665	1.68	1336	7373	1.59	1362
-5°F	-6°F	8468	1.91	1297	8176	1.81	1323	7884	1.71	1349	7592	1.62	1376
0°F	-1°F	8614	1.91	1323	8322	1.81	1350	8030	1.71	1377	7738	1.62	1404
5°F	3°F	8760	1.90	1350	8468	1.80	1377	8176	1.71	1405	7884	1.61	1433
10°F	8°F	9490	2.02	1378	9198	1.92	1405	8906	1.82	1433	8614	1.73	1462
15°F	13°F	9928	2.09	1392	9928	2.05	1420	9636	1.95	1448	9344	1.85	1477
17°F	15°F	10366	2.16	1406	10658	2.18	1434	10366	2.08	1463	10074	1.98	1492
20°F	17°F	10512	2.15	1435	10220	2.05	1463	9928	1.95	1493	9636	1.86	1522
25°F	22°F	11242	2.25	1464	10950	2.15	1493	10658	2.05	1523	10366	1.96	1553
30°F	27°F	11461	2.34	1437	11169	2.23	1466	10877	2.13	1495	10585	2.03	1525
35°F	33°F	11680	2.43	1410	11388	2.32	1438	11096	2.22	1467	10804	2.12	1496
40°F	36°F	13140	2.99	1290	12848	2.86	1316	12556	2.74	1342	12264	2.63	1369
45°F	41°F	13578	3.02	1316	13286	2.90	1342	12994	2.78	1369	12702	2.66	1397
47°F	43°F	14600	3.19	1343	14308	3.06	1370	14016	2.94	1397	13724	2.82	1425
50°F	46°F	14454	3.14	1350	14162	3.01	1377	13870	2.89	1404	13578	2.78	1432
55°F	50°F	14308	3.09	1356	14016	2.97	1384	13724	2.85	1411	13432	2.74	1439
60°F	55°F	14162	3.03	1370	13870	2.91	1397	13578	2.79	1425	13286	2.68	1454
65°F	60°F	13870	3.09	1316	13578	2.97	1342	13286	2.84	1369	12994	2.73	1397
70°F	64°F	13724	3.07	1309	13432	2.95	1336	13140	2.83	1362	12848	2.71	1390
75°F	69°F	13578	3.05	1303	13286	2.93	1329	12994	2.81	1355	12702	2.69	1382
80°F	74°F												
86°F	80°F												

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)
MAX OUTPUT*	-20°F																				
	-15°F																				
	-10°F																				
	-5°F																				
	0°F	6695	4904	73%	9.74	687	7107	5206	73%	9.83	723	7313	5357	73%	9.61	761	7931	5809	73%	9.45	839
	5°F	6798	4997	74%	9.69	701	7210	5299	74%	9.77	738	7416	5451	74%	9.54	777	8034	5905	74%	9.38	857
	10°F	6953	5127	74%	9.72	715	7365	5431	74%	9.78	753	7571	5583	74%	9.55	793	8189	6039	74%	9.37	874
	15°F	7107	5259	74%	9.74	730	7519	5564	74%	9.79	768	7725	5717	74%	9.55	809	8343	6174	74%	9.36	891
	20°F	7210	5353	74%	9.69	744	7622	5659	74%	9.73	783	7828	5812	74%	9.50	824	8446	6271	74%	9.29	909
	25°F	7313	5448	75%	9.65	758	7725	5755	75%	9.68	798	7931	5909	75%	9.44	840	8549	6369	75%	9.23	926
	30°F	7571	5659	75%	9.80	772	7983	5967	75%	9.82	813	8189	6121	75%	9.57	856	8807	6583	75%	9.33	943
	35°F	7828	5871	75%	9.95	787	8240	6180	75%	9.95	828	8446	6335	75%	9.69	872	9064	6798	75%	9.43	961
	40°F	7983	6007	75%	9.97	801	8395	6317	75%	9.96	843	8601	6472	75%	9.69	887	9219	6937	75%	9.42	978
	45°F	8137	6143	76%	9.98	815	8549	6455	76%	9.97	858	8755	6610	76%	9.70	903	9373	7077	76%	9.41	996
	50°F	8395	6359	76%	10.12	829	8807	6671	76%	10.09	873	9013	6827	76%	9.81	919	9631	7295	76%	9.51	1013
	55°F	8652	6576	76%	10.26	843	9064	6889	76%	10.21	888	9270	7045	76%	9.92	935	9888	7515	76%	9.60	1030
	60°F	8910	6793	76%	10.39	858	9322	7108	76%	10.33	903	9528	7265	76%	10.03	950	10146	7736	76%	9.68	1048
	65°F	9167	7013	77%	10.51	872	9579	7328	77%	10.44	918	9785	7486	77%	10.13	966	10403	7958	77%	9.77	1065
	70°F	9579	7352	77%	10.81	886	9991	7668	77%	10.71	933	10197	7826	77%	10.39	982	10815	8301	77%	9.99	1082
	75°F	9991	7693	77%	11.10	900	10403	8010	77%	10.98	948	10609	8169	77%	10.64	998	11227	8645	77%	10.21	1100
	80°F	10146	7837	77%	11.09	914	10558	8156	77%	10.97	963	10764	8315	77%	10.62	1013	11382	8792	77%	10.19	1117
85°F	10300	7983	78%	11.09	929	10712	8302	78%	10.96	978	10918	8461	78%	10.61	1029	11536	8940	78%	10.17	1134	
90°F	9991	7768	78%	10.65	938	10403	8088	78%	10.53	988	10609	8249	78%	10.21	1040	11227	8729	78%	9.80	1146	
95°F	9682	7552	78%	10.22	948	10094	7873	78%	10.12	998	10300	8034	78%	9.81	1050	10918	8516	78%	9.43	1158	
100°F	9425	7375	78%	9.70	971	9837	7697	78%	9.62	1022	10043	7858	78%	9.33	1076	10661	8342	78%	8.98	1187	
105°F	9167	7196	79%	9.21	995	9579	7520	79%	9.15	1047	9785	7681	79%	8.88	1103	10403	8166	79%	8.56	1216	
110°F	9013	7097	79%	8.85	1019	9425	7422	79%	8.79	1072	9631	7584	79%	8.53	1129	10249	8071	79%	8.24	1244	
115°F	8858	6998	79%	8.50	1042	9270	7323	79%	8.45	1097	9476	7486	79%	8.20	1155	10094	7974	79%	7.93	1273	
118°F	8498	6734	79%	8.12	1046	8910	7061	79%	7.94	1122	9116	7224	79%	7.72	1181	9734	7714	79%	7.47	1302	
122°F																					
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

