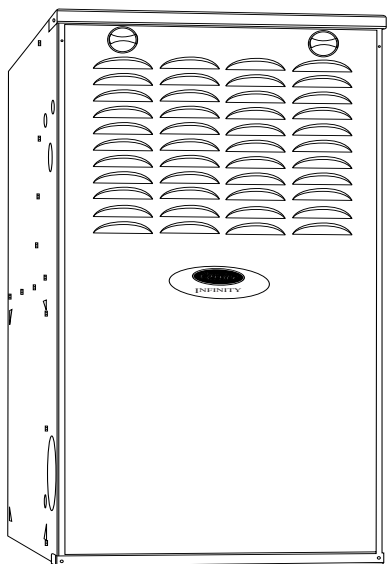


58CU0B

Infinity® 80 Ultra Low NOx, Variable-Speed, Communicating, 4-Way Multipoise Gas Furnace



Product Specifications



A190383

INFINITY® 80 ULTRA LOW NOx GAS FURNACE

The 58CU0B 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, San Joaquin Valley Air Pollution Control District in California, and Bay Area Air Quality Management District. It provides warm winter heating with 65% lower NOx emissions than standard models.

The Infinity® 80 Ultra Low NOx Gas Furnaces offers a number of comfort-enhancing features with its constant airflow variable-speed Infinity ECM blower motor. ComfortFan™ technology selectable fan speeds allows control over ventilation. SmartEvap™ technology provides humidity control during cooling operation, and with select outdoor units, Ideal Humidity System™ 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 - 58CU0B 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

- Infinity System-match with the Infinity Control for Infinity System benefits
- Integral part of the Ideal Humidity System™
 - Maximum dehumidification selection for summer time cooling
 - Full Ideal Humidity System™ benefits including “Super Dehumidify” SmartEvap™ - Humidity control when using a Thermidstat™/ Infinity control
- SmartEvap™ can lower the humidity level in the home by nearly 10 percent
- Power Heat™ Igniter
- Microprocessor based control center
 - 3-digit display shows fault codes and furnace status
 - 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
- Bluetooth® provides enhanced serviceability and diagnostics
- On-board NFC antenna makes setup a tap away when using the Carrier Service Technician App
- RAT and SAT thermistors can provide temperature rise
- 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



A200374

SPECIFICATIONS

FURNACE SIZE		040C17-12	060C17-16	080C21-20	100C21-20
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)	25 - 55 (14 - 31)	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	650	1000	1450	1650
	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		11.1	11.1	14.4	14.4
Unit Ampacity		14.4	14.4	18.5	18.5
Maximum Wire Length - Measure one way in Ft		25	25	31	31
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		3/4	3/4	1	1
Motor Full Load Amps		8.8	8.8	11.5	11.5
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

