



# VRV IV X

## HEAT PUMP SYSTEMS

208-230/460V



# Welcome to innovation.

Engineered and assembled in North America, Daikin's VRV IV X Heat Pump adapts VRV to North American HVAC market needs by expanding the applications in which VRV can be leveraged to solve traditional HVAC challenges. Packed with advanced technology, the

VRV IV X is the industry's first 3-phase variable refrigerant flow system with dual-fuel capability. The new series is equipped with features to optimize initial capital required on phased installations and provides ease of service and maintenance.

## Features and Benefits

### » Adapting VRV to North American market needs

- Design flexibility to enlarge system from single to dual module or dual to triple module without change to installed main pipe sizes\*\*.
- Engineered to optimize capital on phased and tenant fit out buildings.
- Choice of gas furnace or heat pump heating for optimizing operational costs based on utility rates.

### » Technology that matters

- Year round comfort and energy savings with Variable Refrigerant Temperature (VRT) technology.
- Corrosion resistant up to 1000<sup>†</sup> hours Daikin Blue Fin coating as factory standard.
- Refrigerant cooled inverter technology keeps PCB cool independent of ambient temperature.

### » Engineered for ease of maintenance

- New service window provides ease of access to the multi-functional display without removing the main electrical panel. The built-in multi-functional display is utilized for commissioning and maintenance. Digital display and quickly converts to digital gauges to provide refrigerant pressure and temperatures.

- Multi-functional display eliminates the need to connect gauges during regular maintenance checks.
- Ease of commissioning with ability to program off site and upload using configurator tool.
- Field performable intermittent outdoor fan operation to help minimize snow accumulation on fan blades when the system is in thermal off.
- Seamless integration with M, P, and T-series indoor units.
- Compatible with the full suite of Daikin VRV controls.
- Outstanding 10-Year Parts Warranty\* as standard.



\* Complete commercial warranty details available from your local distributor or manufacturer's representative or at [www.daikincomfort.com](http://www.daikincomfort.com) or [www.daikinac.com](http://www.daikinac.com)

<sup>†</sup> When tested in accordance to ASTM B117 methodology.

\*\* Refer to engineering manuals for design rules and pipe sizes.

# VRV IV X: ADAPTING VRV TO NORTH AMERICAN MARKET NEEDS



## GAS FURNACE CONNECTIVITY

Expanding VRV into applications that were limited to gas-based heating, VRV IV X is the first 3-phase dual-fuel variable refrigerant flow system in North America that integrates with communicating gas furnaces.

The VRV IV X Heat Pump offers outstanding design flexibility when connected to Daikin communicating 80%, 96%, and 97% AFUE gas furnaces and CXTQ rate. The new VRV IV X Heat Pump enables the use of VRV technology to provide utility cost based heating solutions. With the flexibility to switch between electric heat pump heating and gas heating, operational costs can be optimized to building owner's choice for a heating source.