LIV09HP230V1R32AH / LIV09HP230V1R32AO

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												
-20°F	-20.5°F												
-15°F	-16°F	7619	2.15	1041	7375	2.04	1062	7356	1.99	1083	6831	1.81	1105
-10°F	-11°F	8079	2.25	1052	7853	2.15	1073	7816	2.09	1094	7290	1.91	1116
-5°F	-6°F	8538	2.36	1062	8331	2.25	1083	8276	2.19	1105	7750	2.02	1127
0°F	-1°F	8933	2.42	1084	8741	2.32	1106	8670	2.25	1128	8144	2.08	1150
5°F	3°F	9327	2.47	1106	9151	2.38	1128	9064	2.31	1151	8538	2.13	1174
10°F	8°F	9852	2.56	1129	9697	2.47	1151	9589	2.39	1174	9064	2.22	1198
15°F	13°F	10049	2.58	1140	10175	2.56	1163	10049	2.48	1186	9524	2.31	1210
17°F	15°F	10246	2.61	1152	10653	2.66	1175	10509	2.57	1198	9983	2.39	1222
20°F	17°F	10772	2.69	1175	10653	2.60	1199	10509	2.52	1223	9983	2.35	1247
25°F	22°F	11166	2.73	1199	11063	2.65	1223	10903	2.56	1248	10377	2.39	1272
30°F	27°F	11363	2.75	1211	11268	2.67	1236	11100	2.58	1260	10574	2.41	1285
35°F	33°F	11560	2.77	1224	11473	2.69	1248	11297	2.60	1273	10772	2.43	1298
40°F	36°F	12479	2.93	1249	12429	2.86	1273	12217	2.76	1299	11691	2.59	1325
45°F	41°F	12873	2.96	1274	12839	2.90	1299	12611	2.79	1325	12085	2.62	1352
47°F	43°F	13136	2.96	1300	13112	2.90	1326	12873	2.79	1353	12348	2.62	1380
50°F	46°F	13005	2.92	1307	12975	2.85	1333	12742	2.75	1359	12216	2.58	1386
55°F	50°F	12873	2.87	1313	12839	2.81	1339	12611	2.71	1366	12085	2.54	1393
60°F	55°F	12742	2.82	1326	12702	2.75	1353	12479	2.65	1380	11954	2.49	1407
65°F	60°F	12479	2.87	1274	12429	2.80	1299	12217	2.70	1325	11691	2.53	1352
70°F	64°F	12348	2.86	1268	12292	2.79	1293	12085	2.69	1319	11560	2.52	1345
75°F	69°F	12217	2.84	1261	12156	2.77	1286	11954	2.67	1312	11428	2.50	1338
80°F	74°F												
86°F	80°F												

