Supply air temp capc for heat pump and natural gas furnace Aug. 31, 2023

Appliance Type	Outside Air Temperature	Air Handler CFM	Efficiency	Heating Capacity (Btu/hr)	Return Air Temperature (F)	Supply Air Temperature (F)
Gas Furnace	17	1885	95% AFUE	97000	70	118
(w/ 5-Ton A/C)	27	1885		97000	70	118
Make: Carrier	37	1885		97000	70	118
Model:59SU5A100	47	1885		97000	70	118
	57	1885		97000	70	118
	67	1885		97000	70	118
					AVERAGE	118
Air to air Heat Pump	17	2002	8.2 HSPF2	36980	70	87
(w/ 5-Ton Cooling)	27	2002	(7.5 is Fed Min)	43520	70	90
Make: Carrier	37	2002		51260	70	94
Model:25SCA560	47	2002		57740	70	97
	57	2002		65360	70	100
	67	2002		73170	70	104
					AVERAGE	95

Senible Heat Formula
q=1.08*CFM*(Tout-Tin)

FJ4
Base Series Fan Coil
Sizes 18 - 60

Carrier®
Turn to the experts

Product Data

A10082

AIR HANDLER TECHNOLOGY AT ITS FINEST

The FJ4 fan coil has the proven technology of Carrier fan coil units with Puron® refrigerant as well as vertical and horizontal applications. The design features contoured condensate pans with rugged drain connections, ensuring that little water is left in the unit at the end of the cooling duty cycle. The lack of standing condensate and corrosion free pans improves IAQ and product life, features homeowners appreciate.

Standard features include grooved tubing and louvered fins. Coil circuiting has also been updated to make the most of all Carrier heat pumps and air conditioners. Units come with solid state fan controls, 1-inch (25mm) thick insulation with R-value of 4.2, multi-speed motors, and fully-wettable coils. Units can accommodate factory- and/or field-installed heaters from 3 to 30 kW.

Assembled at the factory compliant with low leak requirements of less than 2% cabinet leakage rate at 0.5 inches W.C. and 1.4% cabinet leakage rate at 0.5 inches W.C. when tested in accordance with ASHRAE 193 standard.

The FJ4 fan coil design is loaded with popular features. These fan coils utilize the latest in electronic commutation motor (ECM) technology through the use of high efficiency, multi-tap ECM motors allowing reliable air delivery with increased static pressure. It comes in a pre-painted (taupe metallic) galvanized steel casing. The unit is shipped with a Puron refrigerant TXV (sizes 18–60).

STANDARD FEATURES

- Multi-tap ECM (electronic commutating motor) motors – all sizes.
- Integrated motor controls, with 90-sec off TDR function, have replaced integrated circuit board.
- Five available speed tags to meet a wide range of applications.
- Large, grooved tube, louvered fin coils.
- Efficient, quiet, time-tested blower housings and diffusers.
- Sturdy, drainable condensate pans.
- Construction innovations designed to prevent cabinet sweating.
- Tested for condensate disposal in much tougher conditions than Air Conditioning and Refrigeration Institute requirements.
- Super-thick R-4.2 insulation with vapor barrier.
- Pre-painted galvanized steel cabinet (taupe metallic).
- Design meets stringent regulations for cabinet air leakage of less than 2% when tested at 0.5 inches W.C., and less than 1.4% at 0.5 inches W.C. when tested in accordance with ASHRAE 193 standard.
- Installation-flexible, multipoise units.
- 2-piece modular design available for 42 thru 60 sizes. Facilitates attic and crawlspace installations..
- Horizontal hanging provisions on cabinet.
- Newly improved filter rack area filter door insulation added for improved air seal. No tools required to access filter.
- Factory-installed heater packages available on select models. (5 through 15 kW).
- 3 through 30 kW accessory heaters - field installed.
- Easy plug-in provisions for heater installation.
- Entry options for high and low voltage wiring hook-up.
- Leak-preventing sweat connections.
- Thermostatic expansion valve, TXV, on all coils.
- Designed for manufactured housing applications.

WARRANTY

- Default 5-year parts limited warranty:
  - 10-year parts limited warranty with timely registration*. Equipment must be registered within 90 days of original installation, except in jurisdictions where warranty benefits cannot be conditioned on registration.
  - * Applies to original purchaser/homeowner and not available to subsequent owners, except in jurisdictions where laws dictate otherwise.

See Warranty certificate for complete details and restrictions.

MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12
F	J	4	D	N	X	C	3	6	L	0	0

Product
F = Fan Coil

Type / Tier
J = Comfort™

Refrigerant Type
4 = Puron®

Major Series
D

Electrical
N = 208/230V, 1 ph, 60 Hz

Cabinet Type / Metering Device
B = Modular, TXV
X = Singular, TXV

Cabinet Width
A = 14"; B = 17"
C = 21"; D = 24"

Nominal Capacity
18 = 18,000
24 = 24,000
30 = 30,000
36 = 36,000
42 = 42,000
48 = 48,000
60 = 60,000

Coil Type
L = Aluminum

Electric Heater Size
00 = No Heat
05 = 5 kW
08 = 8 kW
10 = 10 kW
11 = 11 kW
15 = 15 kW

Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program For verification of certification for individual products, go to www.ahridirectory.org.

ISO 9001 QMI-SAI Global

A200435

Table 1 – Models Available

1-1/2 Ton	2 Ton	2-1/2 Ton	3 Ton	3-1/2 Ton	4 Ton	5 Ton
FJ4DNXA18L00 FJ4DNXA18L05 FJ4DNXA18L08	FJ4DNXB24L00 FJ4DNXB24L05 FJ4DNXB24L10	FJ4DNXB30L00 FJ4DNXB30L08 FJ4DNXB30L10	FJ4DNXB36L00 FJ4DNXB36L10 FJ4DNXB36L15	FJ4DNBC42L00 FJ4DNXC42L00 FJ4DNXC42L10 FJ4DNXC42L15	FJ4DNBC48L00 FJ4DNXC48L00 FJ4DNXC48L10 FJ4DNXC48L15	FJ4DNBD60L00 FJ4DNXD60L00

DIMENSIONS

UNIT	SERIES	ELECTRICAL CHARACTERSTICS				A	B	C	D	E	F	G	H	J	COIL CONFIGURATION		SHIPPING WT (LBS)
															SLOPE	"A"	
FJ4DNXA18	A,B	X	*			42 11/16"	14 5/16"	12 7/16"	12 5/16"	10 7/16"	18 1/8"	18 5/8"	-	12"	X	-	REFER TO TABLE 1
FJ4DNXB24	A,B	X	*			49 5/8"	17 5/8"	15 3/4"	15 5/8"	15 3/8"	23 1/8"	23 5/8"	-	17"	X	-	
FJ4DNXB30	A,B	X	*			49 5/8"	17 5/8"	15 3/4"	15 5/8"	15 7/8"	23 1/8"	23 1/2"	-	-	-	X	
FJ4DNXB36	A,B	X	*			49 5/8"	17 5/8"	15 3/4"	15 5/8"	15 7/8"	23 1/8"	23 1/2"	-	-	-	X	
FJ4DNBC42	A,B	X	*			53 7/16"	21 1/8"	19 1/4"	19 1/8"	19 1/2"	27 1/4"	26 15/16"	28 5/16"	-	-	X	
FJ4DNXC42	A,B	X	*			49 5/8"	21 1/8"	19 1/4"	19 1/8"	15 11/16"	23 7/16"	23 1/8"	-	-	-	X	
FJ4DNBC48	A	X	*			53 7/16"	21 1/8"	19 1/4"	19 1/8"	19 1/2"	27 1/4"	26 15/16"	28 5/16"	-	-	X	
FJ4DNXC48	A	X	*			53 7/16"	21 1/8"	19 1/4"	19 1/8"	19 1/2"	27 1/4"	26 15/16"	-	-	-	X	
FJ4DNBD60	A	X	*			59 3/16"	24 11/16"	22 3/4"	22 11/16"	25 1/4"	32 15/16"	32 5/8"	34 1/16"	-	-	X	
FJ4DNXD60	A	X	*			59 3/16"	24 11/16"	22 3/4"	22 11/16"	25 1/4"	32 15/16"	32 5/8"	-	-	-	X	
		208/230-1-60	208/230-3-60														

X=YES
O=NO
*=YES, DUE TO AVAILABLE FIELD INSTALLED HEATERS.

NOTE:

1. SERIES DESIGNATION IS THE 14TH POSITION OF UNIT PRODUCT NUMBER
2. ALL DIMENSIONS ARE IN "INCHES" UNLESS NOTED.

NOTE: ALLOW 21" FROM FRONT FOR SERVICE

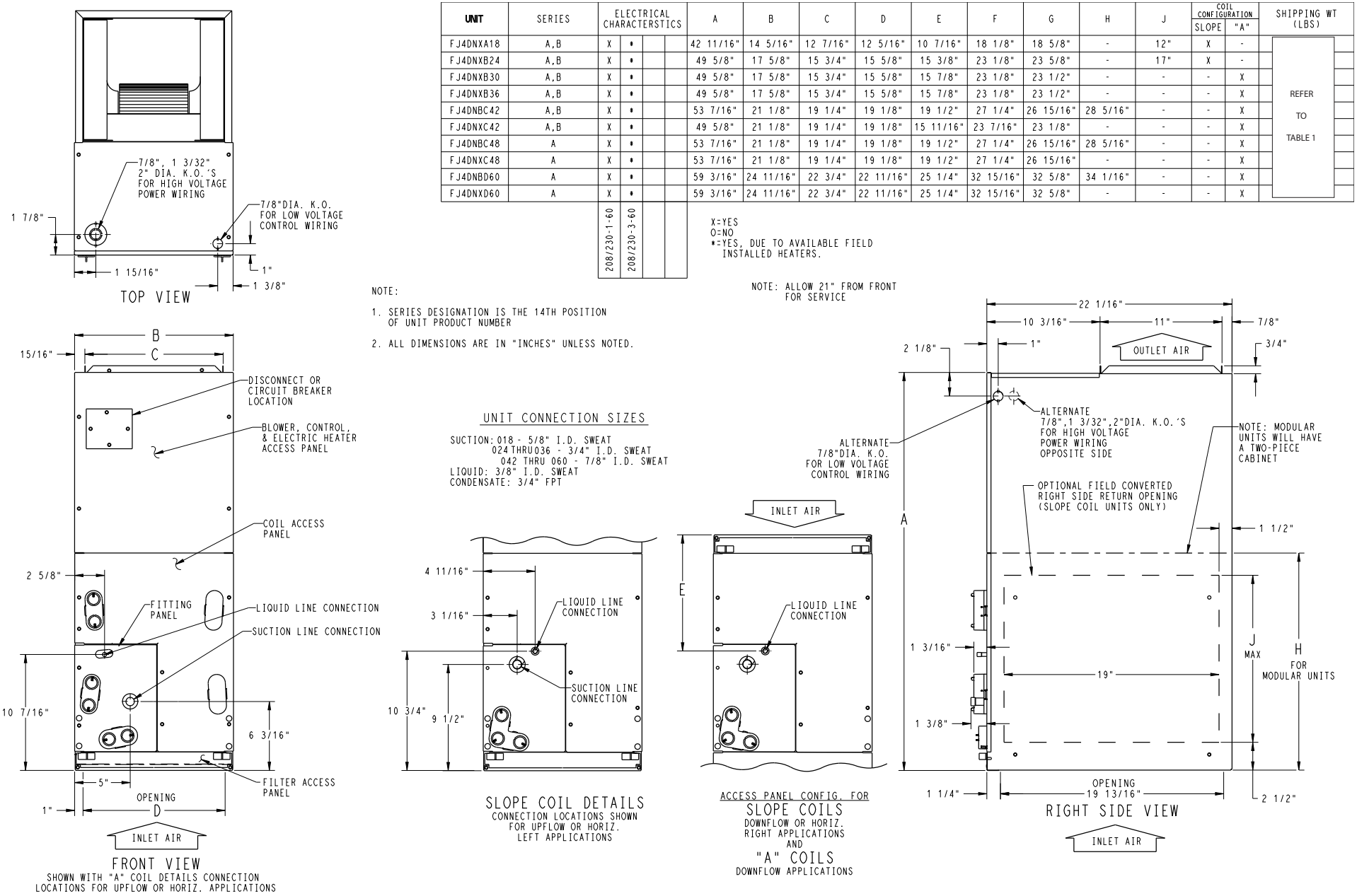

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Fig. 1 – FJ4 - English (sheet 1)

DIMENSIONS (cont.)

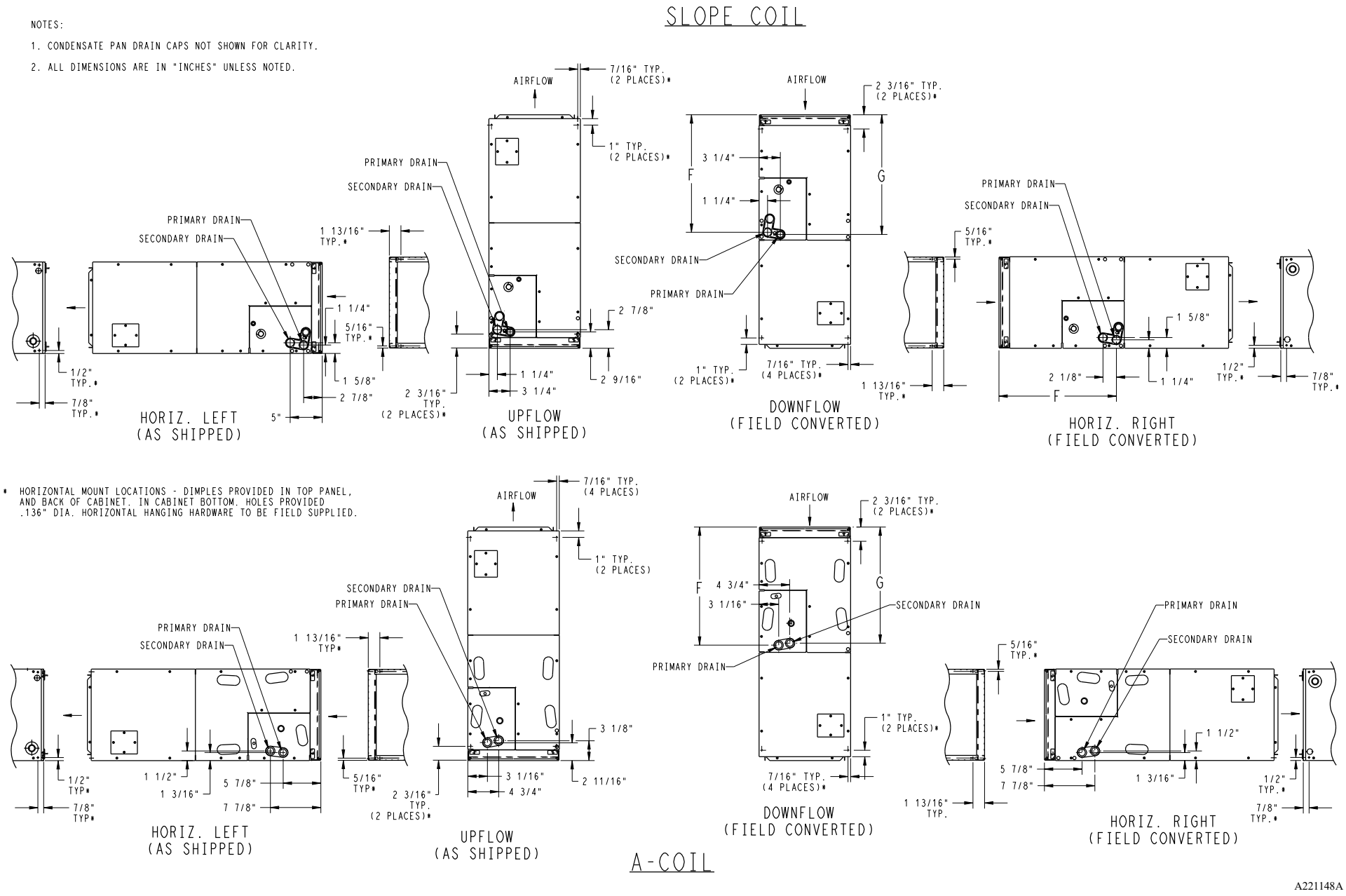


Fig. 2 – FJ4- English (sheet 2)

DIMENSIONS (cont.)

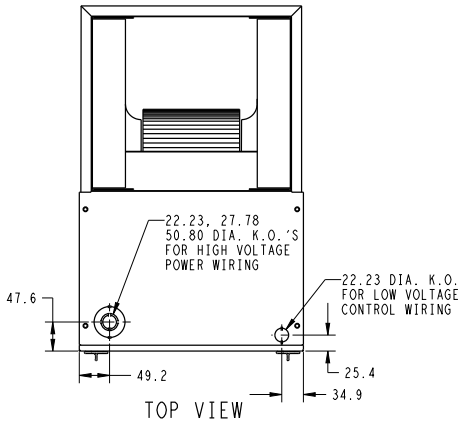
UNIT	SERIES	ELECTRICAL CHARACTERSTICS				A	B	C	D	E	F	G	H	J	COIL CONFIGURATION		SHIPPING WT (Kgs)
		208/230-1-60	208/230-3-60												SLOPE	"A"	
FJ4DNXA18	A,B	X	*			1084.3	363.6	315.9	312.8	265.1	460.4	473.1	-	304.8	X	-	REFER TO TABLE 1
FJ4DNXB24	A,B	X	*			1260.5	447.7	400.0	396.9	390.5	587.4	600.1	-	431.8	X	-	
FJ4DNXB30	A,B	X	*			1260.5	447.7	400.0	396.9	403.2	587.4	596.9	-	-	-	X	
FJ4DNXB36	A,B	X	*			1260.5	447.7	400.0	396.9	403.2	587.4	596.9	-	-	-	X	
FJ4DNBC42	A,B	X	*			1357.3	536.6	489.0	485.8	495.3	692.2	684.2	719.1	-	-	X	
FJ4DNXC42	A,B	X	*			1260.5	536.6	489.0	485.8	398.5	595.3	587.4	-	-	-	X	
FJ4DNBC48	A	X	*			1357.3	536.6	489.0	485.8	495.3	692.2	684.2	719.1	-	-	X	
FJ4DNXC48	A	X	*			1357.3	536.6	489.0	485.8	495.3	692.2	684.2	-	-	-	X	
FJ4DNBD60	A	X	*			1503.4	627.1	577.8	576.3	641.4	836.6	828.7	865.2	-	-	X	
FJ4DNXD60	A	X	*			1503.4	627.1	577.8	576.3	641.4	836.6	828.7	-	-	-	X	

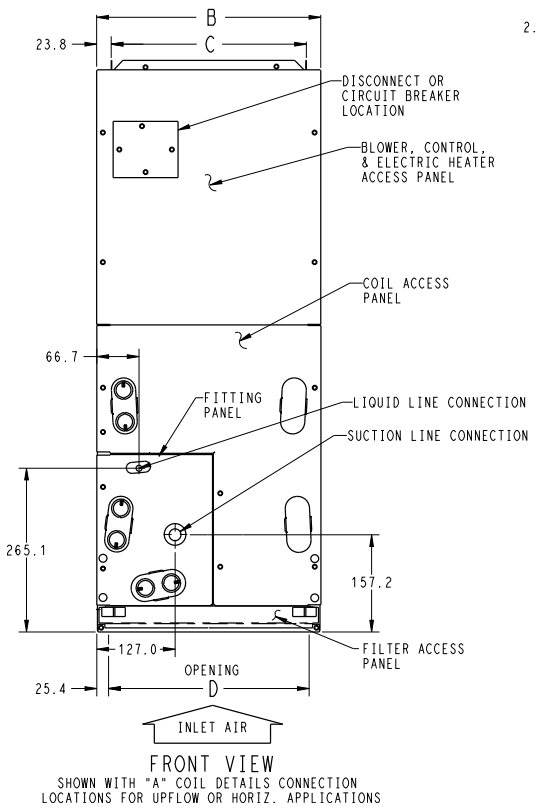
X=YES
O=NO
*=YES, DUE TO AVAILABLE FIELD INSTALLED HEATERS.

NOTE:

1. SERIES DESIGNATION IS THE 14TH POSITION OF UNIT PRODUCT NUMBER
2. ALL DIMENSIONS ARE IN "MM" UNLESS NOTED.

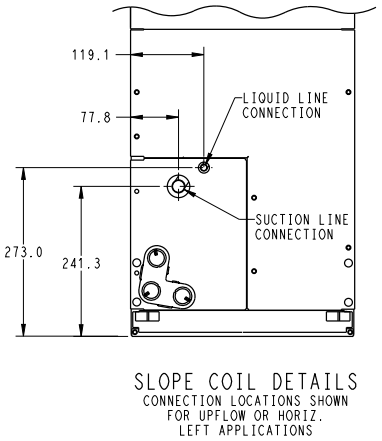
NOTE: ALLOW 533.4 FROM FRONT FOR SERVICE

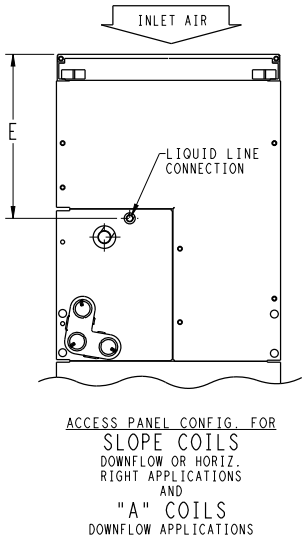




UNIT CONNECTION SIZES

SUCTION: 018 THRU 024 - 15.88 I.D. SWEAT
030 & 036 - 19.05 I.D. SWEAT
042 THRU 060 - 22.23 I.D. SWEAT
LIQUID: 9.53 I.D. SWEAT
CONDENSATE: 19.0 FPT





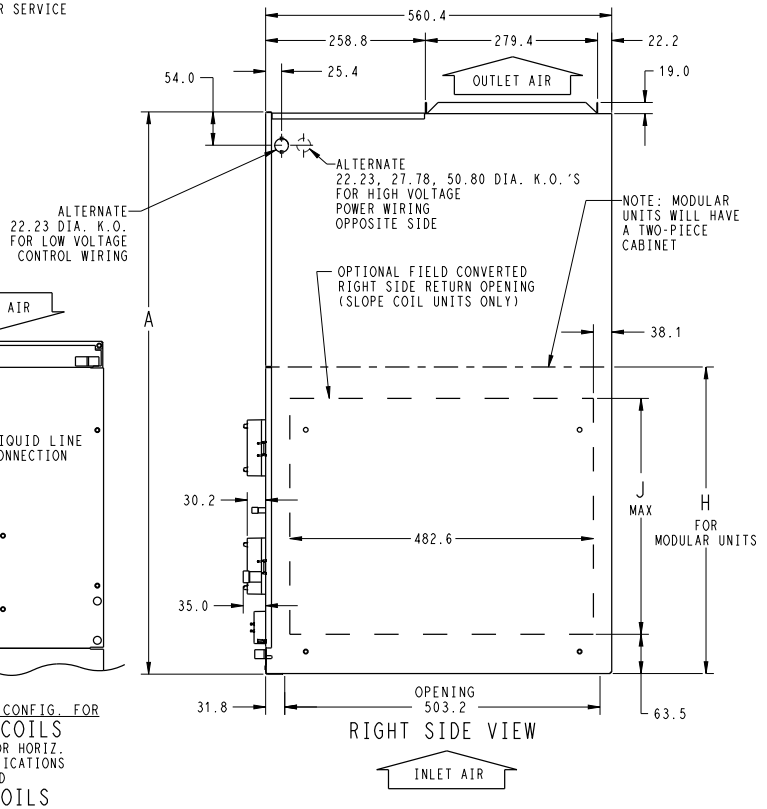


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Fig. 3 – FJ4 - Metric (sheet 1)

DIMENSIONS (cont.)