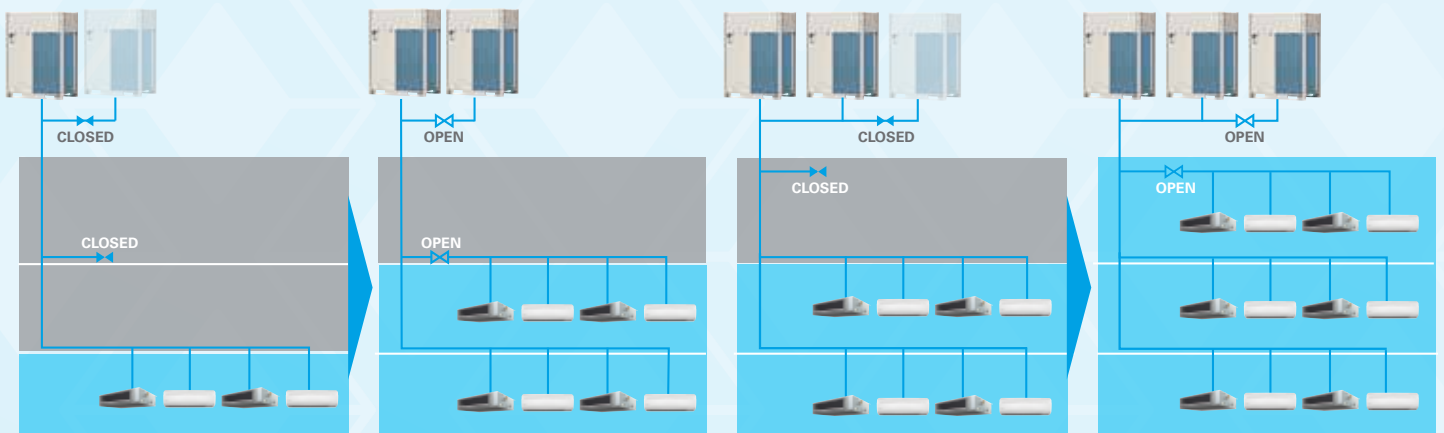


- » Space-saving with ability to connect multiple gas furnaces to one outdoor unit.
- » 14 selectable settings.
- » Customizable changeover temperatures to switch from heat pump to gas heat.
- » Ability to provide system-wide heating independent of outdoor ambient temperature.

## PHASED INSTALLATION

VRV IV X Heat Pump delivers enhanced design flexibility thanks to its ability to expand with the building's phased construction.

- » Expand the system from a single to a dual module or from dual to triple module without changes to main pipe sizes that are already installed.
- » Help reduce initial capital and design complexity compared to systems that do not offer phased installation.
- » Optimize piping design, branch selector boxes, and indoor units per phase of installation.



# Core technologies

# VRV IV X

1

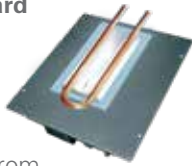


**Service Window** for access to multi-functional digital display for easy commissioning and troubleshooting.

3

**Inverter Board Cooled by Refrigerant Circuit.**

Minimum influence on electronics from ambient temperature. Section of the coil in the unit is permanently set as condenser for cooling of the inverter board.



1

2

2

**Special Coating** applied on printed circuit board for protection against dust and water.

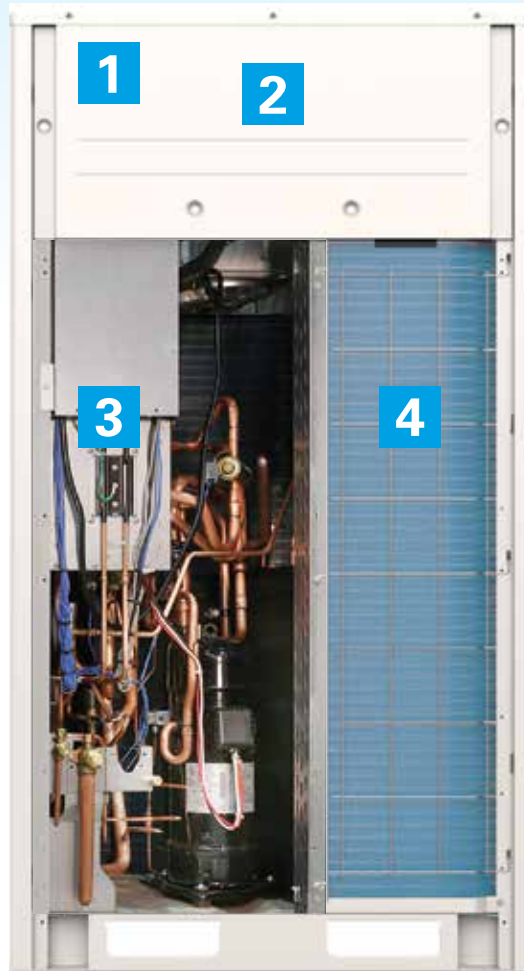
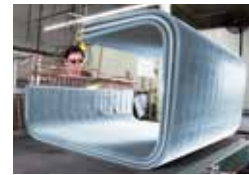


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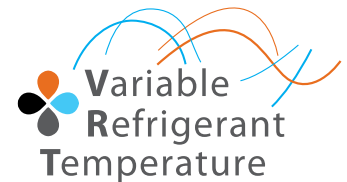
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**4-Sided, Corrosion Protected Heat Exchanger Coil.** The VRV IV X comes as standard with a corrosion resistant coil coating — 1000 hr of salt spray testing according to ASTM B117.