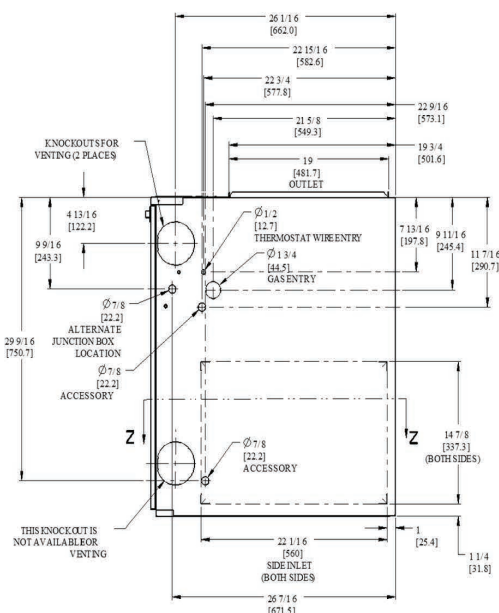
MODEL NUMBER NOMENCLATURE

1, 2 Gas Furnace 59	3 Heating Stages M	4 Tier N	5 Min. AFUE/NOx 7	6 Major Series B	7, 8, 9 Heating Input 060	10 Motor Type E	11, 12 Width 17	13 Voltage (1-phase) 1	14 Minor Series 1	15, 16 Airflow 16
58 = 80% Non-Condensing 59 = 90%+ Condensing	M = Modulating S = Single Stage T = Two Stage	B = Base C = Comfort E = Export N = Infinity P = Performance U = Ultra Low Nox	0 = Std. NOx 80% 1 = 80% Low Nox 2 = 92% 5 = 95% 6 = 96% 7 = 97% 8 = 98%	A B C ---	026 = 26,000 BTU/h 040 = 40,000 BTU/h 060 = 60,000 BTU/h ---	C = Comm. Variable-Speed Constant Airflow (VCA) ECM E = Fixed-Speeds Constant Torque (FCT) ECM V = Variable-Speed Constant Torque (VCT) ECM	14 - 14.2" 17 - 17.5" 21 - 21.0" 24 - 24.5"	1 = 110V/60Hz 2 = 230V/50Hz	1 2 3 ---	08 = 800 CFM 10 = 1000 CFM 12 = 1200 CFM 14 = 1400 CFM 16 = 1600 CFM 20 = 2000 CFM 22 = 2200 CFM

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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 1/2-in. (368 x 560 mm) rectangle.
4. 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 return air to the furnace.



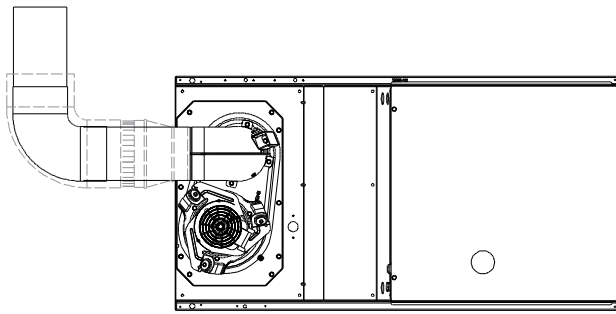
SD5507- 4 ULN 80 REV. B

A190257

FURNACE SIZE	A CABINET WIDTH	B OUTLET WIDTH	C TOP FLUE COLLAR	D BOTTOM INLET WIDTH	VENT CONNECTION SIZE	SHIP WT. LB. (KG)
58CU0B040C17--12	17-1/2 (445)	15-7/8 (403)	11-9/16 (294)	16 (406)	4 (102)	123 (56)
58CU0B060C17--16	17-1/2 (445)	15-7/8 (403)	11-9/16 (294)	16 (406)	4 (102)	130 (59)
58CU0B080C21--20	21 (533)	19-3/8 (492)	13-5/16 (338)	19-1/2 (495)	4 (102)	144 (65)
58CU0B100C21--20	21 (533)	19-3/8 (492)	13-5/16 (338)	19-1/2 (495)	4 (102)	154 (70)

CLEARANCES

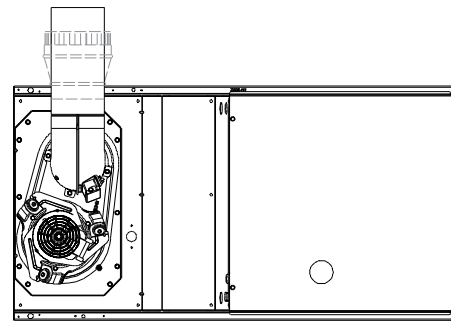
VENTING CONFIGURATIONS



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

Horizontal Left Application-Vent Elbow Left

A03213



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

Horizontal Left Application-Vent Elbow Up

A03215

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.	040C17-12	060C17-16	080C21-20	100C21-20
Infinity® System Control Wi-Fi	SYSTXCCITC01	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