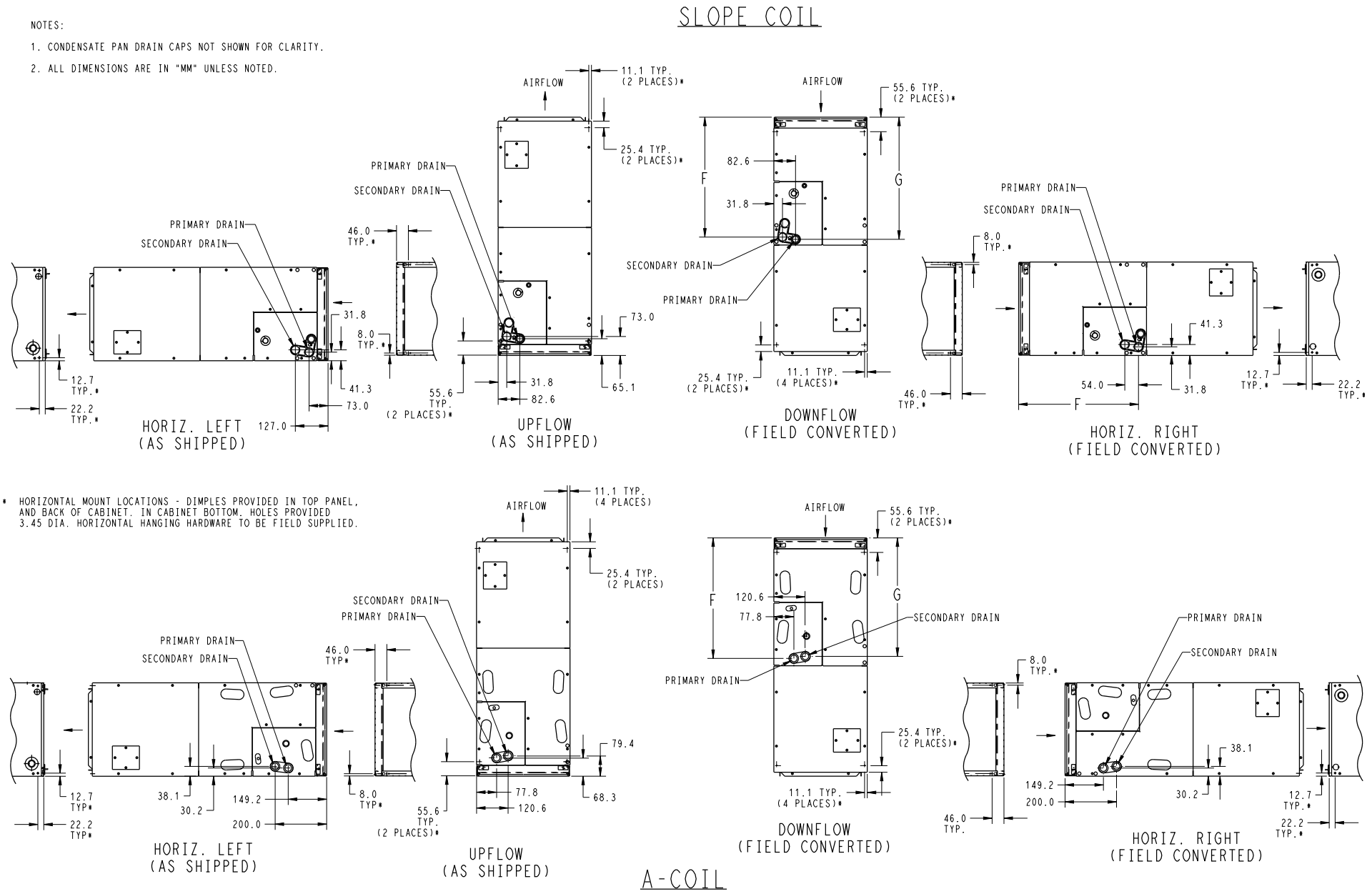


Fig. 4 – FJ4 - Metric (sheet 2)

Table 2 – PHYSICAL DATA

UNIT SIZE	NOMINAL COOLING CAPACITY (Btuh)	DIMENSIONS – IN (mm)			SHIPPING WEIGHT LB (KG)
		Height	Width	Depth	
18 Singular	18,000	42-11/16 in. (1084mm)	14-5/16 in. (364mm)	22-1/16 in. (560mm)	120 (54.4)
24 Singular	24,000	49-5/8 in. (1260mm)	17-5/8 in. (448mm)	22-1/16 in. (560mm)	131 (59.4)
30 Singular	30,000	49-5/8 in. (1260mm)	17-5/8 in. (448mm)	22-1/16 in. (560mm)	148 (67.1)
36 Singular	36,000	49-5/8 in. (1260mm)	17-5/8 in. (448mm)	22-1/16 in. (560mm)	148 (67.1)
42 Singular	42,000	49-5/8 in. (1260mm)	21-1/8 in. (537mm)	22-1/16 in. (560mm)	166 (75.3)
42 Modular	42,000	53-7/16 in. (1357mm)	21-1/8 in. (537mm)	22-1/16 in. (560mm)	166.5 (75.5)
48 Singular	48,000	53-7/16 in. (1357mm)	21-1/8 in. (537mm)	22-1/16 in. (560mm)	182 (82.5)
48 Modular	48,000	53-7/16 in. (1357mm)	21-1/8 in. (537mm)	22-1/16 in. (560mm)	182.5 (82.8)
60 Singular	60,000	59-3/16 in. (1503mm)	24-11/16 in. (627mm)	22-1/16 in. (560mm)	210 (95.2)
60 Modular	60,000	59-3/16 in. (1503mm)	24-11/16 in. (627mm)	22-1/16 in. (560mm)	210.5 (95.5)

Table 3 – SPECIFICATIONS

SIZE	18	24	30	36	42	48	60
EVAPORATOR COIL							
Face Area, ft^2 (m^2)	2.23 (0.21)	2.97 (0.28)	3.96 (0.37)		4.45 (0.41)	5.93 (0.55)	7.42 (0.69)
Configuration	Slope		A				
Refrigerant Sweat Liquid Line Connection, in (mm)	3/8 (9.5) ID						
Refrigerant Sweat Suction Line Connection, in (mm)	5/8 (15.9) ID	3/4 (19.1) ID			7/8 (22.2) ID		
Metering Device Puron®	TXV						
FILTERS The fan coil filter rack can accommodate most common size filters as well as some smaller filters with minimal modification.							
Market Specified Filter Dimensions (W x L), in (mm)	13 x 20 (330 x 508)	16 x 20 (406 x 508)			20 x 20 (508 x 508)		24 x 20 (584 x 508)
Actual Filter Dimensions (W x L), in (mm) to Fit Fan Coil	up to 13.375 x 19.75 (400 x 502)	up to 16.5 x 19.75 (425 x 502)			up to 19.75 x 19.75 (502 x 502)		up to 23.75 x 19.75 (603 x 502)
BLOWER ASSEMBLY							
Motor Type (ECM)	Multi-tap ECM						
Motor HP	1/3	1/3	1/2	1/2	1/2	3/4	3/4
CFM	525	700	875	1050	1225	1400	1750
CABINET CONFIGURATIONS							
	Singular (1-piece)				Singular (1-piece) or Modular (2-piece)		

PERFORMANCE DATA

Table 4 – Airflow Performance (CFM) Wet

Ton (Size)	Blower Speed	External Static (in. wc)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
1-1/2 (18)	Tap 5	754	737	717	694	668	641	605	572	528	481
	Tap 4	695	678	655	628	600	573	551	520	479	421
	Tap 3	695	678	655	628	600	573	551	520	479	421
	Tap 2	643	620	591	557	534	506	477	439	408	378
	Tap 1	487	448	428	394	358	325	281	NA	NA	NA
2 (24)	Tap 5	1021	1003	964	925	876	838	797	761	726	689
	Tap 4	936	907	873	805	779	732	696	661	626	591
	Tap 3	936	907	873	805	779	732	696	661	626	591
	Tap 2	846	831	792	739	702	651	609	548	536	491
	Tap 1	746	697	629	567	521	477	446	389	364	326
2-1/2 (30)	Tap 5	1247	1215	1188	1154	1122	1083	1053	1017	971	915
	Tap 4	1133	1114	1082	1044	1009	968	924	873	835	785
	Tap 3	1133	1114	1082	1044	1009	968	924	873	835	785
	Tap 2	1040	997	961	929	883	828	782	725	708	667
	Tap 1	896	862	805	740	689	648	597	NA	NA	NA
3 (36)	Tap 5	1433	1404	1363	1328	1282	1251	1201	1145	1095	1021
	Tap 4	1304	1277	1256	1230	1207	1168	1122	1080	1073	983
	Tap 3	1304	1277	1256	1230	1207	1168	1122	1080	1073	983
	Tap 2	1183	1148	1124	1094	1051	1005	955	901	846	783
	Tap 1	1020	995	958	921	881	840	791	735	693	649
3-1/2 (42)	Tap 5	1571	1551	1508	1473	1439	1407	1372	1317	1253	1189
	Tap 4	1517	1493	1458	1425	1392	1358	1328	1295	1253	1193
	Tap 3	1517	1493	1458	1425	1392	1358	1328	1295	1253	1193
	Tap 2	1369	1339	1299	1263	1226	1188	1155	1112	1068	1012
	Tap 1	1260	1231	1172	1143	1077	1041	995	949	896	867
4 (48)	Tap 5	1896	1853	1821	1795	1760	1737	1702	1670	1665	1619
	Tap 4	1711	1673	1643	1607	1570	1549	1509	1490	1446	1411
	Tap 3	1711	1673	1643	1607	1570	1549	1509	1490	1446	1411
	Tap 2	1547	1504	1466	1416	1388	1369	1324	1290	1239	1200
	Tap 1	1397	1347	1312	1269	1232	1172	1135	1086	1038	989
5 (60)	Tap 5	2109	2067	2043	1996	1967	1928	1899	1848	1812	1766
	Tap 4	2109	2067	2043	1996	1967	1928	1899	1848	1812	1766
	Tap 3	2109	2067	2043	1996	1967	1928	1899	1848	1812	1766
	Tap 2	1901	1868	1825	1785	1737	1710	1662	1620	1584	1521
	Tap 1	1583	1557	1499	1451	1392	1358	1313	1259	1194	1138

NOTES:

1.Airflow based upon dry coil at 230V with factory-approved filter and electric heater (2 element heater sizes 018 through 036, 3 element heater sizes 042 through 060).

2.To avoid potential for condensate blowing out of drain pan prior to making drain trap:
Return static pressure must be less than 0.40 in. wc. Horizontal applications of 042 - 060 sizes must have supply static greater than 0.20 in. wc.
Airflow above 400 cfm/ton on 048-060 size could result in condensate blowing off coil or splashing out of drain pan.

3.At higher pextstats (above 0.6 in/wc), water blowoff is more likely to occur depending on the user's setup.

PERFORMANCE DATA (cont.)

Table 5 – Airflow Performance (CFM) Dry

Ton (Size)	Blower Speed	External Static (in. wc)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
1-1/2 (18)	Tap 5	762	741	721	698	672	656	635	577	547	509
	Tap 4	695	679	655	628	600	580	559	534	505	452
	Tap 3	695	679	655	628	600	580	559	534	505	452
	Tap 2	634	615	585	547	522	506	475	444	407	371
	Tap 1	498	470	434	390	356	300	272	NA	NA	NA
2 (24)	Tap 5	1046	1013	978	958	925	877	830	752	722	687
	Tap 4	992	950	916	869	812	763	705	660	611	585
	Tap 3	992	950	916	869	812	763	705	660	611	585
	Tap 2	900	862	814	769	709	644	594	548	507	451
	Tap 1	762	723	651	599	531	471	428	385	345	319
2-1/2 (30)	Tap 5	1277	1244	1226	1193	1169	1122	1094	1058	1014	969
	Tap 4	1179	1142	1114	1070	1039	998	937	915	867	825
	Tap 3	1179	1142	1114	1070	1039	998	937	915	867	825
	Tap 2	1066	1030	997	960	916	863	795	746	703	674
	Tap 1	923	878	832	784	723	658	616	563	NA	NA
3 (36)	Tap 5	1489	1463	1428	1388	1345	1305	1262	1213	1160	1093
	Tap 4	1357	1337	1310	1283	1249	1212	1165	1114	1064	1014
	Tap 3	1357	1337	1310	1283	1249	1212	1165	1114	1064	1014
	Tap 2	1211	1190	1162	1132	1100	1066	1016	959	905	838
	Tap 1	1059	1038	1004	967	925	887	843	791	747	681
3-1/2 (42)	Tap 5	1647	1620	1583	1548	1505	1464	1424	1379	1319	1250
	Tap 4	1569	1539	1506	1476	1442	1404	1370	1336	1299	1219
	Tap 3	1569	1539	1506	1476	1442	1404	1370	1336	1299	1219
	Tap 2	1393	1355	1329	1288	1248	1223	1180	1138	1091	1037
	Tap 1	1265	1234	1195	1154	1111	1062	1022	964	914	865
4 (48)	Tap 5	1956	1917	1887	1855	1831	1798	1763	1743	1707	1683
	Tap 4	1773	1743	1704	1667	1634	1612	1571	1536	1500	1464
	Tap 3	1773	1743	1704	1667	1634	1612	1571	1536	1500	1464
	Tap 2	1566	1524	1483	1451	1414	1376	1340	1303	1266	1217
	Tap 1	1413	1373	1328	1283	1246	1204	1168	1120	1075	1012
5 (60)	Tap 5	2148	2123	2084	2048	2002	1974	1939	1891	1893	1812
	Tap 4	2148	2123	2084	2048	2002	1974	1939	1891	1893	1812
	Tap 3	2148	2123	2084	2048	2002	1974	1939	1891	1893	1812
	Tap 2	1955	1913	1868	1833	1796	1757	1711	1654	1632	1570
	Tap 1	1646	1590	1527	1496	1442	1373	1315	1294	1221	1164

NOTES:

1.Airflow based upon dry coil at 230V with factory-approved filter and electric heater (2 element heater sizes 018 through 036, 3 element heater sizes 042 through 060).

2.To avoid potential for condensate blowing out of drain pan prior to making drain trap:

Return static pressure must be less than 0.40 in. wc. Horizontal applications of 042 - 060 sizes must have supply static greater than 0.20 in. wc.

Airflow above 400 cfm/ton on 048-060 size could result in condensate blowing off coil or splashing out of drain pan.

3.At higher pextstats (above 0.6 in/wc), water blowoff is more likely to occur depending on the user's setup.

Table 6 – Gross Cooling Capacities

Unit Size	INDOOR COIL AIR		SATURATED TEMPERATURE LEAVING EVAPORATOR (°F / °C)														
			35/2			40/4			45/7			50/10			55/13		
	CFM	EWB	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF
18	525	72/22	42.80	20.80	0.00	38.40	18.70	0.00	33.50	16.50	0.01	27.90	14.10	0.02	21.70	11.70	0.02
		67/19	34.90	21.40	0.03	30.40	19.20	0.03	25.30	16.80	0.03	19.80	14.50	0.03	13.90	12.10	0.04
		62/17	27.70	21.90	0.03	23.20	19.60	0.03	18.50	17.30	0.04	14.90	14.90	0.13	12.20	12.20	0.28
	600	72/22	46.90	22.80	0.00	42.10	20.50	0.00	36.70	18.10	0.02	30.60	15.60	0.03	23.80	13.00	0.03
		67/19	38.30	23.70	0.04	33.40	21.20	0.04	27.80	18.70	0.04	21.60	16.10	0.04	15.20	13.40	0.05
		62/17	30.40	24.30	0.04	25.40	21.80	0.04	20.30	19.30	0.06	16.50	16.50	0.15	13.60	13.60	0.30
	675	72/22	50.60	24.60	0.00	45.40	22.20	0.02	39.60	19.70	0.03	33.00	17.00	0.04	25.60	14.10	0.04
		67/19	41.40	25.70	0.05	36.10	23.10	0.05	30.10	20.40	0.05	23.40	17.60	0.05	16.50	14.80	0.06
		62/17	32.90	26.60	0.05	27.50	23.90	0.05	22.10	21.10	0.07	18.10	18.10	0.17	14.90	14.90	0.32
24	700	72/22	54.40	26.40	0.00	49.20	24.00	0.00	43.30	21.40	0.01	36.40	18.50	0.02	28.60	15.50	0.03
		67/19	44.80	27.70	0.03	39.30	25.00	0.03	33.00	22.10	0.03	26.00	19.10	0.03	18.50	16.10	0.04
		62/17	35.80	28.60	0.03	30.20	25.80	0.03	24.30	22.90	0.04	19.70	19.70	0.13	16.30	16.30	0.28
	800	72/22	59.10	28.70	0.00	53.50	26.20	0.01	47.00	23.40	0.02	39.70	20.30	0.03	31.20	31.20	0.04
		67/19	48.70	30.40	0.04	42.90	27.60	0.04	36.10	24.50	0.04	28.30	21.20	0.04	20.20	17.90	0.05
		62/17	39.10	31.60	0.04	33.00	28.60	0.05	26.60	25.40	0.06	21.90	21.90	0.16	18.10	18.10	0.30
	900	72/22	63.20	30.80	0.00	57.20	28.20	0.02	50.40	25.20	0.04	42.60	22.00	0.04	33.50	18.60	0.05
		67/19	52.30	32.80	0.05	46.10	29.90	0.05	38.90	26.70	0.05	30.50	23.20	0.05	21.80	19.60	0.06
		62/17	42.10	34.50	0.05	35.60	31.30	0.06	28.80	27.90	0.07	24.00	24.00	0.18	19.80	19.80	0.32
30	875	72/22	71.60	34.70	0.00	64.40	31.30	0.00	56.30	27.70	0.00	47.20	23.80	0.02	36.80	19.70	0.02
		67/19	58.70	36.00	0.02	51.30	32.30	0.03	42.90	28.40	0.03	33.60	24.40	0.03	23.70	20.30	0.04
		62/17	46.70	36.80	0.03	39.20	33.00	0.03	31.20	29.10	0.04	25.00	25.00	0.12	20.60	20.60	0.27
	1000	72/22	78.30	38.00	0.00	70.50	34.40	0.00	61.60	30.50	0.02	51.70	26.30	0.03	40.30	21.90	0.03
		67/19	64.30	39.70	0.03	56.30	35.80	0.03	47.10	31.50	0.04	36.80	27.10	0.04	26.00	22.70	0.05
		62/17	51.40	40.90	0.04	43.10	36.70	0.04	34.40	32.40	0.05	27.90	27.90	0.14	23.00	23.00	0.29
	1125	72/22	84.30	41.00	0.00	75.90	37.20	0.00	66.80	33.20	0.02	55.80	28.60	0.04	43.60	23.80	0.04
		67/19	69.40	43.10	0.04	60.80	38.90	0.04	51.00	34.50	0.05	39.80	29.70	0.05	28.10	24.90	0.06
		62/17	55.60	44.80	0.05	46.70	40.30	0.05	37.30	35.60	0.06	30.60	30.60	0.16	25.20	25.20	0.31
36	1050	72/22	64.89	33.39	0.00	58.38	30.18	0.00	51.08	26.68	0.02	42.84	22.99	0.03	33.40	19.04	0.03
		67/19	53.14	34.96	0.04	46.48	31.47	0.04	38.88	27.72	0.04	30.22	23.74	0.04	21.13	19.74	0.05
		62/17	42.35	36.18	0.04	35.45	32.44	0.04	28.12	28.54	0.05	22.73	22.73	0.15	18.64	18.64	0.29
	1200	72/22	70.55	36.42	0.00	63.54	32.99	0.02	55.62	29.26	0.03	46.67	25.30	0.04	36.48	21.08	0.05
		67/19	57.90	38.43	0.05	50.70	34.71	0.05	42.55	30.74	0.05	33.13	26.44	0.05	23.14	22.04	0.06
		62/17	46.31	40.09	0.05	38.86	36.09	0.05	31.02	31.87	0.07	25.31	25.31	0.17	20.78	20.78	0.31
	1350	72/22	75.52	39.17	0.00	68.14	35.55	0.03	59.70	31.64	0.04	50.12	27.45	0.05	39.26	23.00	0.06
		67/19	62.18	41.63	0.06	54.49	37.72	0.06	45.77	33.52	0.06	35.75	28.98	0.06	25.00	24.22	0.08
		62/17	49.84	43.73	0.06	42.00	39.53	0.07	33.71	35.01	0.09	27.74	27.74	0.20	22.79	22.79	0.33

Table 6 – Gross Cooling Capacities

Unit Size	INDOOR COIL AIR		SATURATED TEMPERATURE LEAVING EVAPORATOR (°F / °C)														
			35/2			40/4			45/7			50/10			55/13		
	CFM	EWB	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF
42	1225	72/22	79.15	40.41	0.00	70.85	36.31	0.00	61.59	31.90	0.02	51.15	27.24	0.03	39.41	22.38	0.04
		67/19	64.55	42.04	0.04	56.05	37.58	0.04	46.51	32.90	0.04	35.85	28.04	0.04	24.90	23.25	0.05
		62/17	51.09	43.18	0.04	42.46	38.53	0.05	33.59	33.84	0.06	27.05	27.05	0.15	22.11	22.11	0.30
	1400	72/22	86.34	44.20	0.00	77.30	39.79	0.01	67.22	35.05	0.03	55.91	30.07	0.04	43.10	24.80	0.05
		67/19	70.55	46.30	0.05	61.37	41.55	0.05	50.95	36.50	0.05	39.20	31.18	0.06	27.27	25.94	0.07
		62/17	56.04	47.92	0.06	46.63	42.89	0.06	36.98	37.71	0.08	30.12	30.12	0.18	24.63	24.62	0.32
	1575	72/22	92.81	47.68	0.00	83.15	42.98	0.03	72.31	37.96	0.05	60.17	32.67	0.06	46.45	27.07	0.06
		67/19	76.00	50.25	0.06	66.13	45.22	0.06	55.01	39.88	0.07	42.37	34.20	0.07	29.47	28.50	0.08
		62/17	60.57	52.40	0.07	50.47	47.01	0.07	40.22	41.43	0.09	33.01	33.01	0.20	26.99	26.99	0.34
48	1400	72/22	83.95	44.30	0.00	75.71	40.05	0.00	66.36	35.45	0.01	55.84	30.58	0.02	43.82	25.38	0.03
		67/19	68.80	46.22	0.03	60.32	41.61	0.03	50.67	36.70	0.03	39.64	31.45	0.03	27.80	26.12	0.04
		62/17	54.96	47.71	0.03	46.12	42.77	0.03	36.69	37.67	0.04	29.32	29.32	0.13	24.10	24.10	0.28
	1600	72/22	91.53	48.40	0.00	82.59	43.90	0.00	72.47	38.97	0.02	61.02	33.73	0.03	48.01	28.16	0.04
		67/19	75.19	50.91	0.04	65.98	45.99	0.04	55.57	40.75	0.04	43.57	35.09	0.04	30.49	29.21	0.05
		62/17	60.21	52.94	0.04	50.73	47.68	0.04	40.48	42.10	0.06	32.72	32.72	0.15	26.92	26.92	0.30
	1800	72/22	98.31	52.15	0.00	88.79	47.39	0.02	77.99	42.21	0.03	65.70	36.65	0.04	51.81	30.76	0.05
		67/19	80.94	55.25	0.05	71.10	50.06	0.05	59.93	44.50	0.05	47.14	38.52	0.05	32.96	32.14	0.06
		62/17	64.96	57.83	0.05	54.92	52.30	0.05	44.06	46.35	0.07	35.97	35.97	0.17	29.59	29.59	0.31
60	1600	72/22	118.17	60.42	0.00	106.56	54.57	0.00	93.41	48.24	0.02	78.64	41.59	0.02	62.13	34.63	0.03
		67/19	96.74	62.87	0.03	84.83	56.56	0.03	71.43	49.91	0.03	56.41	42.93	0.03	39.37	35.48	0.04
		62/17	77.24	64.78	0.03	65.10	58.16	0.03	51.83	51.23	0.04	41.00	41.00	0.12	33.67	33.67	0.27
	1750	72/22	129.14	66.15	0.00	116.46	59.92	0.00	102.18	53.13	0.02	86.08	45.94	0.03	68.00	38.39	0.03
		67/19	105.94	69.36	0.04	92.95	62.59	0.04	78.33	55.41	0.04	61.93	47.86	0.04	43.49	39.82	0.05
		62/17	84.76	71.94	0.04	71.53	64.80	0.04	57.37	57.38	0.05	45.94	45.94	0.14	37.65	37.65	0.29
	2000	72/22	139.03	71.41	0.00	125.46	64.82	0.01	110.15	57.64	0.03	92.83	49.99	0.04	73.33	41.92	0.04
		67/19	114.27	75.38	0.05	100.34	68.21	0.05	84.61	60.58	0.05	66.92	52.51	0.05	47.25	43.94	0.06
		62/17	91.59	78.67	0.05	77.41	71.08	0.05	62.32	63.11	0.07	50.60	50.60	0.16	41.54	41.54	0.31

CFM - Cubic Ft per Minute **EWB** - Entering Wet Bulb °F (°C) **LWB** - Leaving Wet Bulb °F (°C) **TC** - Gross Cooling Capacity 1000 Btuh

SHC - Gross Sensible Capacity 1000 Btuh **BF** - Bypass Factor **MBH** - 1000 Btuh

NOTES:

1. Contact manufacturer for cooling capacities at conditions other than shown in table.
2. Formulas:
   Leaving db = entering db - $\frac{\text{sensible heat cap.}}{1.09 \times \text{CFM}}$
   Leaving wb = wb corresponding to enthalpy of air leaving coil (h_{lwb})
   $h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{CFM}}$
   where h_{ewb} = enthalpy of air entering coil. Direct interpolation is permissible. Do not extrapolate.
3. SHC is based on 80°F (27°C) db temperature of air entering coil. Below 80°F (27°C) db, subtract (Correction Factor x CFM) from SHC. Above 80°F (27°C) db, add (Correction Factor x CFM) to SHC.
4. Bypass Factor = 0 indicates no psychometric solution. Use bypass factor of next lower EWB for approximation.

SHC CORRECTION FACTOR

BYPASS FACTOR	ENTERING AIR DRY-BULB TEMPERATURE (°F)					
	79	78	77	76	75	Under 75
	81	82	83	84	85	Over 85
	ENTERING AIR DRY-BULB TEMPERATURE (°C)					
	26	25	25	24	24	Under 75
	27	28	28	29	29	Over 85
	Correction Factor					
0.10	.098	1.96	2.94	3.92	4.91	Use formula shown below
0.20	0.87	1.74	2.62	3.49	4.36	
0.30	0.76	1.53	2.29	3.05	3.82	

Interpolation is permissible.
Correction Factor = 1.09 x (1 - BF) x (db - 80)

PERFORMANCE DATA (cont.)

Table 7 – Electric Heater Static Pressure Drop (in wc)

SIZES 18 - 36			SIZES 42 - 60		
HEATER ELEMENTS	kW	EXTERNAL STATIC PRESSURE CORRECTION	HEATER ELEMENTS	kW	EXTERNAL STATIC PRESSURE CORRECTION
0	0	+.02	0	0	+.04
1	3, 5	+.01	1	3, 5	+.03
2	8, 10	0	2	8, 10	+.02
3	9, 15	–.02	3	9, 15	0
4	20	–.04	4	20	–.02
			6	18, 24, 30	–.10

The airflow performance data was developed using fan coils with 10-kW electric heaters (2 elements) in the 018 through 036 size units and 15-kW heaters (3 elements) in the 042 through 061 size units. For fan coils with heaters of a different number of elements, the external available static at a given CFM from the curve may be corrected by adding or subtracting available external static pressure as indicated above.