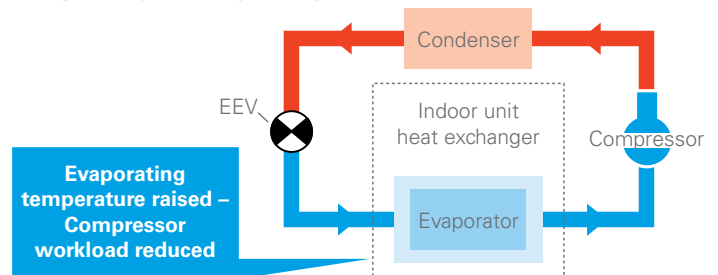
## VRT (Variable Refrigerant Temperature) — STATE-OF-THE-ART ENERGY-SAVING TECHNOLOGY FOR VRV



### ADAPTIVE AND LEARNING VRT

The new VRV IV X system features a newly enhanced learning VRT technology. The new learning VRT technology, in addition to helping with annual energy efficiency and maintaining comfort, provides features that enable time-based learning to adjust cooling and heating capacities to provide a stable capacity to the indoor units. The feature must be activated through field setting changes.

Refrigerant cycle during cooling





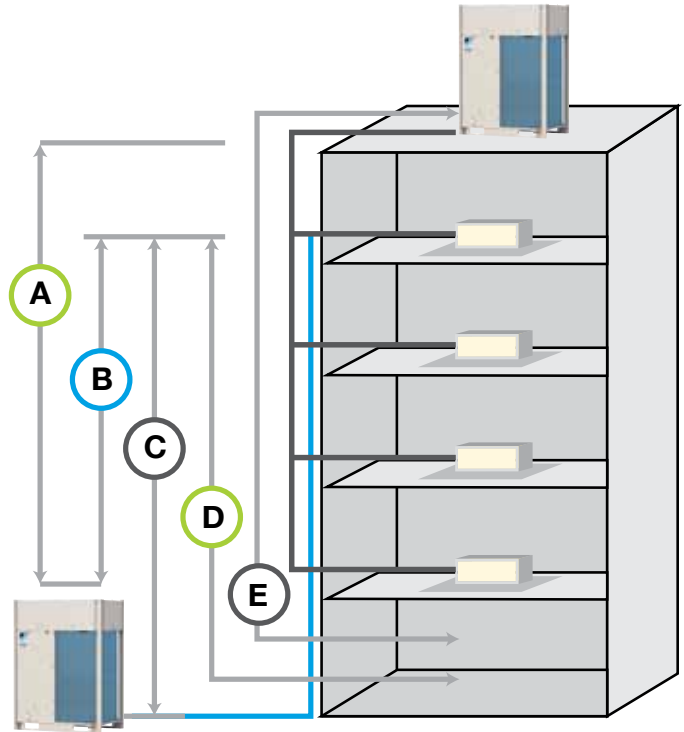
# Specifications

PIPING LIMITATIONS Liquid Line Max (ft)		VRV IV X	
		Heat Pump	Heat Recovery
<b>A</b>	Vertical Drop	164 (295) <sup>1</sup>	
<b>B</b>	Between IDU	100 (49) <sup>3</sup>	
<b>C</b>	Vertical Rise	130 (295) <sup>1</sup>	130 (195) <sup>1</sup>
<b>D</b>	From 1st Joint	130 (295) <sup>2</sup>	
<b>E</b>	Linear Length	540	
Total Network		3280	

<sup>1</sup> Field setting changes and upsizing are required above 164 ft. (vertical drop) and 130 ft. (vertical rise). Refer to Installation Manual for details.

<sup>2</sup> Upsizing is required for extension up to 295 ft. Refer to Installation Manual for details.

<sup>3</sup> Limitations may apply above 49 ft for heat recovery models. Refer to Installation Manual for details.

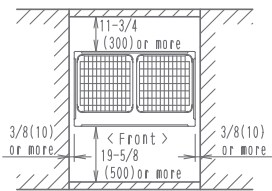


## VRV IV X INSTALLATION SPACE

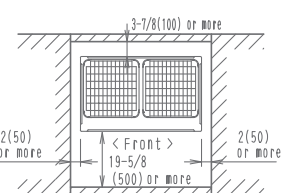
- » During installation, install the units using the most appropriate of the patterns shown in the figure for the location in question, taking into consideration human traffic and wind.
- » If the number of units installed is more than that shown in the pattern in the figure, install the units so that there is no air short circuiting.
- » Consider the space needed for the refrigerant piping when installing the units, as determined by local codes.
- » If the space requirements in the figure do not apply, contact your contractor or Daikin directly.
- » The installation space requirement shown in the figure is a reference for cooling. Refer to Installation Manual for further details.

