SUBMITTAL

Project

Richmond Free Library

Date

Tuesday, June 30, 2020

PROPRIETARY DO NOT DISTRIBUTE

Ken Freer
R.J Murray Co
340 Avenue D
Williston VT

Preliminary
07/14/2020 11:18:48 AM

Table Of Contents

Project: Richmond Free Library
Prepared By: Ken Freer

07/01/2020

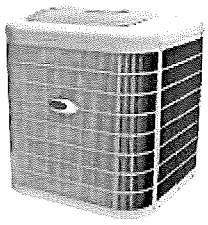
Preliminary
07/14/2020 11:18:59 AM

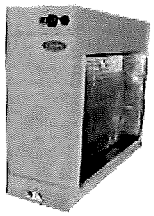
F-1 and AC-1

Submittal Cover Sheet
Unit Report
Performance Summary Report
Acoustic Summary
Certified Drawings
Feature Sheet

Preliminary
07/14/2020 11:18:59 AM

Unit Report For F-1 and AC-1





Outdoor Unit Parameters

Unit Model:	**25VNA**	
Unit Size:	**4 Tons (Size 48)**	
Voltage:	**208/230-1-60**	V-Ph-Hz

Indoor Coil Parameters

Unit Model:	**CSPH**	
Unit Size:	**5 Tons (Size 60)**	
Cabinet Finish:	**Painted**	
Cabinet Width:	**12 inch**	
Refrigerant Type:	**Puron**	

Outdoor Unit Dimensions and Weight

Unit Length:	**35**	in
Unit Width:	**35**	in
Unit Height:	**47.1875**	in
Unit Shipping Weight:	**396.**	lb

Indoor Coil Dimensions and Weight

Unit Length:	**11.75**	in
Unit Width:	**38.9375**	in
Unit Height:	**30.375**	in
Unit Shipping Weight:	**80.5**	lb

RESIDENTIAL APPLICATIONS

This warranty is to the original purchasing owner and subsequent owners only to the extent and as stated in the Warranty Conditions and below. The limited warranty period in years, depending on the part and the claimant, is as shown in the table below.

Limited Warranty (Years)		
Item	**Original Owner**	**Subsequent Owner**
Parts	10* (or 5)	5
Compressor	10* (or 5)	5

***If properly registered within 90 days of original installation, otherwise 5 years (except in California and Quebec and other jurisdictions that prohibit warranty benefits conditioned on registration). See Warranty Conditions below.**

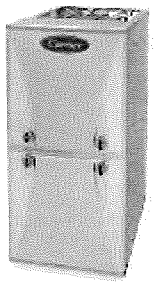
OTHER APPLICATIONS

The warranty period is five (5) years on the compressor, and one (1) year on all other parts. The warranty is the original owner only and is not available for subsequent owners.

Ordering Information

Part Number	Description	Quantity
Outdoor Unit		
25VNA448A003	25VNA Infinity Varible Speed Heat Pump	1
	16-24 SEER @ ARI Conditions	
Accessories		
SYSTXCCITC01-A	Infinity Touch Wi-Fi Control for Outdoor Unit	1
Indoor Coil		
CSPHP6012ALA	Cased Slab Evaporator Coils with Puron	1
	Painted	
	12 inch	
	Aluminum	
Furnace		
59MN7B080C21--20	59MN Infinity +97 Modulating Condensing Gas Furnace	1
	+97 AFUE	
	80,000 Btuh (Size 080)	
	Up to 2000 Clg CFM on Evap Coil	

	Comm. Variable Speed	
	21.0 inches	
Accessories		
KGACK0101HCK	Horizontal Trap Grommet - Direct Vent for Furnace	1
DGAPAXX2025	Germicidal Air Purifier for Furnace	1



Furnace Parameters and Dimensions and Weight

Furnace:	**SEER Enhancing Furnace**	
Furnace Model:	**59MN**	
Furnace Efficiency:	**+97 AFUE**	
Htg Capacity:	**80,000 Btuh (Size 080)**	
Airflow:	**Up to 2000 Clg CFM on Evap Coil**	
Unit Length:	**29.50**	in
Unit Width:	**21.00**	in
Unit Height:	**35.00**	in
Unit Shipping Weight:	**169.5**	lb

The Product and Ratings Data in this program is subject to change at any time and without notice. Please refer to the latest product literature and the AHRI directory at www.ahridirectory.org for the most up-to-date information.

Preliminary
07/14/2020 11:18:59 AM

Performance Summary For F-1 and AC-1

Project: Richmond Free Library
Prepared By: Ken Freer

07/01/2020

System Performance

System:	**25VNA/CSPH**	
System Quantity:	**1**	
Altitude:	**0.0**	ft
Furnace Type:	**59MN7B080C21**20**	
Linear Pipe Length:	**0.0**	ft
COP @ 47 F:	**4.04**	
COP @ 17 F:	**2.50**	
SEER @ ARI Conditions:	**20.0**	
EER @ ARI Conditions:	**12.0**	
HSPF @ ARI Conditions:	**10.0**	

Actual Clg Airflow:	**1576.0**	CFM
Standard Clg Airflow:	**1576.0**	CFM
Total Net Clg Capacity:	**46.18**	MBH
Net Sensible Clg Capacity:	**35.60**	MBH
Htg HP Capacity:	**48.45**	MBH
Htg HP Integrated Capacity:	**48.45**	MBH
Heating HP Compressor Power:	**3.53**	kW
Total System Power:	**3.73**	kW

System Parameters

Outdoor Unit Parameters

Unit Model:	**25VNA448A003**	
Unit Size (Nominal):	**4 Tons (Size 48)**	
Voltage:	**208/230-1-60**	V-Ph-Hz
Clg Ent Air DB Ambient:	**95.0**	°F
Htg Ent Air DB Ambient:	**47.0**	°F

Indoor Coil Parameters

Unit Model:	**CSPHP6012ALA**	
Unit Size (Nominal):	**5 Tons (Size 60)**	
Ent Air DB:	**80.00**	°F
Ent Air WB:	**67.00**	°F
Ent Enthalpy:	**31.44**	BTU/lb
Lvg Air DB:	**59.08**	°F
Lvg Air WB:	**57.83**	°F
Lvg Enthalpy:	**24.93**	BTU/lb
Htg Ent Air DB:	**70.0**	°F
Htg Lvg Air DB:	**98.5**	°F
Total External Static Pressure:	**0.20**	in wg

Furnace Ratings

Furnace:	**59MN7B080C21--20**	
Furnace Efficiency:	**+97 AFUE**	
Input Max Heat:	**80,000**	BTU/hr
Input Intermediate Heat:	**52,000**	BTU/hr
Input Min Heat:	**32,000**	BTU/hr
Output Max Heat:	**78,000**	BTU/hr
Output Intermediate Heat:	**51,000**	BTU/hr
Output Min Heat:	**31,000**	BTU/hr

Furnace Performance

Certified Temp High Rise Range:	**40-70**	F
Certified Temp Med Rise Range:	**50-80**	F
Certified Temp Low Rise Range:	**35-65**	F

The customer must ensure the specified airflow and static pressure are within furnace capabilities.

Electrical Data

Outdoor Electrical Data

Unit Voltage:	**208/230-1-60**	V-Ph-Hz
Fan Motor FLA:	**0.88**	Amps
MCA:	**27.4**	Amps
Max Fuse:	**40**	Amps
Operating Range Min:	**197**	V
Operating Range Max:	**253**	V
Compressor RLA:	**21.2**	Amps

Furnace Electrical Data

Unit Voltage:	**115-1-60**	V-Ph-Hz
Unit MCA:	**14.1**	Amps
Unit MOCP:	**20**	Amps

Acoustic Summary For F-1 and AC-1

Project: Richmond Free Library
Prepared By: Ken Freer

07/01/2020

Outdoor Unit Parameters:

Unit Model: **25VNA**
Unit Size: **4 Tons (Size 48)**
Variations: **Standard**

Octave Band Center Frequency, Hz	125	250	500	1k	2k	4k	8k	dBA
Sound Power,dB	55.0	59.7	51.9	47.6	44.2	45.9	43.2	
A-Weighted Sound Power, dBA								56.0

Indoor Coil Parameters:

Unit Model: **CSPH**
Unit Size: **5 Tons (Size 60)**
Cabinet Finish: **Painted**
Cabinet Width: **12 inch**

No Indoor sound data available.

The Product and Ratings Data in this program is subject to change at any time and without notice. Please refer to the latest product literature and the AHRI directory at www.ahridirectory.org for the most up-to-date information.

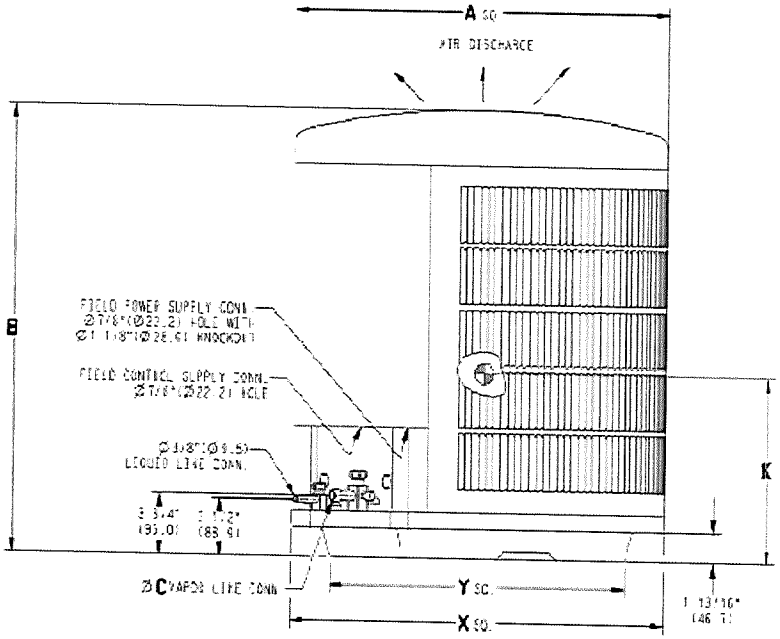
Preliminary
07/14/2020 11:18:59 AM

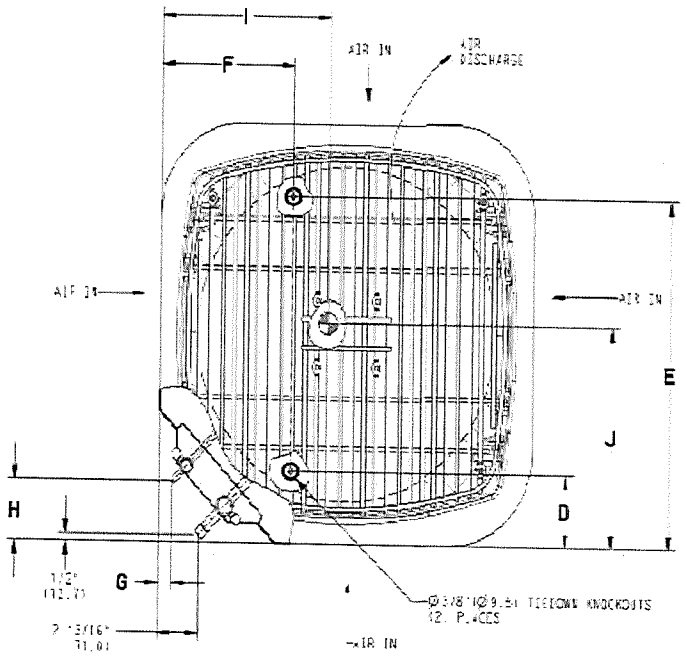
Project: Richmond Free Library
Prepared By: Ken Freer

Certified Drawing For F-1 and AC-1

07/01/2020

Preliminary
07/14/2020 11:18:59 AM





Outdoor Model

Unit Model: **25VNA**
Unit Size: **4 Tons (Size 48)**
Voltage: **208/230-1-60** V-Ph-Hz
SEER: **24**
PartNumber: **25VNA448A003**

Shipping Dimensions and Weights	Outdoor Unit
Height	52.00 in
Width	37.81 in
Length	37.81 in
Operating Weight	373. lb
Shipping Weight	396. lb

Dimensions										
A	B	C	D	E	F	G	H	I	J	K
35.00 in	47.19 in	0.88 in	6.56 in	28.44 in	9.13 in	1.10 in	3.81 in	16.30 in	16.50 in	21.00 in

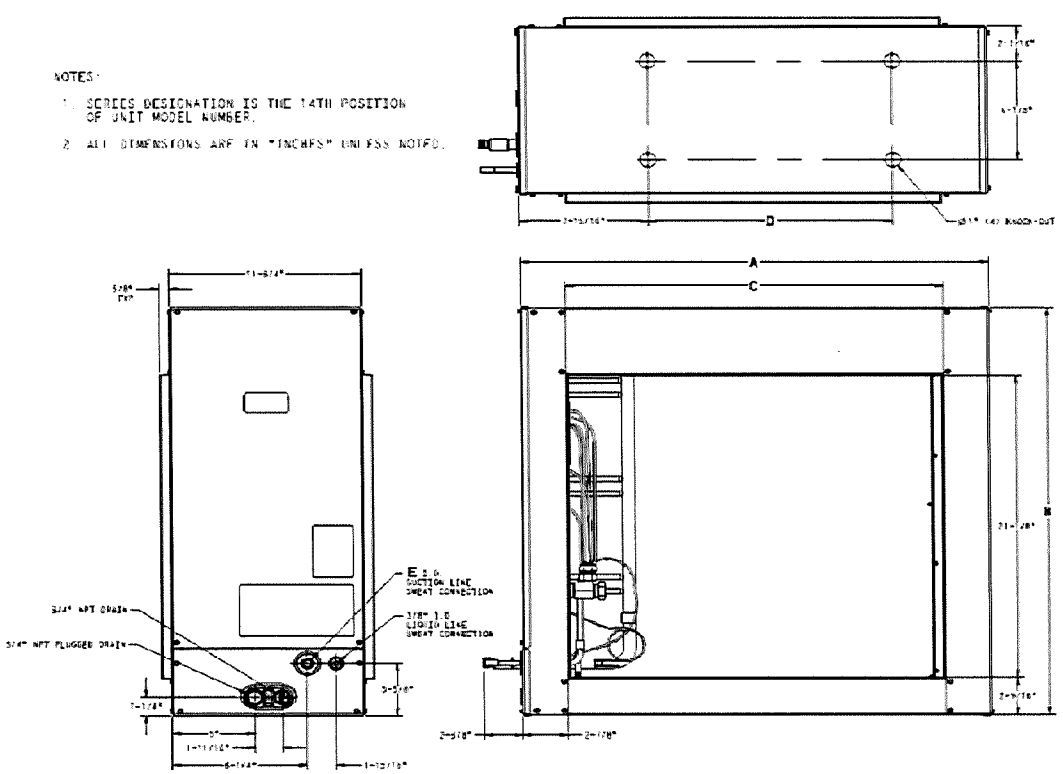
The Product and Ratings Data in this program is subject to change at any time and without notice. Please refer to the latest product literature and the AHRI directory at www.ahridirectory.org for the most up-to-date information.

