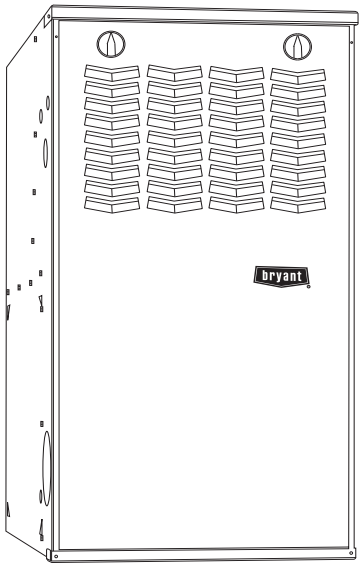
830CA
Evolution® 80 Ultra Low NOx, Variable-Speed,Communicating, 4-Way Multipoise Gas Furnace

Product Specifications



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EVOLUTION® 80 ULTRA LOW NOx GAS FURNACE

The 830CA delivers home comfort in an 80% AFUE furnace that meets the nitrogen oxides (NOx) emission limit of 14 nanograms/joule for South Coast Air Quality Management District and San Joaquin Valley Air Pollution Control District in California. It provides warm winter heating with 65% lower NOx emissions than standard models.

The Evolution® 80 Ultra Low NOx Gas Furnaces offers a number of comfort-enhancing features with its variable-speed, fully communicating blower motor. FanOnPlus™ technology selectable fan speeds allows control over ventilation. SmartEvapt technology provides humidity control during cooling operation, and with select outdoor units, Perfect Humidity® technology provides significantly better dehumidification. And, when paired with a two-speed or variable-speed outdoor unit, homeowners will enjoy consistent summer comfort.

EFFICIENCY

- 80% AFUE
- 40K, 60K, 80K, 100K Btu/h capacities
- Ultra-low NOx emissions - 830CA meets the nitrogen oxides (NOx) emission limit of 14 nanograms/joule for the South Coast Air Quality Management District and San Joaquin Valley Air Pollution Control District in California.

TECHNOLOGY

- Single-stage gas valve
- Variable speed constant airflow ECM blower motor
- Pre-mix burner with pilot free, hot surface ignition
- Variable speed inducer motor
- Stainless steel, tubular heat exchanger

PERFORMANCE

- Integral part of the Perfect Humidity® System
  Maximum dehumidification selection for summer time cooling
  Full Perfect Humidity® benefits including “Super Dehumidify”
  SmartEvap™ - Humidity control when using a Thermidistat™/ Evolution control
- SmartEvap™ can lower the humidity level in the home by nearly 10 percent
- Perfect Light™ Igniter
- Microprocessor based control center
  Enhanced diagnostics with LED and reflective sight glass
  Stores fault codes during power outages
  Adjustable heating air temperature rise
  Adjustable heating and cooling airflow
  Dehumidification selection for summer-time cooling
- Draft Safeguard switch designed to ensure proper furnace venting
- Insulated blower compartment
- Inner door for tighter sealing
- HYBRID HEAT® Dual Fuel System compatible

DESIGN AND INSTALLATION

- Approved for installation up to 5,400 feet
- Versatile venting for tight-fit applications
- Factory shipped for natural gas, not convertible to propane
- Four-position furnace: Upflow, Horizontal Right, Horizontal Left, Downflow (with 6 different vent options)
- 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.

EVOLUTION™ SYSTEM

Perfect Humidity™

ENERGY STAR

Certified System ISO 9001 Quality

AHRI CERTIFIED www.ahridirectory.org

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 .

