180CNV EVOLUTION® EXTREME SERIES VARIABLE SPEED AIR CONDITIONER WITH PURON® REFRIGERANT (2 - 5 Ton)

Advance Product Data

Puron

EVOLUTION EXTREME AIR CONDITIONER

Bryant's 180CNV with Evolution® Extreme Intelligence is a variable speed cooling product providing up to 20.5 SEER cooling efficiency. 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 the Product Data for system combinations that meet Energy Star® guidelines.

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 20.5 SEER/15.5 EER
- Microtube Technology™ refrigeration system
- Indoor air quality accessories available

Sound

- Sound level as low as 58 dBA in low speed

Comfort

- Variable speed scroll compressor with capacity range from 40-100%
- Air cooled Inverter variable speed drive
  - — System requires Evolution Connex™ wall control (SYSTXBBITW01-A, SYSTXBBITC01-A, SYSTXBBITC01-B or newer)
- Energy Tracking capability with the Evolution® Connex™ wall control
  - Wall Control w/software version 13 or later

  (Energy Tracking has the ability to monitor and estimate the energy consumption of your Evolution® system.)

Reliability

- Non-ozone depleting Puron® refrigerant
- Front-seating service valves
- Evolution® Extreme Intelligence monitors critical system parameters
- High pressure switch
- Suction pressure transducer
- 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

Durability

DuraGuard™ Plus 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.)

MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12	14
N	N	N	A	A/N	N	N	N	N	A/N	A/N	N	A
1	**8**	**0**	**C**	**N**	**V**	**0**	**3**	**6**	**0**	**0**	**0**	**A**
Product Family	Tier	SEER	Major Series	Voltage	Variations	Cooling Capacity			Open	Open	Open	Series
1=AC	8= Evolution Series	0 = 20 SEER	C=Puron	N= 208–230–1 or 208/230–1	V = Variable Speed	1,000 Btuh (nominal)			0=Not Defined	0=Not Defined	0=Not Defined	A = Original Series

Puron™ the environmentally sound refrigerant

AHRI CERTIFIED™ www.ahridirectory.org

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

Certified System™

ISO 9001
QMI-SAI Global

c UL us

ENERGY STAR

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

EVOLUTION EXTREME AIR CONDITIONER

Perfect Humidity™

STANDARD FEATURES

FEATURES	Unit Size – Voltage, Series			
	24–A	36–A	48–A	60–A
Puron Refrigerant	X	X	X	X
Louvered Coil Guard	X	X	X	X
Field Installed Filter Drier	X	X	X	X
Front Seating Service Valves	X	X	X	X
Temperature Protection	X	X	X	X
Long Line capability	X	X	X	X
Suction Pressure Transducer	X	X	X	X
High Pressure Switch	X	X	X	X
Internal Crankcase Heater	X	X	X	X
Low ambient cooling down to 0°F capability with Evolution Connex™ wall control	X	X	X	X
Utility Interface Connections	X	X	X	X
Enhanced Diagnostics with Evolution Connex™ wall control	X	X	X	X
Energy Tracking Capability with the Evolution Connex™ wall control (requires software version 13 or later)	X	X	X	X
Deluxe Sound Blanket	X	X	X	X
Outdoor Air Temperature Sensor	X	X	X	X

X = Standard

REFRIGERANT PIPING LENGTH LIMITATIONS

Maximum Line Lengths:

The maximum allowable total equivalent length for air conditioners can vary depending on the vertical separation. See the tables below for allowable lengths depending on whether the outdoor unit is on the same level, above or below the outdoor unit.

Maximum Line Lengths for Air Conditioner Applications

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

† Total equivalent length accounts for losses due to elbows or fitting. See the Long Line Guideline for details.

Maximum Total Equivalent Length† - Outdoor Unit BELOW Indoor Unit

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

*** Maximum actual length not to exceed 100 ft (30.5 m)**

† Total equivalent length accounts for losses due to elbows or fitting.

– – = outside acceptable range

LONG LINE APPLICATIONS

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

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

AC with Puron Referant Long Line Description ft. (m)
Beyond these lengths, long line accessoriews are required.