Certified Drawing For F-1 and AC-1

Project: Richmond Free Library
Prepared By: Ken Freer

07/01/2020

Preliminary
07/14/2020 11:18:59 AM



Indoor Coil

Unit Model: **CSPH**
Unit Size: **5 Tons (Size 60)**
Cabinet Finish: **Painted**
Cabinet Width: **12 inch**
PartNumber: **CSPHP6012ALA**

Dimensions and Weights	Indoor Coil
Height	30.38 in
Width	38.94 in
Length	11.75 in
Shipping Weight	80.5 lb

Dimensions				
A	B	C	D	E
38.94 in	30.38 in	33.81 in	24.81 in	0.88 in

The Product and Ratings Data in this program is subject to change at any time and without notice. Please refer to the latest product literature and the AHRI directory at www.ahridirectory.org for the most up-to-date information.

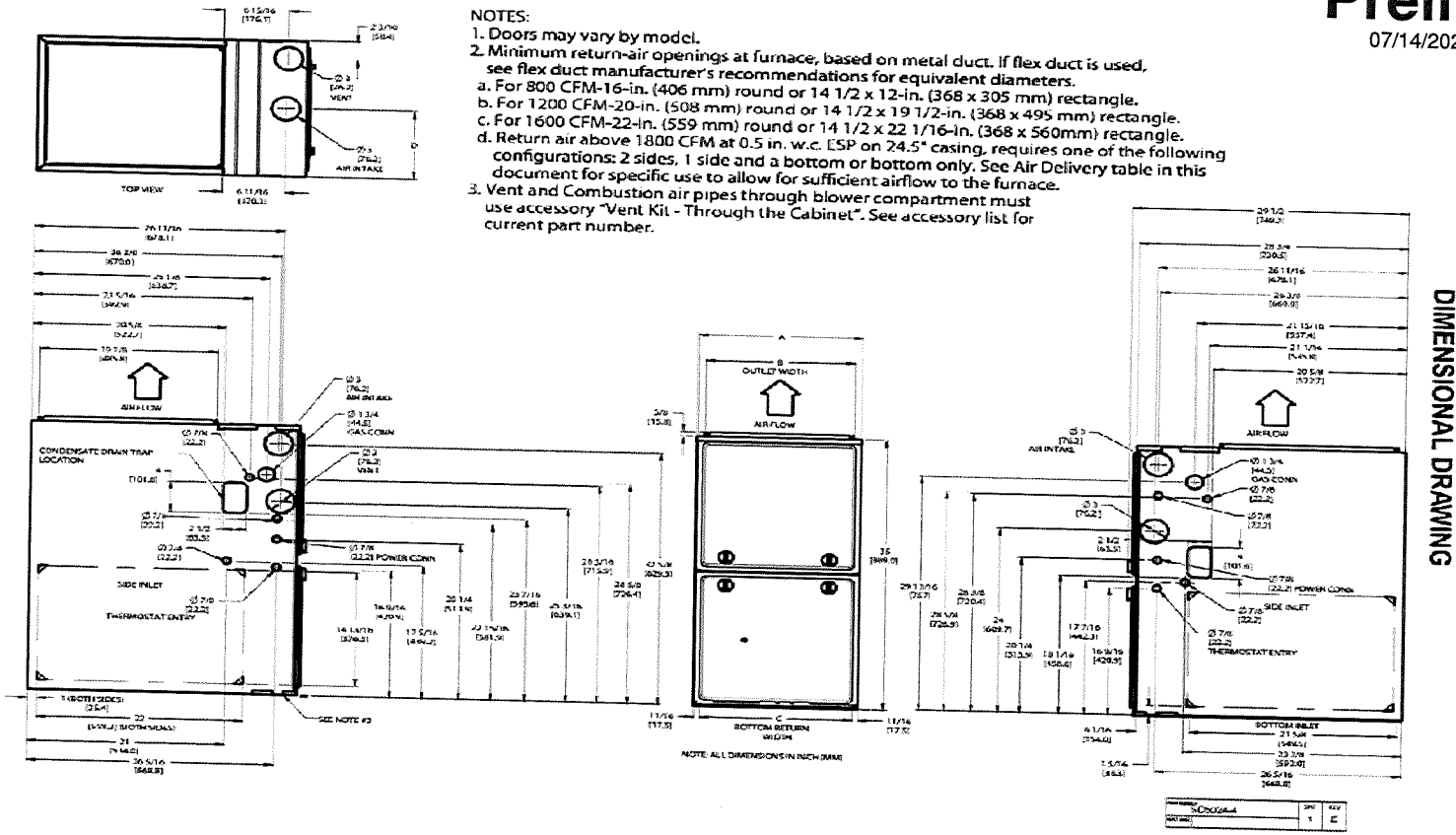
Project: Richmond Free Library
Prepared By: Ken Freer

Certified Drawing For F-1 and AC-1

07/01/2020

Preliminary
07/14/2020 11:18:59 AM

NOTES:
1. Doors may vary by model.
2. 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 at 0.5 in. w.c. ESP on 24.5" casing, requires one of the following configurations: 2 sides, 1 side and a bottom or bottom only. See Air Delivery table in this document for specific use to allow for sufficient airflow to the furnace.
3. Vent and Combustion air pipes through blower compartment must use accessory "Vent Kit - Through the Cabinet". See accessory list for current part number.



DIMENSIONAL DRAWING

Furnace Model: **59MN**
Furnace Efficiency: **+97 AFUE**
Htg Capacity: **80,000 Btuh (Size 080)**

Airflow: **Up to 2000 Clg CFM on Evap Coil**
PartNumber: **59MN7B080C21--20**

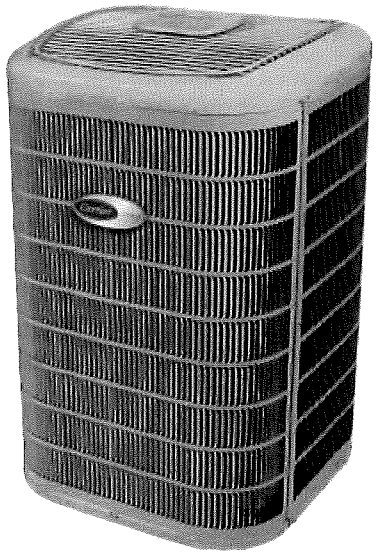
Dimensions				
A	B	C	D	Shipping Wgt
21.00 in	19.38 in	19.50 in	10.50 in	169.50 in

The Product and Ratings Data in this program is subject to change at any time and without notice. Please refer to the latest product literature and the AHRI directory at www.ahridirectory.org for the most up-to-date information.

25VNA4
INFINITY®
VARIABLE SPEED HEAT PUMP
WITH GREENSPEED™ INTELLIGENCE
2 TO 5 NOMINAL TONS

Carrier
Turn to the experts

PRODUCT DATA



Puron INFINITY® SYSTEM

Carrier's 25VNA4 with Greenspeed™ Intelligence is a breakthrough product providing up to 13 HSPF heating efficiency and up to 24 SEER cooling efficiency. The variable speed capacity control results in strong heating capacity as the outdoor temperature drops resulting in less reliance on auxiliary heat. Lower speed operation when needed in cooling, for enhanced comfort and dehumidification.

This product has been designed and manufactured to meet Energy Star® criteria for energy efficiency when matched with appropriate coil components. Refer to the combination ratings in this Product Data for system combinations that meet Energy Star guidlines.

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

Energy Efficiency

- Up to 24 SEER, 15 EER, 13 HSPF
- Microtube Technology™ refrigeration system
- Indoor air quality accessories available

Sound

- Sound level as low as 51 dBA in low speed.

Comfort

- Variable speed compressor with capacity range from 25-100%
- Air cooled Inverter variable speed drive
  - System requires Infinity Control with Greenspeed capability
  - Energy Tracking capability with the Infinity Control Wall Control w/latest software version
    (Energy Tracking has the ability to monitor and estimate the energy consumption of your Infinity system.)

Reliability

- Non-ozone depleting Puron® refrigerant
- Front-seating service valves
- Greenspeed Intelligence actively monitors critical system parameters
- High pressure switch
- Discharge pressure transducer
- Electronic expansion valve (EXV) for heating, TXV for cooling
- Filter drier (field installed)
- Internal crankcase heater standard

Flexibility and installation:

- 2 control wires to outdoor unit
- Minimum and maximum airflow adjustments
- Compressor heating capacity control
- Hybrid Heat™ Dual Fuel capable

Durability

WeatherArmor Ultra™ protection package:

- Solid, Durable sheet metal construction
- Steel louver coil guard
- Baked-on, complete outer coverage, powder paint

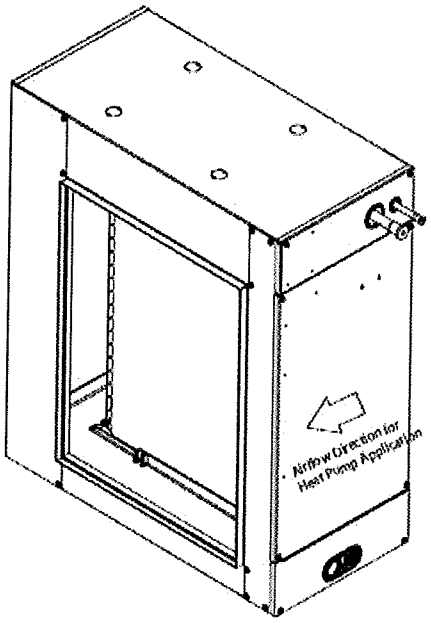
Applications

- Long-line - up to 250 feet (76.2 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.)

Preliminary
07/14/2020 11:19:00 AM

Carrier
Turn to the Experts

Product Data



A06321

CSPHP / CSRHP

The CSPHP and CSRHP evaporator coils incorporate tin plated copper tubing and proven standards for reliable system operation and performance throughout the life of a quality Carrier Air Conditioner or Heat Pump system. Evaporator coils manufactured by Carrier and installed as part of a total comfort system provide ARI-rated performance ratings and are additionally listed with UL and c-UL. The coils are available for systems utilizing both Puron®, the environmentally friendly refrigerant, and R-22. The CSPHP and CSRHP are cased slab coils that are housed in a durable, 22 gauge, pre-painted taupe metallic cabinet to match the Carrier furnaces. The fully-insulated cabinet (foil faced with R-2.1 insulation properties) provides for quiet, efficient operation of the evaporator coil. The coils are available in sizes 024 through 060 (2-5 tons).

DESIGN FEATURES

Performance — Designed with performance in mind, these new slab coils offer low pressure drops to enhance system performance and airflow characteristics.

Thermostatic Expansion Valves (TXV) — All the Carrier coils have refrigerant-specific, factory-installed TXVs.

Durable Condensate Pans — The corrosion-resistant drain pan is designed in a new "fiberglass reinforced thermoset polyester" material (FRTP) that offers unsurpassed pan strength.

Refrigerant Connections — The coils are provided with industry proven sweat-connections for leak-free operation to maintain system reliability. The refrigerant tubing comes out the top of the unit for ease of installation and service.

Burst Pressure — These coils meet or exceed burst pressure of 2100 psi which is at least three to five times the pressure they will see in actual application; good for either Puron® or R-22 refrigerant designs.

UV Knockouts — The cased coils also come with factory-installed UV knockouts for quick and easy installation of Carrier UV lights.

Serviceability — The coils are removable from the front of the unit without use of any tools, after the door is removed. The units are also designed with a single size screw, the same size as used on all our Carrier furnaces. One tool required for all jobs.

Installation Flexibility — The CSPHP and CSRHP evaporator coils are cased slab coils that provide flexibility for a wide variety of field applications. The unique design is great for all those horizontal applications. It should be noted that this new design maintains the same duct size openings as previous units, so replacement of present horizontal coils will be easy to convert.

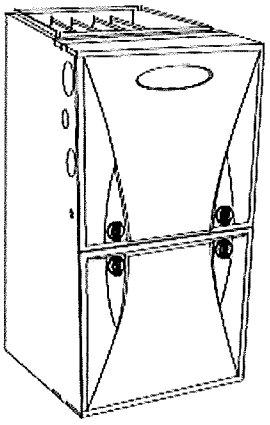
NOTE: For cooling-only units, coil can be installed in either airflow direction. Heat pump applications require specific airflow direction to obtain performance.

Preliminary
07/14/2020 11:19:00 AM

59MN7B
Infinity® Modulating
4–Way Multipoise
Condensing Gas Furnace

Carrier
turn to the experts

Product Data



A11263

The 59MN7B Multipoise Variable-Capacity Condensing Gas Furnace features the modulating Infinity® System. The innovative modulating gas valve is at the heart of this furnace's quiet operation, along with the variable-speed Infinity ECM blower motor and variable-speed inducer motor. This furnace also provides 3.5 times tighter temperature control than single stage furnaces. With an Annual Fuel Utilization Efficiency (AFUE) up to 98.5%, this Infinity gas furnace provides exceptional savings over standard furnaces as well. This Infinity Gas Furnace also features 4-way multipoise installation flexibility. The 59MN7B can be vented as a direct vent/two-pipe furnace or as an optional ventilated combustion air application. A Carrier Infinity® Control and an Infinity® Air Conditioner or Heat Pump can be used to form a complete Infinity System. Low NOx units are designed for California installations and meet 40 ng/J NOx emissions. Can be installed in air quality management districts with a 40 ng/J NOx emissions requirement. All sizes are design certified in Canada. This furnace is not designed for use in recreation vehicles, manufactured (mobile) homes or outdoors.

INFINITY Ideal humidity greenspeed

Certified System ISO 9001 Quality

AHRI CERTIFIED

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.

STANDARD FEATURES

- Our quietest furnace. Compare for yourself at HVACpartners.com.
- All sizes meet ENERGY STAR® Version 4.0 criteria for gas furnaces: 95%+AFUE
- Supports single- and multiple-zone Infinity® systems.
- Ideal height 35" (889 mm) cabinet: short enough for taller coils, but still allows enough room for service.
- Infinity® Features—match with the Infinity® Control for Infinity® System benefits
- Integral part of the Ideal Humidity System® Technology.
- Silicon Nitride Power Heat™ Hot Surface Igniter.
- SmartEvap™ technology helps control humidity levels in the home when used with a compatible humidity control system.
- ComfortFan™ technology allows control of continuous fan speed from a compatible thermostat.
- External Media Filter Cabinet included.
- 4-way multipoise design for upflow, downflow or horizontal installations, with unique vent elbow and optional through-the-cabinet downflow venting capability.
- Variable-Speed blower and inducer motors, modulating gas valve.
- Self-diagnostics and extended diagnostic data through the Advanced Product Monitor (APM) accessory or Infinity® User Interface.
- Adjustable blower speed for cooling, continuous fan, and dehumidification.
- Aluminized-steel primary heat exchanger.
- Stainless-steel condensing secondary heat exchanger.
- Propane convertible (See Accessory list).
- Factory-configured ready for upflow applications.
- Fully-insulated casing including blower section.
- Convenient Air Purifier and Humidifier connections.
- Direct-vent/sealed combustion or ventilated combustion air venting.
- Installation flexibility: sidewall or vertical vent.
- Residential installations may be eligible for consumer financing through the Retail Credit Program.
- 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.