CERTIFIED

DESIGN CERTIFIED

CASE OF INSTALLATION FACTORY AUTHORIZED PARTS ENGINEERED QUALITY

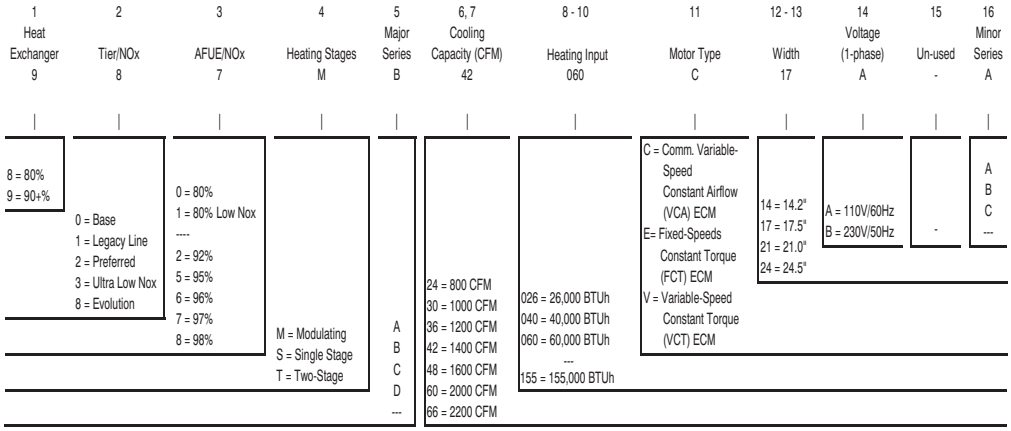
A200624

SPECIFICATIONS

FURNACE SIZE			36040C17A	48060C17A	60080C21A	60100C21A
RATINGS AND PERFORMANCE						
Input Btuh*			40,000	60,000	80,000	100,000
Output Capacity (Btuh)†			31,000	48,000	64,000	81,000
AFUE†			80.0	80.0	80.0	80.0
Certified Temperature Rise Range - °F (°C)			25 - 55 (14 - 31)	30 - 60 (17 - 33)	25 - 55 (14 - 31)	25 - 55 (14 - 31)
External Static Pressure (in. w.c.)‡		Heating	.10	.12	.15	.20
		Cooling	.50	.50	.50	.50
Airflow Delivery @ ESP Listed Above (CFM)		Heating	760	930	1500	1750
		Cooling	505-1490	535-1480	990-2390	1130-2260
ELECTRICAL						
Unit Volts-Hertz-Phase			115-60-1			
Operating Voltage Range		Min-Max	104-127			
Maximum Unit Amps			11.4	11.4	17.8	17.8
Unit Ampacity			12.6	12.6	18.9	18.9
Maximum Wire Length - Measure one way in Ft			29	29	30	30
Minimum Wire Size			14	14	12	12
Maximum Fuse or Ckt Bkr Size (Amps)**			15	15	20	20
Transformer (24v)			40 VA			
External Control Power Available		Heating	12 VA			
		Cooling	35 VA			
Air Conditioning Blower Relay			Standard			
CONTROLS						
Limit Control			SPST			
Heating Blower Control			Solid-State Time Operation			
Gas Connection Size			1/2-in. NPT			
GAS CONTROLS						
Gas Valve (Redundant)		Mfr.	White Rodgers			
		Min. inlet pressure (In. W.C.)	3.5 Natural Gas			
		Max. inlet pressure (In. W.C.)	13.6 Natural Gas			
Ignition Device			Hot Surface Igniter			
Factory-installed orifice			3.35mm	#18	#10	#6
BLOWER DATA						
Direct-Drive Motor HP			1/2	1/2	1	1
Motor Full Load Amps			7.7	7.7	12.8	12.8
Nominal RPM			1050	1050	1050	1050
Blower Wheel Diameter x Width - In. (mm)			10 x 8 (243 x 203)	11 x 8 (279 x 203)	11 x 11 (279 x 279)	11 x 11 (279 x 279)

*. Gas input ratings are certified for elevations to 5,400 ft. (1646 M). In USA, for elevations above 2,000 ft. (610 M), reduce ratings 2 percent for each 1,000 ft. (305 M) above sea level. Refer to National Fuel Gas Code NFPA 54/ANSI Z223.1 Table F.4 or furnace installation instructions.
†. Capacity in accordance with U.S. Government DOE test procedures.
‡. DOE Minimum External Static Pressure
**. Time-delay type is recommended.
ICS = Isolated Combustion System