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)
MAX OUTPUT*	-20°F																				
	-15°F																				
	-10°F																				
	-5°F																				
	0°F	8650	6336	73%	10.58	818	9182	6726	73%	10.66	861	9448	6921	73%	942.50	906	10246	7505	73%	10.26	999
	5°F	8783	6455	74%	10.52	835	9315	6846	73%	10.60	879	9581	7042	73%	962.00	925	10379	7629	73%	10.18	1020
	10°F	8982	6624	74%	10.55	852	9515	7017	74%	10.61	897	9781	7213	74%	981.50	944	10579	7802	74%	10.17	1040
	15°F	9182	6795	74%	10.57	869	9714	7188	74%	10.62	914	9980	7385	74%	1001.00	963	10779	7976	74%	10.16	1061
	20°F	9315	6916	74%	10.52	886	9847	7312	74%	10.56	932	10113	7509	74%	1020.50	981	10912	8102	74%	10.09	1082
	25°F	9448	7039	75%	10.47	903	9980	7435	75%	10.51	950	10246	7634	74%	1040.00	1000	11045	8228	74%	10.02	1103
	30°F	9781	7311	75%	10.64	919	10313	7709	75%	10.66	968	10579	7908	75%	1059.50	1019	11377	8505	75%	10.13	1123
	35°F	10113	7585	75%	10.80	936	10646	7984	75%	10.80	986	10912	8184	75%	1079.00	1038	11710	8783	75%	10.24	1144
	40°F	10313	7760	75%	10.82	953	10845	8161	75%	10.81	1003	11111	8361	75%	1098.50	1056	11910	8962	75%	10.23	1165
	45°F	10513	7937	75%	10.84	970	11045	8339	75%	10.81	1021	11311	8540	76%	1118.00	1075	12109	9143	75%	10.22	1185
	50°F	10845	8215	76%	10.99	987	11377	8618	76%	10.95	1039	11644	8820	76%	1137.50	1094	12442	9425	76%	10.32	1206
	55°F	11178	8495	76%	11.13	1004	11710	8900	76%	11.08	1057	11976	9102	76%	1157.00	1113	12775	9709	76%	10.42	1227
	60°F	11511	8777	76%	11.27	1021	12043	9183	76%	11.21	1075	12309	9386	76%	1176.50	1131	13107	9994	76%	10.51	1247
	65°F	11843	9060	76%	11.41	1038	12376	9467	77%	11.33	1093	12642	9671	76%	1196.00	1150	13440	10282	76%	10.60	1268
	70°F	12376	9498	77%	11.73	1055	12908	9907	77%	11.63	1110	13174	10111	77%	1215.50	1169	13972	10724	77%	10.84	1289
	75°F	12908	9939	77%	12.04	1072	13440	10349	77%	11.91	1128	13706	10554	77%	1235.00	1188	14505	11169	77%	11.08	1309
80°F	13107	10125	77%	12.04	1089	13640	10537	77%	11.90	1146	13906	10742	77%	1254.50	1206	14704	11359	77%	11.06	1330	
85°F	13307	10313	78%	12.04	1106	13839	10725	77%	11.89	1164	14105	10932	77%	1274.00	1225	14904	11550	78%	11.04	1351	
90°F	12908	10036	78%	11.56	1117	13440	10450	78%	11.43	1176	13706	10657	78%	1287.00	1238	14505	11277	78%	10.63	1364	
95°F	12509	9757	78%	11.09	1128	13041	10172	78%	10.98	1188	13307	10379	78%	1300.00	1250	14105	11002	78%	10.24	1378	
100°F	12176	9528	78%	10.53	1156	12708	9944	78%	10.44	1217	12974	10152	78%	1332.50	1281	13773	10777	78%	9.75	1413	
105°F	11843	9297	79%	10.00	1185	12376	9715	79%	9.93	1247	12642	9924	79%	1365.00	1313	13440	10550	78%	9.29	1447	
110°F	11644	9169	79%	9.60	1213	12176	9589	79%	9.54	1277	12442	9798	79%	1397.50	1344	13240	10427	79%	8.94	1481	
115°F	11444	9041	79%	9.22	1241	11976	9461	79%	9.17	1306	12242	9672	79%	1430.00	1375	13041	10302	79%	8.60	1516	
118°F	10978	8700	79%	8.81	1245	11511	9122	79%	8.62	1336	11777	9333	79%	1462.50	1406	12575	9966	79%	8.11	1550	
122°F																					
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

LIV12HP230V1R32AH / LIV12HP230V1R32AO

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												
-20°F	-20.5°F												
-15°F	-16°F	8030	1.85	1271	7738	1.75	1296	7446	1.65	1322	7154	1.55	1349
-10°F	-11°F	8249	1.88	1284	7957	1.78	1309	7665	1.68	1336	7373	1.59	1362
-5°F	-6°F	8468	1.91	1297	8176	1.81	1323	7884	1.71	1349	7592	1.62	1376
0°F	-1°F	8614	1.91	1323	8322	1.81	1350	8030	1.71	1377	7738	1.62	1404
5°F	3°F	9052	1.96	1350	8760	1.86	1377	8468	1.77	1405	8176	1.67	1433
10°F	8°F	9490	2.02	1378	9198	1.92	1405	8906	1.82	1433	8614	1.73	1462
15°F	13°F	9928	2.09	1392	9928	2.05	1420	9636	1.95	1448	9344	1.85	1477
17°F	15°F	10366	2.16	1406	10658	2.18	1434	10366	2.08	1463	10074	1.98	1492
20°F	17°F	10512	2.15	1435	10220	2.05	1463	9928	1.95	1493	9636	1.86	1522
25°F	22°F	11242	2.25	1464	10950	2.15	1493	10658	2.05	1523	10366	1.96	1553
30°F	27°F	11461	2.34	1437	11169	2.23	1466	10877	2.13	1495	10585	2.03	1525
35°F	33°F	11680	2.43	1410	11388	2.32	1438	11096	2.22	1467	10804	2.12	1496
40°F	36°F	13140	2.99	1290	12848	2.86	1316	12556	2.74	1342	12264	2.63	1369
45°F	41°F	13578	3.02	1316	13286	2.90	1342	12994	2.78	1369	12702	2.66	1397
47°F	43°F	14600	3.19	1343	14308	3.06	1370	14016	2.94	1397	13724	2.82	1425
50°F	46°F	14454	3.14	1350	14162	3.01	1377	13870	2.89	1404	13578	2.78	1432
55°F	50°F	14308	3.09	1356	14016	2.97	1384	13724	2.85	1411	13432	2.74	1439
60°F	55°F	14162	3.03	1370	13870	2.91	1397	13578	2.79	1425	13286	2.68	1454
65°F	60°F	13870	3.09	1316	13578	2.97	1342	13286	2.84	1369	12994	2.73	1397
70°F	64°F	13724	3.07	1309	13432	2.95	1336	13140	2.83	1362	12848	2.71	1390
75°F	69°F	13578	3.05	1303	13286	2.93	1329	12994	2.81	1355	12702	2.69	1382
80°F	74°F												
86°F	80°F												

