R8MSN, R8MSL

Product Specifications

80% Single Stage Heating Furnace

EASIER TO SELL

- 80% AFUE
- Flame roll–out sensors standard
- Category I venting
- Blocked vent switch
- Louvered door
- 24 VAC humidifier terminal
- Electronic air cleaner terminal
- R8MSL California NOx approved
- 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

TOUGHER

- PSC blower motor
- Adjustable heating blower OFF delay
- Factory set blower ON delay
- RPJ aluminized steel heat exchanger
- High temperature limit control prevents overheating
- Direct ignition with Silicon Nitride ignitor
- One piece prepainted steel cabinet

QUIETER

- In–shot burners

EASIER TO INSTALL AND SERVICE

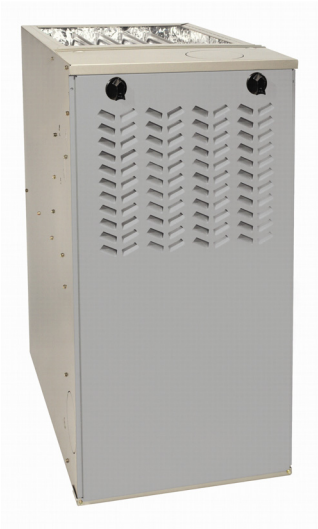
- 33 1/3” (847mm) high, for ease of installation
- Innovative knobs for easy door removal and secure attachment
- Factory shipped for natural gas, with propane gas conversion kits available
- Four position – upflow/downflow/horizontal (left/right) installation
- Three position inducer elbow capability
- Through the casing flue pipe for counterflow applications
- Common venting with other Category I appliances
- Masonry chimney adapter available
- Self diagnostics
- Slide out blower assembly

LIMITED WARRANTY *

- 20 year heat exchanger limited warranty
- 5 year parts limited warranty

– With timely registration, an additional 5 year parts limited warranty

* For residential applications only. See warranty certificate for complete details and restrictions, including warranty coverage for other applications.



Illustrations and photographs are only representative. Some product models may vary.

⚠ WARNING

This furnace is not designed for use in mobile homes, trailers, or recreational vehicles. Such use could result in property damage and/or death.

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 .

DESIGN CERTIFIED

Certified System ISO 9001 QMI-SAI Global

Model	Input (MBTUH)	Efficiency AFUE	Cooling Capacity CFM range @ .5 in. w.c. (125 Pa)	Dimensions H x W x D Inches (Millimeters)	Shipping Wt. Lbs(Kg)
R8MS*0451412A	44,000	80.0	1040–1160	33–1/4 x 14–3/16 x 29 (844 x 360 x 737)	107 (58)
R8MS*0701412A	66,000	80.0	1050–1200		115 (52)
R8MS*0902120A	88,000	80.0	1715–2025	33–1/4 x 21 x 29 (844 x 533 x 737)	140 (64)
R8MS*1102122A	110,000	80.0	1650–2205		152 (69)

* = N–Standard, L–Low NOx

MODEL NUMBER IDENTIFICATION GUIDE

DIGIT POSITION	1	2	3	4	5	6,7,8	9,10	11,12	13	14
	R	**8**	**M**	**S**	**L**	**045**	**14**	**12**	**A**	**1**

R = Non–Branded

8 = 80% AFUE **EFFICIENCY**

M = Multiposition **POSITION**

V = Variable Speed Blower Motor – ECM
X = ECM Blower Motor
S = Single–stage
T = Two–stage **TYPE**

N = Standard
L = Low NOx **FEATURE**

045 = 44,000 BTU/hr
070 = 66,000 BTU/hr
090 = 88,000 BTU/hr
110 = 110,000 BTU/hr **HEAT INPUT**

14 = 14–3/16”
17 = 17–1/2”
21 = 21”
24 = 24–1/2” **CABINET WIDTH**

12 = 1200 CFM (max)
14 = 1400 CFM (max)
20 = 2000 CFM (max)
22 = 2200 CFM (max) **NOMINAL MAXIMUM COOLING AIRFLOW @ .5 IN.W.C.**

