

Commercial Split Heat Pump Air Handlers



RHCYP Series

- Nominal Sizes: 7.5 & 10 Tons [26.4 kW to 35.2 kW]
- Cooling Capacities: 90.0k Btu/h to 120.0k Btu/h [26.4 kW to 35.2 kW]
- Refrigerant Type: R-454B
- Designed for use with matching RPCY models



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RHCYP STANDARD FEATURES INCLUDE:

- Designed for R-454B refrigerant
- Wired and run tested
- Convertible airflow – vertical up flow or horizontal side flow
- Cooling operation up to 125°F ambient
- TXV refrigerant metering system
- Field-adjustable TXVs
- Solid-core liquid line filter drier
- Insulation encapsulated throughout entire unit
- Galvanized steel drain pan
- Standard Variable Frequency Drives (VFDs)
- Innovative, separable cabinet design makes it easier to fit the unit in tight spaces.
- MERV 8 & MERV 13 filters are available as an accessory



Designing for Sustainability with Low GWP: For 2025, the Environmental Protection Agency (EPA) has set a global warming potential (GWP) limit of 700 for refrigerant used in heating and cooling systems. This new requirement will result in a 78%¹ lower GWP than previous-generation refrigerants — with only minimal changes to system installation. For us, this is another step toward our continued sustainability goal of reducing greenhouse gas emissions, while still delivering an exceptional level of energy efficient, dependable comfort.

¹When comparing the GWP of R-454B to R-410A refrigerant.

ACCESSORIES

ACCESSORY DESCRIPTION	MODEL NUMBER	SIZE USED ON	DIMENSIONS D x L x W (INCHES)
MERV 13 Filter	RXMF-M13A11625	090, 120	1 X 16 X 25
	RXMF-M13A21625	090, 120	2 X 16 X 25
MERV 8 Filter	RXMF-M08A11625	090, 120	1 X 16 X 25
	RXMF-M08A21625	090, 120	2 X 16 X 25
Electric Heat (* = C, D, or Y Voltage)	RXHE-AG005CA	090, 120	N/A
	RXHE-AG005DA	090, 120	N/A
	RXHE-AG010*A	090, 120	N/A
	RXHE-AG015*A	090, 120	N/A
	RXHE-AG020*A	090, 120	N/A
	RXHE-AG025*A	090, 120	N/A
Economizers for Commercial Air Handler (No Controls) McDaniel Metals Econmzier with Siemens Controller	RXHM-71SA	090, 120	N/A

R **H** **C** **Y** **P** **2** **090** **C** **A** **R**
1 **2** **3** **4** **5** **6** **789** **10** **11** **12**

1—Brand

R = Sure Comfort

2—Unit Type

H = Air Handler

3—Cabinet Type

C = Commercial

4—Refrigerant

Y = R-454B

5—Heat Type

P = Heat Pump

6—Airflow Configuration

2 = 2-Stage

7,8,9—Capacity

090 = 7.5 Ton

120 = 10 Ton

10—Electrical Designation

C = 208/230 V, 3 PH, 60 Hz

D = 460 V, 3 PH, 60 Hz

Y = 575 V, 3 PH, 60 Hz

11—Minor Series

A = 1st Design

12—Drive

R = Belt Drive—VFD Low Static

S = Belt Drive—VFD Medium Static

T = Belt Drive—VFD High Static

COMMERCIAL SPLIT HEAT PUMP MODEL MATCH-UPS

Outdoor Unit Model Number	Indoor Air Handler Model Number
RPCY2090	RHCYP2090
RPCY2120	RHCYP2120

GENERAL DATA

Model RHCYP2 Series	090C	090D	090Y
			CONTINUED →
Indoor Coil—Fin Type	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	10.2 [0.95]	10.2 [0.95]	10.2 [0.95]
Rows / FPI [FPcm]	4 /15 [10 / 38]	4 /15 [10 / 38]	4 /15 [10 / 38]
Refrigerant Control	TX Valves	TX Valves	TX Valves
Indoor Fan—Type	FC Centrifugal	FC Centrifugal	FC Centrifugal
Diameter in. [mm]	12x12 [305x305]	12x12 [305x305]	12x12 [305x305]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds (Standard / VFD)	Single / Multiple	Single / Multiple	Single / Multiple
No. Motors	1	1	1
Motor HP			
R - Low Static Drive	2	2	2
S - Medium Static Drive	2	2	2
T - High Static Drive	3	3	3
Motor RPM	1725	1725	1725
Weights			
Net Weight lbs. [kg]	409 [186]	409 [186]	409 [186]
R - Low Static Drive	409 [186]	409 [186]	409 [186]
S - Medium Static Drive	419 [190]	419 [190]	419 [190]
T - High Static Drive			
Shipping Weights lbs. [kg]			
R - Low Static Drive	429 [195]	429 [195]	429 [195]
S - Medium Static Drive	429 [195]	429 [195]	429 [195]
T - High Static Drive	439 [199]	439 [199]	439 [199]

[] Designates Metric Conversions

GENERAL DATA (CONTINUED)

Model RHCYP2 Series	120C	120D	120Y
Indoor Coil—Fin Type	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	16.5 [1.5]	16.5 [1.5]	16.5 [1.5]
Rows / FPI [FPcm]	3 / 18 [8 / 46]	3 / 18 [8 / 46]	3 / 18 [8 / 46]
Refrigerant Control	TX Valves	TX Valves	TX Valves
Indoor Fan—Type	FC Centrifugal	FC Centrifugal	FC Centrifugal
Diameter in. [mm]	18x15 [457x381]	18x15 [457x381]	18x15 [457x381]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds (Standard / VFD)	Single / Multiple	Single / Multiple	Single / Multiple
No. Motors	1	1	1
Motor HP			
R - Low Static Drive	2	2	2
S - Medium Static Drive	2	2	2
T - High Static Drive	3	3	3
Motor RPM	1725	1725	1725
Weights			
Net Weight lbs. [kg]	575 [261]	575 [261]	575 [261]
R - Low Static Drive	585 [265]	585 [265]	585 [265]
S - Medium Static Drive	595 [270]	595 [270]	595 [270]
T - High Static Drive			
Shipping Weights lbs. [kg]			
R - Low Static Drive	595 [270]	595 [270]	595 [270]
S - Medium Static Drive	605 [274]	605 [274]	605 [274]
T - High Static Drive	615 [279]	615 [279]	615 [279]

[] Designates Metric Conversions

UNIT DIMENSIONS

Model Number	CONNECTIONS				UNIT					
	Liquid		Vapor		W (Width)		H (Height)		L (Length)	
	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
RHCYP2090	1/2	[12.70]	1-1/8	[28.58]	54-1/2	1384.30	27-43/50	707.52	57-17/20	1469.39
RHCYP2120	5/8	[15.88]	1-3/8	[34.93]	61-47/50	1573.28	35-1/10	891.54	78-25/61	1991.59