Table 8 – Minimum CFM and Motor Speed Selection

SIZE	HEATER kW									
	3	5	8	9	10	15	18	20	24	30
18	525	525	525	—	600	—	—	—	—	—
24	700	700	700	—	700	775	—	—	—	—
30	—	875	875	—	875	875	—	1060	—	—
36	—	1050	970	970	970	920	—	1040	—	—
42	—	—	1225	1225	1225	1225	1225	1225	—	—
48	—	—	1400	1400	1400	1400	1400	1400	1400	1400
60	—	—	1750	1750	1750	1750	1750	1750	1750	1750

Speed Tap 4 (white wire) is used for electric heat only. White wire must remain on tap 4.

Table 9 – Estimated Sound Power Level (dB)*

SIZE	CONDITIONS		OCTAVE BAND CENTER FREQUENCY						
	CFM	Ext Static Pressure	63	125	250	500	1000	2000	4000
18	525	0.50	70.8	66.8	62.8	59.8	57.8	55.8	51.8
24	700	0.50	72.0	68.0	64.0	61.0	59.0	57.0	53.0
30	875	0.50	73.0	69.0	65.0	62.0	60.0	58.0	54.0
36	1050	0.50	73.8	69.8	65.8	62.8	60.8	58.8	54.8
42	1225	0.50	74.4	70.4	66.4	63.4	61.4	59.4	55.4
48	1400	0.50	75.0	71.0	67.0	64.0	62.0	60.0	56.0
60	1750	0.50	76.0	72.0	68.0	65.0	63.0	61.0	57.0

* Estimated sound power levels have been derived using the method described in the 1987 ASHRAE HVAC Systems & Applications Handbook, Chapter 52, p. 52.7.

PERFORMANCE DATA (cont.)

Table 10 – EH Heater Table

HEATER PART NO.	kW @ 240V	VOLTS/PH	STAGES (kW OPERATING)	INTERNAL CIRCUIT PROTECTION	FAN COIL SIZE USED WITH	HEATING CAP.* @ 230V
KFFEH8401N03	3	230/1	3	None	18†	9,400
KFFEH8501N05	5	230/1	5	None	18†	15,700
KFFEH8801N08	8	230/1	8	None	18†	25,100
KFFEH8901N10	10	230/1	10	None	18†	31,400
KFFEH0401N03	3	230/1	3	None	24	9,400
KFFEH0501N05	5	230/1	5	None	24–60	15,700
KFFEH0801N08	8	230/1	8	None	24–60	25,100
KFFEH0901N10	10	230/1	10	None	24–60	31,400
KFFEH3201F20	20	230/1	5, 20	Fuse‡	30–60	62,800
KFFEH8401C05	5	230/1	5	Circuit Breaker	18†	15,700
KFFEH8501C08	8	230/1	8	Circuit Breaker	18†	25,100
KFFEH8601C10	10	230/1	10	Circuit Breaker	18†	31,400
KFFEH2401C05	5	230/1	5	Circuit Breaker	24–60	15,700
KFFEH2501C08	8	230/1	8	Circuit Breaker	24–60	25,100
KFFEH2601C10	10	230/1	10	Circuit Breaker	24–60	31,400
KFFEH3301C20	20	230/1	5, 20	Circuit Breaker	30–60	62,800
KFFEH2901N09	9	230/1**	3, 9	None	36–60	28,200
KFFEH3001F15	15	230/1	5, 15	Fuse‡	24–60	47,100
KFFEH3101C15	15	230/1	5, 15	Circuit Breaker	24–60	47,100
3 Phase Only						
KFFEH1601315	15	230/3	5, 15	None	36–60	47,100
KFFEH2001318	18	230/3	6, 12, 18	None	42–60	56,500
3 Phase, Factory Shipped (field convertible to single phase)						
KFFEH3401F24	24	230/3	8, 16, 24	Fuse	48, 60	78,300
KFFEH3501F30	30	230/3	10, 20, 30	Fuse	48, 60	94,100

*. Does not include heat from blower motor.
†. Size 18 fan coil has a special 6-pin connector. Do not modify wiring.
‡. Single point wiring kit required for these heaters.
**. Field convertible to 3 phase.

Table 11 – Electrical Data for Units without Electric Heat

MODEL SIZE	MTR HP	MTR FLA	VOLTS/PH/HZ	SINGLE CIRCUIT		BRANCH CIRCUIT MIN WIRE SIZE* AWG
				MCA	MAXMUM OVERCURRENT PROTECION	
18	1/3	2.9	208/230/1/60	3.6	15	14
24	1/3	2.9	208/230/1/60	3.6	15	14
30	1/2	4.2	208/230/1/60	5.3	15	14
36	1/2	4.2	208/230/1/60	5.3	15	14
42	1/2	4.2	208/230/1/60	5.3	15	14
48	3/4	6.1	208/230/1/60	7.6	15	14
60	3/4	6.1	208/230/1/60	7.6	15	14

* Use copper wire only. Use 75°C only in this application. When using non-metallic (NM) sheathed cable, wire size required should be based on that of 60°C conductors, instead of wire sizes shown in table above per NEC Article 336-26.
NOTE: If branch circuit wire length exceeds 100 ft (30 m), consult NEC 215-2 to determine maximum wire length. Use 2% voltage drop.
FLA - Full Load Amps

SCCR (Short Circuit Current Rating) = 5kA rms, symmetrical, 230V

PERFORMANCE DATA (cont.)

HEATER ELECTRICAL DATA

Table 12 – Electric Heater Internal Protection

HEATER kW	PHASE	FUSE QTY/SIZE	CKT BKR* QTY/SIZE
5	1	—	1/60
8	1	—	1/60
9	1/3	—	—
10	1	—	1/60
15	1	2/30–2/60	2/60
15	3	—	—
18	3	—	—
20	1	4/60	2/60
24	1/3	6/60	—
30	1/3	6/60	—

* All circuit breakers are 2 pole.

When using units with 20-, 24-, and 30-kW electric heaters, maintain a 1-in. (25mm) clearance from combustible materials to discharge plenum and ductwork and maintain a distance of 36-in (914mm) from the unit. Use an accessory downflow base to maintain proper clearance on downflow installations. Use flexible connectors between ductwork and unit to prevent transmission of vibration. When electric heater is installed, use heat resistant material for flexible connector between ductwork and unit at discharge connection. Ductwork passing through unconditioned space must be insulated and covered with vapor barrier.

Table 13 – Electric Heater Electrical Data

FC Size	HEATER PART NO.	kW		PHASE	Internal Circuit Protection	HEATER AMPS* 208/230V†			MIN AMPACITY* 208/230V†			BRANCH CIRCUIT								
												Min Wire Size (AWG) 208/230V‡			Min Gnd Wire Size 208/230V‡			Max Fuse/Ckt Bkr Amps 208/230V		
						Single Circuit	Dual Circuit		Single Circuit	Dual Circuit		Single Circuit	Dual Circuit		Single Circuit	Dual Circuit		Single Circuit	Dual Circuit	
		240V	208V				L1,L2	L3,L4		L1,L2	L3,L4		L1,L2	L3,L4		L1,L2	L3,L4		L1,L2	L3,L4
24	KFFEH0401N03	3	2.3	1	None	10.7/11.9	—	—	17.0/18.5	—	—	12/12	—	—	12/12	—	—	20/20	—	—
18	KFFEH8401N03	3	2.3	1	None	10.7/11.9	—	—	17.0/18.5	—	—	12/12	—	—	12/12	—	—	20/20	—	—
24-42	KFFEH0501N05	5	3.8	1	None	17.8/19.7	—	—	27.5/29.9	—	—	10/10	—	—	10/10	—	—	30/30	—	—
24-42	KFFEH2401C05	5	3.8	1	Ckt Bkr	17.8/19.7	—	—	27.5/29.9	—	—	10/10	—	—	10/10	—	—	30/30	—	—
48-60	KFFEH0501N05	5	3.8	1	None	17.8/19.7	—	—	29.9/32.3	—	—	10/8	—	—	10/10	—	—	30/35	—	—
48-60	KFFEH2401C05	5	3.8	1	Ckt Bkr	17.8/19.7	—	—	29.9/32.3	—	—	10/8	—	—	10/10	—	—	30/35	—	—
18	KFFEH8501N05	5	3.8	1	None	17.8/19.7	—	—	25.9/28.3	—	—	10/10	—	—	10/10	—	—	30/30	—	—
18	KFFEH8401C05	5	3.8	1	Ckt Bkr	17.8/19.7	—	—	25.9/28.3	—	—	10/10	—	—	10/10	—	—	30/30	—	—
24-60	KFFEH0801N08	8	6.0	1	None	28.5/31.5	—	—	43.3/47.0	—	—	8/8	—	—	10/10	—	—	45/50	—	—
24-60	KFFEH2501C08	8	6.0	1	Ckt Bkr	28.5/31.5	—	—	43.3/47.0	—	—	8/8	—	—	10/10	—	—	45/50	—	—
18	KFFEH8801N08	8	6.0	1	None	28.5/31.5	—	—	39.3/43.0	—	—	8/8	—	—	10/10	—	—	40/45	—	—
18	KFFEH8501C08	8	6.0	1	Ckt Bkr	28.5/31.5	—	—	39.3/43.0	—	—	8/8	—	—	10/10	—	—	40/45	—	—
24-60	KFFEH0901N10	10	7.5	1	None	35.6/39.4	—	—	52.1/56.9	—	—	6/6	—	—	10/10	—	—	60/60	—	—
24-60	KFFEH2601C10	10	7.5	1	Ckt Bkr	35.6/39.4	—	—	52.1/56.9	—	—	6/6	—	—	10/10	—	—	60/60	—	—
18	KFFEH8901N10	10	7.5	1	None	35.6/39.4	—	—	48.1/52.9	—	—	8/6	—	—	10/10	—	—	50/60	—	—
18	KFFEH8601C10	10	7.5	1	Ckt Bkr	35.6/39.4	—	—	48.1/52.9	—	—	8/6	—	—	10/10	—	—	50/60	—	—
36-60	KFFEH2901N09**	9	6.8	1	None	32.2/35.6	—	—	47.9/52.1	—	—	8/6	—	—	10/10	—	—	50/60	—	—
36-60	KFFEH2901N09	9	6.8	3	None	18.6/20.6	—	—	30.9/33.4	—	—	8/8	—	—	10/10	—	—	40/40	—	—
24-60	KFFEH3001F15††	15	11.3	1	Fuse	53.4/59.1	35.6/39.4	17.8/19.7	74.4/81.5	52.1/56.9	22.3/24.6	4/4	6/6	10/10	8/8	10/10	10/10	80/90	60/60	25/25
24-60	KFFEH3101C15	15	11.3	1	Ckt Bkr	53.4/59.1	35.6/39.4	17.8/19.7	74.4/81.5	52.1/56.9	22.3/24.6	4/4	6/6	10/10	8/8	10/10	10/10	80/90	60/60	25/25
36-60	KFFEH1601315	15	11.3	3	Fuse	30.8/34.1	—	—	46.1/50.3	—	—	8/6	—	—	10/10	—	—	50/60	—	—
42-60	KFFEH2001318	18	13.5	3	None	37.2/41.2	—	—	54.1/59.1	—	—	6/6	—	—	10/10	—	—	60/70	—	—
30-60	KFFEH3201F20††	20	15.0	1	Fuse	71.2/78.8	35.6/39.4	35.6/39.4	96.6/106.1	52.1/56.9	44.5/49.3	3/2	6/6	8/8	8/6	10/10	10/10	100/110	60/60	45/50
30-60	KFFEH3301C20	20	15.0	1	Ckt Bkr	71.2/78.8	35.6/39.4	35.6/39.4	96.6/106.1	52.1/56.9	44.5/49.3	3/2	6/6	8/8	8/6	10/10	10/10	100/110	60/60	45/50
48-60	KFFEH3401F24‡‡	24	18.0	3	Fuse	49.3/54.6	—	—	69.3/75.9	—	—	4/4	—	—	8/8	—	—	80/80	—	—
48-60		24	18.0	1	Fuse	85.5/94.5	—	—	114.5/125.8	—	—	2/1	—	—	6/6	—	—	125/150	—	—
48-60	KFFEH3501F30‡‡	30	22.5	3	Fuse	61.7/68.2	—	—	84.8/92.9	—	—	4/3	—	—	8/8	—	—	90/100	—	—
48-60		30	22.5	1	Fuse	106.8/118.1	—	—	141.1/155.3	—	—	0/00	—	—	6/6	—	—	150/175	—	—

*. Includes blower motor amps of largest fan coil used with heater. Consult Product Data for specific motor amps.
†. For 240V, multiply 230V heater amps by 1.04. Wire sizing and over-current protection may need adjustment per local code requirements.
‡. Copper wire must be used. If other than uncoated (non-plated), 75°C ambient, copper wire (solid wire for smaller, and stranded wire for larger than 10 AWG) is used, consult applicable tables of the National Electric Code (ANSI/NFPA 70).
**. Field convertible to 3 phase.
††. Single circuit application of F15 and F20 heaters requires single-point wiring kit accessory.
‡‡. Field convertible to 1 phase, single or multiple supply circuit.

Table 14 – Field Multipoint Wiring or 24- and 30-kW Single Phase

FC Size	HEATER PART NO.	kW		PHASE	HEATER AMPS 208/230V			MIN AMPACITY 208/230V*			MIN WIRE SIZE (AWG) 208/230V†			MIN GND WIRE SIZE 208/230V	MAX FUSE/CKT BKR AMPS 208/230V		
		240V	208V		L1,L2	L3,L4	L5,L6	L1,L2	L3,L4	L5,L6	L1,L2	L3,L4	L5,L6		L1,L2	L3,L4	L5,L6
48-60	KFFEH3401F24‡	24	18.0	1	28.5/31.5	28.5/31.5	28.5/31.5	43.3/47.0	35.6/39.4	35.6/39.4	8/8	8/8	8/8	10/10	50/50	40/40	40/40
48-60	KFFEH3501F30‡	30	22.5	1	35.6/39.4	35.6/39.4	35.6/39.4	52.1/56.9	44.5/49.3	44.5/49.3	6/6	8/8	8/8	10/10	60/60	45/50	45/50

*. Includes blower motor amps of largest fan coil used with heater.
†. Copper wire must be used. If other than uncoated (non-plated), 75°C ambient, copper wire (solid wire for 10 AWG and smaller, stranded wire for larger than 10 AWG) is used, consult applicable tables of the NEC (ANSI/NFPA 70).

‡. Field convertible to 1 phase, single or multiple supply circuit.

Table 15 – Accessories

ITEM		ACCESSORY PART NO.*	FAN COIL SIZE USED WITH
1.	Disconnect Kit	KFADK0301DSC	All single phase 3kW - 10kW heaters
2.	Downflow Base Kit	KFACB0101CFB	18
		KFACB0201CFB	24, 30, 36
		KFACB0301CFB	42, 48
		KFACB0401CFB	60
3.	Downflow Conversion Kit †	KFADC0201SLP	Slope Coil Units—18, 24
		KFADC0401ACL	A-Coil Units—30, 36, 42, 48, 60
4.	Downflow/Horizontal Conversion Gasket Kit	KFAHD0101SLP	All
5.	Horizontal Water Management Kit (25 pack) ‡	KFAHC0125AAA	A-Coil Units—30, 36, 42, 48, 60
6.	Single-Point Wiring Kit	KFASP0101SPK	Only with 15- and 20-kW Fused Heaters
7.	Filter	See Table 3 for filter dimension details.	
8.	Fan Coil Filter Cabinet (Fan Coil Filter Media)	FNCCABXX0014 (MERV 8—FILXXFNC0014) (MERV 11—FILXXFNC0114) (MERV 13—FILXXFNC0314)	18
		FNCCABXX0017 (MERV 8—FILXXFNC0017) (MERV 11—FILXXFNC0117) (MERV 13—FILXXFNC0317)	24, 30, 36
		FNCCABXX0021 (MERV 8—FILXXFNC0021) (MERV 11—FILXXFNC0121) (MERV 13—FILXXFNC0321)	42, 48
		FNCCABXX0024 (MERV 8—FILXXFNC0024) (MERV 11—FILXXFNC0124) (MERV 13—FILXXFNC0324)	60
9.	PVC Condensate Trap Kit (50 pack)	KFAET0150ETK	All
10.	TXV Kit, Puron (R-410A), Aluminum Coils Only	KSBTX0201PUR	18L, 24L, 30L, 36L, 42L
		KSBTX0301PUR	48L
		KSBTX0401PUR	60L
11.	Door Gasket Kit **	344994-751	All
12.	Accessory Quick Connect Kit	KFAPS0110KIT	All

* Factory authorized and listed, field-installed.
** This kit is for replacement of factory installed gaskets if they are damaged or removed from the fan coil.
† KFAHD0101SLP must also be purchased for down flow applications.
‡ KFAHD0101SLP must also be purchased for down flow or horizontal applications.

Accessory Kits Description – Suggested and Required Use

1. **Disconnect Kit**

   The kit is used to disconnect electrical power to the fan coil so service or maintenance may be performed safely.
   SUGGESTED USE: Units for 3- through 10-kW electric resistance heaters and cooling controls.

2. **Downflow Base Kit**

   This kit is designed to provide a 1-in. (25mm) minimum clearance between unit discharge plenum, ductwork, and combustible materials. It also provides a gap-free seal with the floor.
   REQUIRED USE: This kit must be used whenever fan coils are used in downflow applications.

3. **Downflow Conversion Kit**

   Fan coils are shipped from the factory for upflow or horizontal-left applications. Downflow conversion kits provide proper condensate water drainage and support for the coil when used in downflow applications. Separate kits are available for slope coils and A-coils.
   REQUIRED USE: This kit must be used whenever fan coils are used in downflow applications.

4. **Downflow/Horizontal Conversion Gasket Kit**

   This kit provides the proper gasketing of units when applied in either a downflow or horizontal application.
   REQUIRED USE: Fan coils in either downflow or horizontal applications.

5. **Horizontal Applications - Water Management Kit**

   This kit provides proper installation of fan coils under conditions of high static pressure and high relative humidity.
   SUGGESTED USE: All fan coils.

6. **Single Point Wiring Kit**

   The single point wiring kit acts as a jumper between L1 and L3 lugs, and between the L2 and L4 lugs. This allows the installer to run two heavy-gauge, high-voltage wires into the fan coil rather than 4 light-gauge, high-voltage wires.
   SUGGESTED USE: Fan coils with 15- and 20-kW fused heaters only.

7. **Filter Kit (12 pack)**

   The kit consists of 12 fan coil framed filters. These filters collect large dust particles from the return air entering the fan coil and prevents them from collecting on the coil. This process helps to keep the coil clean, which increases heat transfer and, in turn, the efficiency of the system.
   SUGGESTED USE: To replace filters in fan coils.
   REQUIRED USE: All units unless a filter grille is used.

8. **Fan Coil Filter Cabinet**

   This cabinet is mounted to the fan coil on the return air end and designed to slip over the outer fan coil casing. The cabinets are insulated using the same insulation as production fan coils. They are designed for the removal of particulates from indoor air using FILXXFNC00 (17, 21, 24) media filter cartridges. These fan coil media filter cartridge kits are designed for the removal of particles from indoor air. The cartridge is installed in the return air duct next to the air handler or further upstream.
   SUGGESTED USE: All fan coils.

9. **PVC Condensate Drain Trap Kit**

   This kit consists of 50 PVC condensate traps. Each trap is pre-formed and ready for field installation. This deep trap helps the system make and hold proper condensate flow even during blower initiation.
   SUGGESTED USE: All fan coils.

10. **TXV Kit**

    These kits are designed to add TXVs to piston fan coils or convert R-22 fan coils to R-410A TXVs.

11. **Door Gasket Kit**

    This kit consists of specific adhesive-backed foam strips which are applied to the unit door and frame, limiting air leakage.

12. **Accessory Quick Connect Kit**

    This kit enables the installer to easily connect a 230V IAQ accessory (air purifier, electronic air cleaner, UV light, etc.) kit to a fan coil unit, eliminating the need to run a separate power supply to the accessory. Use of this kit may eliminate the requirement for a licensed electrician to complete the job (check local codes).

Edition Date: 08/23
Catalog No: FJ4D-01PD
Replaces: New

25SCA5
Comfort™ Series Single-Stage Heat Pump with Puron® Refrigerant
1-1/2 To 5 Tons

Carrier
Turn to the experts

Product Data

This unit has been designed utilizing Carrier's non-ozone depleting Puron® refrigerant. Heat pumps with Puron® refrigerant provide a collection of features unmatched by any other family of equipment.

NOTE: Ratings contained in this document are subject to change at any time. Always refer to the AHRI directory (www.ahridirectory.org) for the most up-to-date ratings information.

Industry leading Features / Benefits

Efficiency

- 14.3 - 15.2 SEER2 / 11.0 - 12.5 EER2 / 7.5 - 8.1 HSPF2 (depending on unit size and indoor combination installed)
- Microtube technology refrigeration system
- Indoor air quality accessories available

Sound

- Sound levels as low as 69 dBA with accessory sound blanket

Comfort

- System supports programmable or standard thermostat controls

Reliability

- Non-ozone depleting Puron® refrigerant
- Scroll compressor
- Internal pressure relief valve
- Internal thermal overload
- Loss of charge switch
- Filter drier
- Balanced refrigeration system for maximum reliability

Durability

WeatherArmor™ Protection Package:

- Solid, durable sheet metal construction
- Dense wire coil guard

Applications

- Long-line - up to 250 feet (76.20 m) total equivalent length, up to 200 feet (60.96 m) condenser above evaporator, or up to 80 ft. (24.38 m) evaporator above condenser (See Longline Guide for more information.)
- Low ambient cooling (down to 0°F/-17.8°C) with approved low ambient accessory kits

Model Number Nomenclature

1	2	3	4	5	6	7,8	9	10	11	12
N	N	A	A	A/N	N	N	A/N	A/N	A/N	N
2	**5**	**S**	**C**	**A**	**5**	**18**	**A**	**0**	**0**	**3**
Refrigerant and OD Type		OD Design Type	Tier	Major Series	SEER2	Nominal Cooling Capacity	Region	Feature	Special Feature	Voltage
25 = R-410A HP		S = Single Stage	C=Comfort	A = Initial Series	5=14.3 SEER2	**18** = 18,000 BTUH (1.5 Tons) **24** = 24,000 BTUH (2 Tons) **30** = 30,000 BTUH (2.5 Tons) **36** = 36,000 BTUH (3 Tons) **42** = 42,000 BTUH (3.5 Tons) **48** = 48,000 BTUH (4 Tons) **60** = 60,000 BTUH (5 Tons)	A=Standard HP	0=Standard	0=Standard	3=208-230-1 or 208/230-1

Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program For verification of certification for individual products, go to www.ahridirectory.org.

Quality ISO 9001 SAI GLOBAL

C US

This product has been designed and manufactured to meet Energy Star® criteria for energy efficiency when matched with appropriate coil components. However, proper refrigerant charge and proper air flow are critical to achieve rated capacity and efficiency. Installation of this product should be performed by all manufacturing refrigerant charging and air flow instructions. **Failure to confirm proper charge and air flow may reduce energy efficiency and shorten equipment life.**

Tested AHRI Combination Ratings

NOTE: Ratings contained in this document are subject to change at any time.

For AHRI ratings certificates, please refer to the AHRI directory www.ahridirectory.org
Additional ratings and system combinations can be accessed via the Ratings Database here: www.MyCarrierRatings.com

CATALOG ORDERING NUMBERS

Size	Model Number
18	25SCA518A003
24	25SCA524A003
30	25SCA530A003
36	25SCA536A003
42	25SCA542A003
48	25SCA548A003
60	25SCA560A003

Standard Features

Feature	18	24	30	36	42	48	60
Puron Refrigerant	X	X	X	X	X	X	X
Scroll Compressor	X	X	X	X	X	X	X
Field Installed Filter Drier	X	X	X	X	X	X	X
Front Seating Service Valves	X	X	X	X	X	X	X
Internal Pressure Relief Valve	X	X	X	X	X	X	X
Internal Thermal Overload	X	X	X	X	X	X	X
Long Line capability	X	X	X	X	X	X	X
Low Ambient capability with Kit	X	X	X	X	X	X	X
Suction Line Accumulator	X	X	X	X	X	X	X
Loss of Charge Switch	X	X	X	X	X	X	X

X = Standard

Physical Data

Unit Size	18	24	30	36	42	48	60
Compressor Type	Scroll						
Refrigerant	Puron® (R-410A)						
Control	TXV (Puron® Hard Shutoff)						
Charge (lb)	5.9	6.3	9.0	9.0	9.9	10.8	13.7
Outdoor Htg. Piston #	42	46	52	57	61	65	76
Cond Fan	Forward Swept or Propeller Type, Direct Drive						
Air Discharge	Vertical						
Air Qty (CFM)	2346	2652	2652	3550	3716	3716	4779
Motor HP	1/12	1/10	1/10	1/4	1/4	1/4	1/4
Motor RPM	800	825	825	825	1110	1110	825
Cond Coil							
Face Area (Sq ft)	15.0	17.2	15.0	15.0	17.2	19.3	25.1
Fins per In.	20	20	20	20	20	20	20
Rows	1	1	2	2	2	2	2
Circuits	6	6	7	7	10	12	12
Valve Connect (In. ID)							
Vapor	5/8	5/8	3/4	3/4	7/8	7/8	7/8
Liquid	3/8"						
Refrigerant Tubes* **(In. OD)**							
Rated Vapor† (0-80 Ft Tube Length)	5/8	5/8	3/4	3/4	7/8	7/8	1 1/8
Rated Liquid Line‡ (0-80 Ft Tube Length)	3/8"						

*. For 15 ft. lineset
†. Units are rated with 25 ft (7.6 m) of lineset length. See Vapor Line Sizing and Cooling Capacity Loss table when using other sizes and lengths of lineset.
‡. See Liquid Line Sizing For Cooling Only Systems with Puron Refrigerant tables.
Note: See unit Installation Instruction for proper installation.