SALES (MAJOR) REVISION DIGIT

ENGINEERING (MINOR) REVISION DIGIT

ACCESSORIES PART NUMBER IDENTIFICATION GUIDE

DIGIT POSITION	1	2	3	4	5, 6, 7	8, 9	10, 11
	N	**A**	**H**	**A**	**001**	**01**	**DH**

N = Non–Branded **BRANDING**

A = Accessory **PRODUCT GROUP**

H = Heating **KIT USAGE**

A = Original
B = 2nd Generation
C = 3rd Generation **MAJOR SERIES**

Product Identifier Number

Package Quantity

Type of Kit (Example: DH = Draft Hood – Chimney Adapter)

SPECIFICATIONS

R8MSN & R8MSL		0451412	0701412	0902120	1102122
RATING AND PERFORMANCE					
Input Btuh*	R8MSL upflow All R8MSN	44,000	66,000	88,000	110,000
	R8MSL Downflow/ Horizontal	42,000	63,000	84,000	105,000
Output Capacity (Btuh) Nonweatherized ICS†	R8MSL upflow All R8MSN	36,000	54,000	71,000	89,000
	R8MSL Downflow/ Horizontal	34,000	51,000	68,000	85,000
AFUE†		80.0			
Certified Temperature Rise Range °F		20–50	30–60	25–55	30–60
°C		11–28	17–33	14–30	17–33
External Static Pressure	Heat/Cool	0.10/0.50	0.12/0.50	0.15/0.50	0.20/0.50
Airflow CFM‡	Heating	1250	1195	1900	1840
	Cooling	1160	1200	2025	2160
ELECTRICAL					
Transformer (24v)		40VA			
External Control	Heating	12VA			
	Cooling	35VA			
Air Conditioning Blower Relay		Standard			
CONTROLS					
Limit Control		SPST			
Heating Blower Control		Solid–State Timer Operation			
Burners (Monoport)		2	3	4	5
Gas Connection Size		1/2 inch NPT			
GAS CONTROLS					
Gas Valve (Redundant)		White Rodgers			
	Min Inlet Pressure (in wc/kPa)	4.5/1.121 (Natural Gas)			
	Max inlet pressure (in wc/kPa)	13.6/3.386 (Natural Gas)			
Ignition Device		Hot Surface			
BLOWER DATA					
Direct–Drive Motor HP(PSC)		1/3	1/3	3/4	3/4
Motor Full Load Amps		5.2	5.2	11.8	11.8
RPM (Nominal) speeds		1075–3	1075–3	1075–3	1075–3
Blower Wheel Diameter x Width – inches(mm)		10 x 6 (254x152)		11 x 11 (279x279)	
FILTER ARRANGEMENT		External Filter Rack Required			

* Gas input ratings are certified for elevations to 2000 ft. (609.6 m) For elevations about 2000 ft. (609.6 m), reduce ratings 4% for each 1000 ft. (304.8m) above sea level. Refer to National Fuel Gas Code Table F4 or Furnace Installation Instructions. In Canada, derate the unit 10% for elevations 2000 ft. (609.6 m) to 4500 ft. (1371.6 m) above sea level.
† Capacity in accordance with U.S. Government DOE test procedures.
‡ Airflow shown is for bottom only return–air supply for the as–shipped speed tap. For air delivery above 1800 CFM, see Air Delivery table for other options. A filter is required for each return air supply. An airflow reduction of up to 7% may occur when using the factory specified 4–5/16 inch (109.5 mm) wide, high efficiency media filter.
** Time delay type is recommended.
ICS Isolated Combustion System
N/A Not Applicable