MODEL NUMBER NOMENCLATURE



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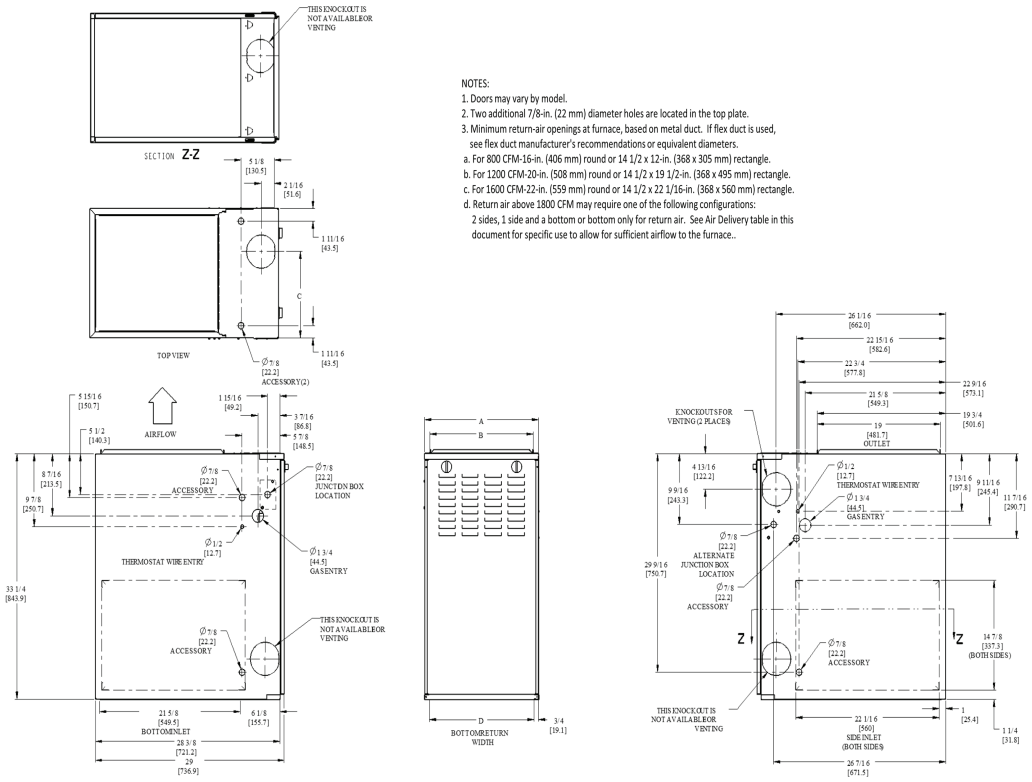
DIMENSIONS



NOTES:
1. Doors may vary by model.
2. Two additional 7/8-in. (22 mm) diameter holes are located in the top plate.
3. Minimum return-air openings at furnace, based on metal duct. If flex duct is used, see flex duct manufacturer's recommendations or equivalent diameters.
   a. For 800 CFM-16-in. (406 mm) round or 14 1/2 x 12-in. (368 x 305 mm) rectangle.
   b. For 1200 CFM-20-in. (508 mm) round or 14 1/2 x 19 1/2-in. (368 x 495 mm) rectangle.
   c. For 1600 CFM-22-in. (559 mm) round or 14 1/2 x 22 1/16-in. (368 x 560 mm) rectangle.
   d. Return air above 1800 CFM may require one of the following configurations:
   2 sides, 1 side and a bottom or bottom only for return air. See Air Delivery table in this document for specific use to allow for sufficient airflow to the furnace..

NOTE: ALL DIMENSIONS IN INCH (MM) U.S. ECCN: Not Subject to Regulation (N.S.R.) SD5507- 4 ULN 80 REV. B

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FURNACE SIZE	A CABINET WIDTH	B OUTLET WIDTH	C TOP FLUE COLLAR	D BOTTOM INLET WIDTH	VENT CONNECTION SIZE	SHIP WT. LB. (KG)
830CA36040C17A	17-1/2 (445)	15-7/8 (403)	11-9/16 (294)	16 (406)	4 (102)	119 (54)
830CA48060C17A	17-1/2 (445)	15-7/8 (403)	11-9/16 (294)	16 (406)	4 (102)	124 (56)
830CA60080C21A	21 (533)	19-3/8 (492)	13-5/16 (338)	19-1/2 (495)	4 (102)	144 (65)
830CA60100C21A	21 (533)	19-3/8 (492)	13-5/16 (338)	19-1/2 (495)	4 (102)	154 (70)

CLEARANCES

⚠ WARNING

FIRE, EXPLOSION, ASPHYXIATION HAZARD

Improper adjustment, alteration, service, maintenance, or installation can cause serious injury or death.

Read and follow instructions and precautions in User's Information Manual provided with this furnace. Installation and service must be performed by a qualified service agency or the gas supplier.

⚠ CAUTION

Check entire gas assembly for leaks after lighting this appliance.

INSTALLATION

1. This furnace must be installed in accordance with the manufacturer's instructions and local codes. In the absence of local codes, follow the National Fuel Gas Code ANSI Z223.1 / NFPA54 or CSA B-149. 1 Gas Installation Code.
2. This furnace must be installed so there are provisions for combustion and ventilation air. See manufacturer's installation information provided with this appliance.