[] Designates Metric Conversions

ELECTRICAL DATA – RHCYP2 SERIES

		090C	090D	090Y
Unit Information	Unit Operating Voltage Range	187-253	414-506	541-610
	Volts	208/230	460	575
	Minimum Circuit Ampacity			
	R - Low Static Drive	8	4	3
	S - Medium Static Drive	8	4	3
	T - High Static Drive	12	6	5
	Maximum Overcurrent Protection Device Size			
	R - Low Static Drive	15/15	15/15	15/15
	S - Medium Static Drive	15/15	15/15	15/15
	T - High Static Drive	15/20	15/15	15/15
Motor Information	No.	1	1	1
	Volts	208/230	460	575
	Phase	3	3	3
	Rating Plate Amps			
	R - Low Static Drive	6.2	3	2.4
	S - Medium Static Drive	6.2	3	2.4
	T - High Static Drive	9.2	4.6	3.5
	LRA (Amps)			
	R - Low Static Drive	47	24	22.72
	S - Medium Static Drive	47	24	22.72
T - High Static Drive	74.5	38.1	30	

ELECTRICAL DATA – RHCYP2 SERIES

		120C	120D	120Y
Unit Information	Unit Operating Voltage Range	187-253	414-506	541-610
	Volts	208/230	460	575
	Minimum Circuit Ampacity			
	R - Low Static Drive	8	4	3
	S - Medium Static Drive	8	4	3
	T - High Static Drive	12	6	5
	Maximum Overcurrent Protection Device Size			
	R - Low Static Drive	15/15	15/15	15/15
	S - Medium Static Drive	15/15	15/15	15/15
	T - High Static Drive	15/15	15/15	15/15
Motor Information	No.	1	1	1
	Volts	208/230	460	575
	Phase	3	3	3
	Rating Plate Amps			
	R - Low Static Drive	6.2	3	2.4
	S - Medium Static Drive	6.2	3	2.4
	T - High Static Drive	9.2	4.6	3.5
	LRA (Amps)			
	R - Low Static Drive	47	24	22.72
	S - Medium Static Drive	47	24	22.72
T - High Static Drive	74.5	38.1	30	

AUXILIARY ELECTRIC HEATER KIT CHARACTERISTICS AND APPLICATION

208/230V, Three Phase, 60 Hz, Auxiliary Electric Heater Kit Characteristics and Application									
Single Power Supply for Both Unit and Heater Kit					Separate Power Supply for Both Unit and Heater Kit				
Unit Model Number RHCYP2	Heater Kit			Heat Pump		Heater Kit		Heat Pump	
	Model No. RXHE-	Rated Heater kW @ 208/230V	FLA	Unit Min. Ckt. Ampacity	Max. Fuse or Ckt. Bkr. Size	Heater Kit Min. Ckt. Ampacity	Heater Kit Max. Fuse or Ckt. Bkr. Size	Air Cond. Min. Ckt. Ampacity	Air Cond. Max. Fuse or Ckt. Bkr. Size
090CAR 090CAS	AG005CA	3.76/5.00	10.44/12.03	21/23	25/25	14/16	15/20	8/8	15/15
	AG010CA	7.75/9.98	20.82/24.01	34/38	35/40	27/31	30/35	8/8	15/15
	AG015CA	11.27/15.0	31.28/36.08	47/53	50/60	40/46	40/50	8/8	15/15
	AG020CA	15.6/20.2	43.1/48.9	62/69	70/70	54/62	60/70	8/8	15/15
	AG025CA	18.78/25.0	52.13/60.14	73/83	80/90	66/76	70/80	8/8	15/15
090CAT	AG005CA	3.76/5.00	10.44/12.03	25/27	30/30	14/16	15/20	12/12	20/20
	AG010CA	7.75/9.98	20.82/24.01	38/42	40/45	27/31	30/35	12/12	20/20
	AG015CA	11.27/15.0	31.28/36.08	51/57	60/60	40/46	40/50	12/12	20/20
	AG020CA	15.6/20.2	43.1/48.9	66/73	70/80	54/62	60/70	12/12	20/20
	AG025CA	18.78/25.0	52.13/60.14	77/87	80/90	66/76	70/80	12/12	20/20
120CAR 120CAS	AG010CC	7.50/9.98	20.82/24.01	34/38	35/40	27/31	30/35	8/8	15/15
	AG020CC	14.98/19.95	41.58/47.99	60/68	60/70	52/60	60/60	8/8	15/15
120CAT	AG010CC	7.50/9.98	20.82/24.01	38/42	40/45	27/31	30/35	12/12	20/20
	AG020CC	14.98/19.95	41.58/47.99	64/72	70/80	52/60	60/60	12/12	20/20

460V, Three Phase, 60 Hz, Auxiliary Electric Heater Kit Characteristics and Application									
Single Power Supply for Both Unit and Heater Kit					Separate Power Supply for Both Unit and Heater Kit				
Unit Model Number RHCYP2	Heater Kit			Heat Pump		Heater Kit		Heat Pump	
	Model No. RXHE-	Rated Heater kW @ 460V	FLA	Unit Min. Ckt. Ampacity	Max. Fuse or Ckt. Bkr. Size	Heater Kit Min. Ckt. Ampacity	Heater Kit Max. Fuse or Ckt. Bkr. Size	Air Cond. Min. Ckt. Ampacity	Air Cond. Max. Fuse or Ckt. Bkr. Size
090DAR 090DAS	AG005DA	5	6.01	12	15	8	15	4	15
	AG010DA	9.98	12	19	20	15	15	4	15
	AG015DA	15	18.04	27	30	23	25	4	15
	AG020DA	20.2	24.7	35	35	31	35	4	15
	AG025DA	25	30.07	42	45	38	40	4	15
090DAT	AG005DA	5	6.01	14	15	8	15	6	15
	AG010DA	9.98	12	21	25	15	15	6	15
	AG015DA	15	18.04	29	30	23	25	6	15
	AG020DA	20.2	24.7	37	40	31	35	6	15
	AG025DA	25	30.07	44	45	38	40	6	15
120DAR 120DAS	AG010DC	9.98	12	19	20	15	15	4	15
	AG020DC	20	24.06	34	35	31	35	4	15
120DAT	AG010DC	9.98	12	21	25	15	15	6	15
	AG020DC	20	24.06	36	40	31	35	6	15