Vapor Line Sizing and Cooling Capacity Loss

Acceptable vapor line diameters provide adequate oil return to the compressor while avoiding excessive capacity loss. The suction line diameters shown in the chart below are acceptable for HP systems with Puron® refrigerant:

Vapor Line Sizing and Cooling Capacity Losses - Puron® **Refrigerant 1- Stage Heat Pump Applications**

Unit Nominal Size (Btuh)	Acceptable Vapor Line Diameters (In. OD)	Cooling Capacity Loss (%) Total Equivalent Line Length (ft)										
		Standard Application				Long Line Application Requires Accessories						
		25 (7.62)	50 (15.2)	80 (24.4)	80+ (24.4+)	100 (30.48)	125 (38.10)	150 (45.72)	175 (53.34)	200 (60.96)	225 (68.58)	250 (76.20)
18,000	1/2	1	2	3	3	4	6	7	8	9	10	12
	5/8	0	0	1	1	1	1	2	2	3	3	3
24,000	5/8	0	1	1	1	2	3	3	4	4	5	6
	3/4	0	0	0	0	0	1	1	1	1	1	2
30,000	5/8	1	2	3	3	3	4	5	6	7	8	9
	3/4	0	0	1	1	1	1	2	2	2	3	3
	7/8	0	0	0	0	0	1	1	1	1	1	1
36,000	5/8	1	2	4	4	5	6	7	9	10	11	13
	3/4	0	0	1	1	1	2	2	3	3	4	4
	7/8	0	0	0	0	0	1	1	1	1	2	2
42,000	3/4	0	1	2	2	2	3	4	4	5	6	6
	7/8	0	0	1	1	1	1	2	2	2	3	3
48,000	3/4	0	1	2	2	3	4	5	5	6	7	8
	7/8	0	0	1	1	1	2	2	2	3	3	4
60,000	3/4	1	2	4	4	5	6	7	9	10	11	12
	7/8	0	1	2	2	2	3	4	4	5	5	6
	1 1/8	0	0	0	0	1	1	1	1	1	1	2

Standard Length = 80 ft. (24.4 m) or less total equivalent length

Applications in this area are long line. Accessories are required as shown recommended on Long Line Application Guidelines

Applications in this area may have height restrictions that limit allowable total equivalent length, when outdoor unit is below indoor unit See Long Line Application Guidelines

Refrigerant Piping Length Limitations

Maximum Line Lengths:

The maximum allowable total equivalent length for heat pumps varies depending on the vertical separation. See the tables below for allowable lengths depending on whether the outdoor unit is on the same level, above or below the outdoor unit.

Maximum Line Lengths for Heat Pump Applications

	MAXIMUM ACTUAL LENGTH* ft (m)	MAXIMUM EQUIVALENT LENGTH{ ft (m)	MAXIMUM VERTICAL SEPARATION ft (m)
Units on equal level	200 (61)	250 (76.2)	N/A
Outdoor unit ABOVE indoor unit	200 (61)	250 (76.2)	200 (61)
Outdoor unit BELOW indoor unit	See Table 'Maximum Total Equivalent Length: Outdoor Unit BELOW Indoor Unit'		

. Maximum actual length not to exceed 200 ft (61 m)

Maximum Total Equivalent Length*{ - Outdoor Unit BELOW Indoor Unit

Size	Liquid Line Diameter w/ TXV	HP with Puron® Refrigerant - Maximum Total Equivalent Length Vertical Separation ft (m) Outdoor unit BELOW indoor unit;						
		0-20 (0 - 6.1)	21-30 (6.4 - 9.1)	31-40 (9.4 - 12.2)	41-50 (12.5 - 15.2)	51-60 (15.5 - 18.3)	61-70 (18.6 - 21.3)	71-80 (21.6 - 24.4)
18,000	3/8	250*	250*	250*	250*	250*	250*	250*
24,000	3/8	250*	250*	250*	250*	250*	250*	250*
30,000	3/8	250*	250*	250*	250*	250*	250*	250*
36,000	3/8	250*	250*	250*	250*	250*	250*	250*
42,000	3/8	250*	250*	250*	250*	250*	250*	150
48,000	3/8	250*	250*	250*	250*	230	160	—
60,000	3/8	250*	225*	190	150	110	—	—

*.Total equivalent length accounts for losses due to elbows or fitting. See the Long Line Guideline for details.
— = outside acceptable range

Long Line Applications

An application is considered Long Line when the refrigerant level in the system requires the use of accessories to maintain acceptable refrigerant management for systems reliability. Defining a system as long line depends on the liquid line diameter, actual length of the tubing, and vertical separation between the indoor and outdoor units.

For Heat Pump systems, the chart below shows when an application is considered Long Line. Beyond these lengths, long line accessories are required:

HP with Puron® Refrigerant Long Line Description ft (m)
Beyond these lengths, long line accessories are required

Liquid Line Size	Units On Same Level	Outdoor Below Indoor	Outdoor Above Indoor
3/8	80 (24.4)	20 (6.1) vertical or 80 (24.4) total	80 (24.4)

Note: See Long Line Guideline for details

Accessories

KIT NUMBER	KIT NAME	18	24	30	36	42	48	60
KAACH1701AAA	Crankcase Heater	X	X	X	X			
KAACH1601AAA	Crankcase Heater					X	X	S
KAATD0101TDR	Time Delay Relay	X	X	X	X	X	X	X
KHAIR0201AAA	Isolation Relay	X	X	X	X	X	X	X
KHALS0401LLS	Solenoid Valve Kit	X	X	X	X	X	X	X
KHASS0606MPK	Snow Stand	X	X	X	X	X	X	X
KSACY0101AAA	Cycle Protector	X	X	X	X	X	X	X
KSAFT0101AAA	Evaporator Freeze Stat	X	X	X	X	X	X	X
KSAHI0401PUR	High Pressure Switch Kit	X	X	X	X	X	X	X
KSAHS2501AAA	Hard Start	X	X	X	X	X	X	X
KSALA0301410	Low Ambient Cooling Pressure Switch	X	X	X	X	X	X	X
KSALA1001AAA	MotorMaster	X	X	X	X	X	X	X
KSATX0201PUR	TXV Kit	X	X	X				
KSATX0301PUR	TXV Kit				X	X		
KSATX0401PUR	TXV Kit						X	X
KSBTX0201PUR	TXV Kit	X	X	X				
KSBTX0301PUR	TXV Kit				X	X		
KSBTX0401PUR	TXV Kit						X	X
KSASH2301COP	Sound Blanket	X	X	X	X			
KSASH2401COP	Sound Blanket					X	X	X
KSASF0201AAA	Support Feet	X	X	X	X	X	X	X

X = Accessory
S = Standard

Accessory Usage Guideline

Accessory	REQUIRED FOR LOW-AMBIENT COOLING APPLICATIONS (Below 55°F / 12.8°C)	REQUIRED FOR LONG LINE APPLICATIONS*	REQUIRED FOR SEA COAST APPLICATIONS (Within 2 miles / 3.22 km)
Accumulator	Standard	Standard	Standard
Ball Bearing Fan Motor	Standard	Standard	Standard
Compressor Start Assist Capacitor and Relay	Yes	Yes	No
Crankcase Heater	Yes†	Yew	No
Evaporator Freeze Thermostat	Yes	No	No
Hard Shutoff TXV	Yes	Yes	No
Isolation Relay	Yes	No	No
Liquid Line Solenoid Valve	No	See Long-Line Application Guideline	No
Motor Master® Control or Low Ambient Switch	Yes	No	No
Support Feet	Recommended	No	Recommended

*. For tubing line sets between 80 and 200 ft. (24.38 and 60.96 m) and/or 20 ft. (6.09 m) vertical differential, refer to Residential Split-System Longline Application Guideline.
†. Standard on 3 phase units only

Accessory Description and Usage (Listed Alphabetically)

1. Ball-Bearing Fan Motor

A fan motor with ball bearings which permits speed reduction while maintaining bearing lubrication.

Usage Guideline:

Required on all units when MotorMaster® is used.

2. Compressor Start Assist - Capacitor and Relay

Start capacitor and relay gives a ”hard” boost to compressor motor at each start up.

Usage Guideline:

Required for single-phase scroll compressors in the following applications:

Long line

Low ambient cooling

Suggested for all compressors in areas with a history of low voltage problems.

3. Crankcase Heater

An electric resistance heater which mounts to the base of the compressor to keep the lubricant warm during off cycles. Improves compressor lubrication on restart and minimizes the chance of liquid slugging.

Usage Guideline:

Required in low ambient cooling applications.

Required in long line applications.

Suggested in all commercial applications.

4. Cycle Protector

The cycle protector is designed to prevent compressor short cycling. This control provides an approximate 5-minute delay after power to the compressor has been interrupted for any reason, including power outage, protector control trip, thermostat jiggling, or normal cycling.

5. Evaporator Freeze Thermostat

An SPST temperature-actuated switch that stops unit operation when evaporator reaches freeze-up conditions.

Usage Guideline:

Required when low ambient kit has been added.

6. Low-Ambient Pressure Switch Kit

A long life pressure switch which is mounted to outdoor unit service valve. It is designed to cycle the outdoor fan motor in order to maintain head pressure within normal operating limits (approximately 100 psig to 225 psig). The control will maintain working head pressure at low-ambient temperatures down to 0°F (-18°C) when properly installed and also using wind baffles. Instructions provided in accessory kit.

Usage Guideline:

A Low-Ambient Pressure Switch or MotorMaster® Low-Ambient Controller must be used when cooling operation is used at outdoor temperatures below 55°F (12.8°C).

7. MotorMaster® Low-Ambient Controller

A fan-speed control device activated by a temperature sensor, designed to control condenser fan motor speed in response to the saturated, condensing temperature during operation in cooling mode only. For outdoor temperatures down to 0°F/–17.8°C), it maintains condensing temperature at 100°F ±10°F (37.8°C ±5.5°C).

Usage Guideline:

A MotorMaster® Low Ambient Controller or Low-Ambient Pressure Switch must be used when cooling operation is used at outdoor temperatures below 55°F (12.8°C).

Suggested for all commercial applications.

8. Outdoor Air Temperature Sensor

This device enables the thermostat to display the outdoor temperature. This device is also required to enable special thermostat features such as auxiliary heat lock out.

Usage Guideline:

Suggested for use with compatible Carrier thermostats.

9. Sound Hood

Wraparound sound reducing cover for the compressor. Reduces the sound level of the compressor.

Usage Guideline:

Suggested when unit is installed closer than 15 ft (4.57 m) to quiet areas, bedrooms, etc.

Suggested when unit is installed between two houses less than 10 ft (3 m) apart.

Accessory Description and Usage (Listed Alphabetically) Continued

10. Support Feet

Four or five stick-on plastic feet that raise the unit 4 in. (101.6 mm) above the mounting pad. This allows sand, dirt, and other debris to be flushed from the unit base, minimizing corrosion.

Usage Guideline:

Suggested in the following applications:

Coastal installations.

Windy areas or where debris is normally circulating.

Rooftop installations.

For improved sound ratings.

11. Thermostatic Expansion Valve (TXV)

A modulating flow-control valve which meters refrigerant liquid flow rate into the evaporator in response to the superheat of the refrigerant gas leaving the evaporator.

Kit includes valve, adapter tubes, and external equalizer tube. Hard shut off types are available.

Usage Guideline:

Required to achieve AHRI ratings in certain equipment combinations. Refer to combination ratings.

Hard shut off TXV or LLS required in air conditioner long line applications.

Required for use on all zoning systems.

12. Time-Delay Relay

An SPST delay relay which briefly continues operation of indoor blower motor to provide additional cooling after the compressor cycles off.

NOTE: Most indoor unit controls include this feature. For those that do not, use the guideline below.

Usage Guideline:

For improved efficiency ratings for certain combinations of indoor and outdoor units. Refer to AHRI Directory of Certified Product Performance (AHRI Directory).

When a Time-Delay Relay (TDR) is called for in the AHRI Directory, use a 30 second TDR for MicroChannel Indoor units and use a 90 second TDR for Round Tube Plate Fin Indoor units.

13. Winter Start Control

This control is designed to alleviate nuisance opening of the low-pressure switch by bypassing it for the first 3 minutes of operation.

Electrical Data

UNIT SIZE	V/PH	OPER VOLTS*		COMPR		FAN	MCA	MAX FUSE† or CKT BRK AMPS
		MAX	MIN	LRA	RLA	FLA		
18	208-230-1	253	197	45.7	10.3	0.50	13.4	20
24				59.5	11.1	0.60	14.5	25
30				67.9	14.1	0.60	18.2	30
36				83.1	15.3	1.20	20.3	30
42				110.0	18.6	1.40	24.7	40
48				120.0	25.0	1.52	32.8	50
60				150.0	25.6	1.20	33.2	50

*. Perrmissible limits of the voltage range at which the unit will operate satisfactorily
†. Time-Delay fuse.

FLA—Full Load Amps
LRA—Locked Rotor Amps
MCA—Minimum Circuit Amps
RLA—Rated Load Amps
NOTE: Control circuit is 24-V on all units and requires external power source. Copper wire must be used from service disconnect to unit.
All motors/compressors contain internal overload protection.
Complies with requirements of ASHRAE Standards 90.1
Short Circuit Current Rating (SCCR): 5kA rms

Sound Power Level Without Sound Hood

UNIT SIZE	STANDARD RATING (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dB, without tone adjustment)						
		125	250	500	1000	2000	4000	8000
18	71	70.2	66.4	65.1	67.4	62.8	58.2	52.5
24	76	66.3	68.4	69.4	67.7	64.4	61.4	55.9
30	76	70.1	71.3	70.8	69.6	64.0	60.6	54.9
36	76	74.0	72.5	71.7	70.5	66.1	61.7	55.6
42	76	72.1	72.6	70.0	67.6	62.9	60.5	56.0
48	76	75.5	72.4	71.4	68.3	63.1	60.5	55.5
60	76	65.2	67.0	67.4	70.0	62.6	59.7	55.5

NOTE: Tested in compliance with AHRI 270 but not listed with AHRI.

Sound Power Level With Sound Hood

UNIT SIZE	STANDARD RATING (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dB, without tone adjustment)						
		125	250	500	1000	2000	4000	8000
18	69	70.6	66.2	64.8	65.7	61.2	57.5	51.3
24	74	66.7	68.1	68.7	66.5	63.1	60.0	53.1
30	74	71.4	70.5	70.5	68.3	63.4	60.3	53.5
36	74	74.7	72.7	71.8	68.6	64.3	59.0	51.6
42	74	72.8	73.7	70.3	67.3	62.6	59.8	53.4
48	74	76.3	71.9	71.0	68.1	62.9	60.0	53.9
60	73	65.4	67.5	67.5	68.8	61.5	58.5	52.9

NOTE: Tested in compliance with AHRI 270 but not listed with AHRI.

Charging Subcooling (TXV-Type Expansion Device)

UNIT SIZE-VOLTAGE	REQUIRED SUBCOOLING °F (°C)
18	7 (3.9)
24	7 (3.9)
30	12 (6.7)
36	12 (6.7)
42	10 (5.6)
48	13 (7.2)
60	10 (5.6)

HP Only Replacement with Piston Indoors

This heat pump may only be installed with piston metered indoor units as replacement components in a piston system.

When installing a non-rated heat pump with a piston indoor unit, the correct piston must be installed, which should be listed in the indoor unit Installation Instructions or Product Data.

Replacement pistons can be ordered from Replacement Components (RC).

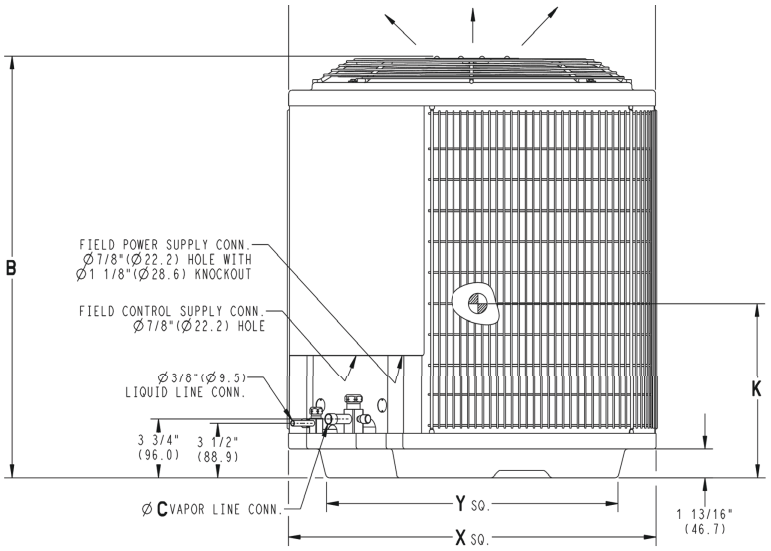
Dimensions

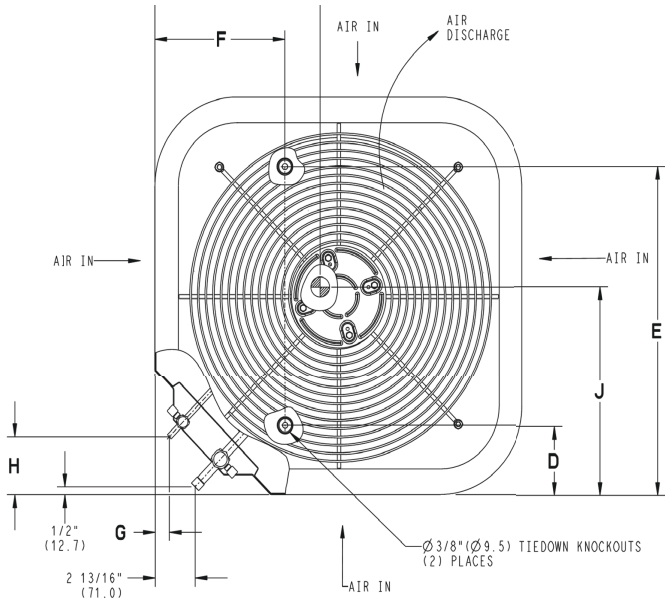
UNIT	SERIES	ELECTRICAL CHARACTERISTICS				A		B		C		D		E		F		G		H		I		J		K		OPERATING WEIGHT		SHIPPING WEIGHT		SHIPPING LENGTH / WIDTH (Sq.)		SHIPPING HEIGHT	
		208-230-1-60	208/230-3-60	460-3-60	575-3-60	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	Lbs	Kgs	Lbs	Kgs	INCH	MM	INCH	MM
25SCA518A*0	0	Y	N	N	N	31 3/16	792.5	28 11/16	728.7	5/8	15.9	6 9/16	166.1	24 11/16	626.3	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	14 3/4	374.7	16 1/4	412.8	13 1/2	342.9	140	63.4	170	77.2	34 1/4	870.0	33 15/16	861.6
25SCA524A*0	0	Y	N	N	N	31 3/16	792.5	32 1/16	815.1	5/8	15.9	6 9/16	166.1	24 11/16	626.3	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	13 3/4	349.3	14	355.6	14 1/2	368.3	159	72.0	190	86.1	34 1/4	870.0	37 5/16	947.9
25SCA530A*0	0	Y	N	N	N	31 3/16	792.5	28 11/16	728.7	3/4	19.1	6 9/16	166.1	24 11/16	626.3	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	15 3/4	400.1	15 1/2	393.7	12 1/4	311.2	176	79.8	207	93.7	34 1/4	870.0	33 15/16	861.6
25SCA536A*0	0	Y	N	N	N	31 3/16	792.5	28 11/16	728.7	3/4	19.1	6 9/16	166.1	24 11/16	626.3	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	14	355.6	14 1/2	368.3	14 1/2	368.3	178	80.7	208	94.5	34 1/4	870.0	33 15/16	861.6
25SCA542A*0	0	Y	N	N	N	31 3/16	792.5	32 1/16	815.1	7/8	22.2	6 9/16	166.1	24 11/16	626.3	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	15 1/4	387.4	14 1/2	368.3	13 3/4	349.3	221	100.4	252	114.5	34 1/4	870.0	37 5/16	947.9
25SCA548A*0	0	Y	N	N	N	31 3/16	792.5	35 1/2	901.4	7/8	22.2	6 9/16	166.1	24 11/16	626.3	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	15 1/4	387.4	15	381.0	14 3/4	374.7	228	103.4	260	117.9	34 1/4	870.0	40 3/4	1034.3
25SCA560A*0	0	Y	N	N	N	35	889.0	38 7/8	987.8	7/8	22.2	6 9/16	166.1	28 7/16	722.8	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	16 1/2	419.1	17 1/2	444.5	19	482.6	260	117.9	293	133.1	37 13/16	960.0	44 1/8	1120.7

Y=YES
N=NO

NOTES:

1. CENTER OF GRAVITY .





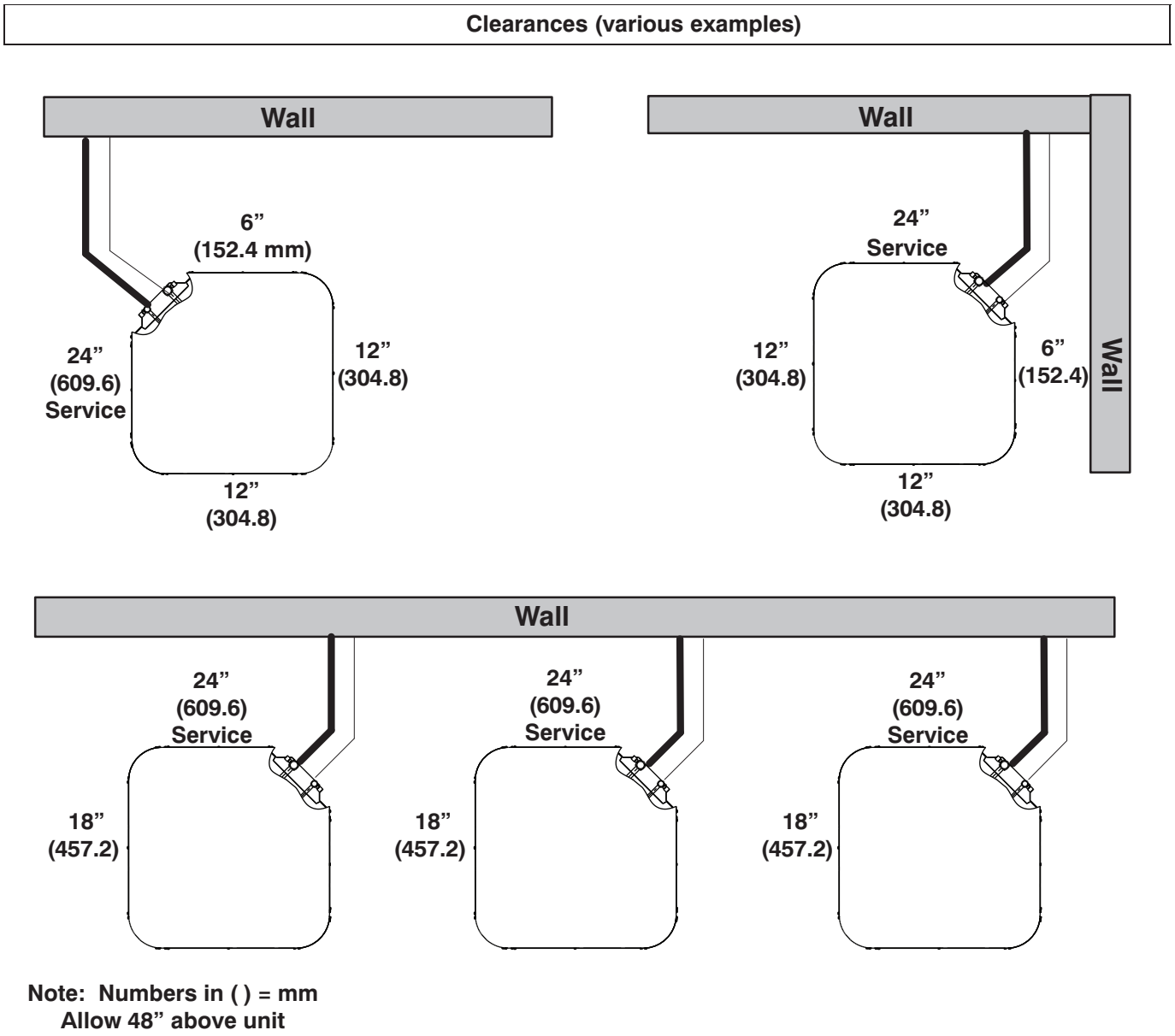
UNIT SIZE	"X" MINIMUM GROUND MOUNTING PAD APPLICATION DIMENSIONS		"Y" MINIMUM ROOF-TOP MOUNTING PAD APPLICATION DIMENSIONS	
-	23 1/8	587.3	17 7/8	454.6
-	25 3/4	654.0	20 7/16	518.5
18,24,30,36,42,48	31 3/16	792.5	22 15/16	583.2
60	35	889.0	26 3/4	679.7

NOTE: ALL DIMENSIONS IN INCH (MM)

U.S. ECCN: Not Subject to Regulation (N.S.R.)