OPERATION

This furnace is equipped with manual reset limit switch(es) in burner compartment to protect against overheat conditions that can result from inadequate combustion air supply or blocked vent conditions.

1. Do not bypass limit switches.
2. If a limit opens, call a qualified serviceman to correct the condition and reset limit switch.

INSTALLATION

MINIMUM INCHES CLEARANCE TO COMBUSTIBLE CONSTRUCTION

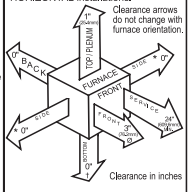
This forced air furnace is equipped for use with natural gas at altitudes 0 - 5,400 ft (0 - 1646m).

This furnace is for indoor installation in a building constructed on site.

This furnace may be installed on combustible flooring in alcove or closet at minimum clearance as indicated by the diagram from combustible material.

This furnace may be used with a Type B-1 Vent and may be vented in common with other gas fired appliances.

This furnace is approved for UPFLOW, DOWNFLOW, and HORIZONTAL installations.



Vent Clearance to combustibles:
For Single Wall vents 6 inches (6 po).
For Type B-1 vent type 1 inch (1 po).

MINIMUM INCHES CLEARANCE TO COMBUSTIBLE CONSTRUCTION

DOWNFLOW POSITIONS:

† Installation on non-combustible floors only. For installation on combustible flooring only when installed on a manufacture approved special base kit or manufacturer recommended coil assembly.

Ø 18 inches front clearance required for alcove.

★ Indicates supply or return sides when furnace is in the horizontal position. Line contact only permissible between lines formed by intersections of the Top and two Sides of the furnace jacket, and building joists, studs or framing.

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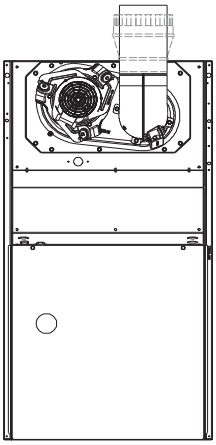
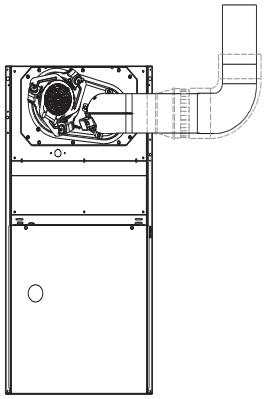
VENTING CONFIGURATIONS



SEE NOTES: 1,2,4,7,8,9
on the page following
these figures

A03208

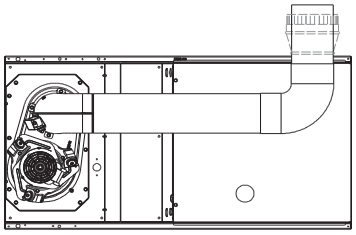
Upflow Application-Vent Elbow Up



SEE NOTES: 1,2,3,4,7,8,9
on the pages following
these figures

A03209

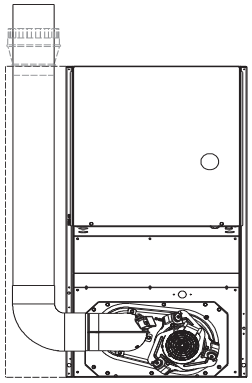
Upflow Application-Vent Elbow Right



SEE NOTES: 1,2,4,5,7,8,9 on the page
following these figures

A03214

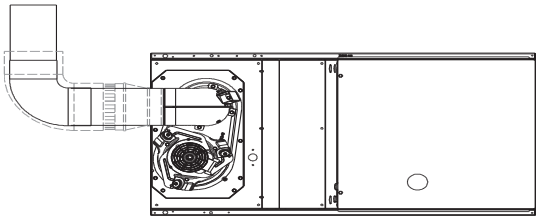
Horizontal Right Application-Vent Elbow Right



SEE NOTES: 1,2,4,5,6,7,8,9
on the page following these figures

A03207

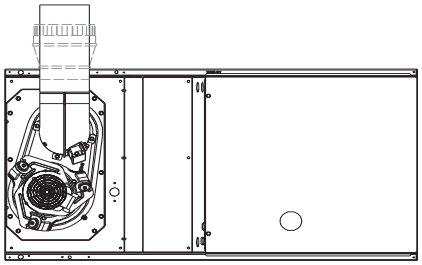
Downflow Application-Vent Elbow Left then Up