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

Note: See Long Line Guideline for details

COOLING CAPACITY LOSS TABLE

Nominal Size (Btuh)	Line OD (in.)	180CNV Cooling Capacity Loss (%) Total Equivalent Line Length (ft)										
		25	50	75	80	100	125	150	175	200	225	250
24000	5/8	0.5	1.2	1.8	1.9	2.4	3.0	3.7	4.3	4.9	5.5	6.2
	3/4	0.1	0.4	0.6	0.7	0.8	1.1	1.3	1.5	1.8	2.0	2.3
	7/8	0.0	0.1	0.3	0.3	0.4	0.5	0.6	0.7	0.8	1.0	1.1
36000	5/8	1.1	2.4	3.7	4.0	5.0	6.3	7.7	9.0	10.3	11.6	12.9
	3/4	0.3	0.8	1.3	1.4	1.8	2.3	2.8	3.2	3.7	4.2	4.7
	7/8	0.0	0.3	0.5	0.6	0.8	1.0	1.3	1.5	1.8	2.0	2.3
48000	3/4	0.7	1.6	2.4	2.6	3.2	4.1	4.9	5.7	6.5	7.4	8.2
	7/8	0.3	0.7	1.1	1.2	1.6	2.0	2.4	2.8	3.2	3.6	4.1
	1 1/8	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
60000	3/4	1.0	2.3	3.5	3.8	4.8	6.0	7.3	8.5	9.8	11.0	12.3
	7/8	0.4	1.0	1.7	1.8	2.3	2.9	3.5	4.2	4.8	5.4	6.0
	1 1/8	0.0	0.1	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.4	1.5

Rating Line Size in **Bold**

MIN/MAX AIRFLOW TABLES

The indoor airflow delivered by this system varies significantly based on outdoor temperature, indoor unit combination, and system demand. The airflows on these tables are for duct design considerations. Duct systems capable of these ranges will ensure the system will deliver full capacity at all outdoor temperatures. Minimum and maximum airflows can be adjusted from these numbers in the Evolution Control air conditioner Setup screen.

Cooling – Comfort Mode			Minimum Cooling (Dehum or Zoning)
Size	**Max Capacity**	**Min Capacity**	
24	726	651	398
36	1168	651	398
48	1394	1186	693
60	1650	1186	693

Cooling – Efficiency Mode		
Size	**Max Capacity**	**Min Capacity**
24	949	830
36	1334	830
48	1593	1355
60	1885	1355

PHYSICAL DATA

UNIT SIZE SERIES	**24–A**	**36–A**	**48–A**	**60–A**
Operating Weight lb (kg)	315 (143)	315 (143)	324 (147)	324 (147)
Shipping Weight lb (kg)	351 (159)	351 (159)	362 (164)	362 (164)
Compressor Type	Variable Speed Scroll			
REFRIGERANT	Puron® (R–410A)			
Control	TXV (Puron® Hard Shutoff)			
Charge lb (kg)	12.7 (5.76)	12.7 (5.76)	14.0 (6.35)	14.0 (6.35)
COND FAN	Forward Swept Propeller Type, Direct Drive			
Air Discharge	Vertical			
Air Qty (CFM)	2700	4269	4350	5000
Motor HP	1/3	1/3	1/3	1/3
Motor RPM	500–900	500–900	500–900	500–900
COND COIL				
Face Area (Sq ft)	30.25	30.25	30.25	30.25
Fins per In.	20	20	20	20
Rows	2	2	2	2
Circuits	8	8	8	8
VALVE CONNECT. (In. ID)				
Vapor	7/8	7/8	7/8	7/8
Liquid	3/8			
REFRIGERANT TUBES (In. OD)				
Rated Vapor*	7/8	7/8	1–1/8	1–1/8
Max Liquid Line	3/8			

* Units are rated with 25 ft (7.6 m) of lineset length. See Vapor Line Sizing and Cooling Capacity Loss table when using other sizes and lengths of lineset.

Note: See unit Installation Instruction for proper installation.

ACCESSORIES

KIT NUMBER	KIT NAME	24–A	36–A	48–A	60–A
KHAEM0101EMI	ELECTRO–MAGNETIC INTERFERENCE (EMI) KIT	X	X	X	X
KHASS0606MPK*	SNOW STAND	X	X	X	X
KSASF0201AAA	SUPPORT FEET	X	X	X	X
KSATX0301PUR	TXV	X	X		
KSATX0401PUR	TXV			X	X
STANDARD	INTERNAL CRANKCASE HEATER	S	S	S	S

x = Accessory S = Standard * Available from RCD

CONTROLS

SYSTXBBITC01–A & B	Evolution® Connex™ wall control (Wi–Fi)
SYSTXBB4ZC01	4–Zone Damper Control Module (Wall–mounted control for a four–zone system.)
SYSTXBBSMS01	Smart Sensor (Optional wall control used to monitor temperature and/or fan control in an individual zone.)
SYSTXBBRRS01	Remote Room Sensor (Monitors temperature in an individual zone.)
SYSTXBBNIM01	Evolution Network Interface Module (Connects Heat Recovery and Energy Recovery Ventilators on non–zoning applications.)