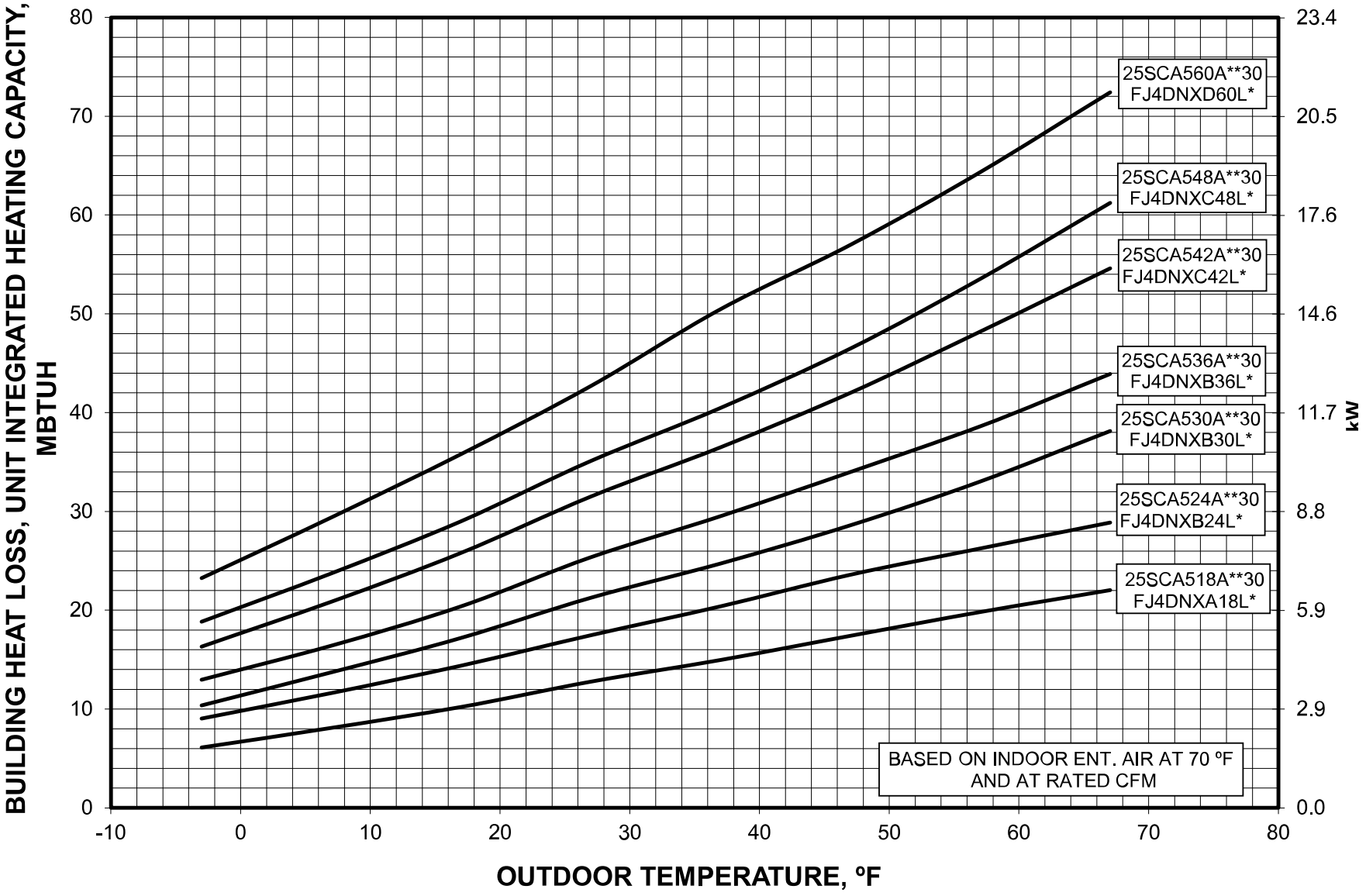
SD5779-4 (5) REV. A

Clearances



IMPORTANT: When installing multiple units in an alcove, roof well, or partially enclosed area, ensure there is adequate ventilation to prevent re-circulation of discharge air.

Balance Point Worksheet



DETAILED COOLING CAPACITIES#

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
		75.0 (23.9)			85.0 (29.4)			95.0 (35.0)			105.0 (40.6)			115.0 (46.1)			125.0 (51.7)		
CFM	EWB	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.
		Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**
25SCA518A003 Outdoor Section With FJ4DNXA18L* Indoor Section																			
525	72.0 (22.2)	20.65	10.58	1.15	19.67	10.21	1.30	18.65	9.83	1.47	17.57	9.44	1.65	16.37	9.00	1.87	15.06	8.54	2.11
	67.0 (19.4)	18.74	13.02	1.17	17.84	12.65	1.31	16.91	12.27	1.48	15.92	11.87	1.66	14.84	11.44	1.88	13.64	10.96	2.12
	63.0 (17.2)††	17.37	12.52	1.18	16.52	12.15	1.32	15.66	11.77	1.48	14.74	11.37	1.67	13.74	10.93	1.88	12.63	10.45	2.12
	62.0 (16.7)	17.07	15.40	1.18	16.26	15.01	1.32	15.44	14.60	1.49	14.58	14.14	1.67	13.76	13.32	1.88	12.79	12.79	2.12
	57.0 (13.9)	16.50	16.50	1.18	15.86	15.86	1.32	15.19	15.19	1.49	14.47	14.47	1.67	13.67	13.67	1.88	12.77	12.77	2.12
600	72.0 (22.2)	21.04	11.10	1.17	20.03	10.73	1.32	18.96	10.35	1.48	17.83	9.94	1.67	16.59	9.50	1.89	15.23	9.03	2.13
	67.0 (19.4)	19.10	13.87	1.18	18.17	13.49	1.33	17.20	13.10	1.50	16.17	12.69	1.68	15.05	12.24	1.90	13.81	11.75	2.14
	63.0 (17.2)††	17.71	13.31	1.19	16.84	12.93	1.34	15.94	12.54	1.50	14.99	12.13	1.69	13.95	11.68	1.90	12.80	11.18	2.14
	62.0 (16.7)	17.47	16.50	1.19	16.65	16.06	1.34	15.88	15.44	1.50	15.04	15.04	1.69	14.18	14.18	1.90	13.22	13.22	2.14
	57.0 (13.9)	17.19	17.19	1.20	16.50	16.50	1.34	15.79	15.79	1.50	15.02	15.02	1.69	14.16	14.16	1.90	13.20	13.20	2.14
675	72.0 (22.2)	21.34	11.60	1.19	20.29	11.22	1.34	19.19	10.84	1.50	18.02	10.43	1.69	16.74	9.98	1.91	15.35	9.50	2.15
	67.0 (19.4)	19.38	14.68	1.20	18.41	14.29	1.35	17.42	13.89	1.51	16.35	13.47	1.70	15.20	13.00	1.92	13.95	12.48	2.16
	63.0 (17.2)††	17.98	14.06	1.21	17.06	13.66	1.36	16.16	13.27	1.52	15.17	12.84	1.71	14.10	12.38	1.92	12.93	11.85	2.16
	62.0 (16.7)	18.01	16.88	1.21	17.22	16.30	1.36	16.30	16.30	1.52	15.48	15.48	1.71	14.58	14.58	1.92	13.56	13.56	2.16
	57.0 (13.9)	17.76	17.76	1.21	17.03	17.03	1.36	16.28	16.28	1.52	15.46	15.46	1.71	14.56	14.56	1.92	13.55	13.55	2.16
25SCA524A003 Outdoor Section With FJ4DNXB24L* Indoor Section																			
700	72.0 (22.2)	28.31	14.39	1.54	27.03	13.91	1.72	25.65	13.40	1.93	24.16	12.86	2.16	22.53	12.28	2.43	20.76	11.66	2.74
	67.0 (19.4)	25.74	17.76	1.55	24.54	17.27	1.74	23.27	16.75	1.95	21.90	16.19	2.19	20.41	15.60	2.46	18.77	14.95	2.77
	63.0 (17.2)††	23.88	17.09	1.56	22.77	16.59	1.75	21.58	16.07	1.96	20.29	15.51	2.20	18.89	14.91	2.48	17.36	14.25	2.79
	62.0 (16.7)	23.47	21.02	1.56	22.40	20.51	1.75	21.26	19.94	1.96	20.04	19.31	2.20	18.80	18.80	2.48	17.57	17.57	2.79
	57.0 (13.9)	22.69	22.69	1.57	21.83	21.83	1.75	20.91	20.91	1.96	19.89	19.89	2.20	18.78	18.78	2.48	17.54	17.54	2.79
780	72.0 (22.2)	28.73	14.96	1.56	27.41	14.48	1.74	25.98	13.96	1.95	24.45	13.41	2.18	22.77	12.82	2.45	20.96	12.19	2.75
	67.0 (19.4)	26.13	18.68	1.57	24.89	18.18	1.76	23.60	17.66	1.97	22.18	17.09	2.20	20.63	16.47	2.48	18.98	15.82	2.79
	63.0 (17.2)††	24.27	17.95	1.58	23.11	17.44	1.77	21.88	16.91	1.98	20.56	16.34	2.22	19.12	15.72	2.50	17.55	15.05	2.81
	62.0 (16.7)	23.91	22.23	1.58	22.82	21.67	1.77	21.67	21.67	1.98	20.65	19.77	2.22	19.35	19.35	2.49	18.05	18.05	2.80
	57.0 (13.9)	23.45	23.45	1.59	22.54	22.54	1.77	21.57	21.57	1.98	20.50	20.50	2.22	19.33	19.33	2.49	18.03	18.03	2.80
900	72.0 (22.2)	29.21	15.76	1.59	27.84	15.27	1.77	26.36	14.75	1.98	24.76	14.20	2.21	23.03	13.60	2.48	21.16	12.96	2.78
	67.0 (19.4)	26.57	19.99	1.60	25.30	19.49	1.79	23.96	18.95	2.00	22.50	18.36	2.23	20.90	17.72	2.50	19.21	17.03	2.81
	63.0 (17.2)††	24.75	19.19	1.61	23.51	18.65	1.80	22.24	18.11	2.01	20.86	17.51	2.25	19.38	16.87	2.53	17.78	16.16	2.84
	62.0 (16.7)	24.74	23.06	1.61	23.45	23.45	1.80	22.77	20.71	2.01	21.27	21.27	2.25	20.02	20.02	2.52	18.65	18.65	2.82
	57.0 (13.9)	24.39	24.39	1.62	23.42	23.42	1.80	22.38	22.38	2.01	21.24	21.24	2.25	20.00	20.00	2.52	18.63	18.63	2.82
25SCA530A003 Outdoor Section With FJ4DNXB30L* Indoor Section																			
875	72.0 (22.2)	33.73	17.56	1.88	32.26	17.00	2.08	30.69	16.41	2.32	29.01	15.78	2.59	27.19	15.11	2.89	25.19	14.39	3.24
	67.0 (19.4)	30.54	21.64	1.87	29.19	21.08	2.08	27.76	20.48	2.31	26.23	19.85	2.58	24.56	19.18	2.88	22.74	18.43	3.23
	63.0 (17.2)††	28.25	20.78	1.87	26.96	20.19	2.08	25.66	19.61	2.31	24.23	18.98	2.57	22.69	18.30	2.88	20.98	17.55	3.22
	62.0 (16.7)	27.76	25.61	1.87	26.55	25.01	2.08	25.30	24.37	2.31	23.96	23.64	2.57	22.77	22.23	2.88	21.24	21.24	3.22
	57.0 (13.9)	26.90	26.90	1.87	25.95	25.95	2.08	24.92	24.92	2.31	23.81	23.81	2.57	22.58	22.58	2.88	21.21	21.21	3.22
1055	72.0 (22.2)	34.62	18.81	1.93	33.05	18.23	2.14	31.39	17.63	2.37	29.62	16.98	2.64	27.70	16.29	2.95	25.60	15.55	3.29
	67.0 (19.4)	31.35	23.69	1.93	29.91	23.07	2.13	28.40	22.47	2.37	26.81	21.82	2.63	25.06	21.10	2.94	23.16	20.32	3.28
	63.0 (17.2)††	29.00	22.65	1.93	27.67	22.06	2.13	26.27	21.44	2.36	24.77	20.79	2.63	23.06	20.18	2.93	21.39	19.27	3.27
	62.0 (16.7)	28.70	28.17	1.93	27.79	26.62	2.13	26.32	26.32	2.36	25.10	25.10	2.63	23.75	23.75	2.93	22.25	22.25	3.28
	57.0 (13.9)	28.47	28.47	1.93	27.41	27.41	2.13	26.29	26.29	2.36	25.06	25.06	2.63	23.72	23.72	2.93	22.22	22.22	3.28
1125	72.0 (22.2)	34.88	19.27	1.95	33.28	18.68	2.16	31.59	18.07	2.39	29.79	17.42	2.66	27.84	16.73	2.97	25.71	15.98	3.31
	67.0 (19.4)	31.58	24.42	1.95	30.13	23.81	2.15	28.60	23.18	2.39	26.97	22.55	2.65	25.21	21.79	2.96	23.29	21.01	3.30
	63.0 (17.2)††	29.23	23.34	1.95	27.88	22.75	2.15	26.45	22.12	2.38	24.93	21.47	2.65	23.29	20.72	2.95	21.51	19.90	3.30
	62.0 (16.7)	29.35	28.17	1.95	28.20	27.21	2.15	26.76	26.76	2.38	25.50	25.50	2.65	24.11	24.11	2.95	22.57	22.57	3.30
	57.0 (13.9)	28.98	28.98	1.95	27.89	27.89	2.15	26.73	26.73	2.38	25.47	25.47	2.65	24.08	24.08	2.95	22.55	22.55	3.30

DETAILED COOLING CAPACITIES# (Continued)

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
		75.0 (23.9)			85.0 (29.4)			95.0 (35.0)			105.0 (40.6)			115.0 (46.1)			125.0 (51.7)		
CFM	EWB	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.
		Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**
25SCA536A003 Outdoor Section With FJ4DNXB36L* Indoor Section																			
1060	72.0 (22.2)	41.65	21.37	2.29	39.73	20.65	2.56	37.70	19.88	2.81	35.53	19.08	3.10	33.22	18.24	3.46	30.74	17.34	3.94
	67.0 (19.4)	37.84	26.35	2.33	36.07	25.61	2.59	34.20	24.83	2.85	32.20	24.01	3.14	30.07	23.15	3.49	27.78	22.23	3.97
	63.0 (17.2)††	35.05	25.33	2.34	33.41	24.59	2.61	31.65	23.80	2.87	29.77	22.97	3.15	27.75	22.05	3.50	25.63	21.17	3.96
	62.0 (16.7)	34.43	31.15	2.34	32.85	30.37	2.61	31.16	29.52	2.87	29.40	28.59	3.15	27.78	26.91	3.50	25.87	25.87	3.96
	57.0 (13.9)	33.21	33.21	2.34	31.95	31.95	2.61	30.59	30.59	2.87	29.12	29.12	3.15	27.54	27.54	3.50	25.83	25.83	3.96
1200	72.0 (22.2)	42.35	22.32	2.33	40.36	21.58	2.59	38.26	20.80	2.84	36.01	19.99	3.13	33.63	19.14	3.50	31.06	18.23	3.98
	67.0 (19.4)	38.52	27.88	2.36	36.73	27.17	2.63	34.73	26.33	2.89	32.65	25.53	3.17	30.46	24.62	3.53	28.11	23.67	4.01
	63.0 (17.2)††	35.69	26.76	2.38	33.97	25.98	2.65	32.15	25.22	2.91	30.21	24.37	3.19	28.15	23.46	3.54	25.95	22.50	4.01
	62.0 (16.7)	35.17	33.16	2.38	33.55	32.30	2.65	31.96	31.04	2.91	30.19	30.19	3.19	28.50	28.50	3.54	26.68	26.68	4.01
	57.0 (13.9)	34.46	34.46	2.38	33.13	33.13	2.65	31.69	31.69	2.91	30.14	30.14	3.19	28.46	28.46	3.54	26.65	26.65	4.01
1350	72.0 (22.2)	42.92	23.27	2.36	40.87	22.52	2.62	38.70	21.74	2.88	36.39	20.92	3.17	33.94	20.05	3.54	31.31	19.13	4.02
	67.0 (19.4)	39.04	29.46	2.41	37.15	28.70	2.67	35.15	27.89	2.93	33.03	27.01	3.22	30.77	26.12	3.58	28.38	25.12	4.05
	63.0 (17.2)††	36.22	28.22	2.42	34.43	27.45	2.69	32.38	26.55	2.95	30.58	25.76	3.23	28.47	24.83	3.59	26.23	23.82	4.06
	62.0 (16.7)	35.86	35.05	2.42	34.24	34.24	2.69	32.73	32.73	2.95	31.07	31.07	3.23	29.31	29.31	3.59	27.40	27.40	4.06
	57.0 (13.9)	35.60	35.60	2.43	34.18	34.18	2.69	32.67	32.67	2.95	31.03	31.03	3.23	29.28	29.28	3.59	27.37	27.37	4.06
25SCA542A003 Outdoor Section With FJ4DNXC42L* Indoor Section																			
1240	72.0 (22.2)	48.60	25.34	2.78	46.33	24.47	3.05	43.92	23.55	3.35	41.35	22.59	3.69	38.56	21.56	4.08	35.57	20.47	4.51
	67.0 (19.4)	44.20	31.29	2.76	42.16	30.41	3.03	40.00	29.52	3.33	37.66	28.55	3.68	35.14	27.51	4.06	32.42	26.39	4.50
	63.0 (17.2)††	41.02	30.12	2.75	39.13	29.25	3.02	37.13	28.33	3.32	34.97	27.38	3.66	32.64	26.34	4.05	30.10	25.20	4.49
	62.0 (16.7)	40.34	37.05	2.75	38.51	36.14	3.02	36.60	35.16	3.32	34.57	34.05	3.66	32.61	32.17	4.05	30.38	30.38	4.49
	57.0 (13.9)	38.95	38.95	2.74	37.50	37.50	3.01	35.95	35.95	3.32	34.26	34.26	3.66	32.39	32.39	4.05	30.33	30.33	4.49
1400	72.0 (22.2)	49.37	26.42	2.83	47.01	25.53	3.10	44.51	24.60	3.40	41.83	23.62	3.74	38.96	22.57	4.13	35.87	21.47	4.56
	67.0 (19.4)	44.94	33.07	2.81	42.80	32.18	3.08	40.60	31.27	3.38	38.15	30.26	3.73	35.54	29.19	4.11	32.74	28.03	4.55
	63.0 (17.2)††	41.72	31.77	2.80	39.75	30.88	3.07	37.67	29.95	3.37	35.43	28.96	3.71	33.03	27.90	4.10	30.43	26.73	4.54
	62.0 (16.7)	41.00	39.25	2.80	39.28	38.36	3.07	37.60	36.44	3.37	35.39	35.39	3.71	33.41	33.41	4.10	31.22	31.22	4.54
	57.0 (13.9)	40.36	40.36	2.80	38.81	38.81	3.07	37.15	37.15	3.37	35.34	35.34	3.71	33.37	33.37	4.10	31.19	31.19	4.54
1575	72.0 (22.2)	50.01	27.54	2.88	47.56	26.63	3.15	44.97	25.69	3.46	42.22	24.69	3.80	39.26	23.63	4.18	36.09	22.51	4.61
	67.0 (19.4)	45.54	34.92	2.87	43.33	34.01	3.14	41.02	33.06	3.44	38.53	32.03	3.78	35.87	30.93	4.17	33.00	29.72	4.60
	63.0 (17.2)††	42.31	33.47	2.85	40.28	32.57	3.12	38.12	31.59	3.43	35.82	30.60	3.77	33.37	29.48	4.16	30.70	28.27	4.59
	62.0 (16.7)	41.94	41.55	2.85	40.30	39.64	3.12	38.33	38.33	3.43	36.38	36.38	3.77	34.28	34.28	4.16	31.98	31.98	4.60
	57.0 (13.9)	41.64	41.64	2.85	39.99	39.99	3.12	38.25	38.25	3.43	36.34	36.34	3.77	34.24	34.24	4.16	31.94	31.94	4.60
25SCA548A003 Outdoor Section With FJ4DNXC48L* Indoor Section																			
1390	72.0 (22.2)	55.87	29.05	3.15	53.35	28.08	3.48	50.68	27.07	3.86	47.80	25.99	4.28	44.69	24.83	4.76	41.32	23.59	5.29
	67.0 (19.4)	50.74	35.74	3.13	48.44	34.76	3.46	46.00	33.74	3.83	43.37	32.65	4.26	40.53	31.47	4.73	37.44	30.21	5.26
	63.0 (17.2)††	47.01	34.36	3.12	44.90	33.40	3.44	42.63	32.38	3.82	40.19	31.29	4.24	37.55	30.11	4.71	34.66	28.84	5.24
	62.0 (16.7)	46.17	42.21	3.11	44.12	41.22	3.44	41.95	40.14	3.81	39.64	38.93	4.24	37.50	36.67	4.71	34.86	34.86	5.24
	57.0 (13.9)	44.48	44.48	3.11	42.87	42.87	3.44	41.13	41.13	3.81	39.23	39.23	4.23	37.13	37.13	4.71	34.81	34.81	5.24
1600	72.0 (22.2)	56.99	30.56	3.21	54.35	29.56	3.55	51.56	28.52	3.92	48.55	27.43	4.35	45.33	26.24	4.83	41.84	24.99	5.36
	67.0 (19.4)	51.78	38.17	3.19	49.37	37.17	3.52	46.82	36.12	3.90	44.08	35.00	4.32	41.13	33.79	4.80	37.95	32.49	5.33
	63.0 (17.2)††	48.01	36.63	3.18	45.82	35.65	3.51	43.42	34.59	3.88	40.88	33.47	4.30	38.13	32.24	4.78	35.16	30.94	5.31
	62.0 (16.7)	47.29	45.42	3.18	45.22	44.28	3.51	43.24	42.39	3.88	40.84	40.84	4.30	38.59	38.59	4.78	36.10	36.10	5.31
	57.0 (13.9)	46.44	46.44	3.18	44.70	44.70	3.50	42.83	42.83	3.88	40.79	40.79	4.30	38.54	38.54	4.78	36.06	36.06	5.31
1800	72.0 (22.2)	57.79	31.89	3.27	55.06	30.89	3.61	52.17	29.83	3.98	49.08	28.72	4.41	45.76	27.53	4.89	42.17	26.26	5.42
	67.0 (19.4)	52.53	40.36	3.25	50.03	39.35	3.58	47.40	38.28	3.96	44.59	37.12	4.38	41.55	35.87	4.86	38.31	34.52	5.39
	63.0 (17.2)††	48.72	38.67	3.24	46.43	37.63	3.57	43.99	36.58	3.94	41.37	35.40	4.36	38.58	34.17	4.84	35.52	32.79	5.37
	62.0 (16.7)	48.29	48.07	3.24	46.68	45.27	3.57	44.21	44.21	3.94	42.05	42.05	4.37	39.67	39.67	4.85	37.07	37.07	5.38
	57.0 (13.9)	47.99	47.99	3.24	46.14	46.14	3.57	44.16	44.16	3.94	42.00	42.00	4.37	39.63	39.63	4.85	37.02	37.02	5.38

DETAILED COOLING CAPACITIES# (Continued)

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
		75.0 (23.9)			85.0 (29.4)			95.0 (35.0)			105.0 (40.6)			115.0 (46.1)			125.0 (51.7)		
CFM	EWB	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.
		Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**
25SCA560A003 Outdoor Section With FJ4DNXD60L* Indoor Section																			
1735	72.0 (22.2)	69.21	35.68	3.92	66.03	34.48	4.31	62.63	33.22	4.77	58.98	31.87	5.29	55.00	30.43	5.89	50.73	28.90	6.55
	67.0 (19.4)	62.99	44.15	3.91	60.07	42.92	4.30	57.00	41.66	4.75	53.67	40.30	5.27	50.05	38.84	5.86	46.13	37.27	6.53
	63.0 (17.2)††	58.43	42.45	3.90	55.76	41.25	4.28	52.91	40.00	4.73	49.85	38.64	5.25	46.50	37.19	5.84	42.85	35.62	6.51
	62.0 (16.7)	57.37	52.31	3.90	54.80	51.06	4.28	52.09	49.70	4.73	49.36	47.68	5.25	46.28	46.28	5.84	43.28	43.28	6.51
	57.0 (13.9)	55.54	55.54	3.89	53.50	53.50	4.27	51.30	51.30	4.73	48.88	48.88	5.25	46.20	46.20	5.84	43.22	43.22	6.51
2000	72.0 (22.2)	70.52	37.55	4.00	67.19	36.32	4.40	63.64	35.03	4.85	59.83	33.66	5.38	55.71	32.20	5.98	51.29	30.64	6.64
	67.0 (19.4)	64.19	47.18	3.99	61.17	45.94	4.38	57.94	44.65	4.84	54.48	43.24	5.36	50.73	41.74	5.95	46.68	40.11	6.62
	63.0 (17.2)††	59.61	45.29	3.98	56.81	44.07	4.37	53.84	42.78	4.82	50.65	41.37	5.34	47.16	39.87	5.93	43.39	38.24	6.59
	62.0 (16.7)	58.76	56.28	3.98	56.13	54.83	4.37	53.44	53.44	4.82	50.82	50.82	5.34	47.92	47.92	5.94	44.75	44.75	6.60
	57.0 (13.9)	57.95	57.95	3.98	55.74	55.74	4.37	53.36	53.36	4.82	50.75	50.75	5.34	47.87	47.87	5.94	44.69	44.69	6.60
2250	72.0 (22.2)	71.43	39.21	4.08	67.99	37.97	4.47	64.32	36.66	4.93	60.40	35.27	5.46	56.16	33.79	6.06	51.64	32.22	6.72
	67.0 (19.4)	65.05	49.92	4.07	61.91	48.66	4.46	58.63	47.34	4.92	55.03	45.88	5.44	51.19	44.33	6.03	47.06	42.63	6.70
	63.0 (17.2)††	60.45	47.82	4.06	57.55	46.58	4.45	54.50	45.24	4.90	51.19	43.81	5.42	47.62	42.24	6.01	43.78	40.51	6.68
	62.0 (16.7)	59.93	59.93	4.06	57.98	55.94	4.45	55.01	55.01	4.90	52.24	52.24	5.43	49.20	49.20	6.02	45.85	45.85	6.69
	57.0 (13.9)	59.82	59.82	4.06	57.47	57.47	4.45	54.95	54.95	4.90	52.18	52.18	5.43	49.15	49.15	6.02	45.80	45.80	6.69

#Detailed cooling capacities are based on indoor and outdoor unit at the same elevation per AHRI standard 210/240-2008. If additional tubing length and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.