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)
MAX OUTPUT*	-20°F																				
	-15°F																				
	-10°F																				
	-5°F																				
	0°F	9770	6546	67%	8.41	1162	10072	6950	69%	8.49	1186	10331	7231	70%	8.54	1210	11054	7848	71%	8.70	1270
	5°F	10072	6849	68%	8.49	1186	10384	7269	70%	8.58	1210	10650	7562	71%	8.63	1235	11396	8205	72%	8.79	1296
	10°F	10384	7061	68%	8.58	1210	10705	7493	70%	8.67	1235	10979	7795	71%	8.72	1260	11748	8459	72%	8.88	1323
	15°F	10705	7279	68%	8.67	1235	11036	7725	70%	8.76	1260	11319	8037	71%	8.81	1285	12111	8720	72%	8.97	1350
	20°F	11036	7505	68%	8.76	1260	11377	7964	70%	8.85	1285	11669	8285	71%	8.90	1312	12486	8990	72%	9.07	1377
	25°F	11377	7850	69%	8.85	1285	11729	8328	71%	8.94	1312	12030	8662	72%	8.99	1338	12872	9397	73%	9.16	1405
	30°F	11729	8093	69%	8.94	1312	12092	8585	71%	9.03	1338	12402	8929	72%	9.08	1366	13270	9687	73%	9.25	1434
	35°F	12092	8343	69%	9.03	1338	12466	8851	71%	9.13	1366	12786	9206	72%	9.17	1394	13681	9987	73%	9.35	1463
	40°F	12466	8602	69%	9.13	1366	12852	9125	71%	9.22	1394	13181	9490	72%	9.27	1422	14104	10296	73%	9.45	1493
	45°F	12852	8996	70%	9.22	1394	13249	9539	72%	9.32	1422	13589	9920	73%	9.36	1451	14540	10760	74%	9.54	1524
	50°F	13249	9274	70%	9.32	1422	13659	9834	72%	9.41	1451	14009	10227	73%	9.46	1481	14990	11092	74%	9.64	1555
	55°F	13659	9561	70%	9.41	1451	14081	10138	72%	9.51	1481	14442	10543	73%	9.56	1511	15453	11435	74%	9.74	1587
	60°F	14081	9857	70%	9.51	1481	14517	10452	72%	9.61	1511	14889	10869	73%	9.66	1542	15931	11789	74%	9.84	1619
	65°F	15646	11109	71%	9.62	1627	16130	11775	73%	9.71	1660	16543	12242	74%	9.76	1694	17701	13276	75%	9.95	1779
	70°F	15965	11335	71%	9.71	1644	16459	12015	73%	9.81	1677	16881	12492	74%	9.86	1711	18063	13547	75%	10.05	1797
	75°F	16459	11686	71%	9.81	1677	16968	12387	73%	9.91	1711	17403	12878	74%	9.97	1746	18621	13966	75%	10.16	1834
	80°F	19363	13942	72%	9.93	1950	19962	14772	74%	10.03	1990	20474	15356	75%	10.08	2031	21907	16650	76%	10.27	2132
85°F	18799	13536	72%	9.45	1990	19381	14342	74%	9.54	2031	19878	14908	75%	9.59	2072	21269	16165	76%	9.78	2176	
90°F	19583	14100	72%	8.95	2187	20188	14939	74%	9.05	2231	20706	15530	75%	9.09	2277	22155	16838	76%	9.27	2391	
95°F	19199	14332	75%	8.69	2209	19793	15171	77%	8.78	2254	20300	15763	78%	8.83	2300	21721	17084	79%	8.99	2415	
100°F	17279	12441	72%	8.60	2010	17813	13182	74%	8.68	2051	18270	13703	75%	8.73	2093	19549	14857	76%	8.90	2198	
105°F	15947	11641	73%	8.93	1785	16440	12330	75%	9.02	1822	16861	12815	76%	9.07	1859	18042	13892	77%	9.24	1952	
110°F	15558	11357	73%	8.54	1822	16039	12029	75%	8.63	1859	16450	12502	76%	8.67	1897	17602	13553	77%	8.84	1992	
115°F	14624	10676	73%	7.87	1858	15076	11307	75%	7.95	1896	15463	11752	76%	7.99	1935	16545	12740	77%	8.14	2032	
118°F	10968	8007	73%	7.38	1487	11307	8480	75%	7.45	1517	11597	8814	76%	7.49	1548	12409	9555	77%	7.63	1625	
122°F																					
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

LIV18HP230V1R32AH / LIV18HP230V1R32AO

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												
-20°F	-20.5°F												
-15°F	-16°F	10002	1.88	1557	9752	1.80	1588	9459	1.71	1620	9081	1.61	1652
-10°F	-11°F	10640	1.94	1605	10374	1.86	1637	10063	1.77	1670	9660	1.66	1704
-5°F	-6°F	11319	2.00	1655	11036	1.92	1688	10705	1.82	1722	10277	1.72	1756
0°F	-1°F	11915	2.05	1706	11617	1.96	1740	11268	1.86	1775	10818	1.75	1811
5°F	3°F	12411	2.07	1759	12101	1.98	1794	11738	1.88	1830	11268	1.77	1867
10°F	8°F	13533	2.30	1728	13194	2.19	1763	12798	2.09	1798	12286	1.96	1834
15°F	13°F	14141	2.36	1754	13787	2.26	1790	13374	2.15	1825	12839	2.02	1862
17°F	15°F	14749	2.41	1790	14380	2.31	1826	13949	2.19	1863	13391	2.07	1900
20°F	17°F	15205	2.44	1827	14825	2.33	1863	14380	2.22	1901	13805	2.09	1939
25°F	22°F	16155	2.30	2057	15751	2.20	2098	15278	2.09	2140	14667	1.97	2183
30°F	27°F	16740	2.39	2055	16322	2.28	2096	15832	2.17	2138	15199	2.04	2181
35°F	33°F	17438	2.67	1911	17002	2.56	1949	16492	2.43	1988	15832	2.29	2028
40°F	36°F	21825	2.81	2277	21279	2.69	2323	20641	2.55	2369	19815	2.40	2416
45°F	41°F	22500	2.87	2300	21938	2.74	2346	21279	2.61	2393	20428	2.45	2441
47°F	43°F	22838	2.88	2323	22267	2.75	2369	21599	2.62	2417	20735	2.47	2465
50°F	46°F	19184	2.95	1905	18704	2.82	1943	18143	2.68	1982	17417	2.53	2021
55°F	50°F	18800	2.92	1886	18330	2.79	1924	17780	2.66	1962	17069	2.50	2001
60°F	55°F	16920	2.89	1716	16497	2.76	1750	16002	2.63	1785	15362	2.47	1821
65°F	60°F	16412	2.86	1682	16002	2.73	1715	15522	2.60	1750	14901	2.45	1785
70°F	64°F	13130	2.82	1362	12802	2.70	1389	12418	2.57	1417	11921	2.42	1446
75°F	69°F	11160	2.76	1185	10881	2.64	1209	10555	2.51	1233	10133	2.36	1258
80°F	74°F												
86°F	80°F												