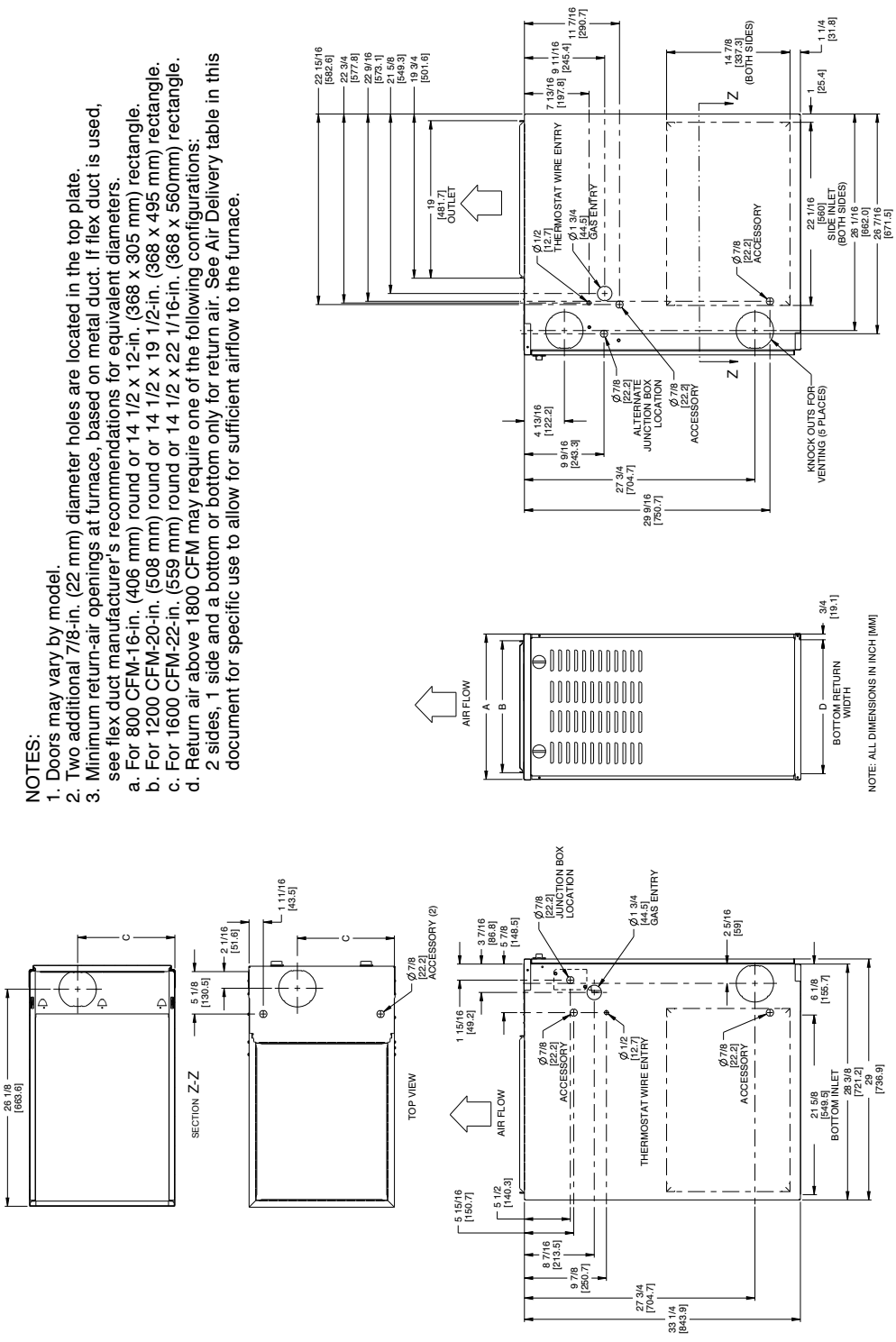
ELECTRICAL DATA

FURNACE SIZE	VOLTS HERTZ PHASE	OPERATING VOLTAGE RANGE		MAXIMUM UNIT AMPS	MAXIMUM WIRE LENGTH FT (M)‡	MAXIMUM FUSE OR CKT BKR AMPS†	MINIMUM WIRE GAGE
		Maximum*	Minimum*				
0451412	115-60-1	127	104	7.2	37 (11.2)	15	14
0701412	115-60-1	127	104	7.2	38 (11.5)	15	14
0902120	115-60-1	127	104	14.1	31 (9.4)	20	12
1102122	115-60-1	127	104	15.1	29 (8.8)	20	12

* Permissible limits of the voltage range at which unit operates satisfactorily.
† Time–delay type is recommended.
‡ Length shown is as measured 1 way along wire path between unit and service panel for maximum 2 percent voltage drop.

UNIT DIMENSIONS

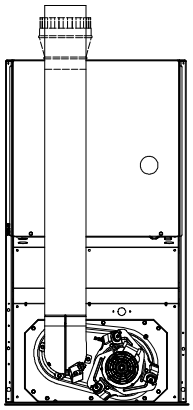
NOTES:
1. Doors may vary by model.
2. Two additional 7/8-in. (22 mm) diameter holes are located in the top plate.
3. Minimum return-air openings at furnace, based on metal duct. If flex duct is used, see flex duct manufacturer's recommendations for equivalent diameters.
   a. For 800 CFM-16-in. (406 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 560mm) 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.