ACCESSORY USAGE GUIDELINE

ACCESSORY	REQUIRED FOR LOW−AMBIENT COOLING APPLICATIONS (Below 55°F/12.8°C)	REQUIRED FOR LONG LINE APPLICATIONS* (Over 80 ft/24.38 m)	REQUIRED FOR SEA COAST APPLICATIONS (Within 2 miles/3.22 km)	Installations with Radio Frequency Interference Concerns in the Range
Crankcase Heater	Standard	Standard	Standard	N/A
Electro−Magnetic Interference (EMI) Kit	No	No	No	Yes
Evaporator Freeze Protection	Standard with Evolution™ Control	No	No	N/A
Low−Ambient Control	Standard with Evolution Control	No	No	N/A
Puron Refrigerant Balance Port Hard−ShutOff TXV	Yes†	Yes†	Yes†	N/A
Winter Start Control	Standard with Evolution Control	No	No	N/A

* For tubing set lengths between 80 and 200 ft. (24.38 and 60.96 m) horizontal or 20 ft. (6.10 m) vertical differential (total equivalent length), refer to the Long Line Guideline—Air Conditioners and Heat Pumps using Puron® Refrigerant.

† Required on all indoor units.

Accessory Description and Usage (Listed Alphabetically)

1. Compressor Start Assist

The inverter drive gently starts the variable speed compressor at all times. No other start device is compatible with this unit.

2. Crankcase Heater

Compressor motor winding resistance heater which is internal to compressor to keep the lubricant warm during off cycles. Improves compressor lubrication on restart and minimizes the chance of liquid slugging.

Usage:

Used in low ambient cooling applications.

Used in long line applications.

3. Electro−Magnetic Interference (EMI) Kit

Usage Guideline:

May be required to address radio frequency interference for equipment, such as HAM radios, operating between 6 and 30 mHz.

4. Evaporator Freeze Thermostat

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

Usage Guideline:

Required when low ambient kit has been added.

5. Thermostatic Expansion Valve (TXV) Bi−Flow

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

Usage Guideline:

Accessory required to meet AHRI rating and system reliability, where indoor not equipped.

Required in all Air conditioner applications designed with Puron refrigerant.

6. Winter Start Control

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

ELECTRICAL DATA

UNIT SIZE–VOLTAGE, SERIES	V/PH	OPER VOLTS*		COMPR		FAN	MCA	MAX FUSE** or CKT BRK AMPS
		MAX	MIN	LRA	RLA	FLA		
24–A	208–230–1	253	197	24	15.1	3.2	22.1	30
36–A				24	15.1	3.2	22.1	30
48–A				42	25.4	3.2	35	50
60–A				42	25.4	3.2	35	50

* Permissible limits of the voltage range at which the unit will operate satisfactorily

† If wire is applied at ambient greater than 30°C, consult table 310–16 of the NEC (NFPA 70). The ampacity of non–metallic–sheathed cable (NM), trade name ROMEX, shall be that of 60°C conditions, per the NEC (NFPA 70) Article 336–26. If other than uncoated (no–plated), 60 or 75°C insulation, copper wire (solid wire for 10 AWG or smaller, stranded wire for larger than 10 AWG) is used, consult applicable tables of the NEC (NFPA 70).

‡ Length shown is as measured 1 way along wire path between unit and service panel for voltage drop not to exceed 2%.

** Time–Delay fuse.

FLA – Full Load Amps

LRA – Locked Rotor Amps

MCA – Minimum Circuit Amps

RLA – Rated Load Amps

NOTE: Control circuit is 24–V on all units and requires external power source. Copper wire must be used from service disconnect to unit.
All motors/compressors contain internal overload protection.