‡Sensible capacities shown are based on 80°F (27°C) entering air at the indoor coil. For sensible capacities at other than 80°F (27°C), deduct 835 Btuh (245 kW) per 1000 CFM (480 L/S) of indoor coil air for each degree below 80°F (27°C), or add 835 Btuh (245 kW) per 1000 CFM (480 L/S) of indoor coil air per degree above 80°F (27°C).

**Total System. kw is total of indoor and outdoor unit kilowatts.

††At TVA rating indoor condition (75°F edb/63°F ewb). All other indoor air temperatures are at 80°F edb.

NOTE: When the required data falls between the published data, interpolation may be performed. Extrapolation is not an acceptable practice.

EWB — Entering Wet Bulb1

HEAT PUMP HEATING PERFORMANCE

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C)																							
		-3.0 (-19.4)			7.0 (-13.9)			17.0 (-8.3)			27.0 (-2.8)			37.0 (2.8)			47.0 (8.3)			57.0 (13.9)			67.0 (19.4)		
EDB	CFM	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†
		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*	
25SCA518A003 Outdoor Section With FJ4DNXA18L* Indoor Section																									
65.0 (18.3)	525	6.31	5.80	1.06	8.24	7.57	1.12	10.33	9.42	1.18	12.82	11.39	1.25	14.99	13.64	1.32	17.43	17.43	1.39	19.89	19.89	1.46	22.25	22.25	1.53
	600	6.44	5.92	1.07	8.39	7.71	1.13	10.49	9.57	1.18	12.98	11.53	1.24	15.17	13.81	1.30	17.65	17.65	1.37	20.05	20.05	1.42	22.35	22.35	1.49
	675	6.56	6.03	1.09	8.52	7.83	1.14	10.64	9.70	1.19	13.11	11.65	1.24	15.33	13.95	1.29	17.84	17.84	1.35	20.16	20.16	1.40	22.39	22.39	1.46
70.0 (21.1)	525	5.98	5.50	1.11	7.94	7.30	1.17	10.04	9.15	1.24	12.60	11.19	1.31	14.79	13.46	1.38	17.18	17.18	1.46	19.51	19.51	1.53	21.99	21.99	1.61
	600	6.10	5.61	1.12	8.08	7.42	1.18	10.20	9.30	1.24	12.76	11.33	1.30	14.96	13.61	1.36	17.40	17.40	1.43	19.80	19.80	1.50	22.01	22.01	1.57
	675	6.21	5.71	1.13	8.21	7.54	1.18	10.34	9.43	1.24	12.90	11.46	1.30	15.11	13.75	1.35	17.59	17.59	1.42	19.93	19.93	1.47	22.16	22.16	1.53
75.0 (23.9)	525	5.66	5.21	1.15	7.64	7.02	1.22	9.76	8.90	1.29	12.12	10.77	1.36	14.59	13.28	1.45	16.93	16.93	1.53	19.52	19.52	1.61	21.74	21.74	1.69
	600	5.77	5.31	1.16	7.78	7.15	1.23	9.91	9.04	1.29	12.36	10.98	1.36	14.75	13.42	1.43	17.15	17.15	1.50	19.69	19.69	1.57	21.85	21.85	1.64
	675	5.88	5.41	1.18	7.90	7.26	1.24	10.05	9.16	1.29	12.68	11.26	1.36	14.90	13.56	1.42	17.33	17.33	1.49	19.79	19.79	1.55	21.89	21.89	1.61
25SCA524A003 Outdoor Section With FJ4DNXB24L* Indoor Section																									
65.0 (18.3)	700	9.25	8.51	1.46	11.80	10.84	1.51	14.65	13.36	1.57	17.55	15.59	1.64	20.48	18.64	1.70	23.72	23.72	1.76	26.48	26.48	1.81	29.22	29.22	1.87
	780	9.37	8.62	1.47	11.95	10.98	1.51	15.04	13.71	1.58	17.71	15.73	1.62	20.68	18.82	1.68	23.86	23.86	1.73	26.51	26.51	1.78	29.14	29.14	1.83
	900	9.54	8.77	1.49	12.15	11.16	1.52	15.24	13.90	1.58	17.92	15.92	1.62	20.93	19.05	1.67	23.93	23.93	1.71	26.50	26.50	1.75	28.95	28.95	1.79
70.0 (21.1)	700	8.92	8.20	1.52	11.47	10.54	1.58	14.22	12.97	1.64	17.33	15.39	1.72	20.20	18.38	1.78	23.45	23.45	1.85	26.22	26.22	1.90	28.63	28.63	1.96
	780	9.04	8.31	1.54	11.62	10.68	1.58	14.40	13.13	1.64	17.48	15.53	1.71	20.40	18.56	1.76	23.60	23.60	1.82	26.26	26.26	1.87	28.88	28.88	1.92
	900	9.21	8.47	1.55	11.81	10.85	1.59	14.66	13.37	1.64	17.69	15.71	1.70	20.65	18.79	1.75	23.86	23.86	1.79	26.27	26.27	1.83	28.80	28.80	1.87
75.0 (23.9)	700	8.57	7.88	1.59	11.12	10.22	1.65	13.86	12.64	1.71	17.09	15.18	1.81	19.92	18.13	1.87	23.12	23.12	1.95	25.95	25.95	2.00	28.41	28.41	2.05
	780	8.69	7.99	1.60	11.27	10.36	1.65	14.03	12.79	1.71	17.25	15.32	1.79	20.11	18.30	1.85	23.32	23.32	1.92	26.00	26.00	1.96	28.60	28.60	2.01
	900	8.86	8.15	1.62	11.47	10.54	1.67	14.26	13.00	1.72	17.45	15.50	1.78	20.36	18.53	1.84	23.49	23.49	1.88	26.03	26.03	1.93	28.48	28.48	1.97
25SCA530A003 Outdoor Section With FJ4DNXB30L* Indoor Section																									
65.0 (18.3)	875	10.57	9.72	1.64	13.85	12.73	1.72	17.28	15.76	1.79	21.23	18.86	1.89	24.67	22.45	1.96	28.51	28.51	2.04	32.89	32.89	2.15	38.06	38.06	2.28
	1055	10.85	9.98	1.67	14.18	13.03	1.74	17.66	16.10	1.81	21.56	19.15	1.88	25.07	22.81	1.94	29.01	29.01	2.01	33.55	33.55	2.11	38.62	38.62	2.20
	1125	10.95	10.07	1.68	14.29	13.13	1.75	17.79	16.22	1.81	21.68	19.26	1.89	25.21	22.94	1.94	29.17	29.17	2.01	33.76	33.76	2.10	38.73	38.73	2.19
70.0 (21.1)	875	10.08	9.27	1.70	13.39	12.30	1.79	16.83	15.35	1.87	20.92	18.58	1.97	24.34	22.15	2.05	28.12	28.12	2.14	32.38	32.38	2.25	37.46	37.46	2.39
	1055	10.37	9.54	1.73	13.72	12.61	1.81	17.20	15.68	1.88	21.26	18.89	1.97	24.73	22.50	2.03	28.60	28.60	2.11	33.02	33.02	2.20	38.12	38.12	2.30
	1125	10.47	9.63	1.75	13.83	12.71	1.82	17.33	15.80	1.89	21.39	19.00	1.97	24.86	22.62	2.03	28.76	28.76	2.10	33.23	33.23	2.20	38.25	38.25	2.29
75.0 (23.9)	875	9.59	8.82	1.76	12.92	11.87	1.86	16.38	14.94	1.95	20.21	17.95	2.04	24.00	21.84	2.14	27.72	27.72	2.24	31.88	31.88	2.35	36.84	36.84	2.51
	1055	9.87	9.08	1.80	13.24	12.17	1.88	16.75	15.27	1.96	20.93	18.59	2.05	24.39	22.20	2.12	28.20	28.20	2.20	32.50	32.50	2.30	37.59	37.59	2.41
	1125	9.96	9.16	1.81	13.35	12.27	1.89	16.87	15.38	1.97	21.05	18.70	2.06	24.52	22.31	2.12	28.36	28.36	2.20	32.70	32.70	2.30	37.75	37.75	2.39
25SCA536A003 Outdoor Section With FJ4DNXB36L* Indoor Section																									
65.0 (18.3)	1060	13.57	12.48	2.18	17.01	15.63	2.19	21.01	19.16	2.26	25.84	22.95	2.39	30.04	27.34	2.49	34.58	34.58	2.60	39.39	39.39	2.69	44.72	44.72	2.78
	1200	13.82	12.71	2.20	17.30	15.90	2.20	21.35	19.47	2.27	26.14	23.22	2.38	30.41	27.67	2.48	35.06	35.06	2.58	39.98	39.98	2.67	45.47	45.47	2.74
	1350	14.06	12.93	2.23	17.57	16.14	2.22	21.65	19.74	2.28	26.43	23.48	2.39	30.76	27.99	2.48	35.49	35.49	2.57	40.51	40.51	2.65	46.11	46.11	2.71
70.0 (21.1)	1060	12.97	11.93	2.28	16.42	15.09	2.29	20.40	18.60	2.35	25.37	22.54	2.48	29.53	26.87	2.59	34.00	34.00	2.69	38.63	38.63	2.79	43.93	43.93	2.89
	1200	13.24	12.18	2.31	16.72	15.36	2.31	20.74	18.91	2.37	25.71	22.84	2.48	29.91	27.22	2.58	34.47	34.47	2.68	39.26	39.26	2.76	44.65	44.65	2.85
	1350	13.47	12.39	2.34	16.99	15.61	2.33	21.06	19.20	2.39	26.01	23.10	2.49	30.27	27.55	2.58	34.90	34.90	2.67	39.81	39.81	2.75	45.29	45.29	2.82
75.0 (23.9)	1060	12.31	11.32	2.36	15.76	14.48	2.37	19.74	18.00	2.44	24.24	21.53	2.55	29.02	26.41	2.68	33.42	33.42	2.79	37.92	37.92	2.90	43.17	43.17	3.01
	1200	12.56	11.55	2.39	16.05	14.75	2.39	20.08	18.31	2.45	24.77	22.00	2.56	29.40	26.75	2.67	33.88	33.88	2.78	38.68	38.68	2.88	43.86	43.86	2.96
	1350	12.81	11.78	2.43	16.34	15.01	2.42	20.40	18.60	2.47	25.51	22.66	2.59	29.74	27.06	2.68	34.30	34.30	2.77	39.06	39.06	2.86	44.47	44.47	2.93
25SCA542A003 Outdoor Section With FJ4DNXC42L* Indoor Section																									
65.0 (18.3)	1240	16.99	15.63	2.54	21.52	19.77	2.66	26.48	24.15	2.78	31.94	28.37	2.92	36.98	33.65	3.05	42.60	42.60	3.19	48.96	48.96	3.38	55.33	55.33	3.53
	1400	17.30	15.91	2.57	21.85	20.08	2.68	26.93	24.56	2.79	32.29	28.68	2.92	37.43	34.06	3.03	43.09	43.09	3.16	49.58	49.58	3.32	55.68	55.68	3.47
	1575	17.60	16.19	2.61	22.18	20.38	2.70	27.39	24.98	2.81	32.63	28.99	2.92	37.82	34.42	3.03	43.57	43.57	3.15	50.05	50.05	3.29	56.08	56.08	3.43
70.0 (21.1)	1240	16.32	15.01	2.64	20.86	19.17	2.76	25.80	23.53	2.89	31.50	27.98	3.05	36.49	33.21	3.17	42.00	42.00	3.33	48.21	48.21	3.52	54.61	54.61	3.68
	1400	16.61	15.28	2.67	21.21	19.49	2.78	26.19	23.88	2.90	31.84	28.28	3.04	36.90	33.58	3.16	42.66	42.66	3.30	48.84	48.84	3.46	55.06	55.06	3.61
	1575	16.91	15.55	2.70	21.53	19.78	2.80	26.56	24.22	2.91	32.19	28.59	3.05	37.29	33.93	3.15	42.96	42.96	3.28	49.37	49.37	3.42	55.39	55.39	3.57
75.0 (23.9)	1240	15.58	14.33	2.73	20.17	18.53	2.86	25.12	22.91	3.00	31.06	27.59	3.18	35.99	32.75	3.31	41.41	41.41	3.47	47.45	47.45	3.67	53.91	53.91	3.83
	1400	15.88	14.60	2.76	20.52	18.85	2.88	25.50	23.25	3.01	31.40	27.89	3.17	36.38	33.11	3.29	41.89	41.89	3.43	48.08	48.08	3.61	54.36	54.36	3.76
	1575	16.17	14.87	2.80	20.84	19.15	2.91	25.86	23.58	3.02	31.74	28.19	3.17	36.63	33.33	3.28	42.35	42.35	3.42	48.64	48.64	3.57	54.67	54.67	3.72

HEAT PUMP HEATING PERFORMANCE (Continued)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C)																					
		-3.0 (-19.4)			7.0 (-13.9)			17.0 (-8.3)			27.0 (-2.8)			37.0 (2.8)			47.0 (8.3)			57.0 (13.9)			67.0 (19.4)		
EDB	CFM	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†
		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*	
25SCA548A003 Outdoor Section With FJ4DNXC48L* Indoor Section																									
65.0 (18.3)	1390	19.57	18.00	2.85	24.39	22.41	2.96	29.74	27.12	3.07	35.56	31.59	3.20	41.01	37.32	3.31	47.17	47.17	3.45	54.37	54.37	3.63	62.01	62.01	3.78
	1600	19.94	18.34	2.88	24.80	22.79	2.97	30.31	27.64	3.08	35.98	31.96	3.19	41.51	37.78	3.29	47.81	47.81	3.41	55.19	55.19	3.56	62.47	62.47	3.68
	1800	20.25	18.62	2.91	25.15	23.11	3.00	31.02	28.29	3.11	36.32	32.26	3.20	41.92	38.15	3.28	48.32	48.32	3.39	55.75	55.75	3.51	62.68	62.68	3.63
70.0 (21.1)	1390	18.83	17.32	2.96	23.72	21.79	3.08	29.00	26.44	3.19	35.11	31.19	3.35	40.48	36.84	3.46	46.50	46.50	3.61	53.55	53.55	3.79	61.23	61.23	3.95
	1600	19.20	17.66	2.99	24.11	22.15	3.10	29.46	26.86	3.20	35.51	31.54	3.34	40.96	37.27	3.44	47.13	47.13	3.56	54.36	54.36	3.73	61.68	61.68	3.85
	1800	19.51	17.94	3.03	24.45	22.47	3.12	29.87	27.24	3.22	35.87	31.86	3.34	41.37	37.65	3.43	47.63	47.63	3.54	54.97	54.97	3.67	61.95	61.95	3.79
75.0 (23.9)	1390	18.07	16.62	3.08	23.00	21.13	3.20	28.29	25.80	3.33	34.68	30.81	3.50	39.98	36.38	3.62	45.84	45.84	3.77	52.73	52.73	3.96	60.36	60.36	4.12
	1600	18.43	16.95	3.11	23.40	21.50	3.22	28.75	26.22	3.34	35.07	31.15	3.49	40.45	36.81	3.59	46.45	46.45	3.72	53.53	53.53	3.89	60.89	60.89	4.02
	1800	18.74	17.23	3.14	23.74	21.81	3.25	29.13	26.56	3.35	35.43	31.47	3.49	40.85	37.17	3.58	46.95	46.95	3.70	54.15	54.15	3.84	61.18	61.18	3.96
25SCA560A003 Outdoor Section With FJ4DNXD60L* Indoor Section																									
65.0 (18.3)	1735	24.41	22.45	3.46	30.46	27.99	3.55	36.84	33.59	3.66	43.94	39.03	3.80	51.13	46.53	3.97	57.77	57.77	4.12	65.36	65.36	4.31	73.43	73.43	4.46
	2000	24.94	22.94	3.51	31.05	28.53	3.59	37.49	34.18	3.68	45.49	40.41	3.84	51.78	47.12	3.95	58.57	58.57	4.09	66.39	66.39	4.25	74.12	74.12	4.37
	2250	25.38	23.34	3.57	31.53	28.97	3.63	38.04	34.69	3.72	45.99	40.85	3.86	52.40	47.69	3.96	59.21	59.21	4.08	67.22	67.22	4.22	74.60	74.60	4.32
70.0 (21.1)	1735	23.25	21.38	3.59	29.39	27.00	3.68	35.80	32.64	3.80	42.69	37.92	3.95	50.48	45.94	4.14	57.00	57.00	4.31	64.36	64.36	4.50	72.44	72.44	4.66
	2000	23.77	21.86	3.64	29.96	27.53	3.72	36.45	33.24	3.83	43.52	38.66	3.96	51.26	46.65	4.13	57.74	57.74	4.26	65.36	65.36	4.44	73.17	73.17	4.56
	2250	24.21	22.27	3.70	30.44	27.97	3.77	36.98	33.72	3.86	44.15	39.22	3.98	51.61	46.97	4.13	58.36	58.36	4.25	66.17	66.17	4.40	73.65	73.65	4.51
75.0 (23.9)	1735	22.05	20.28	3.72	28.28	25.98	3.82	34.75	31.69	3.95	41.62	36.97	4.11	49.79	45.31	4.33	56.23	56.23	4.50	63.37	63.37	4.70	71.41	71.41	4.87
	2000	22.56	20.75	3.77	28.85	26.51	3.86	35.38	32.26	3.98	42.37	37.64	4.11	50.41	45.87	4.31	56.98	56.98	4.45	64.35	64.35	4.63	72.18	72.18	4.76
	2250	22.99	21.14	3.83	29.32	26.94	3.91	35.92	32.75	4.01	42.96	38.16	4.13	50.91	46.33	4.31	57.48	57.48	4.44	65.12	65.12	4.60	72.65	72.65	4.70

NOTE: When the required data falls between the published data, interpolation may be performed. Extrapolation is not an acceptable practice.

* The Btuh heating capacity values shown are net integrated values from which the defrost effect has been subtracted. The Btuh heating from supplement heaters should be added to those values to obtain total Sys. capacity.

† The kW values include the compressor, outdoor fan motor, and indoor blower motor. The kW from supplement heaters should be added to these values to obtain total Sys. kilowatts.

EDB — Entering Dry Bulb2

Guide Specifications
General

Air-Cooled, Split-System Heat Pump
25SCA5
1-1/2 to 5 nominal tons

System Description

Outdoor-mounted, air-cooled, split-system heat pump unit suitable for ground or rooftop installation. Unit consists of a hermetic compressor, an air-cooled coil, propeller-type condenser fan, and a control box. Unit will discharge supply air upward as shown on contract drawings. Unit will be used in a refrigeration circuit to match up to a packaged fan coil or coil unit.

Quality Assurance

- Unit will be rated in accordance with the latest edition of AHRI Standard 210/240.
- Unit will be certified for capacity and efficiency, and listed in the latest AHRI directory.
- Unit construction will comply with latest edition of ANSI/ ASHRAE and with NEC.
- Unit will be constructed in accordance with UL standards and will carry the UL label of approval. Unit will have C-UL approval.
- Unit cabinet will be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 500-hr salt spray test.
- Air-cooled condenser coils are pressure tested and the outdoor unit is leak tested.
- Unit constructed in ISO9001 approved facility.

Delivery, Storage, and Handling

Unit will be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

Warranty (for inclusion by specifying engineer)

U.S. and Canada only.

PRODUCTS

Equipment

Factory assembled, single piece, air-cooled heat pump unit. Contained within the unit enclosure is all factory wiring, piping, controls, compressor, refrigerant charge Puron®, and special features required prior to field start-up.

Unit Cabinet

Unit cabinet will be constructed of galvanized steel and coated with pre-paint.

Available with dense grille only.

Fans

Condenser fan will be direct-drive propeller type, discharging air upward.

Condenser fan motors will be totally enclosed, 1-phase type with class B insulation and permanently lubricated bearings.

Shafts will be corrosion resistant.

Fan blades will be statically and dynamically balanced.

Condenser fan openings will be equipped with steel wire safety guards.

Compressor

Compressor will be hermetically sealed.

Compressor will be mounted on rubber vibration isolators.

Condenser Coil

Condenser coil will be air cooled.

Coil will be constructed of aluminum fins mechanically bonded to copper or aluminum tubes which are then cleaned, dehydrated, and sealed.

Refrigeration Components

Refrigeration circuit components will include liquid-line shutoff valve with sweat connections, vapor-line shutoff valve with sweat connections, system charge of Puron® refrigerant, POE compressor oil, accumulator, and reversing valve.

Operating Characteristics

The capacity of the unit will meet or exceed _____ Btuh at a suction temperature of _____ °F/°C. The power consumption at full load will not exceed _____ kW.

Combination of the unit and the evaporator or fan coil unit will have a total net cooling capacity of _____ Btuh or greater at conditions of _____ CFM entering air temperature at the evaporator at _____ °F wet bulb and _____ °F/°C dry bulb, and air entering the unit at _____ °F/°C.

The system will have a SEER of _____ Btuh/watt or greater at DOE conditions.

Electrical Requirements

Nominal unit electrical characteristics will be _____ v, single phase, 60 hz. The unit will be capable of satisfactory operation within voltage limits of _____ v to _____ v.

Unit electrical power will be single point connection.

Control circuit will be 24v.

Special Features

Refer to section of this literature identifying accessories and descriptions for specific features and available enhancements.

System Design Summary

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01-in. wc.
2. Minimum outdoor operating air temperature without low-ambient operation accessory is 55°F (12.8°C).
3. Maximum outdoor operating air temperature for cooling mode is 125°F (51.7°C).
4. Minimum outdoor operating air temperature for heating mode is –10°F (–23.3°C).
5. Maximum outdoor operating air temperature for heating mode is 66°F (18.9°C).
6. For reliable operation, unit should be level in all horizontal planes.
7. For interconnecting refrigerant tube lengths greater than 80 ft (23.4 m) and/or elevation differences between indoor and outdoor units greater than 20 ft (6.1 m), consult Residential Piping and Longline Guideline and Service Manual available from equipment distributor.
8. If any refrigerant tubing is buried, provide a 6 in. (152.4 mm) vertical rise to the valve connections at the unit. Refrigerant tubing lengths up to 36 in. (914.4 mm) may be buried without further consideration. Do not bury refrigerant lines longer than 36 in. (914.4 mm).
9. Use only copper wire for electric connection at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.
10. Do not apply capillary tube indoor coils to these units.
11. Factory-supplied filter drier must be installed

Edition Date: 09/22

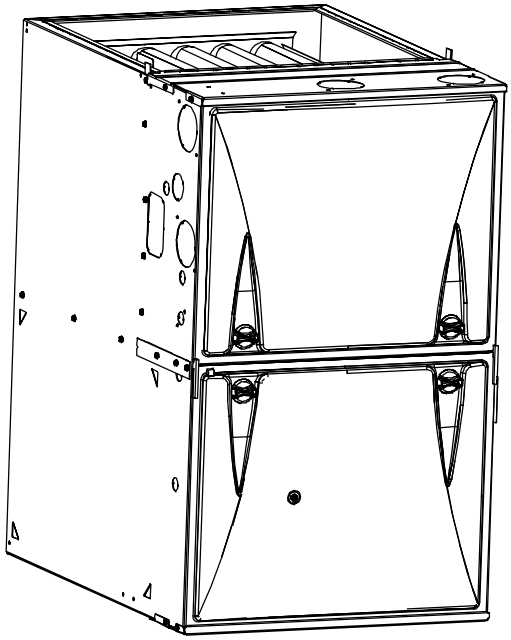
Catalog No: 25SCA5-01PD

Replaces: New

59SU5A
Comfort™ Single−Stage Upflow/Horizontal, Ultra Low NOx Emissions Condensing Gas Furnace

Carrier
turn to the experts

Product Data



A190285

The 59SU5A Comfort™ 95 Ultra-Low NOx gas furnace delivers consumer comfort in a unit that meets California's South Coast Air Quality Management District (SCAQMD) and San Joaquin Valley Air pollution Control District (SJVAPCD) NOx emissions limit of 14ng/J. Offering the performance and benefits of our Comfort Series gas furnaces, this furnace releases 65% less nitrogen oxides (NOx) than previous models. NOx contributes to the formation of smog and acid rain and the deterioration of water quality. Lower NOx emissions mean lower production of particulate matter and cleaner air for the environment. Energy efficiency is at the heart of this furnace with up to 95.0% AFUE gas efficiency and the electrically-efficient fixed-speeds, constant torque (FCT) ECM blower motor. This gas furnace also features Upflow/Horizontal installation flexibility, and is available in four model sizes. All sizes can be vented for direct vent/two-pipe, ventilated combustion air, or single-pipe applications.