Preliminary
07/14/2020 11:19:00 AM

F-2 and AC-2

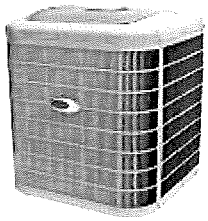
Submittal Cover Sheet
Unit Report
Performance Summary Report
Acoustic Summary
Certified Drawings
Feature Sheet

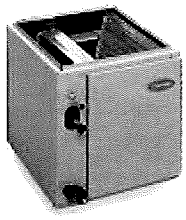
Preliminary
07/14/2020 11:19:00 AM

Unit Report For F-2 and AC-2

Project: Richmond Free Library
Prepared By: Ken Freer

07/01/2020





Outdoor Unit Parameters

Unit Model:	**25VNA**	
Unit Size:	**3 Tons (Size 36)**	
Voltage:	**208/230-1-60**	V-Ph-Hz

Indoor Coil Parameters

Unit Model:	**CNPV**
Unit Size:	**3.5 Tons (Size 42)**
Cabinet Finish:	**Painted**
Cabinet Width:	**17 inch**
Refrigerant Type:	**Puron**

Outdoor Unit Dimensions and Weight

Unit Length:	**35**	in
Unit Width:	**35**	in
Unit Height:	**47.1875**	in
Unit Shipping Weight:	**367.**	lb

Indoor Coil Dimensions and Weight

Unit Length:	**21**	in
Unit Width:	**17.5**	in
Unit Height:	**21.125**	in
Unit Shipping Weight:	**52.**	lb

RESIDENTIAL APPLICATIONS

This warranty is to the original purchasing owner and subsequent owners only to the extent and as stated in the Warranty Conditions and below. The limited warranty period in years, depending on the part and the claimant, is as shown in the table below.

Limited Warranty (Years)		
Item	**Original Owner**	**Subsequent Owner**
Parts	10* (or 5)	5
Compressor	10* (or 5)	5

***If properly registered within 90 days of original installation, otherwise 5 years (except in California and Quebec and other jurisdictions that prohibit warranty benefits conditioned on registration). See Warranty Conditions below.**

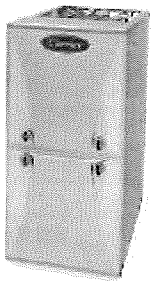
OTHER APPLICATIONS

The warranty period is five (5) years on the compressor, and one (1) year on all other parts. The warranty is the original owner only and is not available for subsequent owners.

Ordering Information

Part Number	Description	Quantity
Outdoor Unit		
25VNA436A003	25VNA Infinity Varible Speed Heat Pump	1
	16-24 SEER @ ARI Conditions	
Accessories		
SYSTXCCITC01-A	Infinity Touch Wi-Fi Control for Outdoor Unit	1
Indoor Coil		
CNPVP4217ALA	Cased Vertical N-Coil Evaporator Coil with Puron	1
	Painted	
	17 inch	
	Aluminum	
Furnace		
59MN7B060C17--14	59MN Infinity +97 Modulating Condensing Gas Furnace	1
	+97 AFUE	
	60,000 Btuh (Size 060)	
	Up to 1400 Clg CFM on Evap Coil	

	Comm. Variable Speed	
	17.5 inches	
Accessories		
DGAPAXX1625	Germicidal Air Purifier for Furnace	1



Furnace Parameters and Dimensions and Weight

Furnace:	**SEER Enhancing Furnace**	
Furnace Model:	**59MN**	
Furnace Efficiency:	**+97 AFUE**	
Htg Capacity:	**60,000 Btuh (Size 060)**	
Airflow:	**Up to 1400 Clg CFM on Evap Coil**	
Unit Length:	**29.50**	in
Unit Width:	**17.50**	in
Unit Height:	**35.00**	in
Unit Shipping Weight:	**147.5**	lb

The Product and Ratings Data in this program is subject to change at any time and without notice. Please refer to the latest product literature and the AHRI directory at www.ahridirectory.org for the most up-to-date information.

Preliminary
07/14/2020 11:19:00 AM

Performance Summary For F-2 and AC-2

Project: Richmond Free Library
Prepared By: Ken Freer

07/01/2020

System Performance

System:	**25VNA/CNPV**	
System Quantity:	**1**	
Altitude:	**0.0**	ft
Furnace Type:	**59MN7B060C17**14**	
Linear Pipe Length:	**0.0**	ft
COP @ 47 F:	**3.46**	
COP @ 17 F:	**2.32**	
SEER @ ARI Conditions:	**20.0**	
EER @ ARI Conditions:	**12.0**	
HSPF @ ARI Conditions:	**10.0**	

Actual Clg Airflow:	**1000.0**	CFM
Standard Clg Airflow:	**1000.0**	CFM
Total Net Clg Capacity:	**31.15**	MBH
Net Sensible Clg Capacity:	**22.73**	MBH
Htg HP Capacity:	**36.61**	MBH
Htg HP Integrated Capacity:	**36.61**	MBH
Heating HP Compressor Power:	**3.16**	kW
Total System Power:	**2.77**	kW

System Parameters

Outdoor Unit Parameters

Unit Model:	**25VNA436A003**	
Unit Size (Nominal):	**3 Tons (Size 36)**	
Voltage:	**208/230-1-60**	V-Ph-Hz
Clg Ent Air DB Ambient:	**95.0**	°F
Htg Ent Air DB Ambient:	**47.0**	°F

Indoor Coil Parameters

Unit Model:	**CNPVP4217ALA**	
Unit Size (Nominal):	**3.5 Tons (Size 42)**	
Ent Air DB:	**80.00**	°F
Ent Air WB:	**67.00**	°F
Ent Enthalpy:	**31.44**	BTU/lb
Lvg Air DB:	**58.95**	°F
Lvg Air WB:	**57.20**	°F
Lvg Enthalpy:	**24.52**	BTU/lb
Htg Ent Air DB:	**70.0**	°F
Htg Lvg Air DB:	**103.9**	°F
Total External Static Pressure:	**0.50**	in wg

Furnace Ratings

Furnace:	**59MN7B060C17--14**	
Furnace Efficiency:	**+97 AFUE**	
Input Max Heat:	**60,000**	BTU/hr
Input Intermediate Heat:	**39,000**	BTU/hr
Input Min Heat:	**24,000**	BTU/hr
Output Max Heat:	**59,000**	BTU/hr
Output Intermediate Heat:	**38,000**	BTU/hr
Output Min Heat:	**24,000**	BTU/hr

Furnace Performance

Certified Temp High Rise Range:	**35-65**	F
Certified Temp Med Rise Range:	**50-80**	F
Certified Temp Low Rise Range:	**35-65**	F

The customer must ensure the specified airflow and static pressure are within furnace capabilities.

Electrical Data

Outdoor Electrical Data

Unit Voltage:	**208/230-1-60**	V-Ph-Hz
Fan Motor FLA:	**0.88**	Amps
MCA:	**18**	Amps
Max Fuse:	**30**	Amps
Operating Range Min:	**197**	V
Operating Range Max:	**253**	V
Compressor RLA:	**13.7**	Amps

Furnace Electrical Data

Unit Voltage:	**115-1-60**	V-Ph-Hz
Unit MCA:	**9.0**	Amps
Unit MOCP:	**15**	Amps

Acoustic Summary For F-2 and AC-2

Project: Richmond Free Library
Prepared By: Ken Freer

07/01/2020

Outdoor Unit Parameters:

Unit Model: **25VNA**
Unit Size: **3 Tons (Size 36)**
Variations: **Standard**

Octave Band Center Frequency, Hz	125	250	500	1k	2k	4k	8k	dBA
Sound Power,dB	57.4	62.2	49.9	47.5	43.5	39.1	46.7	
A-Weighted Sound Power, dBA								56.0

Indoor Coil Parameters:

Unit Model: **CNPV**
Unit Size: **3.5 Tons (Size 42)**
Cabinet Finish: **Painted**
Cabinet Width: **17 inch**

No Indoor sound data available.

The Product and Ratings Data in this program is subject to change at any time and without notice. Please refer to the latest product literature and the AHRI directory at www.ahridirectory.org for the most up-to-date information.

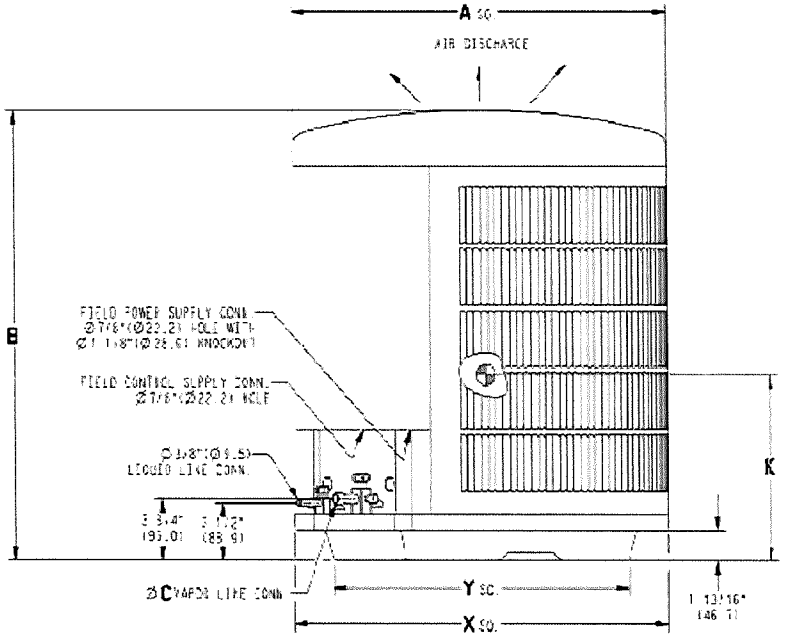
Preliminary
07/14/2020 11:19:00 AM

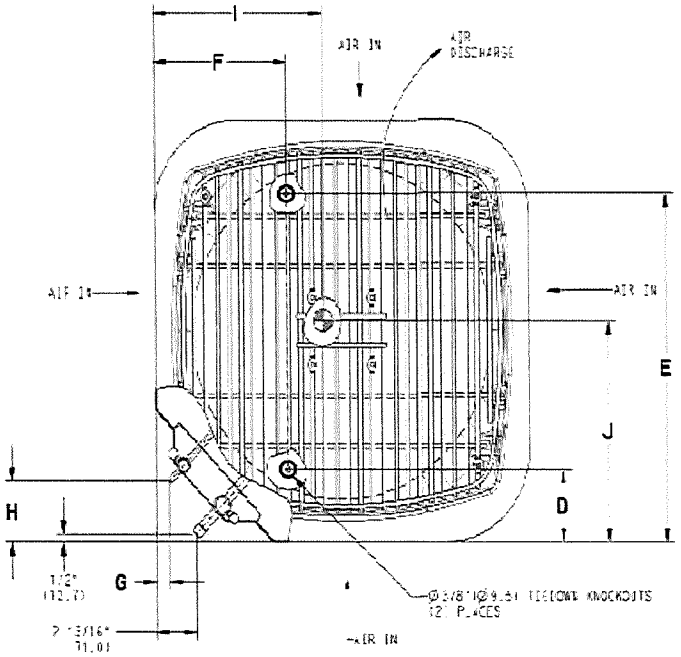
Certified Drawing For F-2 and AC-2

Project: Richmond Free Library
Prepared By: Ken Freer

07/01/2020

Preliminary
07/14/2020 11:19:00 AM





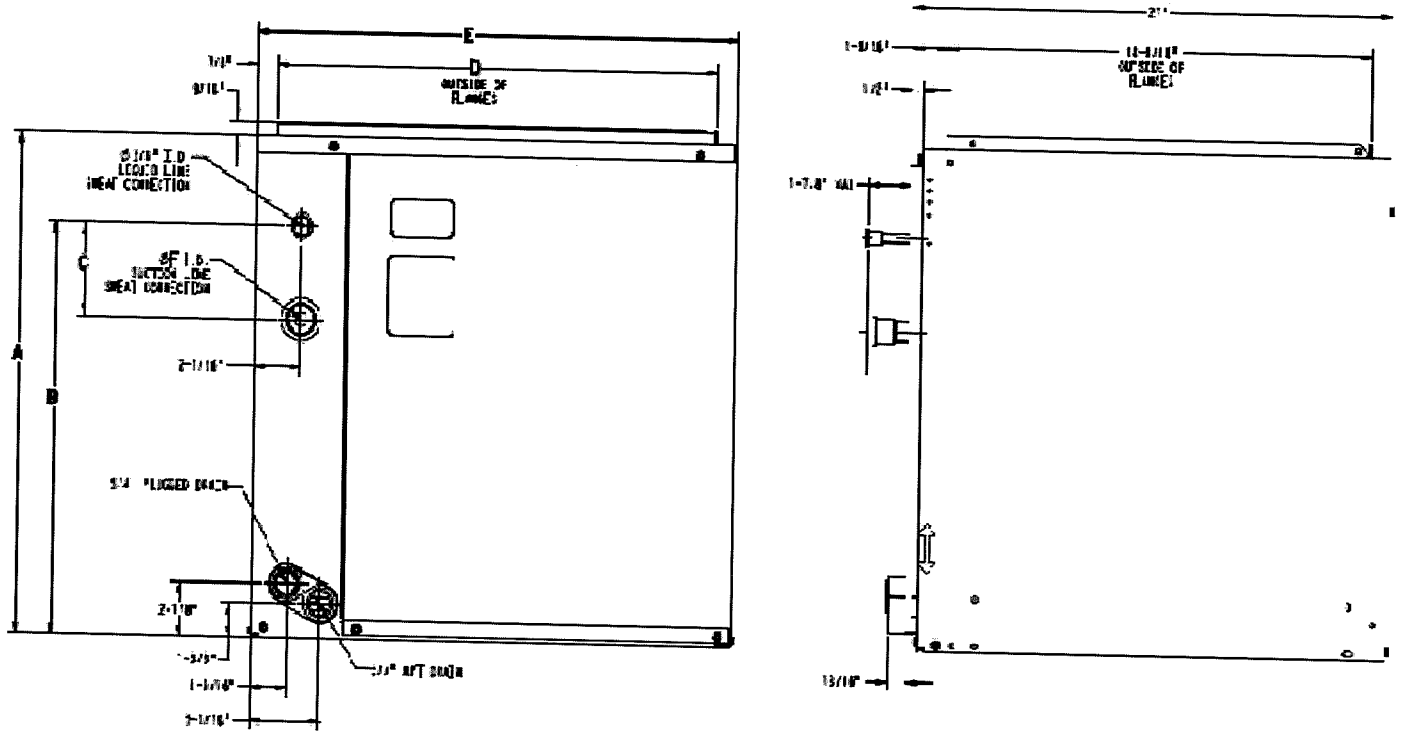
Outdoor Model

Unit Model:	**25VNA**	
Unit Size:	**3 Tons (Size 36)**	
Voltage:	**208/230-1-60**	V-Ph-Hz
SEER:	**24**	
PartNumber:	**25VNA436A003**	

Shipping Dimensions and Weights	Outdoor Unit
Height	52.00 in
Width	37.81 in
Length	37.81 in
Operating Weight	344. lb
Shipping Weight	367. lb

Dimensions										
A	B	C	D	E	F	G	H	I	J	K
35.00 in	47.19 in	0.88 in	6.56 in	28.44 in	9.13 in	1.10 in	3.81 in	16.30 in	16.50 in	21.00 in

The Product and Ratings Data in this program is subject to change at any time and without notice. Please refer to the latest product literature and the AHRI directory at www.ahridirectory.org for the most up-to-date information.