Complies with 2010 requirements of ASHRAE Standards 90.1

SOUND POWER LEVEL (dBA)

Unit Size–Voltage, Series	Typical Octave Band Spectrum (without tone adjustment)	Min Speed Cooling	Max Speed Cooling
24–A	Freq (Hz)	1800 RPM	3200 RPM
	125	44.2	45.1
	250	50.1	52.2
	500	52.1	55.0
	1000	51.3	57.9
	2000	48.7	52.3
	4000	45.0	47.6
	8000	49.1	53.0
	Sound Rating (dBA)	58.0	62.0
36–A	Freq (Hz)	1800 RPM	4500 RPM
	125	44.2	48.0
	250	50.1	54.5
	500	52.1	61.7
	1000	51.3	60.6
	2000	48.7	59.9
	4000	45.0	57.0
	8000	49.1	53.1
	Sound Rating (dBA)	58.0	67.0
48–A	Freq (Hz)	1800 RPM	3450 RPM
	125	48.5	53.3
	250	50.7	58.8
	500	53.2	61.6
	1000	57.0	63.1
	2000	53.0	60.0
	4000	51.9	53.0
	8000	53.8	55.9
	Sound Rating (dBA)	62.0	68.0
60–A	Freq (Hz)	1800 RPM	4250 RPM
	125	48.5	53.5
	250	50.7	62.0
	500	53.2	64.5
	1000	57.0	66.6
	2000	53.0	62.9
	4000	51.9	57.8
	8000	53.8	55.4
	Sound Rating (dBA)	56.0	71.0

NOTE: Tested in compliance with AHRI 270–2008 but not listed with AHRI.

* 024 & 036 tested at 44°F Outdoor Air Temperature. 048 & 060 tested at 40°F

**Testable RPM limited by outdoor temp. Max unit RPM is 6500 for the 4 ton and 7000 for the 3 and 5 ton.

CHARGING SUBCOOLING (TXV-TYPE EXPANSION DEVICE)

UNIT SIZE–VOLTAGE, SERIES	REQUIRED SUBCOOLING °F (°C) – See UI
24–A	Subcooling recommendation displayed on wall control in Charging Mode must be followed
36–A	
48–A	
60–A	

DIMENSIONS

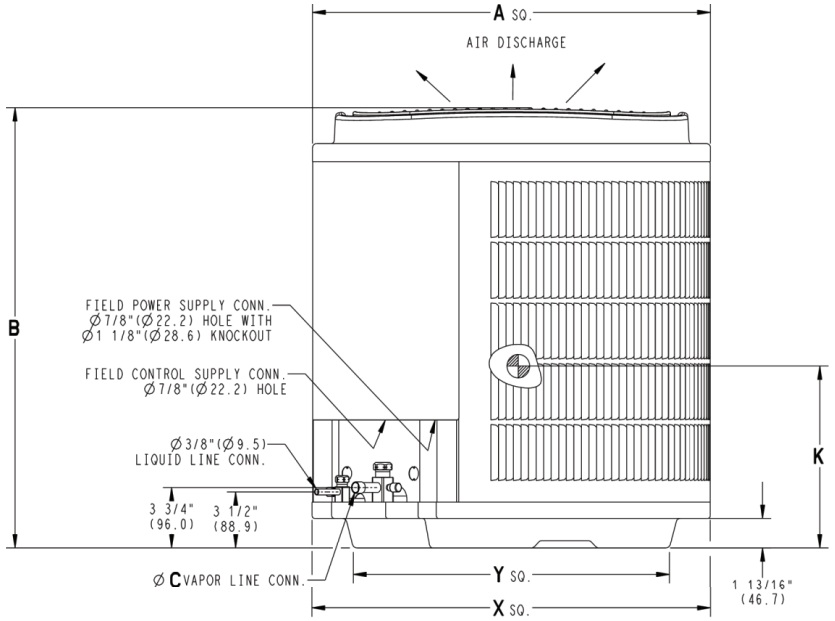
UNIT	SERIES	ELECTRICAL CHARACTERISTICS				A		B		C		D		E				G		H				J		K		OPERATING		SHIPPING		SHIPPING LENGTH / WIDTH (Sq.)		SHIPPING HEIGHT	
						INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	Lbs	Kgs	Lbs	Kgs	INCH	MM	INCH	MM
180CNV024000EAAA	A	Y	N	N	N	35	889.0	43 13/16	1112.6	7/8	22.2	6 9/16	166.1	28 7/16	722.8	9 1/8	231.3	5/16	7.9	3	76.2	16 1/4	412.8	16 1/4	412.8	21 1/4	539.8	324	147.0	367	166.5	37 1/8	943.1	50 3/16	1274.9
180CNV036000EAAA	A	Y	N	N	N	35	889.0	43 13/16	1112.6	7/8	22.2	6 9/16	166.1	28 7/16	722.8	9 1/8	231.3	5/16	7.9	3	76.2	16 1/4	412.8	16 1/4	412.8	21 1/4	539.8	324	147.0	367	166.5	37 1/8	943.1	50 3/16	1274.9
180CNV048000EAAA	A	Y	N	N	N	35	889.0	43 13/16	1112.6	7/8	22.2	6 9/16	166.1	28 7/16	722.8	9 1/8	231.3	5/16	7.9	3	76.2	16 1/4	412.8	16 1/4	412.8	21 1/4	539.8	334	151.5	375	170.1	37 1/8	943.1	50 3/16	1274.9
180CNV060000EAAA	A	Y	N	N	N	35	889.0	43 13/16	1112.6	7/8	22.2	6 9/16	166.1	28 7/16	722.8	9 1/8	231.3	5/16	7.9	3	76.2	16 1/4	412.8	16 1/4	412.8	21 1/4	539.8	334	151.5	375	170.1	37 1/8	943.1	50 3/16	1274.9