SEE NOTES: 1,2,4,7,8,9 on the page
following these figures

A03213

Horizontal Left Application-Vent Elbow Left



SEE NOTES: 1,2,4,5,7,8,9 on the page
following these figures

A03215

Horizontal Left Application-Vent Elbow Up

Venting Notes

1. For common vent, vent connector sizing and vent material: United States, latest edition of the National Fuel Gas Code (NFGC), NFPA54/ANSI Z223.1.
2. Immediately increase to 5-in. (127 mm) vent connector outside furnace casing when 5-in. (127 mm) vent connector required, refer to Note 1.
3. Side outlet vent for upflow and downflow installations must use Type B vent immediately after exiting the furnace, except when accessory Downflow Vent Guard is used in downflow position.
4. Type B vent where required, refer to Note 1.
5. 4-in. (102 mm) single wall vent must be used inside furnace casing and the Downflow Vent Guard Kit.
6. Accessory Downflow Vent Guard Kit required in downflow installations with bottom vent configuration.
7. Secure vent connector to furnace elbow with (2) corrosion-resistant sheet metal screws, space approximately 180° apart.
8. Secure all other single wall vent connector joints with (3) corrosion-resistant screws spaced approximately 120° apart.
9. Secure Type B vent connectors per vent connector manufacturer's recommendations.

ACCESSORIES

DESCRIPTION	PART NO.	36040C17A	48060C17A	60080C21A	60100C21A
Infinity® System Control Wi-Fi	SYSTXCCITC01	X	X	X	X
Evolution® System Control Wi-Fi	SYSTXBBECC01	X	X	X	X
Flue Extension	KGAFE0112UPH	X	X	X	X
Combustible Floor Base	KGASB0201ALL	X	X	X	X
Downflow Vent Guard	KGBVG0101DFG	X	X	X	X
ECM Motor Simulator Kit	KGBSD0301FMS	X	X	X	X
External Bottom Return Filter Rack*	FHG1625-2	X	X	-	-
	FHG2025-2	-	-	X	X
Unframed Filter 3/4-in. (19 mm)*	325531-402	X	X	-	-
	325531-403	-	-	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

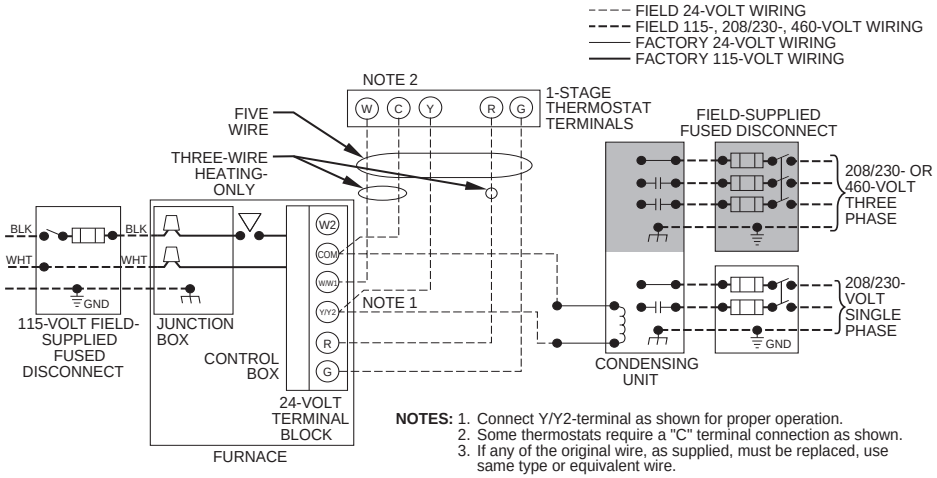
*. Purchased through Replacement Components

DESCRIPTION	ACCESSORIES
HUMIDIFIER	Model HUM
HEAT RECOVERY VENTILATOR	Model HRV
ENERGY RECOVERY VENTILATOR	Model ERV
UV LIGHTS	Model UVL