575V, Three Phase, 60 Hz, Auxiliary Electric Heater Kit Characteristics and Application									
Single Power Supply for Both Unit and Heater Kit					Separate Power Supply for Both Unit and Heater Kit				
Unit Model Number RHCYP2	Heater Kit			Heat Pump		Heater Kit		Heat Pump	
	Model No. RXHE-	Rated Heater kW @ 575V	FLA	Unit Min. Ckt. Ampacity	Max. Fuse or Ckt. Bkr. Size	Heater Kit Min. Ckt. Ampacity	Heater Kit Max. Fuse or Ckt. Bkr. Size	Air Cond. Min. Ckt. Ampacity	Air Cond. Max. Fuse or Ckt. Bkr. Size
090YAR 090YAS	AG010YA	9.98	10.02	16	20	13	15	3	15
	AG015YA	15	15.06	22	25	19	20	3	15
	AG020YA	20	20.08	44	45	38	40	3	15
	AG025YA	25	25.1	35	35	32	35	3	15
090YAT	AG010YA	9.98	10.02	17	20	13	15	5	15
	AG015YA	15	15.06	24	25	19	20	5	15
	AG020YA	20	20.08	30	30	26	30	5	15
	AG025YA	25	25.1	36	40	32	35	5	15
120YAR 120YAS	AG010YC	9.98	10.02	16	20	13	15	3	15
	AG020YC	20	20.08	29	30	26	30	3	15
120YAT	AG010YC	9.98	10.02	17	20	13	15	5	15
	AG020YC	20	20.08	30	30	26	30	5	15

A2L REFRIGERANT INSTALLATION SAFETY DATA

Qmin at Rating Plate Charge Weight [0'-200' 1/2" Line Set]						
RHCYP2		090 [0']	090 [50']	090 [100']	090 [150']	090 [200']
Refrigerant Charge weight (oz)		328.5	378.5	428.5	478.5	528.5
Minimum Total Room Area, T _{Amin} (ft ²)		605.5	697.7	789.8	882.0	974.2
Minimum circulation airflow, Q _{min} (cfm)		1093.0	1259.0	1425.0	1592.0	1758.0
Installed Altitude (ft above sea level)	Altitude Adjustment Factor	Minimum Total Conditioned Room Area, T _{Amin} (sq ft)				
0	1.000	606	698	790	882	974
1000	1.025	621	715	809	904	998
2000	1.051	636	733	830	927	1024
3000	1.078	653	752	852	951	1050
4000	1.107	670	772	874	977	1079
5000	1.138	689	794	899	1003	1108
6000	1.170	708	816	924	1032	1140
6500	1.187	719	828	937	1047	1156

Qmin at Rating Plate Charge Weight [0'-200' 5/8" Line Set]						
RHCYP2		120 [0']	120 [50']	120 [100']	120 [150']	120 [200']
Refrigerant Charge weight (oz)		460.0	535.0	610.0	685.0	760.0
Minimum Total Room Area, T _{Amin} (ft ²)		847.9	940.1	1032.2	1124.4	1216.6
Minimum circulation airflow, Q _{min} (cfm)		1530.0	1696.0	1863.0	2029.0	2195.0
Installed Altitude (ft above sea level)	Altitude Adjustment Factor	Minimum Total Conditioned Room Area, T _{Amin} (sq ft)				
0	1.000	848	940	1032	1124	1217
1000	1.025	869	963	1058	1152	1247
2000	1.051	891	988	1085	1182	1278
3000	1.078	914	1014	1113	1212	1312
4000	1.107	939	1041	1143	1245	1347
5000	1.138	965	1069	1174	1279	1384
6000	1.170	992	1100	1208	1315	1423
6500	1.187	1006	1116	1225	1334	1444

AIRFLOW PERFORMANCE RHCYP2090 — 60 Hz

Air Flow CFM [L/s]		RHCYP2090 Voltage 208/230, 460, 575 — 3 phase 60 Hz																																							
		External Static Pressure—Inches of Water [kPa]																																							
		0.1 [0.02]		0.2 [0.05]		0.3 [0.07]		0.4 f. [0.10]		0.5 [0.12]		0.6 [0.15]		0.7 [0.17]		0.8 [0.20]		0.9 [0.22]		1.0 [0.25]		1.1 [0.27]		1.2 [0.30]		1.3 [0.32]		1.4 [0.35]		1.5 [0.37]		1.6 [0.40]		1.7 [0.42]		1.8 [0.45]		1.9 [0.47]		2.0 [0.50]	
RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W		
2400 [1133]	526	487	581	537	631	581	678	619	720	650	803	788	844	849	884	909	922	967	960	1024	997	1080	1033	1135	1035	1157	1066	1212	1096	1268	1126	1327	1156	1387	1185	1449	1214	1513	1242	1579	
2450 [1156]	533	505	587	555	637	599	683	637	724	668	809	810	850	871	889	932	927	991	965	1049	1001	1106	1036	1162	1040	1187	1070	1244	1101	1302	1131	1362	1160	1424	1189	1488	1218	1553	1246	1620	
2500 [1180]	540	523	594	574	643	618	688	656	728	688	816	833	855	895	894	957	932	1017	969	1075	1005	1133	1040	1189	1044	1219	1075	1277	1105	1337	1135	1399	1164	1463	1193	1528	1222	1595	1250	1664	
2550 [1203]	547	542	600	593	649	637	693	675	732	707	822	857	861	921	899	983	937	1043	973	1103	1009	1161	1018	1193	1049	1252	1080	1312	1110	1373	1139	1437	1169	1502	1197	1569	1226	1637	1254	1708	
2600 [1227]	555	561	607	612	654	657	698	695	737	728	828	883	867	947	905	1010	942	1071	978	1131	1013	1190	1023	1226	1054	1286	1084	1347	1114	1411	1144	1476	1173	1542	1202	1611	1230	1681	1258	1753	
2650 [1250]	562	581	613	632	660	677	703	716	741	748	834	910	873	975	910	1038	947	1100	983	1161	1017	1221	1028	1259	1059	1321	1089	1384	1119	1449	1148	1516	1177	1584	1206	1654	1234	1726	1262	1800	
2700 [1274]	569	601	620	653	666	698	708	737	746	770	840	938	878	1003	916	1068	952	1131	987	1192	1022	1253	1033	1294	1063	1357	1094	1422	1124	1469	1153	1557	1182	1627	1210	1699	1238	1772	1266	1847	
2750 [1298]	577	622	627	674	672	719	714	759	808	900	847	967	884	1034	921	1099	957	1162	992	1225	1026	1286	1038	1330	1068	1395	1098	1461	1128	1529	1158	1599	1186	1671	1215	1744	1243	1819	—	—	
2800 [1321]	584	643	634	695	678	741	719	781	815	930	853	998	890	1065	927	1131	962	1195	997	1258	1030	1320	1043	1367	1073	1433	1103	1501	1133	1571	1162	1643	1191	1716	1219	1791	1247	1868	—	—	
2850 [1345]	592	665	640	718	684	764	724	804	822	961	859	1030	896	1096	932	1164	967	1229	1001	1293	1034	1356	1048	1405	1078	1473	1108	1543	1138	1614	1167	1687	1195	1762	1224	1839	1251	1917	—	—	
2900 [1368]	600	687	647	740	691	787	730	827	828	994	866	1063	902	1132	938	1199	973	1265	1006	1329	1039	1393	1053	1444	1083	1514	1113	1585	1142	1658	1172	1733	1200	1810	1228	1888	1256	1968	—	—	
2950 [1392]	607	710	654	763	697	810	735	850	835	1027	872	1098	909	1167	944	1235	978	1301	1011	1367	1027	1415	1058	1485	1088	1556	1118	1629	1147	1704	1176	1780	1205	1858	1233	1938	1260	2020	—	—	
3000 [1416]	615	734	661	787	703	834	741	875	842	1062	879	1133	915	1203	949	1272	983	1339	1016	1405	1032	1455	1063	1526	1093	1599	1123	1674	1152	1750	1181	1828	1209	1908	1237	1990	1265	2073	—	—	
3050 [1439]	623	758	668	811	710	859	746	899	849	1098	886	1170	921	1241	955	1310	989	1378	1021	1445	1038	1496	1068	1569	1098	1644	1128	1720	1167	1798	1186	1878	1214	1959	1242	2042	1269	2127	—	—	
3100 [1463]	631	782	675	836	716	884	820	1062	856	1136	892	1208	927	1280	961	1350	994	1419	1026	1486	1043	1539	1074	1613	1104	1689	1133	1767	1162	1847	1191	1928	1219	2011	1247	2096	—	—	—	—	
3150 [1486]	638	807	683	861	722	909	827	1100	864	1174	899	1248	933	1320	967	1391	999	1460	1031	1528	1049	1582	1079	1658	1109	1736	1138	1816	1167	1897	1196	1980	1224	2065	1251	2151	—	—	—	—	
3200 [1510]	646	833	690	887	729	935	835	1139	871	1214	906	1288	940	1361	973	1433	1005	1503	1036	1572	1054	1627	1084	1705	1114	1784	1143	1865	1172	1948	1201	2033	1229	2119	1256	2207	—	—	—	—	
3250 [1534]	654	859	697	914	735	962	842	1179	878	1255	913	1330	946	1404	979	1476	1011	1547	1029	1595	1059	1673	1090	1752	1119	1833	1149	1916	1177	2000	1206	2087	1233	2175	1261	2264	—	—	—	—	
3300 [1557]	662	886	704	941	742	989	850	1221	885	1298	919	1373	953	1448	985	1521	1016	1592	1035	1640	1065	1720	1095	1801	1125	1883	1154	1968	1182	2054	1211	2142	1238	2231	1266	2323	—	—	—	—	
3350 [1581]	671	913	712	968	749	1017	868	1264	892	1341	926	1418	959	1493	991	1566	1022	1639	1040	1687	1071	1768	1100	1850	1130	1935	1159	2021	1188	2108	1216	2198	1243	2289	—	—	—	—	—	—	
3400 [1604]	679	940	719	996	830	1229	866	1308	900	1386	933	1463	966	1539	997	1614	1027	1687	1046	1735	1076	1817	1106	1901	1135	1987	1164	2075	1193	2164	1221	2255	1248	2348	—	—	—	—	—	—	