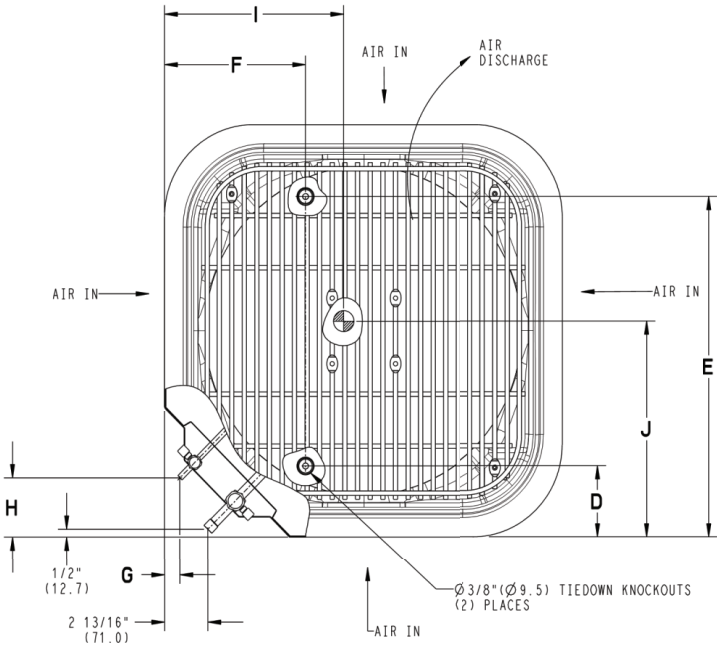
208-230-1-60	208/230-3-60	460-3-60	575-3-60

Y=YES
N=NO

NOTES:

1. ALLOW 24" (609.6) CLEARANCE TO SERVICE SIDE OF UNIT, 48" (1219.2) ABOVE UNIT, 6" (152.4) ON ONE SIDE, 12" (304.8) ON REMAINING SIDE, AND 24" (609.6) BETWEEN UNITS FOR PROPER AIRFLOW.
2. CENTER OF GRAVITY ⊕.
3. SERIES DESIGNATION IS THE 14TH POSITION OF THE UNIT MODEL NUMBER.