DESCRIPTION	ACCESSORY	14”	17”	21”
Bryant Carbon Monoxide Alarm (10 pack)	COALMBBNRB02-A10	X	X	X
Bryant Evolution Air Purifier - 16x25 (407x635 mm)	DGAPAXX1625	X	X	-
Bryant Evolution Air Purifier - 20x25 (508x635 mm)	DGAPAXX2025	-	-	X
Bryant Evolution Air Purifier Repl. Filter- 16x25 (407x635 mm)	PGAPXCAR1625-A02	X	X	-
Bryant Evolution Air Purifier Repl. Filter- 20x25 (508x635 mm)	PGAPXCAR2025-A02	-	-	X
Media Filter Cartridge - 16” (407 mm) (MERV 11)	FILXXCAR0116	X	X	-
Media Filter Cartridge - 16” (407 mm) (MERV 8)	FILXXCAR0016	X	X	-
Media Filter Cartridge - 20” (508 mm) (MERV 8)	FILXXCAR0020	-	-	X
Media Filter Cartridge - 20” (508 mm) (MERV11)	FILXXCAR0120	-	-	X
Media Filter Cabinet -16”	FILCABXL0016	X	X	-
Media Filter Cabinet - 20”	FILCABXL0020	-	-	X
EZ Flex Cabinet Side or Bottom - 16”	EZXCAB--1016	X	X	-
EZ Flex Cabinet Side or Bottom - 20”	EZXCAB--1020	-	-	X
EZ Flex Replacement Filters 16” MERV 10	EXPXXFIL0016	X	X	-
EZ Flex Replacement Filters 16” MERV 13	EXPXXFIL0316	X	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	X	-
EZ-Flex Filter with End Caps - 16” (407 mm) (MERV 13)	EXPXXUNV0316	X	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

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

TYPICAL WIRING SCHEMATIC



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AIR DELIVERY

Air Delivery - CFM (with filter)													
(SW1-5 and SW4-3 set to OFF, except as indicated. See notes 1 and 2)													
Size: 36040C17A	**Clg/CF Switch settings**			**External Static Pressure (ESP)**									
Clg Switches	**SW2-3**	**SW2-2**	**SW2-1**	**0.1**	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Clg Default:	OFF	OFF	OFF	1275	1310	1305	1315	1310	1305	1305	1295	1290	1270
CF Switches	**SW3-3**	**SW3-2**	**SW3-1**										
Low-Clg Default:	OFF	OFF	OFF	1275	1310	1305	1315	1310	1305	1305	1295	1290	1270
Cooling Airflow (SW2) Low-Cooling Airflow (SW3)	OFF	OFF	ON	530	545	545	535	505	495	485	See Note 4		
	OFF	ON	OFF	715	705	730	730	735	735	740	725	720	695
	OFF	ON	ON	870	910	925	925	935	935	925	915	910	900
	ON	OFF	OFF	1100	1090	1080	1110	1120	1120	1110	1110	1100	1095
	ON	OFF	ON	1275	1310	1305	1315	1310	1305	1305	1295	1290	1270
	ON	ON	OFF	1445	1480	1480	1480	1475	1455	1415	1375	1335	1295
	ON	ON	ON	1445	1480	1480	1480	1475	1455	1415	1375	1335	1295
	Maximum Clg Airflow[2]			1635	1605	1565	1525	1490	1455	1415	1375	1335	1295
CF Switches	**SW3-3**	**SW3-2**	**SW3-1**										
Cont. Fan Default:	OFF	OFF	OFF	530	545	545	535	505	495	485	See Note 4		
Continuous Fan Airflow (SW3)	OFF	OFF	ON	530	545	545	535	505	495	485	See Note 4		
	OFF	ON	OFF	715	705	730	730	735	735	740	725	720	695
	OFF	ON	ON	870	910	925	925	935	935	925	915	910	900
	ON	OFF	OFF	1100	1090	1080	1110	1120	1120	1110	1110	1100	1095
	ON	OFF	ON	1100	1090	1080	1110	1120	1120	1110	1110	1100	1095
	ON	ON	OFF	1100	1090	1080	1110	1120	1120	1110	1110	1100	1095
	ON	ON	ON	1100	1090	1080	1110	1120	1120	1110	1110	1100	1095
Heating (SW1)	Heating Airflow[3]			760	765	790	790	800	800	800	790	775	755
Size: 48060C17A	**Clg/CF Switch settings**			**External Static Pressure (ESP)**									
Clg Switches	**SW2-3**	**SW2-2**	**SW2-1**	**0.1**	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Clg Default:	OFF	OFF	OFF	1460	1475	1500	1500	1480	1440	1395	1355	1310	1255
CF Switches	**SW3-3**	**SW3-2**	**SW3-1**										
Low-Clg Default:	OFF	OFF	OFF	540	565	555	555	535	See Note 4				
Cooling Airflow (SW2) Low-Cooling Airflow (SW3)	OFF	OFF	ON	540	565	555	555	535	See Note 4				
	OFF	ON	OFF	715	735	745	760	765	See Note 4				
	OFF	ON	ON	865	910	935	950	965	955	950	955	955	945
	ON	OFF	OFF	1120	1125	1130	1145	1160	1165	1165	1160	1150	1150
	ON	OFF	ON	1275	1295	1315	1335	1340	1345	1340	1335	1310	1255
	ON	ON	OFF	1460	1475	1500	1500	1480	1440	1395	1355	1310	1255
	ON	ON	ON	1460	1475	1500	1500	1480	1440	1395	1355	1310	1255
	Maximum Clg Airflow2			1620	1595	1565	1525	1480	1440	1395	1355	1310	1255
CF Switches	**SW3-3**	**SW3-2**	**SW3-1**										
Cont. Fan Default:	OFF	OFF	OFF	540	565	555	555	535	See Note 4				
Continuous Fan Airflow (SW3)	OFF	OFF	ON	540	565	555	555	535	See Note 4				
	OFF	ON	OFF	715	735	745	760	765	See Note 4				
	OFF	ON	ON	865	910	935	950	965	955	950	955	955	945
	ON	OFF	OFF	1120	1125	1130	1145	1160	1165	1165	1160	1150	1150
	ON	OFF	ON	1275	1295	1315	1335	1340	1345	1340	1335	1310	1255
	ON	ON	OFF	1460	1475	1500	1500	1480	1440	1395	1355	1310	1255
	ON	ON	ON	1460	1475	1500	1500	1480	1440	1395	1355	1310	1255
Heating (SW1)	Heating Airflow[3]			960	995	1015	1020	1030	1050	1055	1060	1055	1045