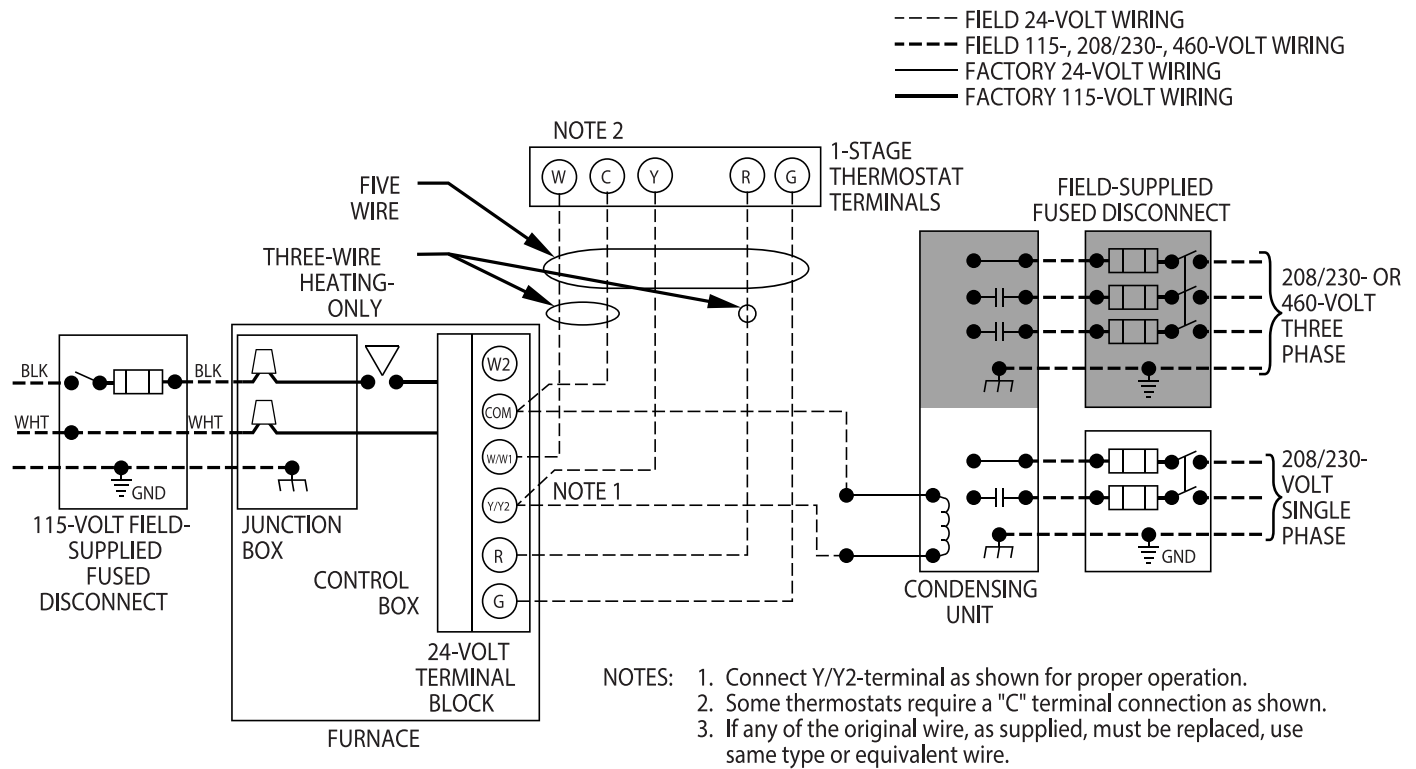
*. Purchased through Replacement Components

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

DESCRIPTION	ACCESSORY	14"	17"	21"
Carrier Carbon Monoxide Alarm (10 pack)	COALMCCNRB02-A10	X	X	X
Carrier Infinity Air Purifier - 16" x 25" (407 x 635 mm)	DGAPAXX1625	X	X	-
Carrier Infinity Air Purifier - 20" x 25" (508 x 635 mm)	DGAPAXX2025	-	-	X
Carrier Infinity Air Purifier Repl. Filter- 16" x 25" (407 x 635 mm)	PGAPXCAR1625-A02	X	X	-
Carrier Infinity Air Purifier Repl. Filter- 20" x 25" (508 x 635 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
Combustion Air Filter Kit – 17"	AGAFLTULN01A17	-	X	-
Combustion Air Filter Kit – 21"	AGAFLTULN01A21	-	-	X