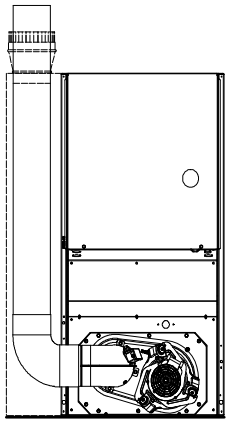
UNIT SIZE	A (CABINET WIDTH) in(mm)	B (SUPPLY WIDTH) in(mm)	C (TOP VENT OUTLET) in(mm)	D BOTTOM RETURN WIDTH) in(mm)	VENT CONNECTION SIZE† in(mm)	SHIPPING WEIGHT (lb/kg)
0451412	14–3/16(360)	12–9/16(319)	9–5/16(237)	12–11/16(322)	4(102)	107(59)
0701412	14–3/16(360)	12–9/16(319)	9–5/16(237)	12–11/16(322)	4(102)	115(52)
0902120	21(533)	19–3/8(492)	13–5/16(338)	19–1/2(495)	4(102)	140(64)
1102122	21(533)	19–3/8(492)	13–5/16(338)	19–1/2(495)	4(102)	152(69)

† See Installation Instructions for complete installation requirements.

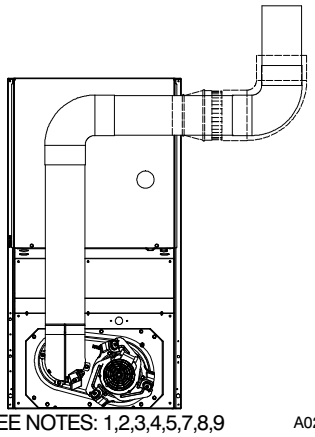
DOWNFLOW VENT CONFIGURATIONS



SEE NOTES: 1,2,4,5,7,8,9 A02061

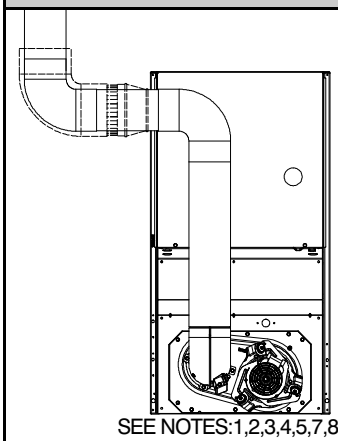


SEE NOTES: 1,2,4,5,6,7,8,9 A02062



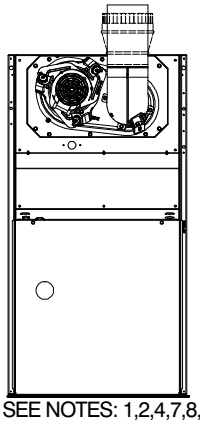
SEE NOTES: 1,2,3,4,5,7,8,9 A02063

DOWNFLOW CONTINUTED

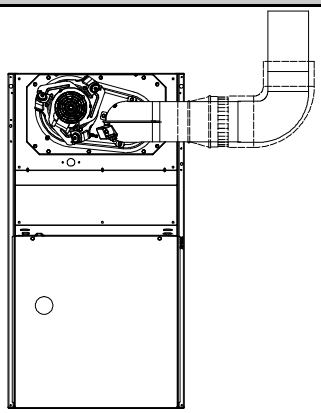


SEE NOTES:1,2,3,4,5,7,8,9 A02060

UPFLOW VENT CONFIGURATIONS

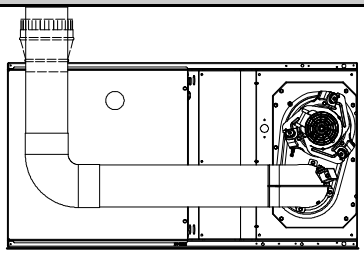


SEE NOTES: 1,2,4,7,8,9 A0205

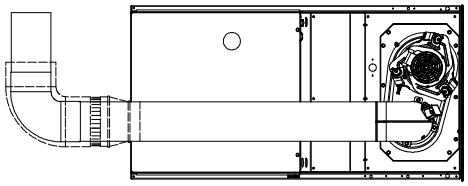


SEE NOTES: 1,2,3,4,7,8,9 A02059

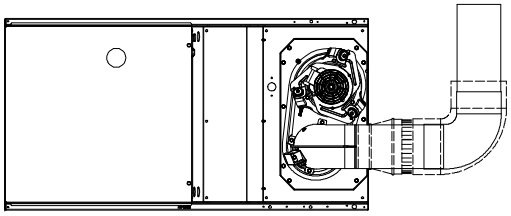
HORIZONTAL RIGHT VENT CONFIGURATIONS



SEE NOTES: 1,2,4,5,7,8,9 A02070

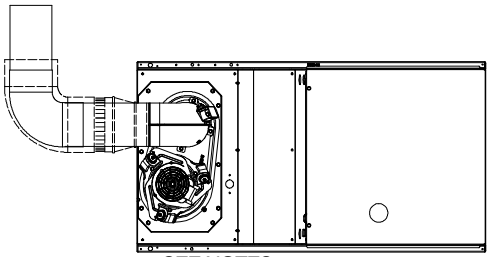


SEE NOTES: 1,2,4,5,7,8,9 A02068

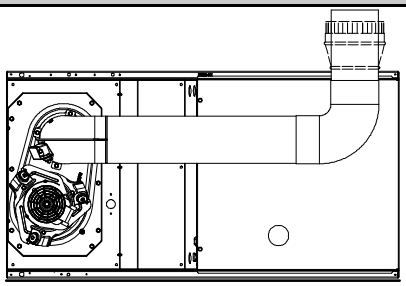


SEE NOTES: 1,2,4,7,8,9 A02069

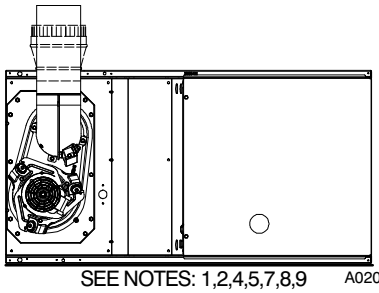
HORIZONTAL LEFT VENT CONFIGURATIONS



SEE NOTES: 1,2,4,7,8,9 A02064

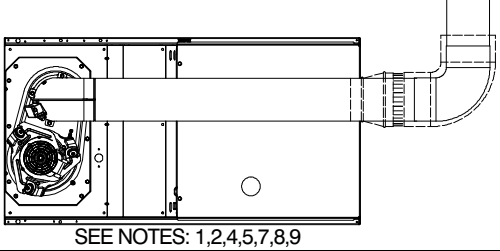


SEE NOTES: 1,2,4,5,7,8,9 A02065



SEE NOTES: 1,2,4,5,7,8,9 A02066

HORIZONTAL LEFT VENT CONFIGURATIONS



SEE NOTES: 1,2,4,5,7,8,9 A02067

Venting notes