PERFORMANCE

- Ultra Low NOx - meets the nitrogen oxides (NOx) emission limit of 14 nanograms/joule for the South Coast Air Quality Management Districts and San Joaquin Valley Air Pollution Control District in California
- Fixed-speeds, constant torque (FCT) ECM blower motor for electrically efficient operation all year long in heating, cooling and continuous fan operation
- Single-stage gas valve with pre-mix burner
- Pilot free, hot surface ignition
- Variable-speed inducer motor for consistent operation
- High temperature limit control designed to prevent overheating
- Adjustable blower speed for heating and cooling
- Stainless-steel primary heat exchanger
- Stainless-steel condensing secondary heat exchanger
- Cabinet air leakage less than 2.0% at 1.0 in. W.C. and cabinet air leakage less than 1.4% at 0.5 in. W.C. when tested in accordance with ASHRAE Standard 193

INSTALLATION FLEXIBILITY

- Upflow/Horizontal design for upflow, horizontal right or horizontal left installation, with rotating vent elbow for exhaust venting flexibility
- Factory-configured ready for upflow applications.
- Ideal height 35" (889 mm) cabinet: short enough for taller coils, but still allows enough room for service.
- Two-pipe venting, single-pipe venting or ventilated combustion air.

APPLICATIONS

- Factory-configured for Natural Gas; not convertible to Liquid Propane.
- Not approved for downflow installation
- Approved for installations up to 5,400 ft.

Comfort SERIES

ENERGY STAR

ISO 9001 Quality

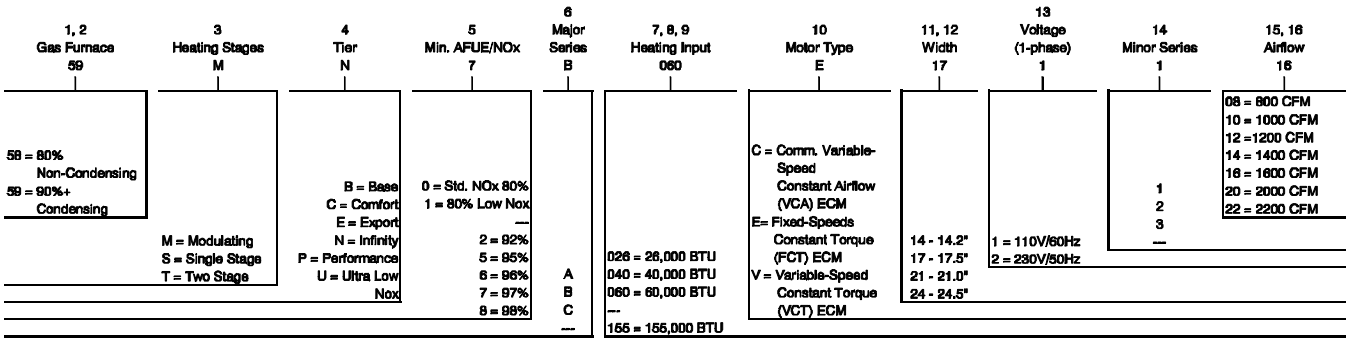
AHRI CERTIFIED

Use of the AHRI Certified ™ Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to www.ahridirectory.org.

FURNACE	CASING DIMENSIONS (IN.)			RATED HEATING OUTPUT† BTUH	AFUE	ENERGY STAR®	HEATING AIRFLOW		COOLING CFM @ 0.5 ESP (in. W.C.)	MOTOR HP - SPEED TAPS
	H	D	W		UPFLOW/ HORIZONTAL		HEATING CFM‡	HEATING ESP (in. W.C.)		
59SU5A060E17--16	35	29.50	17.50	58,000	95%	YES	1205	0.12	1515	3/4 - 5
59SU5A080E21--20	35	29.50	21.00	78,000	95%	YES	1790	0.12	2025	1 - 5
59SU5A100E21--20	35	29.50	21.00	96,000	95%	YES	1880	0.15	2065	1 - 5
59SU5A100E21--22	35	29.50	21.00	97,000	95%	YES	1885	0.15	2025	1 - 5

† Capacity in accordance with DOE test procedures. Ratings are position dependent. See rating plate.
‡ Heating CFM at factory default blower motor heating tap settings.
ESP – External Static Pressure

MODEL NUMBER NOMENCLATURE



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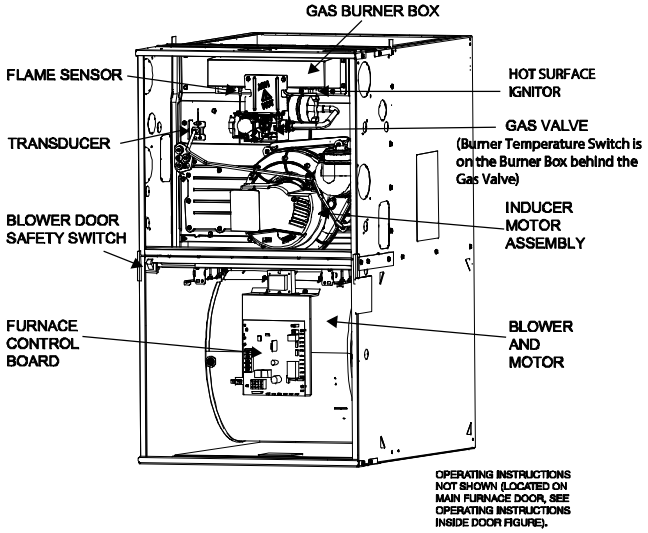
FURNACE COMPONENTS



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FEATURES AND BENEFITS

HYBRID HEAT® Dual Fuel System — This system can provide more control over your monthly energy bills by automatically selecting the most economical method of heating. With HYBRID HEAT components, our system automatically switches between the gas furnace and the electric heat pump as outside temperatures change to maintain greater efficiency and comfort than with any traditional single-source heating system. The heat pump also delivers high-efficiency cooling in the summer.

Pilot Free Igniter — Carrier's unique igniter is not only physically robust but it is also electrically robust. It is capable of running at line voltage and does not require complex voltage regulators.

Multi-Speed ECM Blower Motor — This Fixed-Speeds, Constant Torque ECM, or electronically commutated motor, can provide an efficiency enhancement for select Carrier air conditioner or heat pump systems. It uses less electrical power than its PSC counterpart and also has a wider range of speeds.

Media Filter Cabinet — Enhanced indoor air quality in the home is made easier with our media filter cabinet-accessory (purchased separately). When installed as a part of the system, this cabinet allows for easy and convenient addition of a Carrier high efficiency air filter.

Upflow/Horizontal Design — One model for three applications – upflow, horizontal right or horizontal left.

Direct or Single-pipe Venting, or Optional Ventilated Combustion Air — All sizes can be vented for direct vent/two-pipe, ventilated combustion air, or single-pipe applications.

Sealed Combustion System — This furnace brings in combustion air from outside the furnace, which results in especially quiet operation. The enclosed pre-mix burner also contributes to lower operating noise.

Insulated Casing — Foil-faced insulation in the heat exchanger section of the casing minimizes heat loss, while insulation in the blower compartment reduces operating noise.

Bottom Closure — Factory-installed for side return; easily removable for bottom return. The multi-use bottom closure can also serve for roll-out protection in horizontal applications, and act as the bottom closure for the optional return air base accessory.

Blower Access Panel Switch — Automatically shuts off 115-v power to furnace whenever blower access panel is opened.

Quality Registration — Our furnaces are engineered and manufactured under a quality management system registered to ISO 9001.

SPECIFICATIONS

The furnace should be sized to provide 100 percent of the design heating load requirement plus any margin that occurs because of furnace model size capacity increments. None of the furnace model sizes can be used if the heating load is less than half of the furnaces model's output capacity. Use Air Conditioning Contractors of America (Manual J and S); American Society of Heating, Refrigerating, and Air-Conditioning Engineers; or other approved engineering method to calculate heating load estimates and select the furnace. Excessive oversizing of the furnace may cause the furnace and/or vent to fail prematurely, customer discomfort and/or vent freezing.

Failure to follow these guidelines is considered faulty installation and/or misapplication of the furnace; and resulting failure, damage, or repairs may impact warranty coverage.

Heating Capacity and Efficiency		**060E17--16**	**080E21--20**	**100E21--20**	**100E21--22**
Input	Heating (BTUH)	60,000	80,000	100,000	100,000
Output	Heating (BTUH)	58,000	78,000	96,000	97,000
Certified Temperature Rise Range °F (°C)	Heating	30 – 60 (17 – 33)	30 – 60 (17 – 33)	35 – 65 (19 – 36)	35 – 65 (19 – 36)
Airflow Capacity and Blower Data					
Rated External Static Pressure (in. w.c.)	Heating	0.12	0.12	0.15	0.15
	Cooling	0.5	0.5	0.5	0.5
Airflow Delivery @ Rated ESP (CFM)	Heating	1205	1790	1880	1885
	Cooling	1515	2025	2065	2025
Cooling Capacity (tons) @ CFM/ton	400 CFM/ton	3.5	5	5	5
	350 CFM/ton	4	5.5	5.5	5.5
Direct–Drive Motor Type		Electronically Commutated Motor (ECM)			
Direct–Drive Motor HP		3/4	1	1	1
Motor Full Load Amps		8.8	11.5	11.7	11.0
RPM Range		570 – 1400	570 – 1400	400 – 1300	400 – 1300
Speed Selections		5	5	5	5
Blower Wheel Dia x Width	in.	11 x 8	11 x 10	11 x 10	11 x 10
Filter Used for Certified Watt Data		KGAWF**06UFR			
Electrical Data					
Input Voltage	Volts–Hertz–Phase	115–60–1			
Operating Voltage Range	Min–Max	104–127			
Maximum Input Amps	Amps	10.9	13.6	13.8	13.8
Unit Ampacity	Amps	14.2	17.6	17.8	17.7
Minimum Wire Size	AWG	14	12	12	12
Maximum Wire Length@ Minimum Wire Size	Feet	26.2	32.8	32.3	32.8
Maximum Fuse/Ckt Bkr (Time–Delay Type Recommended)	Amps	15	20	20	20
Transformer Capacity (24 VAC output)		40 VA			
External Control Power Available	Heating	21.8 VA			
	Cooling	34 VA			
Controls					
Gas Connection Size		1/2" - NPT			
Gas Valve (Redundant)	Manufacturer	White Rodgers			
Minimum Inlet Gas pressure (in. wc)		4.50			
Maximum Inlet Gas pressure (in. wc)		13.60			
Manufactured (Mobile) Home Kit		Not approved for Manufactured Home use			
Ignition Device		Silicon Nitride			
Heating Blower Control (Heating Off-Delay)		Adjustable: 90, 120, 150, 180 seconds			
Cooling Blower Control (Time Delay Relay)		90 seconds			
Communication System		*none*			
Thermostat Connections		Com 24V, R, W, G, Y			
Accessory Connections		EAC (115vac); HUM (115vac); 1-stg AC (via Y)			

INSTALLATION CONSIDERATIONS

Refer to Installation Instructions for complete installation requirements.

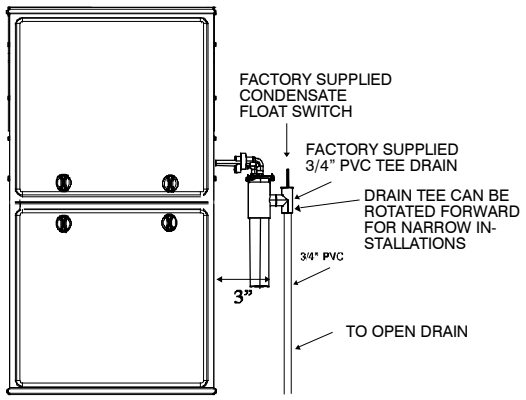
Evaporator Coil Spacer or Shield Requirements

Type of Coil	Install Flush to Furnace	Install with 8−in. Spacer	Install with Metal Shield
Furnace Manufacturer's N Coil	Allowed	Not Required	Not Required
Furnace Manufacturer's A Coil	Not Allowed	Allowed (Except 100k BTU size in Horizontal Right − **MUST** use shield)	Allowed (See Note 2)
3rd Party Coil − Factory Shielded (See Note 1)	Allowed	Not Required	Not Required
3rd Party Coil − Unshielded	Not Allowed	Allowed (Except 100k BTU size in Horizontal Right − **MUST** use shield)	Allowed (See Note 3)

NOTE:

1. 3rd Party Coils that are factory−supplied with a metallic shield over the plastic composite drain pan must completely shield all plastic composite materials from direct exposure to any part of the heat exchanger. Consult with 3rd Party Manufacturer to ensure coil is properly shielded. Coils that are only partially shielded should be treated as un−shielded and require a spacer.
2. Field−fabricated metallic shield must completely shield all plastic composite materials from direct exposure to any part of the heat exchanger. Coils that are only partially shielded should be treated as un−shielded and require a spacer.
3. For 3rd party unshielded coils, consult manufacturer for design of a field−fabricated shield that completely shields all plastic composite materials from direct exposure to any part of the heat exchanger.

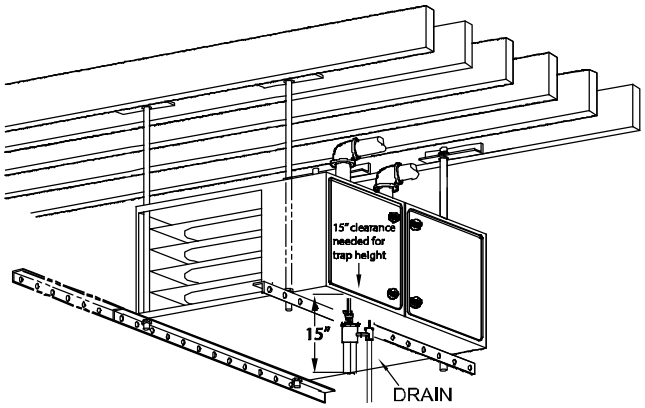
CONDENSATE TRAP CLEARANCES



Representative drawing only, some models may vary.

A190317

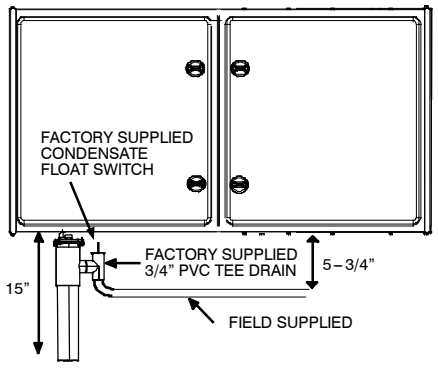
Trap Clearance in Upflow Application



Representative drawing only, some models may vary.

A190356

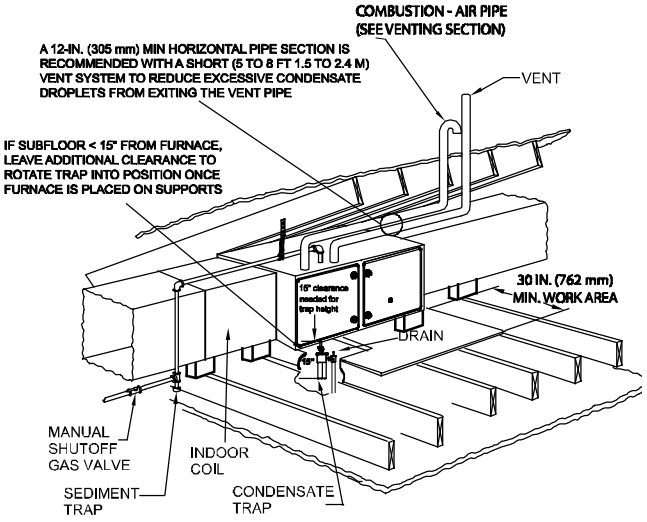
15" Trap Clearance in Horizontal Application



Representative drawing only, some models may vary.

A190315

15" Trap Clearance in Horizontal Application
(Note: Drain line can be run horizontally or vertically)



Representative drawing only, some models may vary.

A190318

Working Platform for Attic Installation

ACCESSORIES

DESCRIPTION	PART NUMBER	060E17--16	080E21--20	100E21--20	100E21--22
Vent Kit - Through the Cabinet for HZ left/right ONLY	KGADC0101BVC	X	X	X	X
Vent Terminal - Concentric - 2” (51 mm)	KGAVT0701CVT	See Venting Tables			
Vent Terminal - Concentric - 3” (76 mm)	KGAVT0801CVT				
Vent Terminal Bracket - 2” (51 mm)	KGAVT0101BRA				
Vent Terminal Bracket - 3” (76 mm)	KGAVT0201BRA				
Vent Kit – Rubber Coupling	KGAAC0101RVC				
Freeze Protect Kit - Condensate Drain Line Tape	KGAHT0101CFP	X	X	X	X
CPVC to PVC Drain Adapters - 1/2” CPVC to 3/4” PVC	KGAAD0110PVC	X	X	X	X
Condensate Neutralizer Kit	P908–0001	X	X	X	X
Return Air Base (Upflow Applications) 17.5–in. wide	KGARP0301B17	X			
Return Air Base (Upflow Applications) 21.0–in. wide	KGARP0301B21		X	X	X
IAQ Device Duct Adapters 20.0–in. IAQ to 16 in. Side Return	KGAAD0101MEC	20”x25” IAQ Devices			
IAQ Device Duct Adapters 24.0–in. IAQ to 16 in. Side Return	KGAAD0201MEC	24”x25” IAQ Devices			
Gas Valve Tower Port Adapter Kit	92–1003	X	X	X	X
Bottom Filter Rack – 17.5 inches (455 mm)	KGBFR0501B17	X			
Bottom Filter Rack – 21 inches (533 mm)	KGBFR0601B21		X	X	X
Filter Pack (6 pack) – Washable - 24x25x1 (610x635x25 mm)	KGAWF1506UFR	X	X	X	X
Coil Adapter Kits (see Installation Instructions for coil requirements)					
Coil Adapter Kits – No Offset	KGADA0101ALL	X	X	X	X
Coil Adapter Kits – Single Offset	KGADA0201ALL	X	X	X	X
Coil Adapter Kits – Double Offset	KGADA0301ALL	X	X	X	X

DESCRIPTION	ACCESSORY
HUMIDIFIER	Model HUM
HEAT RECOVERY VENTILATOR	Model HRV
ENERGY RECOVERY VENTILATOR	Model ERV
ELECTRONIC AIR CLEANER	Model EACB
UV LIGHTS	Model UVL

Carrier has a wide variety of thermostats for your system, please visit **www.Carrier.com** to see all thermostat and IAQ products.

DESCRIPTION	ACCESSORY	17”	21”
Carrier Carbon Monoxide Alarm (10 pack)	COALMCCNRB02–A10	X	X
Carrier Infinity Air Purifier - 16x25 (407x635 mm)	DGAPAXX1625	X	
Carrier Infinity Air Purifier - 20x25 (508x635 mm)	DGAPAXX2025		X
Carrier Infinity Air Purifier Repl. Filter- 16x25 (407x635 mm)	PGAPXCAR1625A02	X	
Carrier Infinity Air Purifier Repl. Filter- 20x25 (508x635 mm)	PGAPXCAR2025A02		X
Cartridge Media Filter - 16” (407 mm) (MERV 11)	FILXXCAR0116	X	
Cartridge Media Filter - 16” (407 mm) (MERV 8)	FILXXCAR0016	X	
Cartridge Media Filter - 20” (508 mm) (MERV 8)	FILXXCAR0020		X
Cartridge Media Filter - 20” (508 mm) (MERV11)	FILXXCAR0120		X
EZ Flex Cabinet Side or Bottom – 16”	EZXCAB––0016	X	
EZ Flex Cabinet Side or Bottom – 20”	EZXCAB––0020		X
EZ Flex Replacement Filters 16” MERV 10	EXPXXFIL0016	X	
EZ Flex Replacement Filters 16” MERV 13	EXPXXFIL0316	X	
EZ Flex Replacement Filters 20” MERV 10	EXPXXFIL0020		X
EZ Flex Replacement Filters 20” MERV 13	EXPXXFIL0320		X
EZ-Flex Filter with End Caps - 16” (407 mm) (MERV 10)	EXPXXUNV0016	X	
EZ-Flex Filter with End Caps - 16” (407 mm) (MERV 13)	EXPXXUNV0316	X	
EZ-Flex Filter with End Caps - 20” (508 mm) (MERV 10)	EXPXXUNV0020		X
EZ-Flex Filter with End Caps - 20” (508 mm) (MERV 13)	EXPXXUNV0320		X
Media Filter Cabinet – 20”	FILCABXL0020		X
Media Filter Cabinet –16”	FILCABXL0016	X	

X = Used with the model furnace

AIR DELIVERY - CFM (BOTTOM RETURN WITH FILTER)

UNIT SIZE	WIRE LEAD COLOR	FUNCTION SPEED TAP [2, 3]	EXTERNAL STATIC PRESSURE (IN.W.C.)									
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
060E17--16	Gray	Cooling. Do not use for Heating	1670	1635	1595	1555	1515	1475	1435	1395	1360	1315
	Yellow	Alt. Cooling. Do not use for Heating	1465	1420	1385	1345	1310	1265	1225	1180	1135	1095
	Blue	Heating or Alt. Cooling	1215	1170	1125	1085	1050	1005	965	925	880	830
	Orange	Alt. Heating or Alt. Cooling	1120	1065	1025	980	940	900	860	815	770	720
	Red	Alt. Cooling. Do not use for Heating	945	895	855	805	765	715	670	625	570	530
080E21--20	Gray [5, 6]	Cooling. Do not use for Heating	2165	2135	2115	2070	2025	1980	1930	1885	1835	1790
	Blue [5, 6]	Heating or Alt. Cooling	1800	1755	1715	1670	1620	1575	1525	1475	1425	1380
	Yellow	Alt. Heating or Alt. Cooling	1645	1595	1550	1510	1460	1410	1365	1315	1265	1220
	Orange	Alt. Cooling. Do not use for Heating	1505	1450	1410	1360	1310	1265	1215	1170	1120	1080
	Red [7]	Alt. Cooling. Do not use for Heating	885	785	705	645	570	495	430	360	295	–
100E21--20	Gray [5, 6]	Cooling Do not use for Heating	2215	2180	2140	2100	2065	2035	1995	1960	1925	1890
	Blue [5, 6]	Heating or Alt Cooling	1890	1850	1810	1770	1730	1690	1650	1610	1565	1520
	Yellow	Alt Cooling. Do not use for Heating	1695	1650	1605	1560	1515	1475	1425	1380	1325	1280
	Orange	Alt Cooling. Do not use for Heating	1270	1215	1155	1100	1040	980	925	865	810	765
	Red [7]	Alt Cooling. Do not use for Heating	800	715	630	550	475	390	320	–	–	–
100E21--22	Gray [5, 6]	Cooling Do not use for Heating	2185	2145	2110	2070	2025	1985	1950	1915	1880	1840
	Blue [5, 6]	Heating or Alt Cooling	1910	1865	1820	1775	1730	1690	1645	1595	1545	1500
	Yellow	Alt Cooling. Do not use for Heating	1705	1655	1610	1560	1510	1460	1400	1345	1295	1245
	Orange	Alt Cooling. Do not use for Heating	1495	1440	1385	1330	1270	1205	1145	1090	1030	970
	Red [7]	Alt Cooling. Do not use for Heating	845	745	655	560	445	–	–	–	–	–

NOTE:

1. A filter is required for each return−air inlet. Airflow performance includes a 3/4−in. (19 mm) washable filter media such as contained in a factory−authorized accessory filter rack. See accessory list in Product Data sheet. To determine airflow performance without this filter, assume an additional 0.1 in. w.c. available external static pressure.
2. **ADJUST THE BLOWER SPEED TAPS AS NECESSARY FOR THE PROPER AIR TEMPERATURE RISE FOR EACH INSTALLATION.**
3. The "Function" column identifies which speed taps can be used for heating.
4. If the same motor speed tap is needed for heating and cooling, a Jumper Wire accessory kit is available, see Product Data sheet for the current Jumper Wire accessory part number. Reference the "Start−up, Adjustments, and Safety Check" section for further Jumper Wire instructions.
5. Airflows over 1800 CFM require bottom return, two−side return, or bottom and side return. A minimum filter size of 20" x 25" (508 x 635 mm) is required.
6. For upflow applications, air entering from one side into both the side of the furnace and a return air base counts as a side and bottom return.
7. The "−" entry indicates an unstable operating condition.

MAXIMUM ALLOWABLE EXPOSED VENT LENGTH IN UNCONDITIONED SPACE - FT.

	Unit Size	60,000 BTUH											
		Uninsulated				3/8-in. Insulation				1/2-in. Insulation			
Winter Design Temp °F	Pipe Dia. in.	1 ½	2	2 ½	3	1 ½	2	2 ½	3	1 ½	2	2 ½	3
	20	20	30	30	25	20	75	65	60	20	85	75	65
	0	15	15	10	10	20	40	30	25	20	45	40	30
	-20	10	5			20	25	20	15	20	30	25	20
	-40	5				20	15	15	10	20	20	15	10

	Unit Size	80,000 BTUH													
		Uninsulated					3/8-in. Insulation					1/2-in. Insulation				
Winter Design Temp °F	Pipe Dia. in.	1 ½	2	2 ½	3	4	1 ½	2	2 ½	3	4	1 ½	2	2 ½	3	4
	20	15	40	40	35	30	15	50	90	75	65	15	50	70	70	70
	0	15	20	15	10	5	15	50	45	35	30	15	50	50	40	35
	-20	15	10	5			15	35	30	20	15	15	40	30	25	15
	-40	10	5				15	25	20	15	5	15	30	25	20	10

	Unit Size	100,000 BTUH											
		Uninsulated				3/8-in. Insulation				1/2-in. Insulation			
Winter Design Temp °F	Pipe Dia. in.	2	2 ½	3	4	2	2 ½	3	4	2	2 ½	3	4
	20	20	50	40	35	20	80	95	80	20	80	105	90
	0	20	20	15	10	20	55	45	35	20	65	55	45
	-20	15	10	5		20	35	30	20	20	45	35	25
	-40	10	5			20	25	20	10	20	30	25	15

MAXIMUM EQUIVALENT VENT LENGTH - FT.