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

TYPICAL WIRING SCHEMATIC



A95236

AIR DELIVERY

Table 1 – 040C17–12 Airflow in CFM

Setting	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
1*	488							†		
2	525									
3	555									
4	600									
5	650									
6	700									
7	740									
8‡	800									
9	875									
10	925									
11	975									
12	1000									
13**	1050									
14	1138									
15	1200									
16	1225									
17	1300									
18	1400									
19	1480									
20	1600									
Constant Fan Airflow (cfm)	Settings 1 - 9 (*488 - 875cfm)									
	Settings above 9 are not recommended									
	Heat Stage									
Setting	High									
Comfort 1	510									
Comfort 2††	565									
Efficiency 1	650									
Efficiency 2	750									

*. Constant Fan Default

†. Operation in the blank region is not recommended because heat operation will exceed 1.0" w.c. ESP.

‡. Low Cooling Default

**. High Cooling Default

††. Heating Default

Table 2 – 060C17–16 Airflow in CFM

Setting	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										
1*	488			†																
2	525																			
3	555																			
4	600																			
5	650																			
6	700																			
7	740																			
8	800																			
9																				
10											875									
11											925									
12											975									
13†											1000									
14											1050									
15											1138									
16											1200									
17											1225									
18**											1300									
19											1400									
20											1480									
Constant Fan Airflow (cfm)											Settings 1 - 9 (†488 - 875)									
											Settings above 9 are not recommended									
											Heat Stage									
Setting											High									
Comfort 1											785									
Comfort 2††											870									
Efficiency 1											1000									
Efficiency 2											1125									

*. Constant Fan Default

†. Operation in the blank region is not recommended because heat operation will exceed 1.0" w.c. ESP.

‡. Low Cooling Default

**. High Cooling Default

††. Heating Default

Table 3 – 080C21–20 Airflow in CFM

Setting	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		
1*	650											
2	700			†								
3	740											
4	800											
5	875											
6	925											
7	975											
8	1000											
9	1050											
10	1138											
11	1200											
12	1225											
13‡	1300											
14	1400											
15	1480											
16	1600											
17	1625											
18**	1750											
19	1850											
20	1910											
21	2000											
22	2100								2060			
23	2180						2160	2110	2060			
24	2200						2160	2110	2060			
Constant Fan Airflow (cfm)	Settings 1 - 9 (*650 - 1050)											
	Settings above 9 are not recommended											
	Heat Stage											
Setting	High											
Comfort 1	1120											
Comfort 2††	1250											
Efficiency 1	1450											
Efficiency 2	1700											

*. Constant Fan Default

†. Operation in the blank region is not recommended because heat operation will exceed 1.0" w.c. ESP.

‡. Low Cooling Default

**. High Cooling Default

††. Heating Default

Table 4 – 100C21–20 Airflow in CFM

Setting	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		
1*	650		†									
2	700											
3	740											
4	800											
5	875											
6	925											
7	975											
8	1000											
9	1050											
10	1138											
11	1200											
12	1225											
13‡	1300											
14	1400											
15	1480											
16	1600											
17	1625											
18**	1750											
19	1850											
20	1910											
21	2000								1980	1930		
22	2100							2040	1980	1930		
23	2180					2155	2100	2040	1980	1930		
24	2200					2155	2100	2040	1980	1930		
Constant Fan Airflow (cfm)	Settings 1 - 9 (*650 - 1050)											
	Settings above 9 are not recommended											
	Heat Stage											
Setting	High											
Comfort 1	1300											
Comfort 2††	1435											
Efficiency 1	1650											
Efficiency 2	1875											

*. Constant Fan Default

†. Operation in the blank region is not recommended because heat operation will exceed 1.0" w.c. ESP.

‡. Low Cooling Default

**. High Cooling Default

††. Heating Default

GUIDE SPECIFICATIONS

General

System Description

Furnish a _____ 4-way multipoise gas-fired condensing furnace for use with natural gas or propane (factory-authorized conversion kit required for propane).

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® and Blue Flame® labels. 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. and Canada 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 0.030 in. thickness minimum, pre-painted steel.

Draft Inducer Motor

Draft inducer motor shall be single-speed PSC design.

Primary Heat Exchangers

Primary heat exchangers shall be 3-Pass corrosion-resistant aluminized steel of fold-and-crimp 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 at least 16 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.