Indoor Coil

Unit Model: **CNPV**
Unit Size: **3.5 Tons (Size 42)**
Cabinet Finish: **Painted**
Cabinet Width: **17 inch**
PartNumber: **CNPVP4217ALA**

Dimensions and Weights	Indoor Coil
Height	21.13 in
Width	17.50 in
Length	21.00 in
Shipping Weight	52. lb

Dimensions					
A	B	C	D	E	F
21.13 in	13.88 in	3.56 in	15.75 in	17.50 in	0.88 in

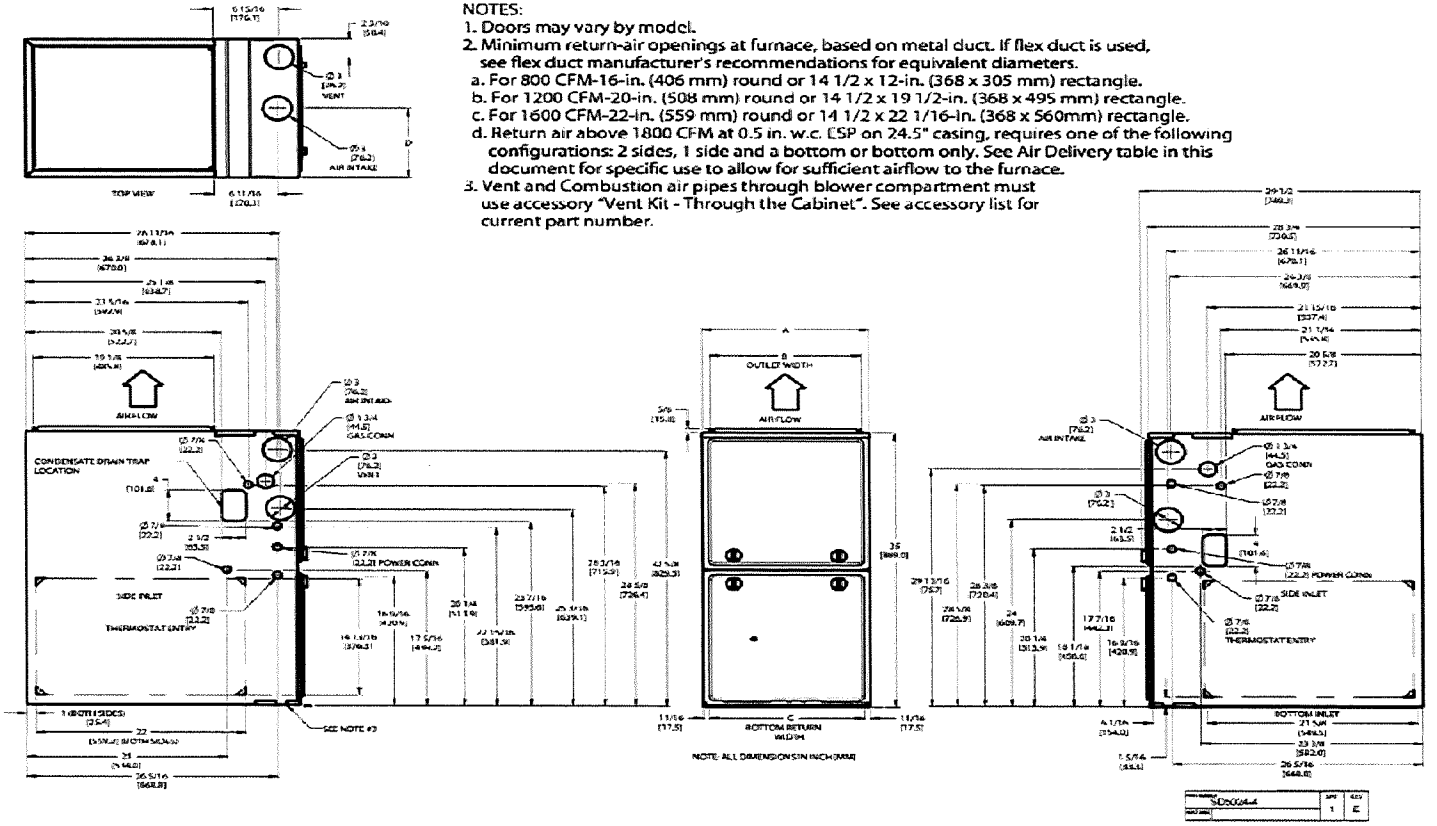
The Product and Ratings Data in this program is subject to change at any time and without notice. Please refer to the latest product literature and the AHRI directory at www.ahridirectory.org for the most up-to-date information.

Certified Drawing For F-2 and AC-2

Project: Richmond Free Library
Prepared By: Ken Freer

07/01/2020

NOTES:
1. Doors may vary by model.
2. 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 at 0.5 in. w.c. ESP on 24.5" casing, requires one of the following configurations: 2 sides, 1 side and a bottom or bottom only. See Air Delivery table in this document for specific use to allow for sufficient airflow to the furnace.
3. Vent and Combustion air pipes through blower compartment must use accessory "Vent Kit - Through the Cabinet". See accessory list for current part number.



DIMENSIONAL DRAWING

Furnace Model: **59MN**
Furnace Efficiency: **+97 AFUE**
Htg Capacity: **60,000 Btuh (Size 060)**

Airflow: **Up to 1400 Clg CFM on Evap Coil**
PartNumber: **59MN7B060C17--14**

Preliminary
07/14/2020 11:19:00 AM

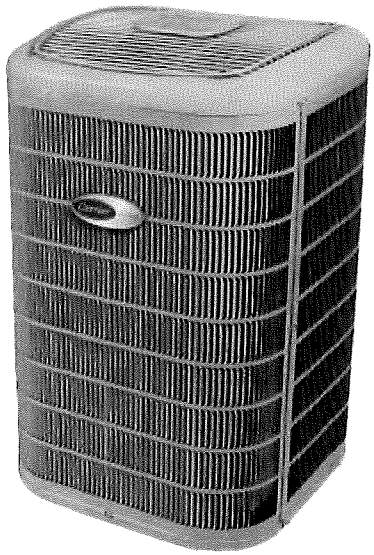
Dimensions				
A	B	C	D	Shipping Wgt
17.50 in	15.88 in	16.00 in	8.75 in	147.50 in

The Product and Ratings Data in this program is subject to change at any time and without notice. Please refer to the latest product literature and the AHRI directory at www.ahridirectory.org for the most up-to-date information.

25VNA4
INFINITY®
VARIABLE SPEED HEAT PUMP
WITH GREENSPEED™ INTELLIGENCE
2 TO 5 NOMINAL TONS

Carrier
Turn to the experts

PRODUCT DATA



Puron INFINITY® SYSTEM

Carrier's 25VNA4 with Greenspeed™ Intelligence is a breakthrough product providing up to 13 HSPF heating efficiency and up to 24 SEER cooling efficiency. The variable speed capacity control results in strong heating capacity as the outdoor temperature drops resulting in less reliance on auxiliary heat. Lower speed operation when needed in cooling, for enhanced comfort and dehumidification.

This product has been designed and manufactured to meet Energy Star® criteria for energy efficiency when matched with appropriate coil components. Refer to the combination ratings in this Product Data for system combinations that meet Energy Star guidlines.

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

Energy Efficiency

- Up to 24 SEER, 15 EER, 13 HSPF
- Microtube Technology™ refrigeration system
- Indoor air quality accessories available

Sound

- Sound level as low as 51 dBA in low speed.

Comfort

- Variable speed compressor with capacity range from 25-100%
- Air cooled Inverter variable speed drive
  - System requires Infinity Control with Greenspeed capability
  - Energy Tracking capability with the Infinity Control Wall Control w/latest software version
    (Energy Tracking has the ability to monitor and estimate the energy consumption of your Infinity system.)

Reliability

- Non-ozone depleting Puron® refrigerant
- Front-seating service valves
- Greenspeed Intelligence actively monitors critical system parameters
- High pressure switch
- Discharge pressure transducer
- Electronic expansion valve (EXV) for heating, TXV for cooling
- Filter drier (field installed)
- Internal crankcase heater standard

Flexibility and installation:

- 2 control wires to outdoor unit
- Minimum and maximum airflow adjustments
- Compressor heating capacity control
- Hybrid Heat™ Dual Fuel capable

Durability

WeatherArmor Ultra™ protection package:

- Solid, Durable sheet metal construction
- Steel louver coil guard
- Baked-on, complete outer coverage, powder paint

Applications

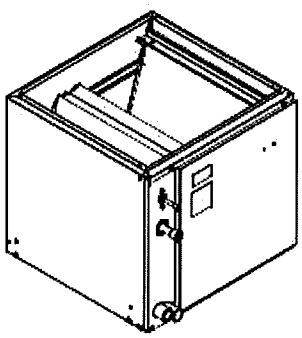
- Long-line - up to 250 feet (76.2 m) total equivalent length, up to 200 feet (60.96 m) condenser above evaporator, or up to 80 ft. (24.38 m) evaporator above condenser (See Longline Guide for more information.)

Preliminary
07/14/2020 11:19:00 AM

CNPVP, CNRVP, CNPVT, CNRVT, CNPVU, CNRVU
Evaporator Coil
N Coil – Cased and Uncased
Upflow, Downflow

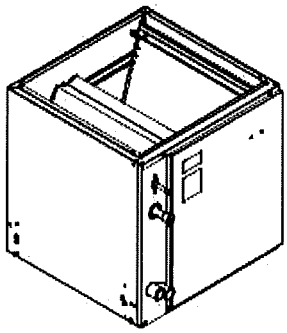
Carrier®
Turn to the Experts

Product Data



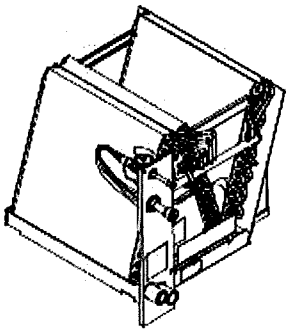
A06006

CN(P,R)VP



A06007

CN(P,R)VT (Transition)



A06004

CN(P,R)VU

This vertical design N-coil is a furnace coil designed to provide the highest standards of reliability and durability. The coils are available for use in Puron®, R-410A refrigerant and R-22 systems.

Both designs have a painted case and come with factory-installed thermostatic expansion valves (TXV). The coils are offered in different width configurations for use in multiple installation applications. Additionally, they are offered in a transition configuration, a design which simplifies making field-supplied transition duct configurations. Easy maintenance is provided as the coil slides out of the cabinet after removing the access door and service panel. The coils are available in sizes 018 through 061 (1-1/2 to 5 tons).

Transition coil models CNPVT and CNRVT are designed for use with one size smaller width furnaces without field modifications.

CN(P,R)V(P,T) and CNPVU are available in tin-plated copper coil models. These coils are built with special hairpins which are tin-plated to resist both general pitting corrosion and excessive indoor corrosion-formicary corrosion. (Formicary corrosion is an industry phenomenon.)

STANDARD FEATURES

Water Management — These coil designs do an excellent job of water management. The coils are designed to avoid water blow-off into the ducts by directing condensate away from the fins and into the drain pan.

Durable Condensate Pan — Each coil is equipped with a corrosion-resistant condensate drain pan. The condensate drain pan is designed with a slope to help ensure proper drainage, improved moisture removal, and home comfort.

Compact Design — Unique design offers as much as 2 to 4 in. (51 to 102 mm) less in height to aid in tight installations.

Brass Inserts — Every condensate pan features two 3/4 in. female threaded brass insert connections. The unique brass inserts provide for a leak-free condensate line connection to prevent water damage.

Refrigerant Connections — The coils are provided with proven sweat-connections for leak-free operation maintaining system reliability.

Burst Pressures — These coils meet or exceed burst pressure of 2100 psi which is at least three to five times the pressure they will see in actual application.

Thermostatic Expansion Valves (TXV) — All Carrier® coils have refrigerant-specific factory-installed TXVs.

Teflon Ring — The ring, installed inside the liquid line connection at the TXV, is the best option for preventing refrigerant leaks and future service calls. Teflon works with both Puron, R-410A, the environmentally friendly refrigerant and R-22 refrigerants.

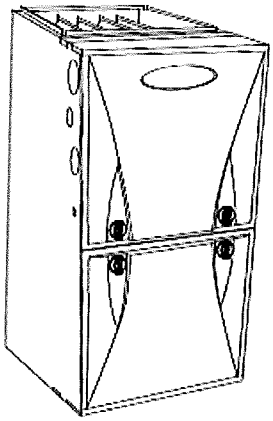
Protective Tube Sheets — Protect the durable copper tubing from being damaged during the manufacturing and installation process.

Preliminary
07/14/2020 11:19:00 AM

59MN7B
Infinity® Modulating 4–Way Multipoise Condensing Gas Furnace

Carrier
turn to the experts

Product Data



A11263

The 59MN7B Multipoise Variable-Capacity Condensing Gas Furnace features the modulating Infinity® System. The innovative modulating gas valve is at the heart of this furnace's quiet operation, along with the variable-speed Infinity ECM blower motor and variable-speed inducer motor. This furnace also provides 3.5 times tighter temperature control than single stage furnaces. With an Annual Fuel Utilization Efficiency (AFUE) up to 98.5%, this Infinity gas furnace provides exceptional savings over standard furnaces as well. This Infinity Gas Furnace also features 4-way multipoise installation flexibility. The 59MN7B can be vented as a direct vent/two-pipe furnace or as an optional ventilated combustion air application. A Carrier Infinity® Control and an Infinity® Air Conditioner or Heat Pump can be used to form a complete Infinity System. Low NOx units are designed for California installations and meet 40 ng/J NOx emissions. Can be installed in air quality management districts with a 40 ng/J NOx emissions requirement. All sizes are design certified in Canada. This furnace is not designed for use in recreation vehicles, manufactured (mobile) homes or outdoors.

INFINITY SERIES Ideal Humidity greenspeed

Certified System ISO 9001 Quality

AHRI CERTIFIED

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.