### For single unit installation

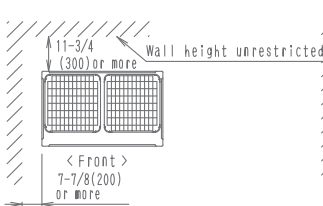
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#### < Pattern 2 >

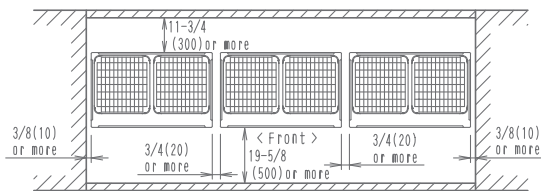


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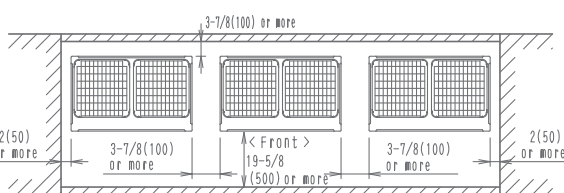


### For installation in rows

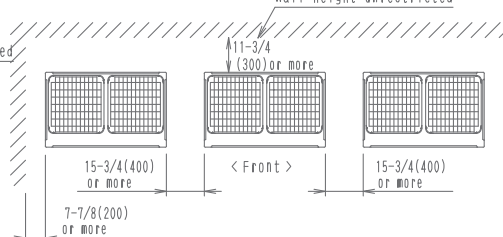
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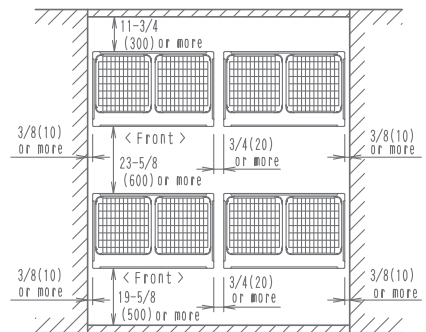


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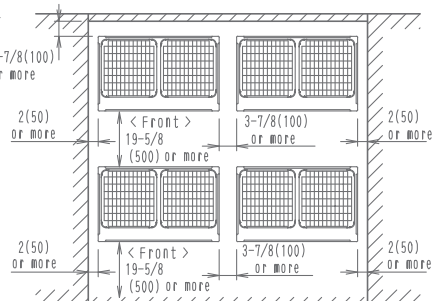