Drive Package	R												S												T																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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AIRFLOW PERFORMANCE RHCYP2090 — 60 Hz (CONTINUED)

Airflow CFM [L/s]	AIRFLOW CORRECTION FACTORS *			Power kW	COMPONENT AIRFLOW RESISTANCE				
	Total MBH	Sensible MBH	Power kW		Wet Coil Resistance Inches of Water [kPa]	MERV 8 Filter		MERV 13 Filter	
						Resistance Inches of Water	Resistance Inches of Water	Resistance Inches of Water	Resistance Inches of Water
2400 [1133]	0.93	0.73	0.96	0.04 [01]	0.153			0.157	
2500 [1180]	0.93	0.74	0.96	0.05 [01]	0.164			0.168	
2600 [1227]	0.94	0.76	0.97	0.05 [01]	0.175			0.179	
2700 [1274]	0.94	0.78	0.97	0.05 [01]	0.186			0.189	
2800 [1321]	0.95	0.80	0.97	0.05 [01]	0.198			0.200	
2900 [1368]	0.95	0.81	0.97	0.06 [01]	0.209			0.211	
3000 [1416]	0.95	0.83	0.98	0.06 [01]	0.220			0.221	
3100 [1463]	0.96	0.85	0.98	0.06 [01]	0.231			0.232	
3200 [1510]	0.96	0.87	0.98	0.06 [01]	0.242			0.243	
3300 [1557]	0.97	0.88	0.99	0.07 [02]	0.253			0.254	
3400 [1604]	0.97	0.90	0.99	0.07 [02]	0.264			0.264	
3500 [1652]	0.98	0.92	0.99	0.07 [02]	0.276			0.275	
3600 [2171]	0.98	0.93	0.99	0.08 [02]	0.287			0.286	
3700 [1746]	0.99	0.95	1.00	0.08 [02]	0.298			0.296	
3800 [1793]	0.99	0.97	1.00	0.08 [02]	0.309			0.307	
3900 [1840]	1.00	0.99	1.00	0.08 [02]	0.320			0.318	
4000 [1888]	1.00	1.00	1.01	0.09 [02]	0.331			0.329	

*Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[] Designates Metric Conversions

AIRFLOW PERFORMANCE RHCYP2120 — 60 Hz (CONTINUED)

Airflow CFM [L/s]	AIRFLOW CORRECTION FACTORS *			Power kW	COMPONENT AIRFLOW RESISTANCE		
	Total MBH	Sensible MBH	Power kW		Wet Coil		MERV 13 Filter Resistance Inches of Water
					Resistance Inches of Water [kPa]	Resistance Inches of Water	
3500 [1652]	0.98	0.92	0.99	0.07 [0.02]	0.091	0.098	
3600 [1699]	0.98	0.93	0.99	0.08 [0.02]	0.097	0.103	
3700 [1746]	0.99	0.95	1.00	0.08 [0.02]	0.103	0.109	
3800 [1793]	0.99	0.97	1.00	0.08 [0.02]	0.109	0.115	
3900 [1840]	1.00	0.99	1.00	0.08 [0.02]	0.115	0.121	
4000 [1888]	1.00	1.00	1.01	0.09 [0.02]	0.121	0.127	
4100 [1935]	1.00	1.02	1.01	0.09 [0.02]	0.127	0.132	
4200 [1982]	1.01	1.04	1.01	0.09 [0.02]	0.133	0.138	
4300 [2029]	1.01	1.06	1.01	0.10 [0.02]	0.139	0.144	
4400 [2076]	1.02	1.07	1.02	0.10 [0.02]	0.145	0.150	
4500 [2123]	1.02	1.09	1.02	0.10 [0.02]	0.151	0.156	
4600 [2171]	1.03	1.11	1.02	0.10 [0.02]	0.157	0.161	
4700 [2218]	1.03	1.12	1.03	0.11 [0.03]	0.163	0.167	
4800 [2265]	1.04	1.14	1.03	0.11 [0.03]	0.169	0.173	
4900 [2312]	1.04	1.16	1.03	0.11 [0.03]	0.175	0.179	
5000 [2359]	1.05	1.18	1.03	0.12 [0.03]	0.181	0.185	
5100 [2407]	1.05	1.19	1.04	0.12 [0.03]	0.188	0.190	