AIR DELIVERY - CONTINUED

Air Delivery - CFM (with filter)													
(SW1-5 and SW4-3 set to OFF, except as indicated. See notes 1 and 2)													
Size: 60080C21A	**Clg/CF Switch settings**			**External Static Pressure (ESP)**									
Clg Switches	**SW2-3**	**SW2-2**	**SW2-1**	**0.1**	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Clg Default:	OFF	OFF	OFF	1905	1920	1935	1945	1950	1945	1935	1930	1920	1905
CF Switches	**SW3-3**	**SW3-2**	**SW3-1**										
Low-Clg Default:	OFF	OFF	OFF	1905	1920	1935	1945	1950	1945	1935	1930	1920	1905
Cooling Airflow (SW2) Low-Cooling Airflow (SW3)	OFF	OFF	ON	785	765	775	See Note 4						
	OFF	ON	OFF	930	975	990	985	990	1000	985	See Note 4		
	OFF	ON	ON	1130	1155	1150	1175	1190	1195	1215	1215	1215	1215
	ON	OFF	OFF	1345	1345	1350	1370	1370	1365	1365	1355	1345	1335
	ON	OFF	ON	1550	1560	1580	1575	1580	1565	1555	1540	1535	1525
	ON	ON	OFF	1905	1920	1935	1945	1950	1945	1935	1930	1920	1905
	ON	ON	ON	2300	2315	2320	2325	2315	2305	2280	2240	2245	2215
	Maximum Clg Airflow[2]			2405	2410	2415	2400	2390	2360	2305	2275	2255	2215
CF Switches	**SW3-3**	**SW3-2**	**SW3-1**										
Cont. Fan Default:	OFF	OFF	OFF	785	765	775	See Note 4						
Continuous Fan Airflow (SW3)	OFF	OFF	ON	785	765	775	See Note 4						
	OFF	ON	OFF	930	975	990	985	990	1000	985	See Note 4		
	OFF	ON	ON	1130	1155	1150	1175	1190	1195	1215	1215	1215	1215
	ON	OFF	OFF	1130	1155	1150	1175	1190	1195	1215	1215	1215	1215
	ON	OFF	ON	1130	1155	1150	1175	1190	1195	1215	1215	1215	1215
	ON	ON	OFF	1130	1155	1150	1175	1190	1195	1215	1215	1215	1215
	ON	ON	ON	1130	1155	1150	1175	1190	1195	1215	1215	1215	1215
Heating (SW1)	Heating Airflow[3]			1550	1570	1585	1580	1565	1555	1550	1545	1545	1535
Size: 60100C21A	**Clg/CF Switch settings**			**External Static Pressure (ESP)**									
Clg Switches	**SW2-3**	**SW2-2**	**SW2-1**	**0.1**	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Clg Default:	OFF	OFF	OFF	1785	1800	1805	1830	1830	1845	1855	1860	1850	1840
CF Switches	**SW3-3**	**SW3-2**	**SW3-1**										
Low-Clg Default:	OFF	OFF	OFF	1785	1800	1805	1830	1830	1845	1855	1860	1850	1840
Cooling Airflow (SW2) Low-Cooling Airflow (SW3)	OFF	OFF	ON	635	630	See Note 4							
	OFF	ON	OFF	785	820	865	See Note 4						
	OFF	ON	ON	1040	1045	1070	1085	1130	See Note 4				
	ON	OFF	OFF	1205	1220	1245	1280	1290	1295	1290	1280	See Note 4	
	ON	OFF	ON	1380	1425	1445	1465	1480	1475	1490	1485	1455	1460
	ON	ON	OFF	1785	1800	1805	1830	1830	1845	1855	1860	1850	1840
	ON	ON	ON	2170	2155	2175	2195	2185	2195	2190	2180	2160	2100
	Maximum Clg Airflow[2]			2200	2220	2245	2260	2260	2260	2255	2225	2170	2100
CF Switches	**SW3-3**	**SW3-2**	**SW3-1**										
Cont. Fan Default:	OFF	OFF	OFF	635	630	See Note 4							
Continuous Fan Airflow (SW3)	OFF	OFF	ON	635	630	See Note 4							
	OFF	ON	OFF	785	820	865	See Note 4						
	OFF	ON	ON	1040	1045	1070	1085	1130	See Note 4				
	ON	OFF	OFF	1205	1220	1245	1280	1290	1295	1290	1280	See Note 4	
	ON	OFF	ON	1380	1425	1445	1465	1480	1475	1490	1485	1455	1460
	ON	ON	OFF	1380	1425	1445	1465	1480	1475	1490	1485	1455	1460
	ON	ON	ON	1380	1425	1445	1465	1480	1475	1490	1485	1455	1460
Heating (SW1)	Heating Airflow[3]			1785	1800	1765	1785	1800	1820	1830	1835	1825	1810