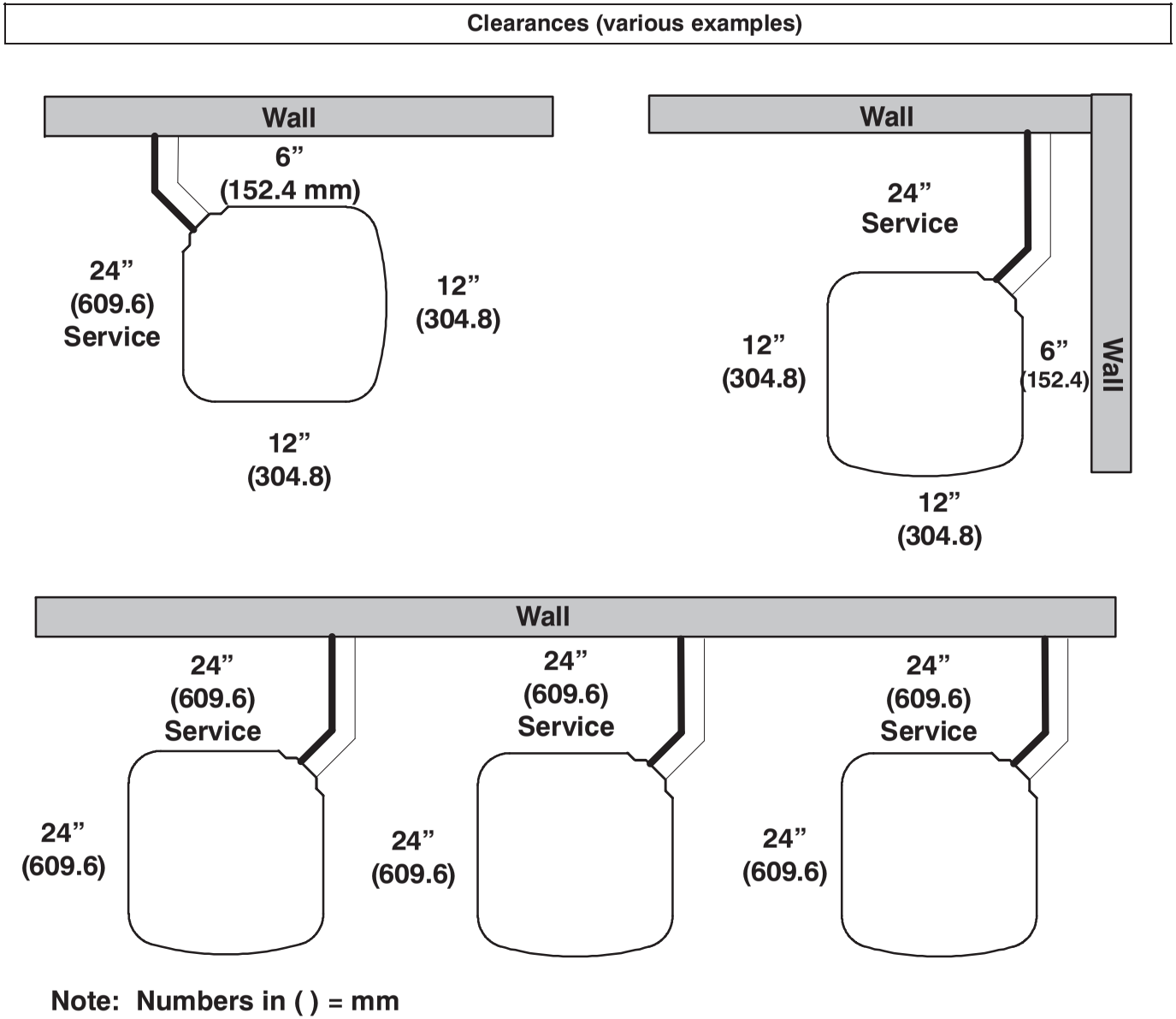


UNIT SIZE	"X" MINIMUM GROUND MOUNTING PAD APPLICATION DIMENSIONS		"Y" MINIMUM ROOF-TOP MOUNTING PAD APPLICATION DIMENSIONS	
-	23 1/8	587.3	17 7/8	454.6
-	25 3/4	654.0	20 7/16	518.5
-	31 3/16	792.5	22 15/16	583.2
24,36,48,60	35	889.0	26 3/4	679.7

NOTE: ALL DIMENSIONS IN INCH (MM)

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

CLEARANCES



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

A07833

TESTED AHRI COMBINATION RATINGS*

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

For AHRI ratings certificates, please refer to the AHRI directory www.ahridirectory.org

Additional ratings and system combinations can be accessed via the Bryant database at: http://cactaxcredits.info/bryant-ratings/hp_ratings_srch.php

Equipment performance calculator can be accessed at: http://rpmobbry.wrightsoft.com/

Model Number	Coil Model Number	Furnace Model Number	Clg. Cap. High	Clg. Cap. Low	EER	SEER	ID CFM	
							High	Low
180CNV024****A	CAP**3617AL	315(A,J)AV036070	23,400	16,100	14.5	18.0	900	650
180CNV036****A	CAP**3617AL	315(A,J)AV036070	33,000	16,100	12.5	18.0	1200	875
180CNV048****A	CAP**6124AL	315(A,J)AV066110	47,500	30,400	13.0	18.0	1500	1100
180CNV060****A	CAP**6124AL	315(A,J)AV066110	56,000	30,400	13.0	18.0	1500	1100