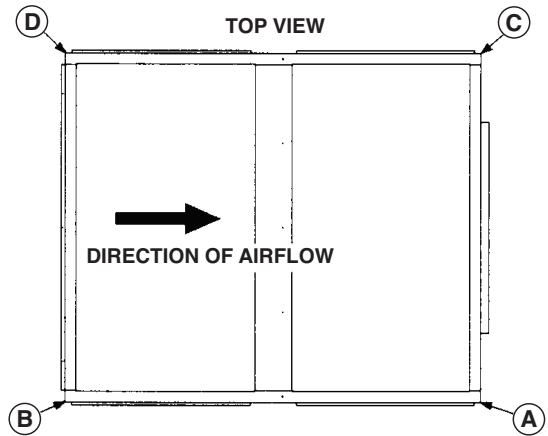
*Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[] Designates Metric Conversions

RHCYP2 DIMENSIONAL DATA 7.5 NOMINAL TONS [26.4 kW]

REFRIGERANT STUB SIZES, IN. [mm]				
MODEL	DUAL LIQ.	DUAL SUC.	SINGLE LIQ.	SINGLE SUC.
090	1/2, 1/2 [13, 13]	7/8, 7/8 [22, 22]	1/2 [13]	1 1/8 [29]

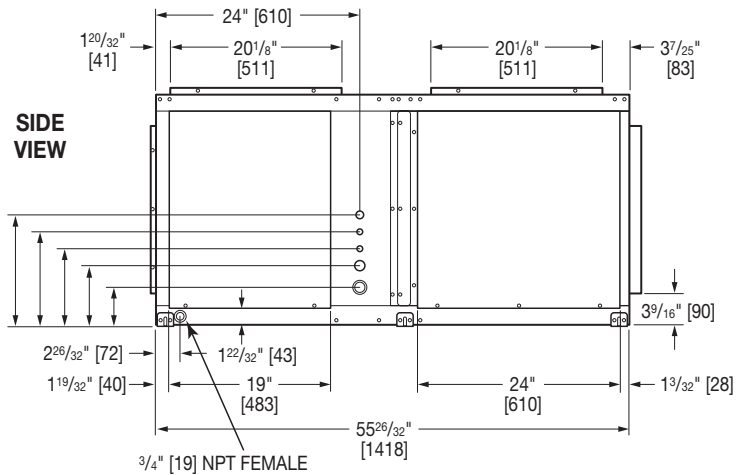
MODEL	CORNER WEIGHTS LBS. [kg]				OPERATING WEIGHT	SHIPPING WEIGHT
	A	B	C	D		
090	75.75 [34.36]	133.31 [60.49]	106.04 [48.10]	93.92 [42.60]	409 [185.52]	429 [194.60]



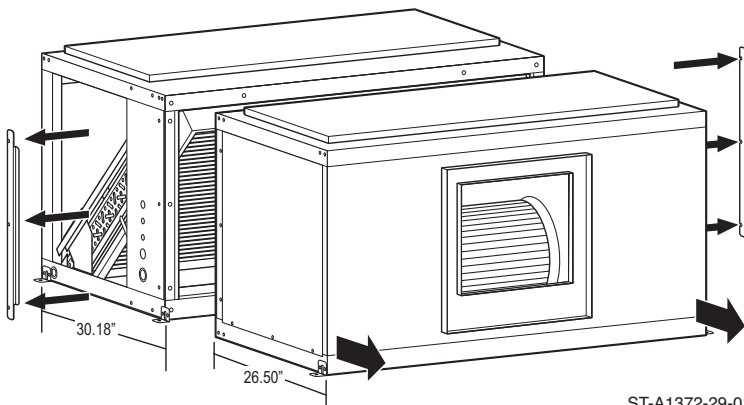
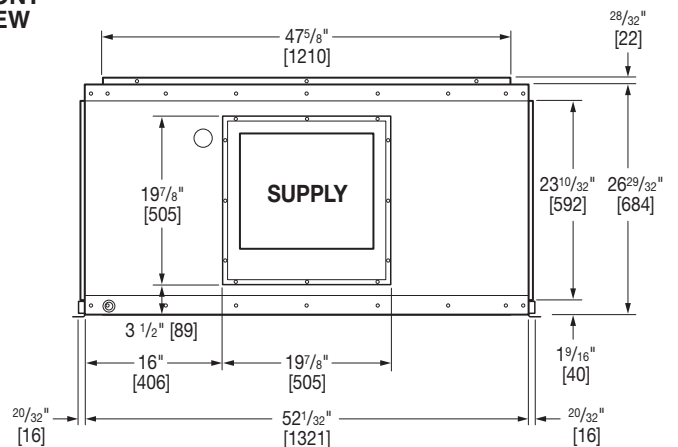
RETURN AIR OPENINGS = 47³/₈" [1203] x 19⁷/₈" [505] HEIGHT

RETURN AIR OPENINGS = 47⁵/₈" [1203] WIDTH x 19⁷/₈" [505] HEIGHT

KNOCK-OUTS BOTH SIDES	
7/8" [22]	12 ¹⁹ / ₁₆ " [325]
5/8" [16]	10 ¹³ / ₁₆ " [275]
5/8" [16]	8 ¹³ / ₁₆ " [224]
1 1/4" [32]	6 ¹³ / ₁₆ " [173]
1 1/4" x 1 3/4" [32 x 44]	4 ⁵ / ₁₆ " [110]



FRONT VIEW



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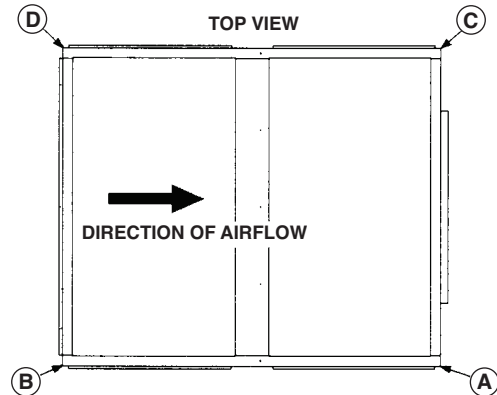
*Drain connections are provided on both sides of the drain pan. The drain can be connected to either side of the drain pan, but not both. The drain must be trapped.