STANDARD FEATURES

- Our quietest furnace. Compare for yourself at HVACpartners.com.
- All sizes meet ENERGY STAR® Version 4.0 criteria for gas furnaces: 95%+AFUE
- Supports single- and multiple-zone Infinity® systems.
- Ideal height 35" (889 mm) cabinet: short enough for taller coils, but still allows enough room for service.
- Infinity® Features—match with the Infinity® Control for Infinity® System benefits
- Integral part of the Ideal Humidity System® Technology.
- Silicon Nitride Power Heat™ Hot Surface Igniter.
- SmartEvap™ technology helps control humidity levels in the home when used with a compatible humidity control system.
- ComfortFan™ technology allows control of continuous fan speed from a compatible thermostat.
- External Media Filter Cabinet included.
- 4-way multipoise design for upflow, downflow or horizontal installations, with unique vent elbow and optional through-the-cabinet downflow venting capability.
- Variable-Speed blower and inducer motors, modulating gas valve.
- Self-diagnostics and extended diagnostic data through the Advanced Product Monitor (APM) accessory or Infinity® User Interface.
- Adjustable blower speed for cooling, continuous fan, and dehumidification.
- Aluminized-steel primary heat exchanger.
- Stainless-steel condensing secondary heat exchanger.
- Propane convertible (See Accessory list).
- Factory-configured ready for upflow applications.
- Fully-insulated casing including blower section.
- Convenient Air Purifier and Humidifier connections.
- Direct-vent/sealed combustion or ventilated combustion air venting.
- Installation flexibility: sidewall or vertical vent.
- Residential installations may be eligible for consumer financing through the Retail Credit Program.
- 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.

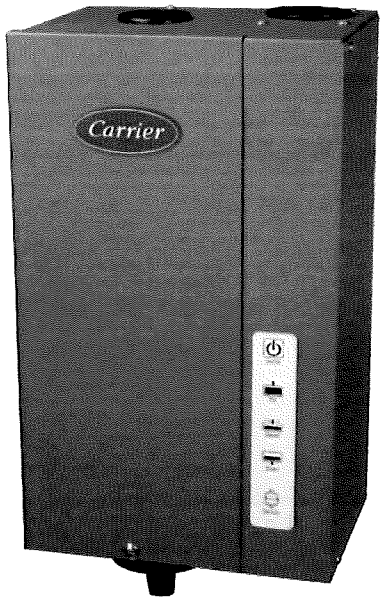
Preliminary
07/14/2020 11:19:00 AM

HUMCR

Humidifiers

turn to the experts

Product Data



Controlling indoor humidity is very important. In many cases the air inside a home is drier than a desert. Dry, indoor air is often the culprit for such common problems as itchy or cracked skin, eye irritation, dry nasal passages, and damaged home furnishings. Dry indoor air can also increase the possibility of catching cold and flu viruses and can reduce the efficiency and effectiveness of the heating system.

All of these problems can be alleviated with the help of a Carrier humidifier. Carrier offers six humidifier models designed to put moisture back into the indoor environment so homeowners can relax in warm, soothing comfort. Depending on the model that best matches the system, a Carrier humidifier can deliver between 12 and 34 gallons (45 and 129 liters) of moisture per day to minimize the problems of excessively dry air. And, because humidified air feels warmer, using lower thermostat settings may be possible for added energy savings.

FEATURES/BENEFITS (Bypass & Fan Powered Models)

Easy Access for Cleaning and Maintenance—The treated aluminum water panel (or wicking paper water panel in the water-saver model) ensures top performance. Front or side access door allows for quick and convenient removal and replacement of water panel.

Smooth, Low-Noise Operation—Nearly silent operation is the result of Carrier humidifier's precision-engineered fan and motor combination on fan powered models. Air is drawn through the water panel quietly and efficiently, turning water into the water vapor that humidifies the home.

Long Lasting, Attractive Cover—The outside casing and interior components of all Carrier humidifiers are made from durable UV resistant plastic. This plastic resists deterioration, even when exposed to ultra-violet light sources common in many systems.

Built-In Bypass Damper—On the LBP, SBP and WBP models.

Optimum Distribution of Moisture—Through the combination of the solenoid valve and water distribution system by Carrier, homeowners will benefit from the most optimum distribution of moisture possible.

Four Humidity Control Options—Choose between four separate control options, the Humidistat, the HumidiTrac™, the Thermidistat™, and the Evolution™ Control. Each of these units provide precise control over the humidity levels in the home.

Granite Gray—Color-compatible with most HVAC equipment.

Water Saver Models - WBP Series units deliver 100% of water used. For use in applications where water costs are high, with septic systems or in drought-stricken areas

A14603B

Preliminary
07/14/2020 11:19:01 AM

FEATURES/BENEFITS
(Steam Model)

The steam humidifier delivers humidity in the form of steam to the conditioned space via the HVAC system duct. Unlike older steam humidifiers using electric heating elements, this device generates steam by energizing two electrodes that extend into a canister of water. Current flowing between the electrodes causes the water to boil, creating steam, which is delivered into the air stream through a dispersion tube mounted in the ductwork. Openings in the dispersion tube are fitted with "tubelets" which extend into the center of the tube. The design of the dispersion tube and tubelets distribute steam over a wide area in the duct and direct any condensed moisture back into the steam hose.

- Steam is generated via electrodes in replaceable canister
- Canister can be replaced easily and quickly - no cleaning required
- Capable of operating with either 115 or 208-240 voltage
- Unit can be mounted on wall, duct or indoor unit
- Dispersion technology prevents condensation in duct
- Water filtration not required - suitable for a wide range of water conditions
- Granite gray color, compatible with most HVAC equipment
- Includes: manual control, 6-ft steam hose, dispersion tube, 10-ft drain tubing, hose clamps, saddle valve

MODEL NUMBER NOMENCLATURE

HUM CR LFP 15 18

Product Type
HUM = Humidifier

Brand - Carrier

Model Type
LFP = Large Fan Powered
SBP = Small Bypass
LBP = Large Bypass
WBP = Water Saving Large Bypass
STM = Steam

Series
15 = LFP
24 = SBP, LBP, WBP
30 = STM

Gallons (Liters) Per Day
LFP = 18 (68)
SBP = 12 (45)
LBP = 17 (64)
WBP = 17 (64)
STM = 34 (129)

PHYSICAL DATA

F1 F2

MODEL	HUMCRLFP	HUMCRLBP	HUMCRWBP	HUMCRSBP	HUMCRSTM
Output Gallons (Liters)/Day	18 (68)	17 (64)		12 (45)	34** (128**)
TYPE					
Airflow	Fan	Bypass			N/A
Water Flow	Drain Through		Sump with Overflow Drain	Drain Through	Steam
GENERAL					
Water Panel Replacement	P110- 3545 (10 packs)	P110- 3545 (10 packs)	P110- 4545 (5 - 2 packs)	P110- 1045 (10 packs)	N/A
Water Panel in (mm) (H x W x D)	13 x 10 x 1- 11/16 (330 x 254 x43)			9- 7/8 x 9- 5/8 x 11- 1/16 (251 x 244 x 41)	N/A
Water Panel Access	Quick Release Cover				N/A
Unit Size in (mm) (H x W x D)	18 x 16 x 10- 1/4 (457 x 406 x 260)	15- 1/8 x 14 x 10- 1/4 (384 x 356 x 260)		12- 1/4 x 14 x 10- 1/4 (311 x 356 x 260)	21 x 9 x 7- 1/4 (533 x 229 x 184)
Weight lbs (kg)	17.1 (7.8)	8.0 (4)		7.0 (3)	23 (10)
Water Usage Gal (liters)/hr)	6 (23)	3 (11)			1.44** (5.45**)
ELECTRICAL CONTROL LOW- VOLTAGE SOLENOID					
Volts	24V- 60Hz				N/A
Amps (Max)	0.5				N/A
VA (Max)	12				N/A
Watts	2.3				N/A
HIGH VOLTAGE CORD					
Volts	120V- 1ph- 60Hz	N/A			120V- 1ph- 60Hz 208V- 1ph- 60Hz 240V- 1ph- 60Hz
Amps	0.7	N/A			11.5 - 16 (nominal)
CONNECTIONS					
Water Inlet	1/4- in. Copper Tubing				
Water Drain	1/2- in. I.D. plastic hose				7/8- in. Tube
Bypass Opening	N/A	6- in. round elbow or straight			N/A
Duct Opening in (mm) (W x H)	14- 13/16 x 14- 1/4 (376 x 362)	9- 7/8 x 12- 5/8 (251 x 321)		9- 1/2 x 9- 1/2 (241 x 241)	1- 1/4- in Round (32)
STANDARD EQUIPMENT					
Water Valve	Solenoid, 24VAC				
Motor	Thermal Protected 120VAC (0.014HP = 1/70 HP)	N/A			N/A
Relay	SPST 24VAC	N/A			DPST 24VAC
Humidistat	24V		24V (not included)	24V	
Saddle Valve	Standard				
Damper	N/A	Standard			N/A
Template	Installation Sheet Included				N/A
ACESSORIES					
HumidiTrac™ Automatic Cntrl	KUAW0101CAC- A10				
Blower Activation Relay	5387				

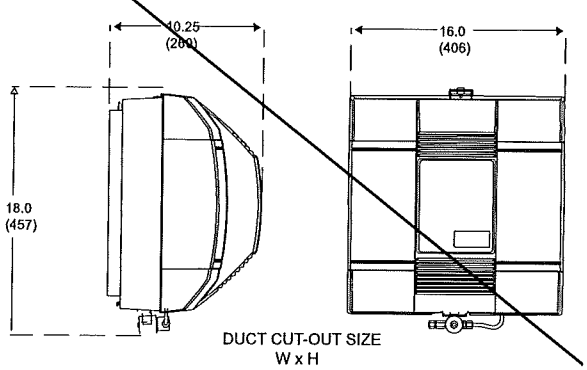
**Varies by voltage and amperage.

Preliminary
07/14/2020 11:19:01 AM

DIMENSIONS

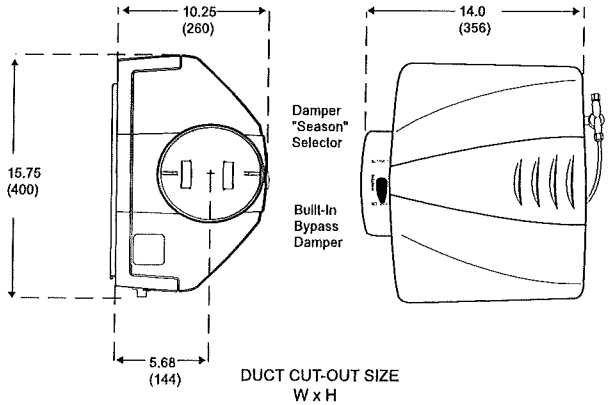
F1

Model HUMCRLFP1518



DUCT CUT-OUT SIZE
W x H
14.81 x 14.25
(376 x 362)

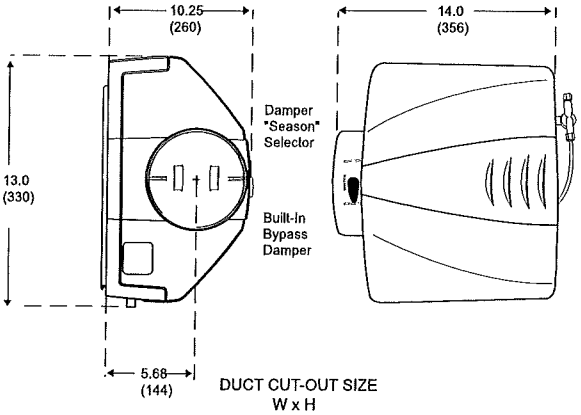
Model HUMCRLBP2417 & HUMCRWBP2417



DUCT CUT-OUT SIZE
W x H
9.88 x 12.75
(251 x 324)

F2

Model HUMCRSBP2412

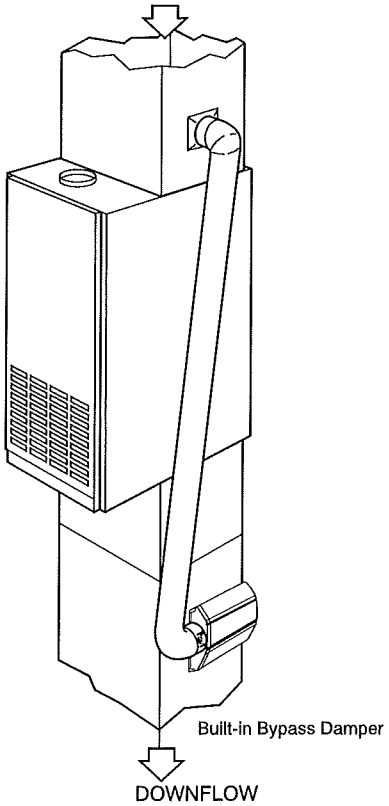


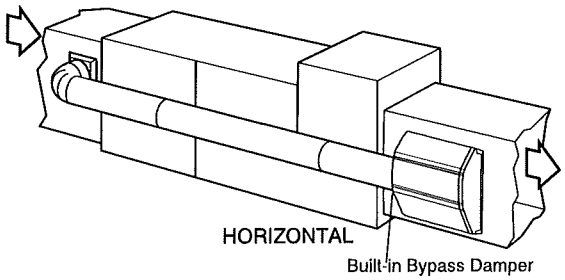
DUCT CUT-OUT SIZE
W x H
9.50 x 9.50
(241 x 241)

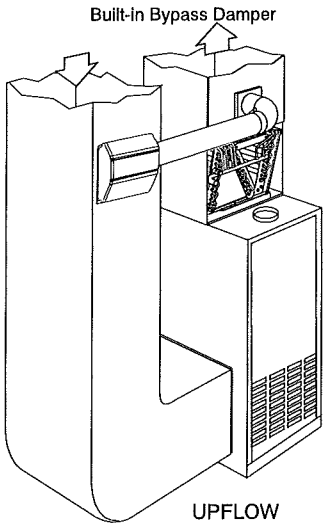
A14598A

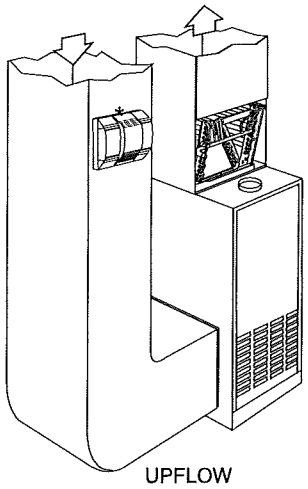
Preliminary
07/14/2020 11:19:01 AM

TYPICAL HUMIDIFIER INSTALLATIONS (Bypass and Fan Powered Models)

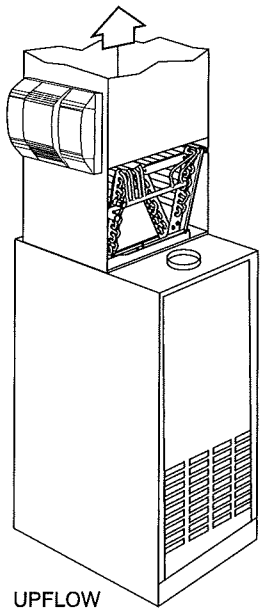








*Note - It is recommended that hot water be supplied in this return air application.