1. For common vent, vent connector sizing and vent material: United States, use the latest edition of the National Fuel Gas Code (NFGC).
2. Immediately increase to 5 inch (127mm) vent connector outside furnace casing when 5 inch (127mm) 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 the Downflow Vent Guard Kit is used in downflow position.
4. Type B vent where required, refer to Note 1.
5. 4 inch (102 mm) single−wall (26 ga. min.) vent must be used inside furnace casing and when the Downflow Vent Guard Kit is used external to the furnace.
6. Accessory Downflow Vent Guard Kit, required in downflow installations with lower vent configuration.
7. Chimney Adapter Kit may be required for exterior masonry chimney applications. Refer to Chimney Adapter Kit for sizing and complete application details.
8. Secure vent connector to furnace elbow with two (2) corrosion−resistant sheet metal screws, space approximately 180° apart.
9. Secure all other single wall vent connector joints with three (3) corrosion−resistant screws spaced approximately 120° apart. secure Type B vent connectors per vent connector manufacturer's recommendations.

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS FOR ALL UNITS

This forced air furnace is equipped for use with natural gas at altitudes 0 − 10,000 ft (0 − 3,050m).

An accessory kit, supplied by the manufacturer, shall be used to convert to propane gas use or may be required for some natural gas applications.

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

The 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.

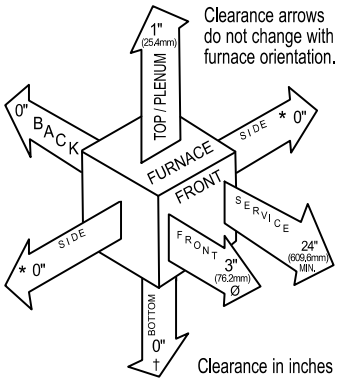
This furnace is approved for UPFLOW, DOWNFLOW, and HORIZONTAL installations.