[] Designates Metric Conversions

RHCYP2 DIMENSIONAL DATA 10 NOMINAL TONS [35.2 kW]

REFRIGERANT STUB SIZES, IN. [mm]				
MODEL	DUAL LIQ.	DUAL SUC.	SINGLE LIQ.	SINGLE SUC.
120	1/2, 1/2 [13, 13]	7/8, 7/8 [22, 22]	5/8 [16]	1 3/8 [35]

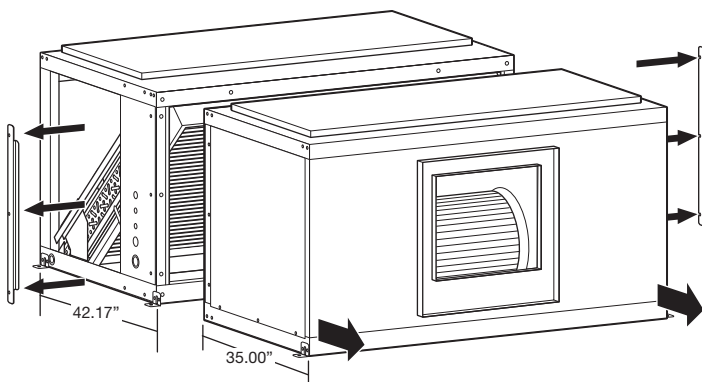
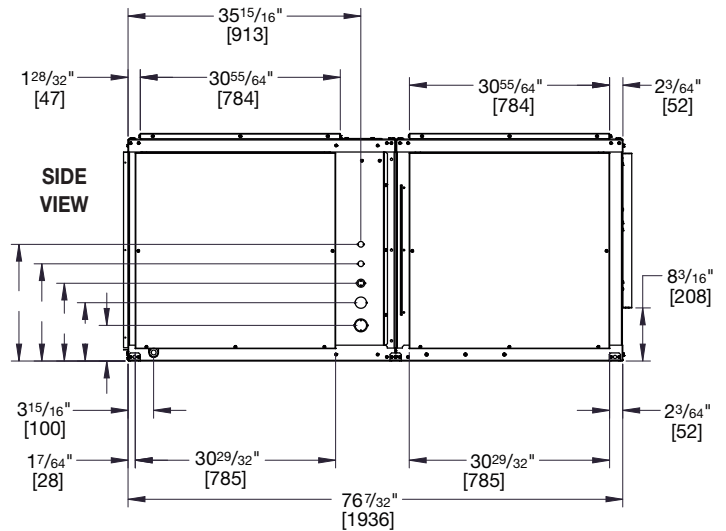
MODEL	CORNER WEIGHTS LBS. [kg]				OPERATING WEIGHT	SHIPPING WEIGHT
	A	B	C	D		
120	139.42 [63.24]	184.62 [83.74]	79.81 [36.20]	171.15 [77.63]	575.0 [260.82]	585.0 [265.35]



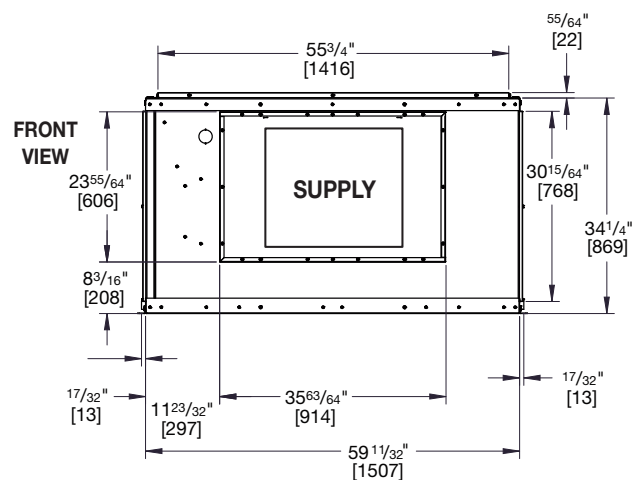
RETURN AIR OPENINGS = 47 3/8" [1203] x 19 7/8" [505] HEIGHT

RETURN AIR OPENINGS = 55 13/32" [1407] WIDTH x 30 17/32" [776] HEIGHT

KNOCK-OUTS BOTH SIDES	
7/8" [22]	18" [457]
7/8" [22]	15" [381]
1 1/4" x 7/8" [32 x 22]	12" [305]
1 3/4" [44]	9" [229]
2" x 1 3/4" [51 x 44]	5 1/2" [140]



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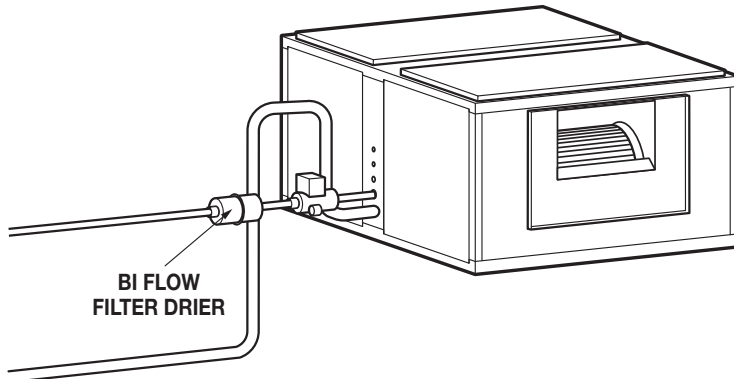
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*Drain connections are provided on both sides of the drain pan. The drain can be connected to either side of the drain pan, but not both. The drain must be trapped.

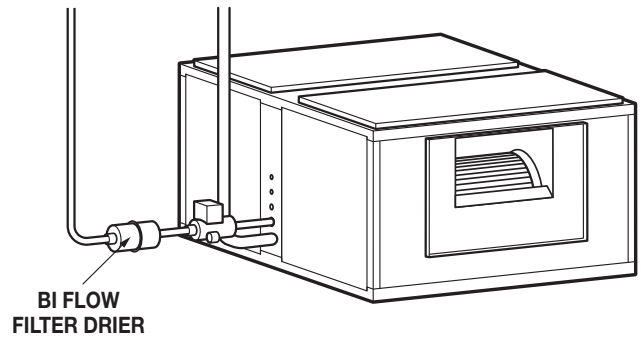
[] Designates Metric Conversions

TYPICAL PIPING RECOMMENDATIONS

INDOOR COIL ABOVE OUTDOOR UNIT



INDOOR COIL BELOW OUTDOOR UNIT



NOTE: PIPING ACCESSORIES SHOWN SHOULD BE MOUNTED AS CLOSE TO AIR HANDLER UNIT AS POSSIBLE

REFRIGERANT PIPING

1. Size liquid line for no more than 50 PSIG pressure drop.
2. Size suction lines for no more than 2°F loss, which corresponds to approximately 5 PSIG pressure drop.
3. When evaporator is installed below condensing unit, do not exceed the recommend-ed suction line O.D. This will insure adequate velocities for proper oil return.
4. Install strainer-drier and sight glass in liquid line.
5. Pitch all horizontal suction lines downward in the direction of flow.
6. When making up refrigerant piping, take every precaution to prevent dirt and moisture from entering the piping.
7. Locate the condensing unit and evaporator(s) as close together as possible to minimize piping runs.
8. A liquid line solenoid installed just ahead of the expansion valve is recommended.
9. See tables below for general refrigerant line sizing and equivalent length of valves and fittings.
10. Refer to the vapor and liquid line selection procedure and charts in the outdoor unit installation manual or literature for more specific refrigerant line sizing information. When dual outdoor units are matched with the air-handler using dual circuits, size the refrigerant lines for each system independently.