### For centralized group layout

#### < Pattern 1 >



#### < Pattern 2 >



# Specifications

## TECHNICAL DATA FOR VRV IV X RXYQ\_XATA/XAYDA HEAT PUMP OUTDOOR UNITS

		6 Ton	8 Ton	10 Ton	12 Ton	14 Ton	16 Ton	18 Ton	20 Ton	
Model	208-230V/3Ph/60Hz	RXYQ72XATJA	RXYQ96XATJA	RXYQ120XATJA	RXYQ144XATJA	RXYQ168XATJA	RXYQ192XATJA	RXYQ216XATJA	RXYQ240XATJA	
	460V/3Ph/60Hz	RXYQ72XAYDA	RXYQ96XAYDA	RXYQ120XAYDA	RXYQ144XAYDA	RXYQ168XAYDA	RXYQ192XAYDA	RXYQ216XAYDA	RXYQ240XAYDA	
Combination							1 x RXYQ120X 1 x RXYQ72X	1 x RXYQ120X 1 x RXYQ96X	2 x RXYQ120X	
Performance	Rated Cooling Capacity	BTU/h	69,000	92,000	114,000	138,000	158,000	184,000	206,000	228,000
	Rated Heating Capacity	BTU/h	73,000	103,000	129,000	154,000	174,000	206,000	230,000	256,000
	Sound Pressure	dB(A)	58	61		64	65	63	64	
	IEER (Ducted / Non-Ducted)		20.7 / 25.8	22.5 / 27.3	22.0 / 25.4	22.6 / 24.8	19.8 / 22.6	21.2 / 22.2	21.1 / 20.5	20.9 / 20.8
	Airflow	CFM	5,544	5,827	6286	8,228		5544 + 6286	5827 + 6286	6286 + 6286
Fan ESP, Standard/Max	in. Wg	0.12 / 0.32								
Compressor	Compressors, all inverter	Qty	1			2				
	Revolutions per minute	RPM	7668	7650	7746	7008 + 7608	7680 + 8280	7668, 7746	7650, 7746	7746, 7746
	Capacity Control Range	%	20-100	16-100	15-100	11-100	10-100	17-100	15-100	
Refrigerant Piping, Layout	Maximum Vertical Pipe Length Above Unit	ft.	164 (295 With Field Setting)							
	Maximum Vertical Pipe Length Below Unit	ft.	130 (295 With Field Setting)							
	Maximum Vertical Pipe Length Between IDU	ft.	100							
	Maximum Actual Pipe Length	ft.	540							
	Maximum Equivalent Pipe Length	ft.	620							
Maximum Total Pipe Length	ft.	3,280								
Refrigerant Piping, Connections	Liquid Pipe, Main Line	in.	Ø3/8 (9.5) C1220T (Brazeing Connection)		Ø1/2 (12.7) C1220T (Brazeing Connection)		Ø5/8 (15.9) C1220T (Brazeing Connection)			
	Suction Gas Pipe, Main Line	in.	Ø3/4 (19.1) C1220T (Brazeing Connection)	Ø7/8 (22.2) C1220T (Brazeing Connection)	Ø1-1/8 (28.6) C1220T (Brazeing Connection)					Ø1-3/8 (34.9) C1220T (Brazeing Connection)
Connection Ratio	Standard Connectable Indoor Unit Ratio	%	50 - 200							
	Maximum Number of Indoor Units	Qty	12	16	20	25	29	33	37	41
Electrical	Maximum Overcurrent Protection, MOP (RXYQ_XAT / RXYQ_XAY)	A	35 / 20	45 / 25		60 / 35	60 / 35	35 + 45 / 20 + 25	45 + 45 / 25+25	45 + 45 / 25 + 25
	Minimum Circuit Amps, MCA (RXYQ_XAT / RXYQ_XAY)	A	27.6 / 12.3	36.3 / 20.6	36.3 / 20.6	55.1 / 25.9	55.1 / 25.9	27.6 + 36.3 / 12.3 + 20.6	36.3 + 36.3 / 20.6 + 20.6	36.3 + 36.3 / 20.6 + 20.6
	Compressor Rated Load Amps, RLA (RXYQ_XAT / RXYQ_XAY)	A	15.7 / 7.1	23.8 / 10.2	26.2 / 11.7	16.7 + 16.7 / 7.6 + 7.6	18.8 + 18.8 / 8.5 + 8.5	15.7 + 26.2 / 7.1 + 11.7	23.8 + 26.2 / 10.2 + 11.7	26.2 + 26.2 / 11.7 + 11.7
Unit	Factory Refrigerant Charge	lbs.	13	22.7	22.9	18.1	17.2	13.0 + 22.9	22.7 + 22.9	22.9 + 22.9
	Weight (RXYQ_XAT / RXYQ_XAY)	lbs.	435 / 451	525 / 553	528 / 556	695 / 709		435 + 528 / 451 + 556	525 + 528 / 553 + 556	528 + 528 / 556 + 556
	Dimensions (H x W x D)	in.	66-11/16 x 36-11/16 x 30-3/16	66-11/16 x 48-7/8 x 30-3/16				66-11/16 x 48-7/8 x 30-3/16 + 66-11/16 x 36-11/16 x 30-3/16	(66-11/16 x 48-7/8 x 30-3/16) x 2	

## OPERATION RANGE FOR ALL VRV IV X HEAT PUMP OUTDOOR UNITS

Cooling °F DB (°C DB)	23* – 122°F DB (-5 – 50°C DB)
Heating °F WB (°C DB)	-4 – 60°F DB (-20 – 15.5°C DB)

\* Cooling operation for VRV IV X Heat Pump single module systems (RXYQ72/96/120/144/168X) can be extended down to 10°F from the standard limitation of 23°F under defined conditions. Contact your local Daikin manufacturer's representative or distributor for details.