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)
MAX OUTPUT*	-20°F																				
	-15°F																				
	-10°F																				
	-5°F																				
	0°F	16416	11901	73%	11.11	1478	17426	12634	73%	11.20	1556	17931	13000	73%	10.95	1638	19446	14099	73%	10.77	1806
	5°F	16668	12085	73%	11.05	1509	17679	12817	73%	11.13	1588	18184	13183	73%	10.88	1672	19699	14282	73%	10.69	1843
	10°F	17047	12359	73%	11.07	1539	18057	13092	73%	11.14	1620	18562	13458	73%	10.88	1706	20078	14556	73%	10.68	1880
	15°F	17426	12634	73%	11.10	1570	18436	13366	73%	11.16	1652	18941	13732	73%	10.89	1739	20457	14831	73%	10.67	1918
	20°F	17679	12817	73%	11.05	1600	18689	13549	73%	11.09	1685	19194	13916	73%	10.82	1773	20709	15014	73%	10.59	1955
	25°F	17931	13000	73%	10.99	1631	18941	13732	73%	11.03	1717	19446	14099	73%	10.76	1807	20962	15197	73%	10.52	1992
	30°F	18562	13458	73%	11.17	1662	19573	14190	73%	11.19	1749	20078	14556	73%	10.91	1841	21593	15655	73%	10.64	2030
	35°F	19194	13916	73%	11.34	1692	20204	14648	73%	11.34	1781	20709	15014	73%	11.05	1875	22224	16113	73%	10.75	2067
	40°F	19573	14190	73%	11.36	1723	20583	14923	73%	11.35	1813	21088	15289	73%	11.05	1909	22603	16387	73%	10.74	2105
	45°F	19951	14465	73%	11.38	1753	20962	15197	73%	11.36	1846	21467	15563	73%	11.05	1943	22982	16662	73%	10.73	2142
	50°F	20583	14923	73%	11.54	1784	21593	15655	73%	11.50	1878	22098	16021	73%	11.18	1977	23613	17120	73%	10.84	2179
	55°F	21214	15380	73%	11.69	1814	22224	16113	73%	11.64	1910	22730	16479	73%	11.31	2011	24245	17577	73%	10.94	2217
	60°F	21846	15838	73%	11.84	1845	22856	16570	73%	11.77	1942	23361	16937	73%	11.43	2044	24876	18035	73%	11.04	2254
	65°F	22477	16296	73%	11.98	1876	23487	17028	73%	11.90	1974	23992	17394	73%	11.54	2078	25508	18493	73%	11.13	2291
	70°F	23487	17028	73%	12.32	1906	24497	17761	73%	12.21	2007	25002	18127	73%	11.84	2112	26518	19225	73%	11.39	2329
	75°F	24497	17761	73%	12.65	1937	25508	18493	73%	12.51	2039	26013	18859	73%	12.12	2146	27528	19958	73%	11.63	2366
80°F	24876	18035	73%	12.64	1967	25886	18768	73%	12.50	2071	26391	19134	73%	12.11	2180	27907	20232	73%	11.61	2403	
85°F	25255	18310	73%	12.64	1998	26265	19042	73%	12.49	2103	26770	19408	73%	12.09	2214	28286	20507	73%	11.59	2441	
90°F	24497	17761	73%	12.14	2018	25508	18493	73%	12.01	2125	26013	18859	73%	11.63	2236	27528	19958	73%	11.16	2466	
95°F	23740	17211	73%	11.64	2039	24750	17944	73%	11.53	2146	25255	18310	73%	11.18	2259	26770	19408	73%	10.75	2491	
100°F	23108	16754	73%	11.06	2090	24119	17486	73%	10.96	2200	24624	17852	73%	10.63	2315	26139	18951	73%	10.24	2553	
105°F	22477	16296	73%	10.50	2141	23487	17028	73%	10.42	2253	23992	17394	73%	10.11	2372	25508	18493	73%	9.75	2615	
110°F	22098	16021	73%	10.08	2192	23108	16754	73%	10.02	2307	23613	17120	73%	9.72	2428	25129	18218	73%	9.39	2677	
115°F	21719	15746	73%	9.68	2243	22730	16479	73%	9.63	2361	23235	16845	73%	9.35	2485	24750	17944	73%	9.03	2740	
118°F	20835	15106	73%	9.26	2251	21846	15838	73%	9.05	2414	22351	16204	73%	8.79	2541	23866	17303	73%	8.52	2802	
122°F																					
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