CONDENSATE DRAIN PIPING

- Consult local codes or ordinances for specific requirements regarding condensate drain.
- Condensate drain is open to atmosphere and must be trapped. Trap must be at least 3 inches [76 mm] deep and made of flexible material or fabricated to prevent freeze-up.
- Pitch the drain line at least 1/4 inch [6 mm] per foot away from the drain pan.
- Do not reduce the drain line size from the connection size provided on the unit.
- Do not connect the drain line to a closed sewer line.

RECOMMENDED VAPOR AND LIQUID LINE SIZES FOR VARIOUS LENGTHS OF RUN				
LINEAR LENGTH (FT.) [m]	LIQUID LINE O.D. SIZES (IN.) [mm]		VAPOR LINE O.D. SIZES (IN.) [mm]	
	090	120	090	120
0-40 [0-12.19]	1/2 [12.7]	5/8 [15.88]	1 1/8 [28.58]	1 3/8 [34.93]
41-90 [12.5-27.43]	1/2 [12.7]	5/8 [15.88]	1 3/8 [34.93]*	1 3/8 [34.93]*

*NOTE: With the outdoor unit located below the indoor air handler, all vertical vapor lines must not exceed 1 1/8" [28.58 mm] O.D.

[] Designates Metric Conversions

TYPICAL PIPING RECOMMENDATIONS

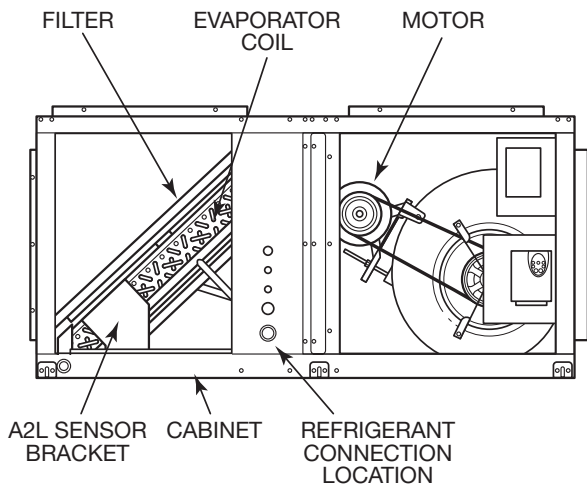
All models are provided with dual circuit coil manifolds that can be configured for dual condensing unit applications. The coil is circuited to provide full face coil operation for each system. Knock-outs are provided on both sides of the unit to allow the refrigerant tubing to enter from either side. Remove the rubber grommets from the parts bag and install them in the appropriate

holes prior to running the line set tubing into the cabinet to seal around and protect the tubing. Copper fittings are provided in the parts bag to allow the two refrigerant circuits to be tied together for single condensing unit applications. The fittings may be installed to allow the tubing to enter the unit from either side.

REQUIRED OUNCES OF R-454B CHARGE PER FOOT OF TUBING									
Tube Size		Liquid Tube		Vapor Tube		Total		Internal Volume	
OD (in)	OD (mm)	oz/ft	kg/m	oz/ft	kg/m	oz/ft	kg/m	ft ³ /ft	m ³ /m
3/8	9.5	0.5	0.05	0.0	0.00	0.5	0.05	0.000555	0.0000480
1/2	12.7	1.0	0.09	0.0	0.00	1.0	0.09	0.001080	0.0000929
5/8	15.9	1.5	0.14	0.1	0.00	1.6	0.15	0.001730	0.0001490
3/4	19.1	2.2	0.21	0.1	0.01	2.3	0.21	0.002480	0.0002140
7/8	22.2	3.1	0.29	0.1	0.01	3.2	0.30	0.003430	0.0002960
1	25.4	4.0	0.37	0.1	0.01	4.2	0.39	0.004500	0.0003890
1-1/8	28.6	5.2	0.49	0.2	0.02	5.4	0.50	0.005850	0.0005030
1-1/4	31.8	6.5	0.60	0.2	0.02	6.7	0.62	0.007210	0.0006230
1-3/8	34.9	7.3	0.68	0.2	0.02	7.6	0.70	0.008165	0.0007590
1-1/2	38.1	9.4	0.87	0.3	0.03	9.7	0.90	0.010500	0.0009100
1-5/8	41.3	11.2	1.04	0.4	0.03	11.6	1.08	0.012500	0.0010800
2-1/8	54.0	19.5	1.82	0.6	0.06	20.2	1.88	0.021800	0.0018800

REFRIGERANT LEAK DETECTION

In the event of a detected refrigerant leak, the refrigerant leak detection sensor will trigger a mitigation procedure that shuts off the compressor(s) and turns on the indoor blower motor.



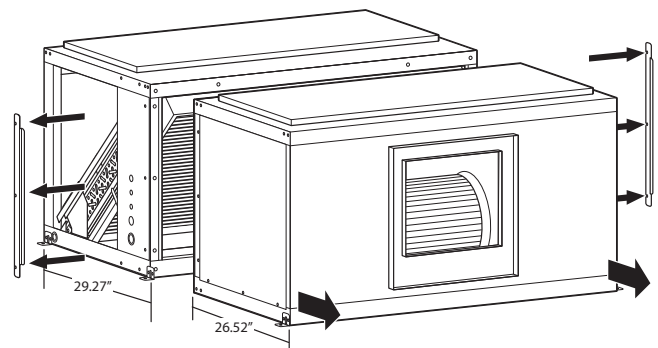
UNIT SHOWN WITH SIDE PANELS REMOVED FOR COIL CONNECTIONS AND AIR FILTER ACCESS.

SEPARABLE CABINET

For ease of installation into the indoor space, the air handler unit is separable. If required to move into the space, follow the steps below to separate and reconnect the two halves of the air handler.

NOTE: Separation and reconnection should be completed on a flat, stable surface. Do not attempt while unit is suspended from the ceiling.

1. Unscrew and remove the two metal brackets on each side of the air handler.
2. Remove access panels.
3. Remove the 3/8 inch bolts from the frame. The unit can now be pulled apart.
4. Move the air handler into place.
5. If gasketing is damaged, use included replacement gasketing to repair the unit.
6. Align the two sides. Reattach the metal brackets and access panels—these brackets should help align the connecting holes—then insert and fasten the 3/8 inch bolts. The unit can now be reconnected and installation and set-up can commence.



Guide Specifications RHCYP2-090-120

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HP AIR HANDLER UNIT**HVAC Guide Specifications****Size Range: 7.5 & 10 Nominal Tons****1.01 Quality Assurance:**

- A. Unit shall be rated in accordance with AHRI Standard 340/360.
- B. Unit construction shall comply with ANSI/ASHRAE 15 safety code latest revision and comply with NEC.
- C. Unit shall be constructed in accordance with UL 60335-2-40 standard and shall carry the UL label.
- D. Unit cabinet shall be capable of withstanding 500 hour salt spray exposure per ASTM B117 (scribed specimen).
- E. Unit shall be subjected to oz/ft run test on the assembly line.
- F. Unit meets ASHRAE 90.1 2022 minimum efficiency requirements.
- G. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
- H. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory and must be available upon request.