A06225

Recommended Relative Humidity by Outdoor Temperature

OUTDOOR TEMP °F (°C)	OUTDOOR RELATIVE HUMIDITY (%)	INDOOR RELATIVE HUMIDITY (%) W/O HUMIDIFIER*	MAX RECOMMENDED INDOOR RELATIVE HUMIDITY†
- 10 (- 23)	30 to 70	1 to 2	20 (Lo)
0 (- 18)	30 to 70	2 to 4	25
10 (- 12)	30 to 70	3 to 6	30
20 (- 7)	30 to 70	4 to 10	35
30 (- 1)	30 to 70	6 to 15	40 (Med)

*Indoor relative humidity level when outdoor air is heated to 72°F/22°C.
†As stipulated by the Air Conditioning Contractors of America.

Indoor Relative Humidity Limit for no Window Condensation
(Indoor Air at 74°F/23°C Dry Bulb)

OUTDOOR TEMPERATURE °F (°C)	SINGLE PANE WINDOWS (%)	DOUBLE PANE WINDOWS (%)
40 (4)	39	59
30 (- 1)	29	50
20 (- 7)	21	43
10 (- 12)	15	36
0 (- 18)	10	30
- 10 (- 23)	7	26
- 20 (- 29)	5	21
- 30 (- 34)	3	17

Maximum Moisture Requirements*

VOLUME OF RESIDENCE CUBIC FEET (CUBIC METER)	TIGHT HOUSE		AVERAGE HOUSE	
	POUNDS (KILOGRAMS) PER HOUR	GALLONS (LITERS) PER DAY	POUNDS (KILOGRAMS) PER HOUR	GALLONS (LITERS) PER DAY
8,000 (227)	1.76 (0.8)	5.09 (19)	3.52 (1.6)	10.17 (38)
10,000 (283)	2.21 (1.0)	6.35 (24)	4.41 (2.0)	12.72 (48)
12,000 (340)	2.64 (1.2)	7.63 (29)	5.29 (2.4)	15.26 (58)
14,000 (396)	3.09 (1.4)	8.91 (34)	5.92 (2.7)	17.08 (65)
16,000 (453)	3.53 (1.6)	10.18 (39)	7.06 (3.2)	20.35 (77)
18,000 (510)	3.97 (1.8)	11.45 (43)	7.94 (3.6)	22.89 (87)
20,000 (566)	4.41 (2.0)	12.72 (48)	8.82 (4.0)	25.44 (96)
22,000 (623)	4.85 (2.2)	13.99 (53)	9.71 (4.4)	27.98 (106)
24,000 (680)	5.29 (2.4)	15.27 (58)	10.59 (4.8)	30.52 (116)
26,000 (736)	5.74 (2.6)	16.54 (63)	11.47 (5.2)	33.07 (125)
28,000 (793)	6.18 (2.8)	17.81 (67)	12.35 (5.6)	35.61 (135)
30,000 (850)	6.62 (3.0)	19.08 (72)	13.24 (6.0)	38.16 (144)

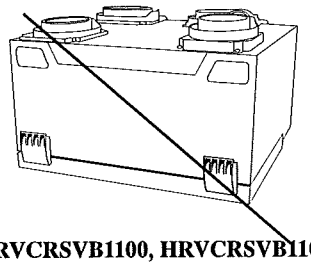
*Based on design conditions of outdoor 20°F/- 7°C dry bulb, 80% RH; indoor 70°F/21°C dry bulb, 40% RH, and minimum moisture production from residential operations for an absolute humidity difference of 0.0049 lb/hr.

NOTE: Tight house is defined as being well insulated, having vapor barriers, tight storm doors and windows with weatherstripping, and having dampered fireplaces. Average house is defined as being insulated, having vapor barriers, loose storm door and windows and having dampered fireplace.

HRVCR
Heat Recovery Ventilators
ERVCR
Energy Recovery Ventilators

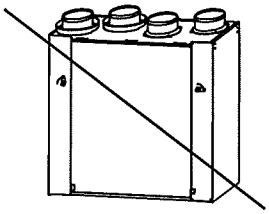
Carrier
turn to the experts

Product Data



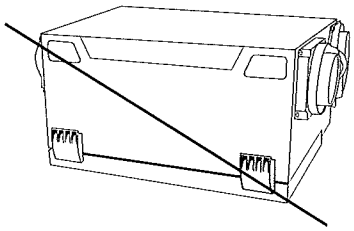
A05229

ERVCRSVB1100, HRVCRSVB1100



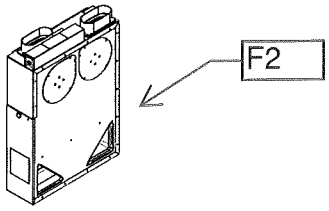
A12338

HRVCRSVU1157



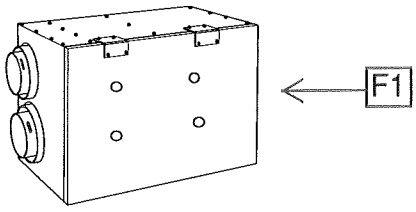
A05330

ERVCRSHB1100, HRVCRSHB1100



A13212

ERVCRNVA



A10299

ERVCRLHB1200, HRVCRLHB1150, HRVCRLHB1250

The Carrier Heat Recovery Ventilation (HRV) and Energy Recovery Ventilator (ERV) systems are the finest on the market today. These units provide efficient and cost effective heat recovery during the heating season when needed most.

As temperatures drop below 23°F (–5°C), indoor air is recirculated periodically through the heat exchanger core to prevent frost from forming.* Competitors' methods of supplementary electric defrost waste energy. Unlike rotary wheel heat exchangers which mix air streams, these cross–flow or counterflow heat exchangers ensure that there is no mixing of the stale air stream with the fresh outdoor air stream.

A filter installed on the incoming outdoor air stream removes large airborne particles from the intake air stream before they enter the heat exchanger and reduces the maintenance required. The units' acoustically engineered design make Carrier ventilators the quietest on the market and ensures that comfort is felt, not heard.

Unlatching two (2) suitcase style latches allows easy removal of the filters and core for cleaning on most units.

NOTE: The unit should not be installed in an attic or unconditioned space unless provisions are made for drain line freezing and condensation.

STANDARD FEATURES

HRV

- Energy saving defrost cycle
- Cross–flow, counterflow heat exchangers
- One filter on incoming air; one filter on outgoing air to protect core
- Acoustical design
- Polypropylene heat exchanger core

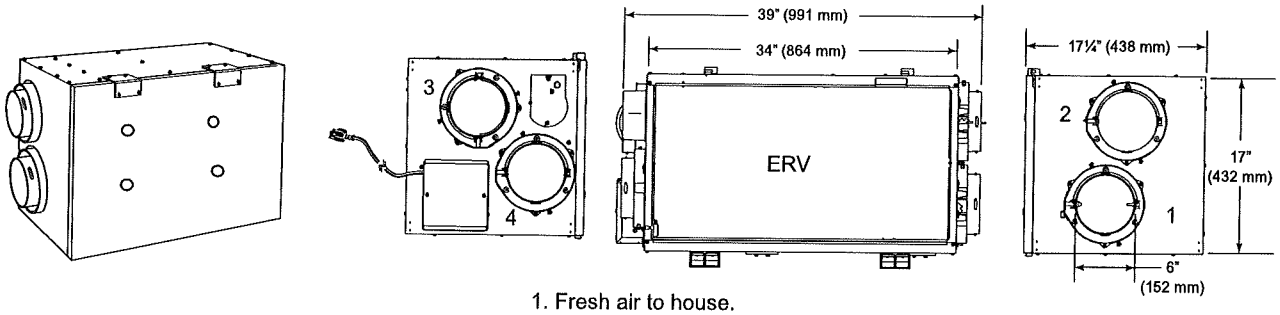
ERV

- Integrated airflow balancing points*
- Integrated furnace interlock*
- High pressure blowers
- Onboard control for continuous high/low ventilator operation
- Energy saving defrost cycle*
- Cross–flow, counterflow heat exchangers
- One filter incoming air; one filter outgoing to protect core
- No–tools maintenance
- Enthalpic heat exchanger core
- ERVCRNVA model uses EAC terminals to interlock with furnace blower for constant ventilation

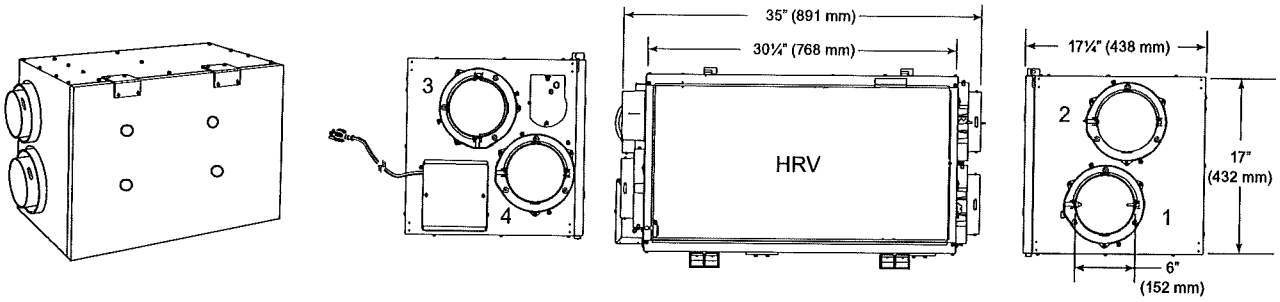
*Except ERVCRNVA

Preliminary
07/14/2020 11:19:01 AM

F1 → **ERVCRLHB1200, HRVCRLHB1150, HRVCRLHB1250**



1. Fresh air to house.
2. Exhaust air from house.
3. Fresh air from outside.
4. Exhaust air to outside.



A12341

PHYSICAL & ELECTRICAL DATA

MODEL	CAPACITY (LO–HI)		PORT LOC.	CORE		WEIGHT LBS. [KG]	VOLTAGE	MAX POWER WATTS	MAX AMPS
	CFM	L/S		TYPE	AIR FLOW				
ERVCRLHB1200	80 – 198	38 – 93	Ends	Enthalpic transfer media	Cross flow	76 [35]	120/60/1	200	2.1
HRVCRLHB1150	66 – 163	31 – 77	Ends	Polypropylene	Cross flow	65 [30]	120/60/1	160	1.5
HRVCRLHB1250	82 – 204	39 – 96	Ends	Polypropylene	Cross flow	65 [30]	120/60/1	195	2.1

DEFROST OPERATION

MODEL	OUTSIDE TEMPERATURE		DEFROST CYCLE (MIN.)		EXTENDED DEFROST CYCLES (MIN.)	
	°C	°F	Defrosting	Operation Time Between Each Defrost Cycle	Defrosting	Operation Time Between Each Defrost Cycle
ERVCRLHB1200	–5	23	10	60	10	30
	–15	5	10	30	10	20
	–27	–17	10	20	10	15
HRVCRLHB1150	–5	23	7	50	10	30
	–15	5	7	25	10	20
	–27	–17	10	20	10	15
HRVCRLHB1250	–5	23	6	50	10	30
	–15	5	6	25	10	20
	–27	–17	10	20	10	15

Preliminary
07/14/2020 11:19:01 AM

HVI RATED ENERGY PERFORMANCE

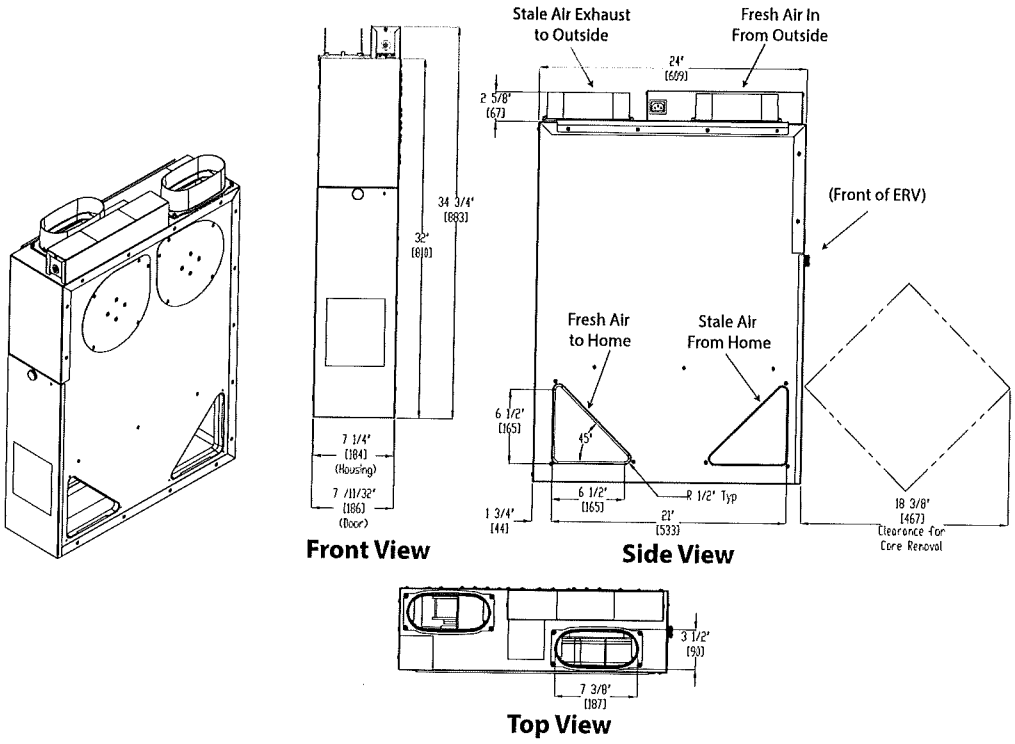
MODEL	MODE	SUPPLY TEMP		NET AIR FLOW		POWER CONSUMED (WATTS)	SENSIBLE RECOVERY EFFICIENCY	APPARENT SENSIBLE EFFECTIVENESS	LATENT RECOVERY MOISTURE TRANSFER	TOTAL RECOVERY EFFICIENCY
		°C	°F	L/S	CFM					
ERVCRLHB1200	Heat	0	32	39	80	84	60	72	0.60	
		0	32	54	114	113	58	69	0.53	
		0	32	79	167	169	56	66	0.45	
		–25	–13	31	65	116	41	86	0.47	
	Cool	35	95	39	82	81				52
HRVCRLHB1150	Heat	0	32	31	66	67	67	79	–0.01	
		0	32	40	86	74	65	75	–0.01	
		0	32	54	115	90	61	70	–0.01	
		–25	–13	38	81	87	60	76	0.02	
HRVCRLHB1250	Heat	0	32	39	82	71	65	75	0.01	
		0	32	61	130	129	60	69	0.01	
		–25	–13	40	84	114	60	76	0.03	