LIV24HP230V1R32AH / LIV24HP230V1R32AO

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												
-20°F	-20.5°F												
-15°F	-16°F	14626	7.95	1841	14122	7.52	1878	13618	7.11	1915	13113	6.71	1954
-10°F	-11°F	15509	8.34	1860	15005	7.91	1897	14500	7.49	1935	13996	7.09	1973
-5°F	-6°F	16392	8.73	1878	15887	8.29	1916	15383	7.87	1954	14879	7.46	1993
0°F	-1°F	17148	8.95	1917	16644	8.51	1955	16140	8.09	1994	15635	7.69	2034
5°F	3°F	17905	9.15	1956	17400	8.72	1995	16896	8.30	2035	16392	7.90	2076
10°F	8°F	18914	9.48	1996	18409	9.04	2036	17905	8.62	2076	17400	8.22	2118
15°F	13°F	19292	9.57	2016	19292	9.38	2057	18787	8.96	2098	18283	8.55	2140
17°F	15°F	19670	9.66	2037	20174	9.71	2077	19670	9.28	2119	19166	8.87	2161
20°F	17°F	20679	9.95	2078	20174	9.52	2120	19670	9.10	2162	19166	8.69	2205
25°F	22°F	21435	10.11	2121	20931	9.68	2163	20427	9.26	2206	19922	8.85	2250
30°F	27°F	21814	10.18	2142	21309	9.75	2185	20805	9.33	2229	20300	8.93	2273
35°F	33°F	22192	10.26	2164	21687	9.83	2207	21183	9.41	2251	20679	9.01	2296
40°F	36°F	23957	10.85	2208	23453	10.41	2252	22948	9.99	2297	22444	9.58	2343
45°F	41°F	24714	10.97	2253	24209	10.53	2298	23705	10.11	2344	23201	9.70	2391
47°F	43°F	25218	10.97	2299	24714	10.54	2345	24209	10.12	2392	23705	9.72	2440
50°F	46°F	24966	10.81	2310	24461	10.38	2357	23957	9.97	2404	23453	9.57	2452
55°F	50°F	24714	10.64	2322	24209	10.22	2368	23705	9.81	2416	23201	9.42	2464
60°F	55°F	24461	10.43	2345	23957	10.02	2392	23453	9.61	2440	22948	9.22	2489
65°F	60°F	23957	10.63	2253	23453	10.21	2298	22948	9.79	2344	22444	9.39	2391
70°F	64°F	23705	10.58	2242	23201	10.15	2286	22696	9.73	2332	22192	9.33	2379
75°F	69°F	23453	10.52	2230	22948	10.09	2275	22444	9.67	2320	21940	9.27	2367
80°F	74°F												
86°F	80°F												

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)
MAX OUTPUT*	-20°F																				
	-15°F																				
	-10°F																				
	-5°F																				
	0°F	17954	13152	73%	7.99	2248	19059	13961	73%	8.05	2366	19611	14366	73%	7.87	2491	21268	15580	73%	7.75	2746
	5°F	18964	13939	74%	8.07	2349	20113	14783	74%	8.14	2472	20688	15206	74%	7.95	2602	22412	16473	74%	7.81	2869
	10°F	20356	15014	74%	8.64	2356	21562	15903	74%	8.69	2480	22165	16348	74%	8.49	2611	23975	17682	74%	8.33	2878
	15°F	20795	15389	74%	8.73	2382	22001	16281	74%	8.77	2507	22604	16727	74%	8.56	2639	24412	18065	74%	8.39	2910
	20°F	21227	15762	74%	8.60	2469	22440	16663	74%	8.64	2599	23047	17113	74%	8.43	2735	24866	18464	74%	8.25	3016
	25°F	21549	16054	75%	8.56	2516	22763	16958	74%	8.59	2649	23370	17411	75%	8.38	2788	25191	18767	74%	8.19	3074
	30°F	21926	16392	75%	8.48	2585	23120	17284	75%	8.50	2721	23716	17730	75%	8.28	2865	25506	19068	75%	8.08	3158
	35°F	22370	16777	75%	8.55	2617	23547	17661	75%	8.55	2755	24136	18102	75%	8.32	2900	25902	19427	75%	8.10	3197
	40°F	24535	18464	75%	9.14	2684	25802	19417	75%	9.13	2825	26435	19893	75%	8.89	2974	28334	21323	75%	8.64	3279
	45°F	25586	19317	75%	9.22	2776	26882	20296	75%	9.20	2922	27529	20785	75%	8.95	3076	29473	22252	76%	8.69	3391
	50°F	26763	20275	76%	9.38	2852	28077	21270	76%	9.35	3002	28733	21768	76%	9.09	3160	30704	23260	76%	8.81	3484
	55°F	27386	20814	76%	9.42	2908	28690	21805	76%	9.37	3061	29343	22300	76%	9.11	3222	31299	23787	76%	8.81	3552
	60°F	28303	21583	76%	9.59	2952	29611	22581	76%	9.53	3108	30266	23080	76%	9.25	3271	32229	24577	76%	8.94	3607
	65°F	28671	21933	76%	9.49	3022	29959	22919	76%	9.42	3181	30604	23412	76%	9.14	3348	32537	24890	77%	8.81	3691
	70°F	29511	22653	77%	9.67	3053	30780	23627	77%	9.58	3214	31415	24114	77%	9.29	3383	33319	25576	77%	8.93	3730
	75°F	30438	23438	77%	9.86	3087	31694	24404	77%	9.75	3249	32321	24887	77%	9.45	3420	34204	26337	77%	9.07	3771
80°F	30742	23749	77%	9.47	3246	31990	24714	77%	9.36	3416	32614	25196	77%	9.07	3596	34487	26642	77%	8.70	3965	
85°F	31609	24497	77%	9.50	3326	32873	25477	78%	9.39	3501	33505	25967	78%	9.09	3685	35402	27437	78%	8.71	4063	
90°F	32172	25011	78%	9.43	3411	33499	26043	78%	9.33	3590	34162	26559	78%	9.04	3779	36152	28106	78%	8.68	4166	
95°F	32998	25738	78%	9.46	3488	34402	26833	78%	9.37	3672	35104	27381	78%	9.08	3865	37210	29024	78%	8.73	4261	
100°F	32852	25704	78%	9.21	3566	34288	26828	78%	9.13	3753	35006	27390	78%	8.86	3951	37160	29075	78%	8.53	4356	
105°F	31943	25076	79%	8.73	3657	33379	26203	79%	8.67	3850	34097	26766	78%	8.41	4052	36250	28457	79%	8.11	4467	
110°F	31757	25007	79%	8.52	3729	33209	26151	79%	8.46	3926	33935	26722	79%	8.21	4132	36112	28437	79%	7.93	4556	
115°F	29724	23482	79%	7.91	3757	31107	24575	79%	7.87	3955	31798	25121	79%	7.64	4163	33872	26759	79%	7.38	4590	
118°F	27783	22015	79%	7.47	3717	29130	23083	79%	7.31	3987	29803	23616	79%	7.10	4197	31824	25218	79%	6.88	4627	
122°F																					
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