22 Ton	24 Ton	26 Ton	28 Ton	30 Ton	32 Ton	34 Ton
RXYQ264XATJA	RXYQ288XATJA	RXYQ312XATJA	RXYQ336XATJA	RXYQ360XATJA	RXYQ384XATJA	RXYQ408XATJA
RXYQ264XAYDA	RXYQ288XAYDA	RXYQ312XAYDA	RXYQ336XAYDA	RXYQ360XAYDA	RXYQ384XAYDA	RXYQ408XAYDA
1 x RXYQ144X 1 x RXYQ120X	2 x RXYQ144X	1 x RXYQ168T 1 x RXYQ144T	2 x RXYQ168X	3 x RXYQ120X	1 x RXYQ168X 1 x RXYQ120X 1 x RXYQ96X	1 x RXYQ168X 1 x RXYQ144X 1 x RXYQ96X
252,000	274,000	296,000	312,000	342,000	356,000	372,000
282,000	308,000	334,000	342,000	372,000	396,000	435,000
66	67	68		66	68	
19.6 / 20.3	19.6 / 20.1	18.8 / 19.9	18.5 / 20.6	18.5 / 19.4	18.5 / 21.1	19.0 / 21.1
6286 + 8228	8228 + 8228		6286 + 6286 + 6286		5827 + 6286 + 8228	6286 + 6286 + 8228
0.12 / 0.32						
3	4			3	4	5
7746, (7008, 7608)	(7008, 7608), (7008, 7608)	(7008, 7608), (7680, 8280)	(7680, 8280), (7680, 8280)	7746, 7746, 7746	7650, 7746, (7680, 8280)	7650, (7008, 7608), (7680, 8280)
13-100	11-100	10-100		15-100	13-100	12-100
164 (295 With Field Setting)						
131 (295 With Field Setting)						
100						
541						
620						
3,280						
Ø3/4 (19.1) C1220T (Brazeing Connection)						
Ø1-3/8 (34.9) C1220T (Brazeing Connection)				Ø1-5/8 (41.3) C1220T (Brazeing Connection)		
50 - 200						
45	49	54	58	62	64	
45 + 60 / 25 + 35	60 + 60 / 35 + 35			45 + 45 + 45 / 25 + 25 + 25	45 + 45 + 60 / 25 + 25 + 35	45 + 60 + 60 / 25 + 35 + 35
36.3 + 55.1 / 20.6 + 25.9	55.1 + 55.1 / 25.9 + 25.9			36.3 + 36.3 + 36.3 / 20.6 + 20.6 + 20.6	36.3 + 36.3 + 55.1 / 20.6 + 20.6 + 25.9	36.3 + 55.1 + 55.1 / 20.6 + 25.9 + 25.9
26.2 + (16.7 + 16.7) / 11.7 + (7.6 + 7.6)	(16.7 + 16.7) x 2 / (7.6 + 7.6) x 2	(16.7 + 16.7) + (18.8 + 18.8) / (7.6 + 7.6) + (8.5 + 8.5)	(18.8 + 18.8) x 2 / (8.5 + 8.5) x 2	26.2 + 26.2 + 26.2 / 11.7 + 11.7 + 11.7	23.8 + 26.2 + (18.8 + 18.8) / 10.2 + 11.7 + (8.5 + 8.5)	23.8 + (16.7 + 16.37) + (18.8 + 18.8) / 10.2 + (7.6 + 7.6) + (8.5 + 8.5)
22.9 + 18.1	18.1 + 18.1	18.1 + 17.2	17.2 + 17.2	22.9 + 22.9 + 22.9	22.7 + 22.9 + 17.2	22.7 + 18.1 + 17.2
528 + 695 / 556 + 709	695 + 695 / 709 + 709			528 + 528 + 528 / 525 + 528 + 695	525 + 528 + 695 / 553 + 556 + 709	525 + 695 + 695 / 553 + 709 + 709
(66-11/16 x 48-7/8 x 30-3/16) x 2				(66-11/16 x 48-7/8 x 30-3/16) x 3		

## COMMERCIAL • RENOVATION • NEW CONSTRUCTION

### About Daikin:

#### **DAIKIN**

Daikin Industries, Ltd. (DIL) is a global Fortune 1000 company which celebrated its 95th anniversary in May 2019. The company is recognized as the leading HVAC (Heating, Ventilation, Air Conditioning) manufacturer in the world. DIL is primarily engaged in developing indoor comfort systems and refrigeration products for residential, commercial and industrial applications. Its consistent success is derived, in part, from a focus on innovative, energy-efficient and premium quality indoor climate and comfort management solutions.

Before purchasing an appliance in this document, read important information about its estimated annual energy consumption, yearly operating cost, or energy efficiency rating that is available from your retailer.

### WARNINGS:

- » Always use a licensed installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- » Use only those parts and accessories supplied or specified by Daikin. Ask a licensed contractor to install those parts and accessories. Use of unauthorized parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- » Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.
- » For any inquiries, contact your local Daikin sales office.

#### **DAIKIN**

Our continuing commitment to quality products may mean a change in specifications without notice.

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