VENTILATION PERFORMANCE

MODEL	EXT. STATIC PRESSURE		NET SUPPLY AIR FLOW		GROSS AIR FLOW			
					SUPPLY		EXHAUST	
	Pa	In w.g.	L/S	CFM	L/S	CFM	L/S	CFM
ERVCRLHB1200	25	0.1	105	222	106	225	106	225
	75	0.3	93	198	94	200	100	212
	100	0.4	86	183	88	186	93	198
	150	0.6	70	148	71	150	75	158
	200	0.8	50	107	51	108	29	61
HRVCRLHB1150	25	0.1	85	180	86	182	92	194
	75	0.3	77	163	77	164	81	171
	100	0.4	71	150	71	151	71	151
	150	0.6	60	128	61	130	40	85
	175	0.7	51	108	52	110	27	57
HRVCRLHB1250	25	0.1	106	225	107	227	118	249
	75	0.3	96	204	97	205	111	235
	100	0.4	90	192	91	193	107	226
	150	0.6	76	161	76	162	89	189
	175	0.7	67	142	67	143	75	159

NOTE: For additional data points, refer to HVI Directory at www.hvi.org

ERVCRNVA1090 ← F2



A13294

PHYSICAL & ELECTRICAL DATA

Model	CAPACITY (LO-HI)		Port Loc.	Core Type	Core Air Flow	Weight Lbs. [kg]	Voltage	Max. Power Watts	Max. Amps
	CFM	L/S							
ERVCRNVA1090	52-128	25-60	Top	Enthalpy Paper	Cross flow	40	120/60/1	140	1.3

HVI RATED ENERGY PERFORMANCE

Model	Mode	Supply Temp		Net Air Flow		Power Consumed (Watts)	Sensible Recovery Efficiency	Apparent Sensible Effectiveness	Latent Recovery Moisture Transfer	Total Recovery Efficiency Transfer
		°C	°F	L/S	CFM					
ERVCRNVA1090	Heat	0	32	22	46	68	60%	76%	0.56	
		0	32	33	70	106	59%	75%	0.54	
		0	32	44	92	140	55%	69%	0.48	
	Cool	35	95	23	48					55%

NOTE TO ENERGY RATERS

HVI rated performance of this ERV is not representative of the actual CFM/watt performance in the actual application due to test protocol of the laboratory rating test. Actual ERV CFM/watt performance with the triangular openings connected to a location under negative static pressure will significantly improve. For example at medium speed with the connection location at −0.2−in. w.c. and with +0.1−in. w.c. duct connection static, a typical measurement is 1.14 CFM/watt. For additional performance data points more representative of actual application, refer to the "Maximum ERV Airflow Delivery (CFM) & Power Consumption" table below.

MAXIMUM ERV AIRFLOW DELIVERY (CFM) & POWER CONSUMPTION[1]

HVAC Return Pressure	ERV Fan Speed (CFM)								
	Low			Medium			High		
	Supply	Exhaust	Watts	Supply	Exhaust	Watts	Supply	Exhaust	Watts
-0.1" w.c.	74	69	67	104	122	103	121	148	135
-0.2" w.c.	93	62	66	120	116	102	136	143	135
-0.3" w.c.	110	54	66	135	110	102	150	137	135
-0.4" w.c.				150	103	102	163	132	135

[1]Maximum airflow delivery assumes no more than 0.1" external static from the duct collar to the intake or exhaust hood. If your duct runs are long or have a lot of bends or compressions, you may not be able to achieve the maximum airflow.

Preliminary
07/14/2020 11:19:01 AM

ERVCRNVA1090 (CONT.)

VENTILATION PERFORMANCE

Return Pressure inches w.c.	Ext. Duct Pressure inches w.c.	ERV Fan Speed Setting (CFM)					
		Low		Medium		High	
		Supply	Exhaust	Supply	Exhaust	Supply	Exhaust
-0.1	0.1	74	69	104	122	121	148
	0.2	60	58	99	110	116	139
	0.3	58	51	94	101	112	128
	0.4			87	92	107	120
	0.5			69	72		111
-0.2	0.1	93	62	120	116	136	143
	0.2	86	51	115	104	133	132
	0.3	71		110	94	127	122
	0.4	60		101	86	123	112
	0.5			96	76	119	
	0.6			89	67	115	
	0.7			83		111	
	0.8			76			
	0.9			70			
	1.0			64			
-0.3	0.1	110	54	135	110	150	137
	0.2	104		130	98	147	127
	0.3	91		126	88	142	116
	0.4	81		113	81	133	
	0.5	71		109	70	128	
	0.6	61		104	60	121	
	0.7	51		85	50	116	
	0.8			86			
	0.9			81			
	1.0			73			
	1.1			66			
	1.2			59			
	1.3			52			
-0.4	0.1			150	103	163	132
	0.2			146	92	160	122
	0.3			141	82	156	111
	0.4			127	74	143	101
	0.5			123	64	140	
	0.6			114	55	133	
	0.7			108		128	
	0.8			102		124	
	0.9			93		116	
	1.0			86		110	
	1.1			79			
	1.2			71			
	1.3			64			
	1.4			57			

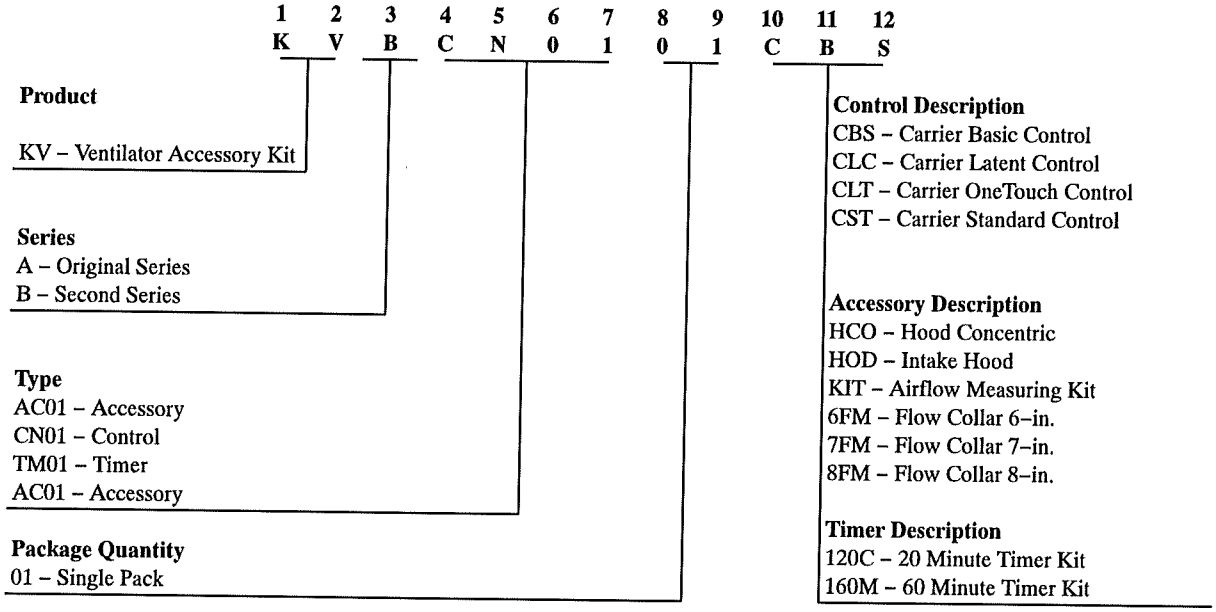
DEFROST

This model is NOT equipped with a defrost feature. It is designed only for use in IECC Climate Zones 1 through 5, which EXCLUDE the following states in their entirety: Montana, Wyoming, North Dakota, Minnesota, Wisconsin, Vermont, New Hampshire, Maine. **– Do not install this model in these states.**

The following states have *some* areas in Climate Zone 5: Washington, Idaho, Utah, Colorado, South Dakota, Iowa, Michigan, Pennsylvania, New York, California. **Prior to installing this model in these states, refer to the IECC Climate Zone Map to ensure that the installation location is within Climate Zones 1 through 5.** (See Fig. 1.)

ACCESSORIES

VENTILATOR ACCESSORY NUMBER NOMENCLATURE



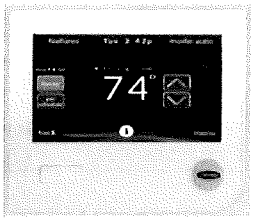
KIT NUMBER	DESCRIPTION	WHERE USED
KVBCN0101CBS	Basic Wall Control	Used with HRVs
KVACN0101CLC	Latent Wall Control	Used with ERVs
KVBCN0101CLT	OneTouch Control	Used with ERVs and HRVs as a main wall control
KVBCN0101CST	Standard HRV Control	Used with HRVs
KVAAC0101HOD	Exterior Intake and Exhaust Hood	Used with ERVs and HRVs, 2 Required
KVBAC0101KIT	Airflow Measuring Kit	Start up Balancing Kit, includes (2) 6 in. Flow Meter Collars & Magnehelic Gauge
KVATM010120B	20 Minute Push Button Timer	Used with ERVs and HRVs when 20 minute manual operation is required
KVATM010160M	60 Minute Timer	Used with ERVs and HRVs, time is adjustable between 10 and 60 minutes
KVAAC01016FM	6 in. Flow Meter Collar	Used with ERVs and HRVs, at start up, when 6 in. duct work is connected to HRV
KVAAC01017FM	7 in. Flow Meter Collar	Used with ERVs and HRVs, at start up, when 7 in. duct work is connected to HRV
KVAAC01018FM	8 in. Flow Meter Collar	Used with ERVs and HRVs, at start up, when 8 in. duct work is connected to HRV
KVAAC0101HCO	Concentric Intake/Exhaust Hood	Used as a single intake/exhaust for SVB1100, SHB1100 & NVA1090 models only
Totaline 6506C	Fresh–Air Intake Damper NCPO	Used with NVA1090
Totaline 5428	Fan Coil Connection Kit	Used with NVA1090. **Note:** "G" signal required. Not for use with communicating controls.

SYSTXCCITC01-B, SYSTXCCWIC01-B, SYSTXCCICF01-B, SYSTXCCWIF01-B
Infinity® System Control

Carrier
turn to the experts

Product Data

A170203



A180218C

NOTE: Infinity® System Control compatible with Infinity® rated indoor equipment only.

US Patents: Carrier® U.S. Pat No. 7,243,004, Carrier® U.S. Pat No. 7,775,452, pointSET™ U.S. Pat No. 7,415,102

INFINITY SYSTEM

côr HOME AUTOMATION

WORKS WITH amazon alexa

INFINITY® SYSTEM CONTROL

Carrier specializes in creating a customized home comfort system tailored to your needs with our broad selection of residential heating and cooling products. The Infinity® System Control is the ultimate control center for all of your system components. When you add an Infinity® System Control to a compatible variable speed furnace, fan coil, Infinity® System split or package unit, or small packaged product, you will enjoy longer heating and cooling cycles at lower fan speeds for a more consistent temperature throughout your home. By adding a variable speed, multi-stage, or 2-stage outdoor unit, you will enjoy extra benefits which include better humidity and temperature control as well as a more energy efficient comfort system. When paired with Infinity® Zoning controls, the Infinity® System Control allows you to create up to 8 zones of customized comfort.

The Infinity® Zoning system does not require a bypass damper, leaving air temperature (LAT) sensor, or field-installed power transformer.

Always install the latest version of software to enable all features of the system.

Over-the-Air software updates for Wi-Fi models connected to the Infinity server are automatically downloaded. Software updates via MicroSD are available on HVACpartners, or at www.MyInfinityTouch.com.

INDUSTRY LEADING FEATURES/BENEFITS

Carrier's revolutionary Infinity® System Control is the smart control of the future. Its unique system self-configuration and diagnostics capabilities make installation and service fast and accurate, helping to avoid costly call-backs. The Infinity® System Control features a high resolution display, making it easier to read. Intuitive prompts let you program everything from humidity levels to fan speeds, giving you the ultimate control over your home comfort. Other features include:

- 4-wire installation from each major component in the system
- 2-wire connection to Infinity® System two or more stage outdoor equipment (including geothermal split units)
- Infinity® Zoning System compatibility
- Occupancy sensing to provide comfort when spaces are occupied and energy savings when they're not
- Intuitive on screen prompts for ease of installation and service
- *Ideal Humidity System*™ settings are the default; no longer requiring increased system setup
- Complete integration of the temperature, humidity and ventilation in every season
- For Zoned Systems, auto mode selection to satisfy simultaneous heating and cooling demands in different zones via more aggressive Auto Changeover algorithm--installer must enable
- 7-day programmability with Lifestyle Comfort Profiles and Touch-N-Go® features; complies with California Title 24 programmability requirements
- Easy timed-override schedule
- Simplified vacation schedules
- Day-at-a-glance programming for simplified ease of use
- Programmable fan by period
- TrueSense™ Dirty Filter Detection
- Indoor Air Quality pop up service reminders
- General maintenance reminder messaging
- Wi-Fi® remote access capability
- Upload photo, dealer info, and software updates locally via MicroSD card. Software updates available automatically when connected to the Infinity web server
- Compatible with home automation through the SYSTXCCRCT01 or SYSTXCCRWF01 system access modules, or via the Côr Home Automation app or Amazon ™ Alexa ™ interface.
- Compatible with Infinity® System geothermal products (GC and GZ models). Energy Tracking feature for geothermal systems is available with Entering Water Temperature sensor installed in heat pump.

Preliminary
07/14/2020 11:19:01 AM

MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12	13	14
S	Y	S	T	X	C	C	I	T	C	0	1	–	B

Product Type
Infinity® System

Brand / Product
CC = Carrier
XX or NN = No Brand

Model Type
ITC – Black Infinity® System Control with Wi–Fi
WIC– White Infinity® System Control with Wi–Fi
ICF – Black Infinity® System Control with Wi–Fi (with French Literature)
WIF– White Infinity® System Control with Wi–Fi (with French Literature)

Packaged Quantity
01

Version
B

INFINITY® SYSTEM INFINITY® SYSTEM CONTROL

Comfort HEAT PUMP SYSTEM

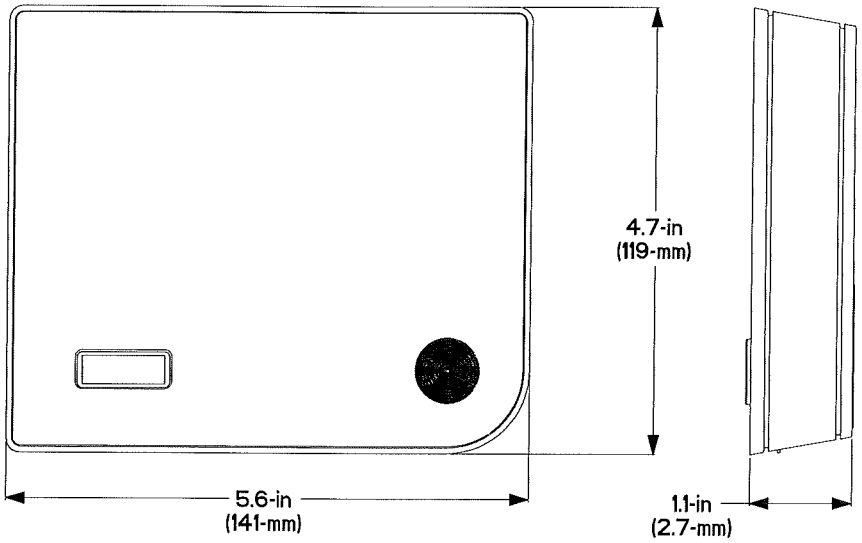
cor HOME AUTOMATION

SmartEvap™

IdealHumidity

ComfortHeat™

greenspeed® INTELLIGENCE



A170101

Fig. 1 - Unit Dimensions

Compatible Communicating Products

Compatible with most Infinity® System indoor and outdoor equipment built since 2004; see equipment specifications for details.