LIV30HP230V1R32AH / LIV30HP230V1R32AO

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												
-20°F	-20.5°F												
-15°F	-16°F	17932	5.49	3269	17394	5.11	3402	17125	4.93	3471	16491	4.66	3540
-10°F	-11°F	18584	5.60	3322	18027	5.21	3457	17748	5.03	3526	17131	4.76	3597
-5°F	-6°F	19761	5.92	3336	19169	5.52	3472	18872	5.33	3541	18253	5.05	3612
0°F	-1°F	19818	5.82	3404	19224	5.43	3543	18926	5.24	3614	18335	4.97	3686
5°F	3°F	21214	6.11	3473	20578	5.69	3615	20259	5.49	3687	19655	5.23	3761
10°F	8°F	22917	6.47	3544	22229	6.03	3689	21886	5.82	3763	21269	5.54	3838
15°F	13°F	24264	6.71	3617	23536	6.25	3764	23172	6.04	3839	22550	5.76	3916
17°F	15°F	24390	6.66	3664	23658	6.20	3814	23292	5.99	3890	22695	5.72	3968
20°F	17°F	24502	6.64	3690	23767	6.19	3841	23399	5.97	3918	22799	5.71	3996
25°F	22°F	25954	6.89	3766	25176	6.42	3919	24786	6.20	3998	24174	5.93	4078
30°F	27°F	26675	6.94	3842	25875	6.47	3999	25475	6.24	4079	24857	5.97	4161
35°F	33°F	28516	7.32	3893	27660	6.83	4052	27232	6.59	4133	26584	6.31	4216
40°F	36°F	30340	7.74	3921	29430	7.21	4081	28975	6.96	4163	28338	6.67	4246
45°F	41°F	33645	8.41	4001	33706	8.09	4164	33185	7.81	4247	32479	7.50	4332
47°F	43°F	33885	8.30	4082	33313	7.84	4249	32891	7.59	4334	32847	7.43	4421
50°F	46°F	35376	8.53	4145	34723	8.05	4314	34000	7.73	4400	33773	7.52	4488
55°F	50°F	35846	8.52	4205	35841	8.19	4377	35287	7.90	4464	34536	7.58	4553
60°F	55°F	37316	8.32	4487	37234	8.26	4508	36641	7.97	4598	35829	7.64	4690
65°F	60°F	38303	8.27	4630	38225	8.23	4643	37633	7.95	4736	36806	7.62	4831
70°F	64°F	37415	8.34	4487	36293	7.59	4783	35731	7.32	4878	34937	7.02	4976
75°F	69°F	36196	8.21	4409	35110	7.13	4926	34567	6.88	5025	33790	6.59	5125
80°F	74°F												
86°F	80°F												