1.02 Manufacturer Qualifications:

- A. Unit shall be manufactured in a facility registered to ISO 9001:2015 manufacturing quality standard.

1.03 Installer Qualifications:

- A. The installer shall be trained to install and service equipment with A2L refrigerants.

1.04 Delivery, Storage, and Handling:

- A. Unit shall be shipped as single package only, and shall be stored and handled according to unit manufacturer's recommendations.
- B. Unit shall be stored and handled per manufacturer's recommendations.
- C. Refer to the manufacturer's installation and operation manual for guidance on how to properly lift the unit.
- D. Unit shall only be stored or positioned in the upright position.

1.05 Unit Cabinet:

- A. Unit cabinet shall be constructed of galvanized steel and coated with a pre-painted baked enamel finish.
- B. Cabinets shall be insulated with 1/2" [13 mm] by 1-1/2 pound [.68 kg] density fiberglass insulation coated with neoprene and bonded to the cabinet surface with a U.L. approved adhesive. Insulation shall have fire retarding characteristics in accordance with smoke developed rating not to exceed 50 and flame spread rating of 25 per UL testing procedures.
- C. Unit cabinet exterior paint shall be: pre-painted steel.
- D. Insulation:
 - i. Interior cabinet surfaces shall be insulated with a minimum of 1/2-in. thick, minimum 1.6 LB density, flexible fiberglass insulation bonded with foil face on the air side.
 - ii. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
 - iii. Insulation shall also be mechanically fastened with welded pin and retainer washer.
- E. Condensate pan and connections:
 - i. Shall be a sloped condensate drain pan made of a non-corrosive material and be removable for cleaning.
 - ii. Shall comply with ASHRAE Standard 62.
 - iii. Shall use a 3/4" NPT drain connection through either side of the drain pan. The connection shall be made per the manufacturer's recommendations.
 - iv. Shall have drain connections on each side of the unit in either horizontal or vertical type applications.
- F. Side panel:
 - i. The separable unit shall have removable side panels on each side of the unit. Each side has two removable panels: four panels total.
- G. Electrical Connections:
 - i. All unit power wiring shall enter the unit cabinet through factory-prepared knockouts next to the unit access panels.
- H. Component access panels (standard):
 - i. Cabinet panels shall be easily opened for servicing.

1.06 Refrigerant Components:

- A. The refrigerant circuit shall include the following control, safety, and maintenance features:
 - i. Refrigerant filter drier.
 - ii. Service gauge connections on suction and discharge lines.
 - iii. External pressure gauge ports allows pressures to be checked on the side, without removing access panel.

1.07 Evaporator Coils:

- A. The evaporator coil shall consist of copper tubes with aluminum fins bonded to the tubes by mechanical expansion. Suction and liquid line connections or supply and discharge connections shall be field-configurable to either side of the coil.
- B. Evaporator coil in 10 ton unit shall be 3-row.
- C. Evaporator coil in 7.5 ton unit shall be 4-row.
- D. Direct expansion coils shall feature factory-installed thermostatic expansion valves (TXVs) for refrigerant control. The TXVs shall be R-454B compatible and capable of external adjustment.

1.08 Controls and Safeties:

- A. Components are not compatible between different refrigerants. Do not use R-410A service equipment or components on R-454B equipment. System or part failure could occur.

1.09 Operating Characteristics:

- A. When combined with matching RACY condensing unit, the system shall be capable of starting and running at ambient outdoor temperatures up to 125.6°F (52°C) in cooling mode.
- B. Unit shall be factory configured for horizontal supply & return configurations.
- C. Unit shall be field convertible from vertical to horizontal configuration.

1.10 Electrical Requirements:

- A. Unit shall operate at $\pm 10\%$ from rated voltage.
- B. Unit electrical power shall be single-point connection.
- C. Main power supply voltage, phase, and frequency must match those required by the manufacturer.

1.11 Thermostats:

- A. Thermostat shall:
 - i. Have the capability to energize 2 stages of cooling.
 - ii. The variable speed drive (VFD) must be powered continuously and controlled by the thermostat signals.
- B. Thermostat Controls:
 - i. The appropriate thermostat control wires (C, G, Y2) must also be connected to the low voltage terminal block (TB2) located on the outside of the air-handler control box (No heat application).
 - ii. Electric Heat Application - The appropriate thermostat control wires must be connected to the thermostat pigtails on the heater kit and to the C, G, Y2, W1 and R terminals on the low voltage terminal block located on the outside of the air handler control box.
 - iii. Low voltage terminal block (TB3) to be used for A2L sensor. Red wire to "24V VAC/VDC", Brown wire to "24V COM".

1.12 Motor:

- A. Fan motor of the size and electrical characteristics specified on the equipment schedule shall be factory supplied and installed.
- B. Motors shall have inherent thermal overload protection.
- C. Alternate Motor and Drive:
 - i. An alternate motor and/or medium-static or high-static drive shall be available to meet the airflow and external static pressure requirements specified on the equipment schedule.
- D. Variable Frequency Drive (VFD) Standard:
 - i. Unit shall be supplied with an electronic variable frequency drive for the supply air fan.
 - ii. Drive shall be factory installed in an enclosed cabinet.
 - iii. Drive shall meet UL Standard 95-5V.
 - iv. The completed unit assembly shall be UL listed.
 - v. Drives are to be accessible through a tooled access hinged door assembly.
 - vi. The unit manufacturer shall install all power and control wiring.
 - vii. The supply air fan drive output shall be controlled by the factory installed main unit control system and drive status and operating speed shall be monitored and displayed at the main unit control panel.
 - viii. Drive shall be programmed and factory run tested in the unit.

1.13 Special Features:

- A. Electric Heaters:
 - i. Heaters for nominal 240V or 460V, 3phase, 60 Hz shall be field-installed as shown on the equipment drawings.
 - ii. Electric heat assembly shall be UL agency approved and shall have single-point power wiring.
- B. A2L Sensor:
 - i. Sensor shall provide the ability to signal the blower, compressor, and electric heat to comply with the UL 60335-2-40 mitigation when a refrigerant leak is detected.
 - ii. Sensor shall be operable when the unit is installed in either vertical or horizontal configurations.

GENERAL TERMS OF LIMITED PARTS WARRANTY*

Sure Comfort® will furnish a replacement for any part of this product which fails in normal use and service within the applicable periods stated, in accordance with the terms of the limited warranty.

Parts

Commercial Applications.One (1) Year

***For Complete Details of the Limited Warranty, Including Applicable Terms and Conditions, See Your Local Installer or Contact the Manufacturer for a Copy.**

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Before proceeding with installation, refer to installation instructions packaged with each model, as well as complying with all Federal, State, Provincial, and Local codes, regulations, and practices.