* Ratings are net values reflecting the effects of circulating fan heat. Supplemental electric heat is not included. Ratings are based on:
Cooling Standard: 80°F (27°C) db 67°F (19°C) wb indoor entering air temperature and 95°F (35°C) db air entering outdoor unit.
EER — Energy Efficiency Ratio
SEER — Seasonal Energy Efficiency Ratio
UI — User Interface

DETAILED COOLING CAPACITIES# - COMING SOON

CONDENSER ONLY RATINGS - COMING SOON

GUIDE SPECIFICATIONS
GENERAL

System Description

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

Quality Assurance

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

Delivery, Storage, and Handling

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

Warranty (for inclusion by specifying engineer)

- U.S. and Canada only.

PRODUCTS

Equipment

- Factory-assembled, single-piece, air-cooled air conditioner. Contained within the unit enclosure is all factory wiring, piping, controls, compressor, refrigerant charge Puron® (R-410A) refrigerant, and special features required prior to field start-up.

Unit Cabinet

- Unit cabinet will be constructed of galvanized steel, bonderized, and coated with a powder coat paint.

Fans

- Condenser fan will be direct-drive propeller type, forward swept blade, discharging air upward.
- Condenser fan motors will be totally enclosed, 1-phase type with class B insulation and permanently lubricated.
- Shafts will be corrosion resistant.
- Fan blades will be statically and dynamically balanced.
- Condenser fan openings will be equipped with coated steel wire safety guards.

Compressor

- Compressor will be hermetically sealed.
- Compressor will be mounted on rubber vibration isolators.
- Compressor will be covered with a sound absorbing blanket.

Condenser Coil

- Condenser coil will be air cooled.
- Coil will be constructed of aluminum fins mechanically bonded to copper tubes which are then cleaned, dehydrated, and sealed.

Refrigeration Components

- Refrigeration circuit components will include liquid-line front-seating shutoff valve with sweat connections, vapor-line front-seating shutoff valve with sweat connections, system charge of Puron® (R-410A) refrigerant, POE compressor oil, accumulator.
- Unit will be equipped with high-pressure switch, suction pressure transducer, and filter drier for Puron® refrigerant.

Operating Characteristics

- The capacity of the unit will meet or exceed _____ Btuh at a suction temperature of _____ °F (°C). The power consumption at full load will not exceed _____ kW.
- Combination of the unit and the evaporator or fan coil unit will have a total net cooling capacity of _____ Btuh or greater at conditions of _____ CFM entering air temperature at the evaporator at _____ °F (°C) wet bulb and _____ °F (°C) dry bulb, and air entering the unit at _____ °F (°C).
- The system will have a SEER of _____ Btuh/watt or greater at DOE conditions.

Electrical Requirements

- Nominal unit electrical characteristics will be _____ v, single phase, 60 hz. The unit will be capable of satisfactory operation within voltage limits of _____ v to _____ v.
- Unit electrical power will be single point connection.
- Control circuit will be 24v.

Special Features

- Refer to section of this literature identifying accessories and descriptions for specific features and available enhancements.
- Evolution wall control with appropriate software version is required for full featured operation.

SYSTEM DESIGN SUMMARY

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01-in. wc.
2. This product is qualified for low ambient cooling operation (below 55°F / 12.8°C) with an Evolution wall control **ONLY**.
3. The maximum outdoor operating ambient in cooling mode is 125.6°F (51.67°C).
4. For reliable operation, unit should be level in all horizontal planes.
5. For interconnecting refrigerant tube lengths greater than 80 ft (23.4 m) and/or elevation differences between indoor and outdoor units greater than 20 ft (6.1 m), consult Residential Piping and Longline Guideline and Service Manual available from equipment distributor.
6. If any refrigerant tubing is buried, provide a 6 in. (152.4 mm) vertical rise to the valve connections at the unit. Refrigerant tubing lengths up to 36 in. (914.4 mm) may be buried without further consideration. Do not bury refrigerant lines longer than 36 in. (914.4 mm).
7. Use only copper wire for electric connection at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.
8. Do not apply capillary tube indoor coils to these units.
9. Factory-supplied filter drier must be installed.

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