Home Automation System Interface

A cloud-to-cloud Open API (Application Program Interface) is available for the ITC and ITW model Infinity Touch and Infinity System Controls. See the Infinity Systems Open API Getting Started Guide available on www.HVACpartners.com or contact InfinityOpenAPI@carrier.utc.com for more information. The Infinity® System control may also connect to a variety of Home Automation systems using SAM modules. Note that not all Home Automation systems may be compatible. Reference the latest version of the Application Specification titled "SAM Remote Access Application Specification," available on HVACpartners.com to learn more about the latest Home Automation interfaces to the Infinity® systems. Work with the home automation supplier to see if the systems are compatible. If not, you may provide the "Infinity System Open API Getting Started Guide" or the "SAM Remote Access Application Specification" to the home automation supplier to develop an interface with the Infinity® System. Always be sure to obtain the latest version of the application specification from HVACpartners, as we continually update and add home automation interfaces.

NOTE: The ability to remotely access and adjust the settings of the Infinity® System Control with the MyInfinity web and mobile applications is dependent on the compatibility of the user's computer, home network and/or mobile device, the Infinity® System Control, and/or the MyInfinity web server or other system interfaces with, and the availability of, the user's internet service provider or mobile device carrier service. Carrier Corporation makes no representations or warranties, express or implied, including, to the extent permitted by applicable law, any implied warranty of merchantability or fitness for a particular purpose or use, about the compatibility of the user's computer, home network, and/or mobile device, with the Infinity® System Control, and/or the MyInfinity web server or other system interfaces, with, and the availability of, the user's internet service provider or mobile device carrier service, or that the ability to remotely access and adjust the settings of the Infinity® System Control will not be negatively affected by the network-related modifications, upgrades, or similar activity of the user's internet service provider or mobile device carrier service.

Physical Characteristics

Dimensions: See drawing

Appearance: Black glass front, silver plastic body

Electrical Characteristics/Communication

Input Volts/Amps 24VAC

Each device in the Infinity® System has a four-pin connector labeled ABCD. It is recommended that the following color code be used when wiring each device:

A — Green = Data A+

B — Yellow = Data B-

C — White = 24VAC (Com)

D — Red = 24VAC (Hot)

Always verify that the IDU and ODU are well-grounded, and that there are less than 10 volts AC/DC as measured between the cabinets of the IDU and ODU, while the equipment is operating at full capacity. If there is a larger voltage difference between the cabinets of the IDU and ODU, recheck the equipment grounding.

Environmental Requirements:

Operating Temperature/Relative Humidity:

User interface and all sensors: 32°F to 104°F / 0°C to 40°C, 95% RH non-condensing

Feature Specifications:

Temperature set point range: 50°F to 90°F / 10.0°C to 32.0°C

Separate heat and cool setpoints

Programming days: 7 day

Programming periods: Up to 5 periods per day

Advanced Smart Setback (with programming)

Touch-N-Go® feature

Occupancy Sensing

Non-Programmable (installer selectable)

Auto Changeover* (may be disabled)

Simultaneous Heat Cool Demand Algorithm for zoned systems

Programmable fan (installer selectable)

Humidity Sensor Offsets

Auto Changeover Timer (installer adjustable)

Smart Recovery (in heating and cooling)

Hold function

Copy functions: copy day of week; copy zones

Permanent memory

Humidity display and control

Temperature sensor offsets (indoor and outdoor)

TrueSense™ Dirty Filter Detection with compatible indoor equipment

* See Installation Instructions for details on Auto Changeover and Simultaneous Heat/Cool Demand Algorithm operation.

Wiring Requirements:

Power supply: 24VAC, 40 VA (minimum), 60 Hz, via indoor equipment ABCD Connector. Zoning systems with a large number of dampers, especially multiple dampers per zone, may require a separate, dedicated, field-installed 24VAC power supply. The SAM module requires an independent, isolated, field-supplied 24VAC power supply.

Wiring material: Standard thermostat wire 18 to 22 gauge. Use 18 AWG wiring for wire lengths over 25 feet. Shielded, twisted pair cable for te ABCD communication bus is optional, and may be helpful in electrically noisy environments, or for zoning systems with Smart Sensors.

NIM Requirements:

IDU	NON-COMMUNICATING ODU	NIM REQUIRED?
Furnace	1-stage A/C	No
Furnace	2-stage A/C	Yes
Furnace	1-stage HP	Yes
Furnace	2-stage HP	Yes
Fan Coil	1-stage A/C	No
Fan Coil	2-stage A/C	Yes
Fan Coil	1-stage HP	No
Fan Coil	2-stage HP	Yes

CONTROLS

DESCRIPTION	PART NO.
Infinity® System Control with Wi-Fi® Remote Access Capability (Black)	SYSTXCCITC01-B
Infinity® System Control with Wi-Fi® Remote Access Capability (White)	SYSTXCCWIC01-B
Infinity® System Control with Wi-Fi® Remote Access Capability (Black with French Literature)	SYSTXCCICF01-B
Infinity® System Control with Wi-Fi® Remote Access Capability (White with French Literature)	SYSTXCCWIF01-B
Infinity® Network Interface Module (NIM)	SYSTXCCNIM01*

* Required for ventilator control
* Required for Hybrid Heat applications with non-communicating heat pumps
* Required for use with 2-stage (non-communicating) AC or HP

ZONING CONTROLS

DESCRIPTION	PART NO.
Infinity® Damper Control Module (4 Zone)	SYSTXCC4ZC01†
Infinity® Smart Sensor	SYSTXCCSMS01-B

* NOTE: Each piece of the zoning equipment is purchased separately allowing for customization of the zoning application.
**Smart Sensor dimensions are 3.375 in. (85mm) side x 4 in. (101 mm) high
† One Damper Control Module for up to 4 zones. A second Damper Control Module is required for zones 5-8.

OPTIONAL ACCESSORIES

DESCRIPTION	PART NO.
Infinity® Remote Room Sensor – Wired (RRS)	SYSTXCCRRS01*
Decorative Trim Plate – Silver (six pack)	SYSTXNNSBP06†
Decorative Trim Plate – White (six pack)	SYSTXNNWBP06†
Decorative Trim Plate – Black (six pack)	SYSTXNNBBP06†
Decorative Trim Plate – Gray (six pack)	SYSTXNNGBP06†
ABCD Equipment Communication Connector (Green Plug; 10 pack)	SYSTXGRPLG10
Outdoor Air Temperature Sensor	TSTATXXSEN01-B
Energy Tracking Kit (EWT) for GC and GZ Geothermal Heat Pumps	KHAGT0101KIT**
Infinity® Remote Access Module, Broadband Cat-5 Wired (SAM)	SYSTXCCRCT01
Accessory Power Transformer for SAM Modules**	SYSTXNNXFM01**

* Not required, but may be used to remote sense indoor room temperature.
† Backplate dimensions 6.83 in. (173.5 mm) wide X 5.97 in. (151.7 mm) high
** Available from RC/Totaline.

DAMPER ACCESSORIES & REPLACEMENT PARTS

DESCRIPTION	PART NO.
45° Actuator for round dampers	DAMPACT45DEG-R
90° Actuator for rectangular dampers	DAMPACT90DEG-R
Damper Control Module 1-amp Fuse	ATO1*

*Available from RC.

ROUND & RECTANGULAR DAMPERS

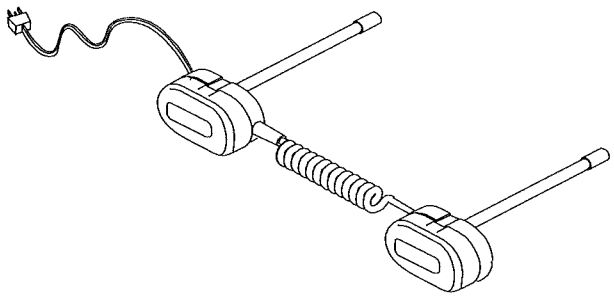
DESCRIPTION		PART NO.
Round Dampers	6 in.	DAMPRND06INC-B
	8 in.	DAMPRND08INC-B
	10 in.	DAMPRND10INC-B
	12 in.	DAMPRND12INC-B
	14 in.	DAMPRND14INC-B
	16 in.	DAMPRND16INC-B
Rectangular Dampers	8 in. X 10 in.	DAMPREC08X10-B
	8 in. X 14 in.	DAMPREC08X14-B
	8 in. X 18 in.	DAMPREC08X18-B
	8 in. X 24 in.	DAMPREC08X24-B
	10 in. X 10 in.	DAMPREC10X10-B
	10 in. X 14 in.	DAMPREC10X14-B
	10 in. X 18 in.	DAMPREC10X18-B
	10 in. X 24 in.	DAMPREC10X24-B

Preliminary
07/14/2020 11:19:02 AM

UVLCC(1, 2)LP
UVL - Ultraviolet Germicidal Lamp
Model 1 & 2 Lamp Systems
115- V & 208/230- V

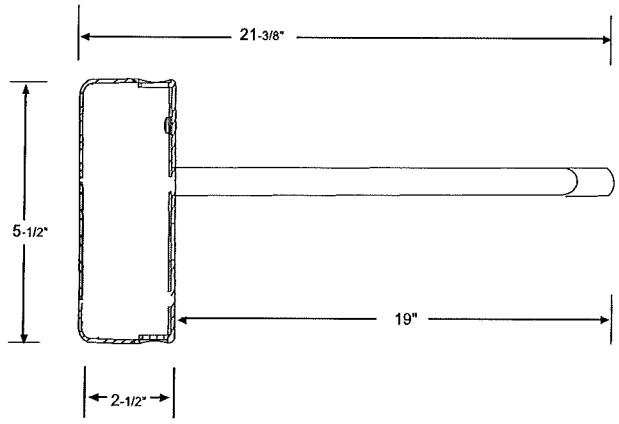
Carrier
turn to the experts

Product Data



C03009

DIMENSIONS



C03015

The UVL is designed to inhibit fungus and microbial growth when applied to the indoor coil/drain pan section of a central A/C system.

FEATURES/BENEFITS

FOUR MODELS OFFERED

Available in both single and dual lamp models in both 115-v and 208/230-v to meet needs in different applications.

CLEANER COIL AND IMPROVED INDOOR AIR QUALITY (IAQ)

The UV Lights work to clean the coil and prevent the growth of fungus on and around the coil by destroying the DNA of the fungus to kill or deactivate it.

TROUBLE-FREE INSTALLATION

One hole, 2 mounting screws per lamp and a power source are all that are needed to install.

NEARLY MAINTENANCE FREE OPERATION

The only maintenance required is replacing the lamp annually.

ZERO OZONE OPERATION

Côr UV Lamp Systems do not produce ozone.

c UL us

UVL- ULTRAVIOLET GERMICIDAL LAMP MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12
U	V	L	C	C	1	L	P	1	0	2	0

Product Type
UVL Ultraviolet Lamp

Brand
CC - Carrier

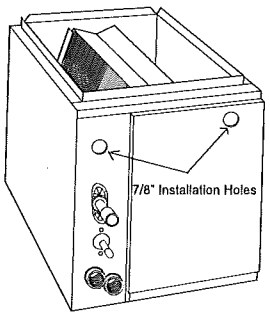
Lamp
1LP - Single Lamp Model
2LP - Dual Lamp Model

Size
020

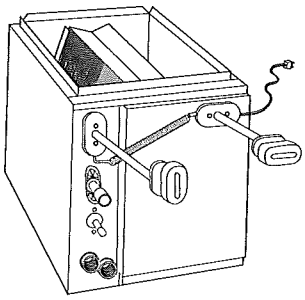
Electrical Supply
1 - 115 Volt
3 - 208/230 Volt

Preliminary
07/14/2020 11:19:02 AM

TYPICAL INSTALLATION



Step 1- Drill or cut 7/8-in hole

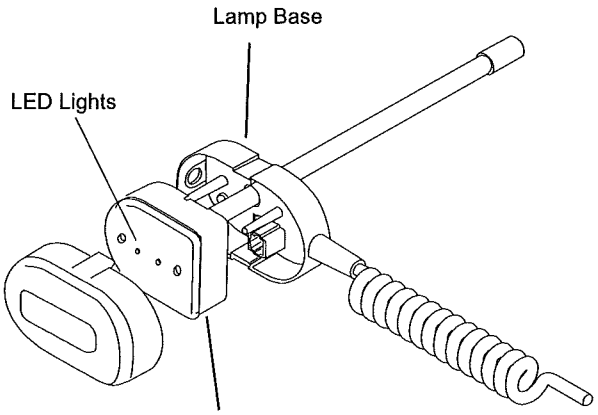


Step 2 - Mount Base and Slide Bulb Assembly into position. Then replace cover.

Note: See installation instructions for additional mounting locations.

C04013

TYPICAL BULB ASSEMBLY CHANGE



Note: LED Lights are not lamp change indicators. Lamps should be changed annually.

C03004

PHYSICAL DATA

SIZE	1LP	2LP	1LP	2LP
Electrical (V- PH- Hz)	115- 1- 60	115- 1- 60	208/230- 1- 60	208/230- 1- 60
Maximum Amperage Draw	0.6 Amps	1.1 Amps	0.3 Amps	0.6 Amps
Average Power Consumption	27 Watts	53 Watts	27 Watts	53 Watts
Unit Power Cord (included) with ground pin plug	6 foot cord	6 foot cord	6 foot cord	6 foot cord
Initial UVC Output at 1 Meter (in microwatts per square centimeter and 70 Deg F) and 450 FPM Airflow	105	198	105	198
Average Lamp Life	1 Year	1 Year	1 Year	1 Year
Lamp Length	19- in.	19- in.	19- in.	19- in.

REPLACEMENT LAMPS

REPLACEMENT LAMP ORDER NUMBERS		
Quantity	**Lamp Voltage**	**Catalog Number**
1 Lamp/Ballast Assembly	115–1–60	UVLXXRPL1020
1 Lamp/Ballast Assembly	208/230–1–60	UVLXXRPL3020

 Printed in U.S.A. Edition Date: 12/19

Catalog No: UVLCR- 02PD

Replaces: UVLCR- 01PD

Preliminary

07/14/2020 11:19:02 AM