Table 1 – Maximum Equivalent Vent Length

NOTE: Maximum Equivalent Vent Length (MEVL) includes standard and concentric vent termination and does NOT include elbows. Use Table 2 - Deductions from Maximum Equivalent Vent Length to determine allowable vent length for each application.

Unit Size		60,000				80,000					100,000			
	Pipe Dia. (in)	1 ½	2	2 ½	3	1 ½	2	2 ½	3	4	2	2 ½	3	4
Altitude (feet)	0−2000	20	100	175	200	15	55	130	175	200	20	80	175	200
	2001−3000		95	165	185	10	49	125	165	185	15	75	165	185
	3001−4000	16	90	155	175			115	155	175				175
	4501−5000	15	80	145	165	10	44	110	145	160	10	65	150	165
	5001−5400		75	140	155		41	100	135	150			140	155

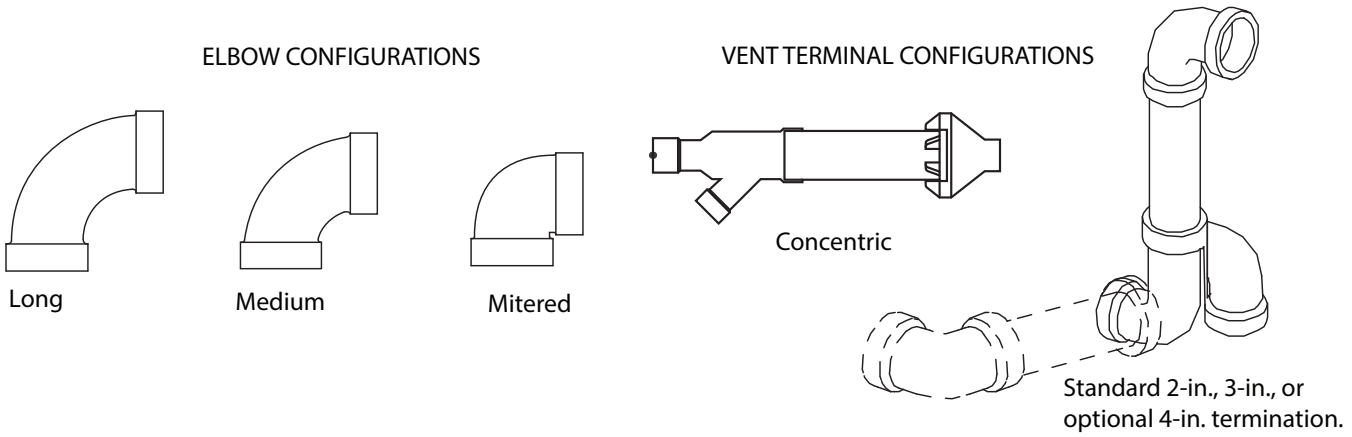


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Table 2 – Deductions from Maximum Equivalent Vent Length - Ft. (M)

Pipe Diameter (in):	1-1/2		2		2-1/2		3		4	
Mitered 90º Elbow	8	(2.4)	8	(2.4)	8	(2.4)	8	(2.4)	8	(2.4)
Medium Radius 90º Elbow	5	(1.5)	5	(1.5)	5	(1.5)	5	(1.5)	5	(1.5)
Long Radius 90º Elbow	3	(0.9)	3	(0.9)	3	(0.9)	3	(0.9)	3	(0.9)
Mitered 45º Elbow	4	(1.2)	4	(1.2)	4	(1.2)	4	(1.2)	4	(1.2)
Medium Radius 45º Elbow	2.5	(0.8)	2.5	(0.8)	2.5	(0.8)	2.5	(0.8)	2.5	(0.8)
Long Radius 45º Elbow	1.5	(0.5)	1.5	(0.5)	1.5	(0.5)	1.5	(0.5)	1.5	(0.5)
Tee	16	(4.9)	16	(4.9)	16	(4.9)	16	(4.9)	16	(4.9)
Concentric Vent Termination	NA		0	(0.0)	NA		0	(0.0)	NA	
Standard Vent Termination	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)

NOTES:
1. Use only the smallest diameter pipe possible for venting. Over−sizing may cause flame disturbance or excessive vent terminal icing or freeze−up.
2. NA – Not allowed. Pressure transducer will not close, or flame disturbance may result.
3. Vent sizing for Canadian installations over 4500 ft. (1370 M) above sea level are subject to acceptance by the local authorities having jurisdiction.
4. Size both the combustion air and vent pipe independently, then use the larger size for both pipes.
5. Assume the two 45° elbows equal one 90° elbow. Wide radius elbows are desirable and may be required in some cases.
6. Elbow and pipe sections within the furnace casing and at the vent termination should not be included in vent length or elbow count.
7. The minimum pipe length is 5 ft. (2 M) linear feet (meters) for all applications.
8. Use 3−in. (76 mm) diameter vent termination kit for installations requiring 4−in. (102 mm) diameter pipe.

Venting System Length Calculations

The Total Equivalent Vent Length (TEVL) for **EACH** combustion air or vent pipe equals the length of the venting system, plus the equivalent length of elbows used in the venting system from Table 2.

Standard vent terminations or factory accessory concentric vent terminations count for zero deduction.

See vent system manufacturer's data for equivalent lengths of flexible vent pipe or other termination systems. **DO NOT ASSUME** that one foot of flexible vent pipe equals one foot of straight PVC/ABS DWV vent pipe.

Compare the Total Equivalent Vent Length to the Maximum Equivalent Vent Lengths in Table 1.

Example 1

A direct-vent 60,000 BTUH furnace installed at 2100 ft. (640M). Venting system includes **FOR EACH PIPE:**
70 feet (22 M) of vent pipe, 65 feet (20 M) of combustion air inlet pipe, (3) 90º long-radius elbows, (2) 45º long-radius elbows, and a factory accessory concentric vent kit.
Can this application use 2" (50 mm ND) PVC/ABS DWV vent piping?

Measure the required linear length of air inlet and vent pipe; insert the longest of the two here					70 ft. (22 M)	Use length of the longer of the vent or air inlet piping system
Add equiv length of (3) 90º long-radius elbows (use the highest number of elbows for either the vent or inlet pipe)	3	x	3 ft. (0.9 M)	=	9 ft. (2.7 M)	From Table 2
Add equiv length of (2) 45º long-radius elbows (use the highest number of elbows for either the vent or inlet pipe)	2	x	1.5 ft. (0.5 M)	=	3 ft. (0.9 M)	From Table 2
Add equiv length of factory concentric vent term					0 ft.	From Table 2
Add correction for flexible vent pipe, if any					0 ft.	From Vent Manufacturer's instructions; zero for PVC/ABS DWV
Total Equivalent Vent Length (TEVL)					82 ft. (25 M)	Add all of the above lines
Maximum Equivalent Vent Length (MEVL)					95 ft. (29 M)	For 2" pipe from Table 1
Is TEVL less than MEVL?					**YES**	**Therefore, 2" pipe MAY be used**

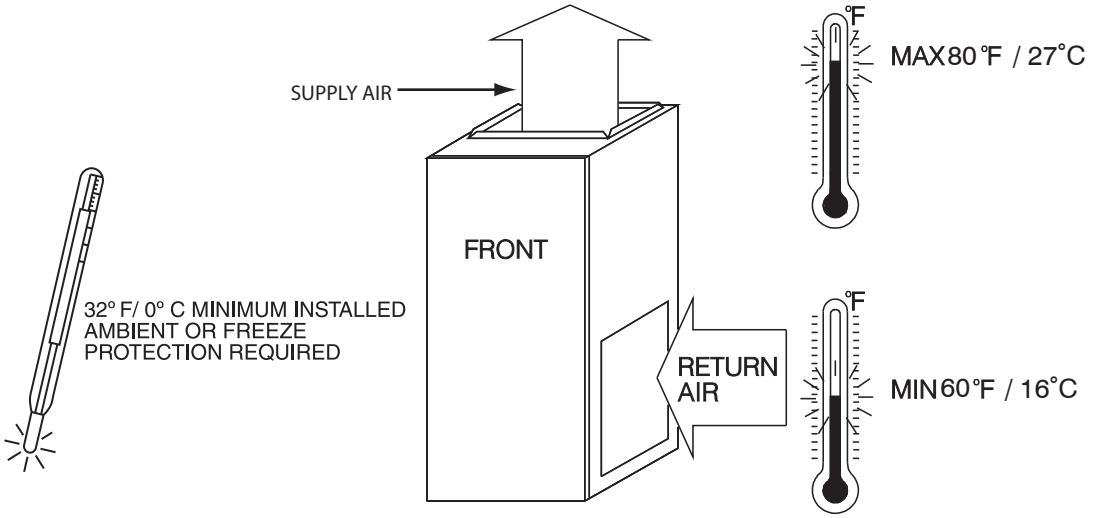
Example 2

A direct-vent 60,000 BTUH furnace installed at 2100 ft. (640M). Venting system includes **FOR EACH PIPE:**
100 feet (30 M) of vent pipe, 95 feet (29 M) of combustion air inlet pipe, (3) 90º long-radius elbows, and a polypropylene concentric vent kit. Also includes 20 feet (6.1 M) of flexible polypropylene vent pipe, included within the 100 feet (30 M) of vent pipe.
VERIFY FROM POLYPROPYLENE VENT MANUFACTURER'S INSTRUCTIONS for the multiplier correction for flexible vent pipe.
Can this application use 60mm o.d. (2") polypropylene vent piping? If not, what size piping can be used?

Measure the required linear length of **RIGID** air inlet and vent pipe; insert the longest of the two here: 100 ft. Of rigid pipe – 20 ft. Of flexible pipe				=	80 ft. (24 M)	Use length of the longer of the vent or air inlet piping system
Add equiv length of (3) 90º long-radius elbows (use the highest number of elbows for either the vent or inlet pipe)	3	x	5 ft. (1.5 M)	=	15 ft. (4.6 M)	Example from polypropylene vent manufacturer's instructions, Verify from vent manufacturer's instructions.
Add equiv length of 45º long-radius elbows (use the highest number of elbows for either the vent or inlet pipe)	0	x		=	0 ft. (0 M)	
Add equiv length of factory concentric vent term	9	x	3.3 ft (0.9 M)	=	30 ft. (9 M)	
Add correction for flexible vent pipe, if any	2*	x	20 ft. (6.1 M)	=	40 ft. (12.2 M)	
* VERIFY FROM VENT MANUFACTURER'S INSTRUCTIONS; For example only, assume 1 meter of flexible 60mm (2") or 80mm (3") polypropylene pipe equals 2.0 meters (6.5 ft.) of PVC/ABS pipe.						
Total Equivalent Vent Length (TEVL)					165 ft. (50 M)	Add all of the above lines
Maximum Equivalent Vent Length (MEVL)					95 ft. (29 M)	For 2" pipe from Table 1
Is TEVL less than MEVL?					**NO**	**Therefore, 60mm (2") pipe may NOT be used; try 80mm (3")**
Maximum Equivalent Vent Length (MEVL)					185 ft. (57 M)	For 3" pipe from Table 1
Is TEVL less than MEVL?					**YES**	**Therefore, 80mm (3") pipe MAY be used**

RETURN AIR TEMPERATURE

This furnace is designed for continuous return-air minimum temperature of 60°F (15°C) db or intermittent operation down to 55°F (13°C) db such as when used with a night setback thermometer. Return-air temperature must not exceed 80°F (27°C) db. Failure to follow these return air limits may affect reliability of heat exchangers, motors and controls.



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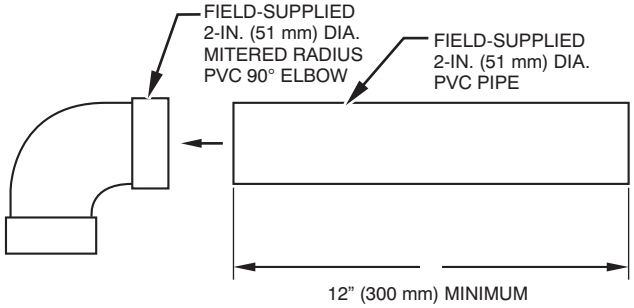
MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

POSITION	CLEARANCE
Rear	1 in.
Front (Combustion air openings in furnace and in structure)	1 in.
Required for service**	24 in.*
All Sides of Supply Plenum**	1 in.
Sides	1 in.**
Vent	0
Top of Furnace	1 in.

* Consult local building codes.
**Additional clearance is required for condensate trap installation.
NOTE: Furnace edge contact is permissible with combustible materials unless local codes state otherwise.

COMBUSTION-AIR PIPE FOR NON-DIRECT (1-PIPE) VENT APPLICATION



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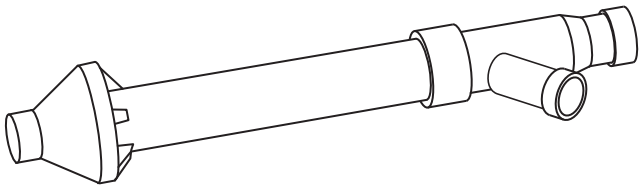
NOTE: See Installation Instructions for specific venting configurations.

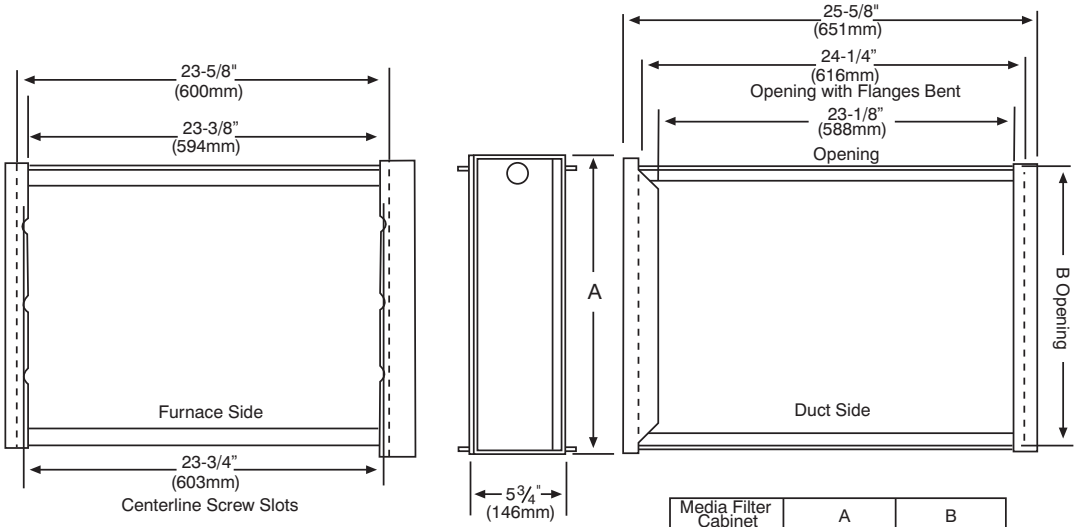


Concentric Vent Kit

A93086

A concentric vent kit allows vent and combustion-air pipes to terminate through a single exit in a roof or side wall. One pipe runs inside the other allowing venting through the inner pipe and combustion air to be drawn in through the outer pipe.

MEDIA FILTER CABINET (OPTIONAL ACCESSORY)

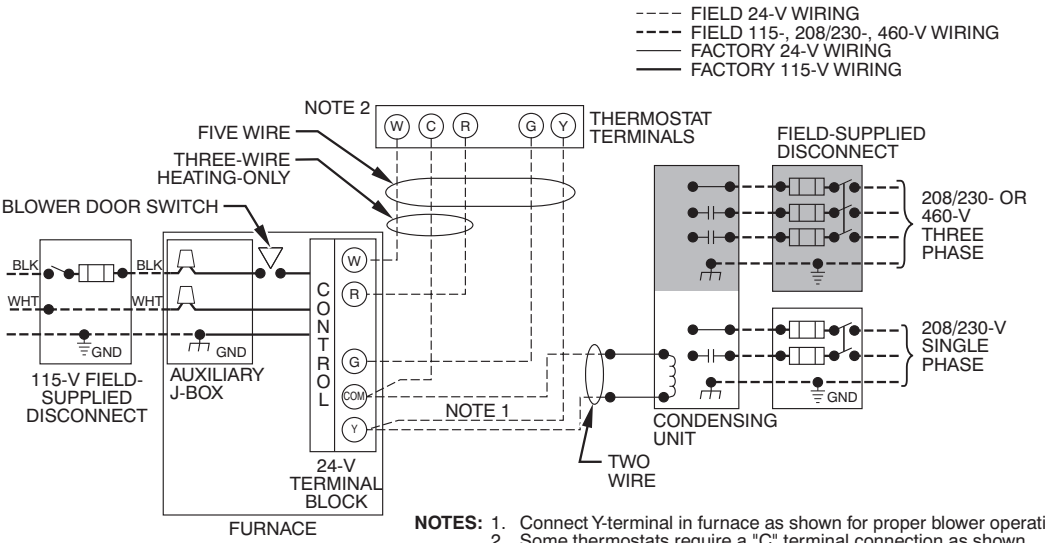


Media Filter Cabinet	A	B
16" (406mm)	17" (432mm)	16" (406mm)
20" (508mm)	21" (533mm)	20" (508mm)
24" (610mm)	25" (635mm)	24" (610mm)

NOTE: Media cabinet is matched to the bottom opening on furnace. May also be used for side return.

A12428

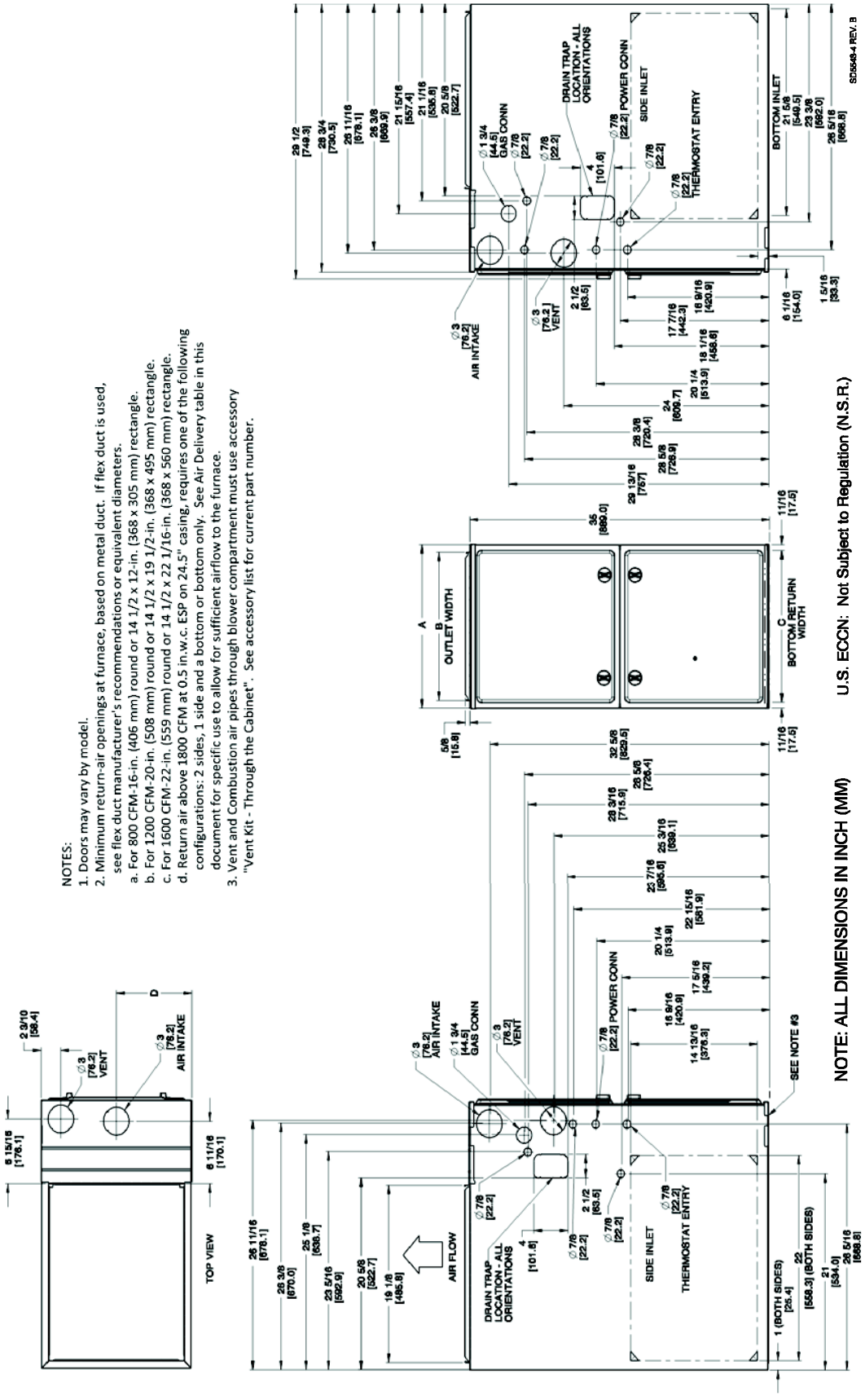
TYPICAL WIRING SCHEMATIC



NOTES: 1. Connect Y-terminal in furnace as shown for proper blower operation.
2. Some thermostats require a "C" terminal connection as shown.
3. If any of the original wire, as supplied, must be replaced, use same type or equivalent wire.

A11387

DIMENSIONAL DRAWING



FURNACE SIZE	A	B	C	D	SHIP WT. LB (KG)
	CABINET WIDTH	OUTLET WIDTH	BOTTOM INLET WIDTH	AIR INTAKE	
060E17--16	17–1/2 (445)	15–7/8 (403)	16 (406)	8–3/4 (222)	149.4 (67.8)
080E21--20	21 (533)	19–3/8 (492)	19–1/2 (495)	10–1/2 (267)	167.4 (75.9)
100E21--20	21 (533)	19–3/8 (492)	19–1/2 (495)	10–1/2 (267)	174.4 (79.1)
100E21--22	21 (533)	19–3/8 (492)	19–1/2 (495)	10–1/2 (267)	175.4 (79.1)

GUIDE SPECIFICATIONS

General

System Description

Furnish a _____ Upflow/Horizontal gas-fired condensing furnace for use with natural gas.

Quality Assurance

Unit will be designed, tested and constructed to the current ANSI Z 21.47/CSA 2.3 design standard for gas-fired central furnaces.

Unit will be third party certified by CSA to the current ANSI Z 21.47/CSA 2.3 design standard for gas-fired central furnaces. Unit will carry the CSA Blue Star® label. Unit efficiency testing will be performed per the current DOE test procedure as listed in the Federal Register.

Unit will be certified for capacity and efficiency and listed in the latest AHRI Consumer's Directory of Certified Efficiency Ratings.

Unit will carry the current Federal Trade Commission Energy Guide efficiency label.

Delivery, Storage, and Handling

Unit will be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

Warranty (for inclusion by specifying engineer)

U.S. only. Warranty certificate available upon request.

Equipment

Blower Wheel and ECM Blower Motor

Galvanized blower wheel shall be centrifugal type, statically and dynamically balanced. Blower motor of ECM type shall be permanently lubricated with sealed ball bearings, of _____hp, and have multiple speeds from 600-1200 RPM operating only when 24-VAC motor inputs are provided. Blower motor shall be direct drive and soft mounted to the blower housing to reduce vibration transmission.

Filters

Furnace shall have reusable-type filters. Filter shall be _____ in. (mm) X _____ in. (mm). An accessory highly efficient Media Filter is available as an option. _____ Media Filter.

Casing

Casing shall be of .030 in. thickness minimum, pre-painted steel.

Draft Inducer Motor

Draft inducer motor shall be variable-speed design.

Primary Heat Exchangers

Primary heat exchangers shall be tubular stainless steel sectional design and applied operating under negative pressure.

Secondary Heat Exchangers

Secondary heat exchangers shall be of a stainless steel flow-through of fin-and-tube design and applied operating under negative pressure.

Controls

Controls shall include a micro-processor-based integrated electronic control board with service troubleshooting codes displayed via diagnostic flashing LED light on the control, a self-test feature that checks all major functions of the furnace, and a replaceable automotive-type circuit protection fuse. Multiple operational settings available, including blower speeds for heating and cooling.

Operating Characteristics

Heating capacity shall be _____ Btuh input; _____ Btuh output capacity.

Fuel Gas Efficiency shall be _____AFUE.

Air delivery shall be _____ cfm minimum at 0.50 in. W.C. external static pressure.

Dimensions shall be: depth_____in. (mm); width _____in. (mm); height_____in. (mm) (casing only). Height shall be_____in. (mm) with A/C coil and _____in. (mm) overall with plenum.

Electrical Requirements

Electrical supply shall be 115 volts, 60 Hz, single-phase (nominal). Minimum wire size shall be _____AWG; maximum fuse size of HACR-type designated circuit breaker shall be _____ amps.

Special Features

Refer to section of the product data identifying accessories and descriptions for specific features and available enhancements.

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