Downflow Positions:

† Installation on non−combustible floors only.
For Installation on combustible flooring only when installed on special base or coil assembly.

∅ 18 inch front clearance required for alcove.

* Indicate 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.



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

AIR DELIVERY−CFM (WITH FILTER)*

FURNACE SIZE	RETURN−AIR INLET	SPEED	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
0451412	Bottom or Side(s)	High	1440	1375	1305	1240	1160	1070	975	870	730	560
		Med−Low	1360	1300	1240	1175	1115	1040	950	850	725	575
		Low	1250	1210	1160	1100	1040	965	885	790	670	520
0701412	Bottom or Side(s)	High	1425	1375	1320	1265	1200	1125	1035	940	830	655
		Med−Low	1320	1280	1240	1205	1140	1075	995	905	790	620
		Low	1200	1175	1145	1105	1050	990	920	840	725	555
0902120	Bottom Only	High	2405	2310	2220	2130	2025	1920	1790	1660	1530	1350
		Med−High	2170	2110	2040	1970	1895	1785	1675	1565	1420	1260
		Med−Low	1920	1875	1835	1780	1715	1630	1535	1420	1275	1135
	Both Sides or 1 Side & Bottom	High	2530	2450	2365	2270	2165	2065	1940	1805	1670	1505
		Med−High	2230	2170	2110	2050	1985	1890	1780	1660	1525	1360
		Med−Low	1895	1890	1845	1815	1755	1685	1600	1480	1350	1180
	1 Side Only	High	2475	2395	2300	2200	2090	1985	1865	1730	1585	1425
		Med−High	2105	2145	2070	2010	1940	1845	1735	1620	1475	1325
		Med−Low	1850	1860	1810	1770	1715	1650	1555	1445	1310	1150
1102122	Bottom Only	High	2485	2415	2340	2255	2160	2060	1950	1840	1720	1565
		Med−Low	2135	2100	2060	2000	1930	1860	1765	1670	1555	1425
		Low	1855	1840	1815	1775	1725	1675	1600	1510	1405	1290
	Bottom, Sides or 1 Side & Bottom	High	−−	−−	2355	2285	2190	2090	1965	1850	1705	1535
		Med−Low	2140	2100	2050	1990	1935	1865	1760	1670	1545	1410
		Low	1855	1840	1815	1775	1725	1675	1600	1510	1405	1290
	1 Side Only	High	2495	2440	2370	2290	2205	2120	2015	1910	1775	1625
		Med−Low	2030	2025	2000	1950	1905	1850	1750	1660	1555	1425
		Low	−−	1735	1725	1695	1650	1595	1535	1455	1335	1230

* A filter is required for each return−air supply. Airflow performance includes 1 inch (25.4mm) washable filter media such as contained in factory−authorized accessory filter rack. To determine airflow performance without this filter, assume an additional .1 available external static pressure

− Indicates unstable operating conditions.

ACCESSORIES					
PART NUMBER	**DESCRIPTION**	**0451412**	**0701412**	**0902120**	**1102122**
NAHB00501FF	External Bottom Filter Rack, 14 inch (14 x 25 inch washable filter included)	X	X		
NAHB00701FF	External Bottom Filter Rack, 21 inch (20 x 25 inch washable filter included)			X	X
NAHA00506FB†	Washable filter, 1 inch 16 x 25 (6 pack)	X	X		
NAHA00706FB	Washable filter, 1 inch 24 x 25 (6 pack)			X	X
NAHA01001FF	Side Filter Rack 16 x 25 (not adjustable)	X	X	X	X
NAHA01006FF	Side Filter Racks 16 x 25 (6 pack)	X	X	X	X
NAHA01101SB	Combustible Floor Base (Not required when evaporator coil case is used for downflow)	X	X	X	X
NAHB00301VC	Downflow Vent Guard (Not required when vent is routed through cabinet)	X	X	X	X
NAHA00401DH	Chimney Adapter Kit 4−in. vent	X	X	X	X
NAHD00901LP*	Natural−to−Propane Conversion Kit	X	X	X	X
NAHD00901NG*	Propane−to−Natural Conversion Kit	X	X	X	X

X Accessory available
† Suitable for side return filter rack and 17 inch external bottom filter rack.
* Factory authorized and field installed. Gas conversion kits are CSA recognized.

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Specifications subject to change without notice.