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)
MAX OUTPUT*	-20°F																				
	-15°F																				
	-10°F																				
	-5°F																				
	0°F	19001	13919	73%	10.52	1806	20170	14775	73%	10.61	1901	20755	15204	73%	10.37	2001	22509	16488	73%	10.20	2207
	5°F	20070	14751	74%	10.63	1887	21286	15645	74%	10.72	1987	21894	16092	74%	10.47	2091	23719	17433	74%	10.29	2305
	10°F	21543	15889	74%	11.38	1893	22819	16831	74%	11.45	1993	23458	17301	74%	11.18	2098	25373	18714	74%	10.97	2313
	15°F	22008	16286	74%	11.50	1914	23284	17230	74%	11.56	2015	23922	17702	74%	11.28	2121	25835	19118	74%	11.05	2338
	20°F	22465	16681	74%	11.32	1984	23749	17634	74%	11.37	2088	24391	18111	74%	11.10	2198	26316	19541	74%	10.86	2423
	25°F	22805	16990	75%	11.28	2022	24090	17947	74%	11.32	2128	24733	18426	75%	11.04	2240	26660	19862	74%	10.79	2470
	30°F	23205	17348	75%	11.17	2078	24468	18292	75%	11.19	2187	25099	18764	75%	10.90	2302	26993	20180	75%	10.64	2538
	35°F	23674	17756	75%	11.26	2103	24920	18690	75%	11.26	2214	25543	19158	75%	10.96	2330	27412	20559	75%	10.67	2569
	40°F	25966	19541	75%	12.04	2157	27306	20549	75%	12.03	2270	27976	21053	75%	11.71	2390	29986	22566	75%	11.38	2635
	45°F	27078	20444	75%	12.14	2231	28449	21479	75%	12.12	2348	29135	21997	75%	11.79	2472	31191	23549	76%	11.45	2725
	50°F	28324	21457	76%	12.36	2292	29714	22510	76%	12.32	2412	30409	23037	76%	11.98	2539	32494	24616	76%	11.61	2799
	55°F	28983	22027	76%	12.40	2337	30364	23076	76%	12.34	2460	31054	23601	76%	11.99	2589	33124	25174	76%	11.60	2855
	60°F	29953	22841	76%	12.63	2373	31338	23897	76%	12.55	2497	32031	24426	76%	12.18	2629	34108	26010	76%	11.77	2898
	65°F	30343	23212	76%	12.50	2428	31706	24255	76%	12.41	2556	32388	24777	76%	12.04	2690	34434	26342	77%	11.61	2966
	70°F	31232	23974	77%	12.73	2453	32575	25005	77%	12.61	2583	33247	25520	77%	12.23	2718	35262	27067	77%	11.77	2997
	75°F	32213	24804	77%	12.99	2480	33542	25827	77%	12.85	2611	34206	26339	77%	12.45	2748	36198	27873	77%	11.95	3030
80°F	32534	25134	77%	12.47	2608	33856	26155	77%	12.33	2745	34516	26665	77%	11.94	2890	36498	28196	77%	11.46	3186	
85°F	33452	25925	77%	12.52	2673	34790	26962	78%	12.37	2813	35459	27481	78%	11.97	2961	37466	29036	78%	11.48	3265	
90°F	34048	26470	78%	12.42	2741	35452	27561	78%	12.29	2885	36154	28107	78%	11.91	3037	38260	29745	78%	11.43	3348	
95°F	34922	27239	78%	12.46	2803	36408	28398	78%	12.34	2951	37151	28978	78%	11.96	3106	39380	30716	78%	11.50	3424	
100°F	34767	27203	78%	12.13	2865	36287	28392	78%	12.03	3016	37047	28987	78%	11.67	3175	39327	30771	78%	11.24	3500	
105°F	33806	26538	79%	11.50	2939	35326	27731	79%	11.42	3093	36085	28327	78%	11.08	3256	38364	30116	79%	10.69	3590	
110°F	33609	26466	79%	11.21	2997	35145	27676	79%	11.14	3155	35914	28280	79%	10.82	3321	38218	30095	79%	10.44	3661	
115°F	31458	24852	79%	10.42	3019	32921	26008	79%	10.36	3178	33652	26585	79%	10.06	3345	35847	28319	79%	9.72	3688	
118°F	29403	23299	79%	9.84	2987	30829	24429	79%	9.62	3204	31541	24993	79%	9.35	3372	33680	26688	79%	9.06	3718	
122°F																					
125°F																					
129°F																					

*Maximum Output values are not based on AHRI test conditions

- LEGEND:** W - Watts
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EXTENDED RATINGS

LIV36HP230V1R32AH / LIV36HP230V1R32AO

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												
-20°F	-20.5°F												
-15°F	-16°F	17986	9.27	1940	17446	8.64	2019	17176	8.34	2060	16540	7.87	2101
-10°F	-11°F	18640	9.46	1971	18081	8.81	2052	17802	8.51	2093	17182	8.05	2135
-5°F	-6°F	19821	10.01	1980	19226	9.33	2060	18929	9.01	2102	18308	8.54	2144
0°F	-1°F	19878	9.84	2020	19281	9.17	2102	18983	8.85	2145	18390	8.41	2187
5°F	3°F	21278	10.32	2061	20640	9.62	2145	20320	9.29	2188	19714	8.83	2232
10°F	8°F	22986	10.93	2103	22296	10.18	2189	21951	9.83	2233	21333	9.37	2278
15°F	13°F	24337	11.34	2146	23607	10.57	2234	23242	10.20	2279	22618	9.73	2324
17°F	15°F	24463	11.25	2174	23729	10.48	2263	23362	10.12	2308	22763	9.67	2355
20°F	17°F	24576	11.22	2190	23838	10.46	2279	23470	10.09	2325	22868	9.64	2372
25°F	22°F	26033	11.65	2235	25252	10.86	2326	24861	10.48	2372	24247	10.02	2420
30°F	27°F	26756	11.73	2280	25953	10.93	2373	25552	10.55	2421	24932	10.10	2469
35°F	33°F	28601	12.38	2311	27743	11.54	2405	27314	11.14	2453	26664	10.66	2502
40°F	36°F	30432	13.08	2327	29519	12.19	2422	29062	11.76	2470	28423	11.28	2520
45°F	41°F	33746	14.21	2374	33808	13.68	2471	33285	13.20	2521	32577	12.67	2571
47°F	43°F	33987	14.03	2423	33413	13.25	2522	32990	12.83	2572	32946	12.56	2624
50°F	46°F	35482	14.42	2460	34827	13.60	2560	34102	13.06	2611	33875	12.72	2664
55°F	50°F	35954	14.41	2496	35949	13.84	2597	35393	13.36	2649	34640	12.82	2702
60°F	55°F	37428	14.05	2663	37346	13.96	2675	36751	13.47	2729	35937	12.91	2783
65°F	60°F	38419	13.98	2748	38340	13.91	2756	37747	13.43	2811	36917	12.88	2867
70°F	64°F	37528	14.09	2663	36402	12.83	2838	35839	12.38	2895	35042	11.87	2953
75°F	69°F	36304	13.87	2617	35215	12.05	2923	34671	11.63	2982	33892	11.14	3041
80°F	74°F												
86°F	80°F												

MAX OUTPUT*

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