1. Nominal 350 CFM/ton cooling airflow is delivered with SW1-5 and SW4-3 set to OFF.
   Set SW1-5 to ON for nominal 400 CFM/ton (+15% airflow).
   Set SW4-3 to ON for nominal 325 CFM/ton (-7% airflow).
   Set both SW1-5 and SW4-3 to ON for nominal 370 CFM/ton (+7% airflow).
   This applies to Cooling and Low-Cooling airflow, but does not affect continuous fan airflow.

The above adjustments in airflow are subject to motor horsepower range/capacity.

2. Maximum cooling airflow is achieved when switches SW2-1, SW2-2, SW2-3 and SW1-5 are set to ON, and SW4-3 is set to OFF.
3. All heating CFM's are when comfort/efficiency adjustment switch (SW1-4) is set to OFF
4. Ductwork must be sized for heating CFM within the operational range of ESP. Operation within the blank areas of the chart is not recommended because heat operation will be above 1.0 ESP.
5. All airflows on 21" casing size furnaces are 5% less on side return only installations.

GUIDE SPECIFICATIONS

Gas Furnace

General

System Description

Furnish a _____ variable speed gas-fired furnace for use with natural gas; furnish cold air return plenum.

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 3rd 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 shall be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

Warranty (for inclusion by specifying engineer)

Products

Equipment

Components shall include: slow-opening gas valve to reduce ignition noise, regulate gas flow, with electric switch gas shut-off; flame proving sensor, hot surface igniter, transducer, burner thermal switch, blower and inducer assembly, 40va transformer; low-voltage (heating) (heating/ cooling) thermostat.

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 bearings, of _____hp, and delivers requested airflow CFM as defined by direct drive and signals received from furnace control. Blower motor shall be soft mounted to the blower scroll to reduce vibration transmission.

Filters

Furnace may have reusable-type filters. Filter shall be _____ in (x) _____in. (mm). An accessory high-efficiency media filter is available as an option. _____ Media Filter.

Casing

Casing shall be of .030 in. (.76 mm) thickness minimum, pre-painted steel.

Draft Safeguard Switch

Draft Safeguard Switch (blocked vent safeguard) shall be factory installed to reduce the possibility of vent gas infiltration due to a blocked or restricted vent pipe.

Controls

Control shall include a micro-processor based integrated electronic control board with troubleshooting codes displayed via enhanced flashing LED diagnostic 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 separate blower speeds for heating and cooling.

Operating Characteristics

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

Fuel Gas Efficiency shall be 80% AFUE.

Air delivery shall be _____ CFM minimum at 0.50 In. W.C. external static pressure.

Dimensions shall be: depth _____ in.; width _____ in; 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 or circuit breaker shall be _____Amps.

Special Features

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