

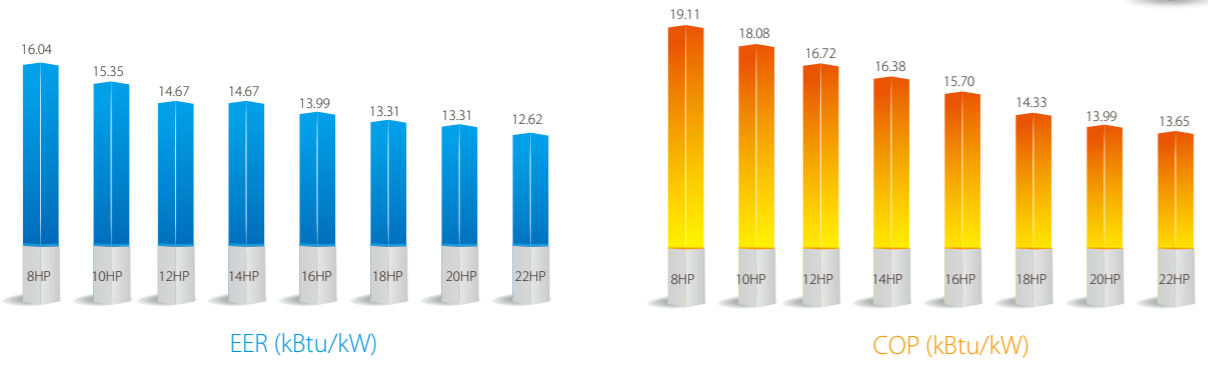
# Super Plus Series Heat Pump VRF



# High Efficiency

## High EER and COP

DC compressors and fan motors together with a high-efficiency heat exchanger combine to give the Super Plus Series top-class energy efficiency in cooling and heating.



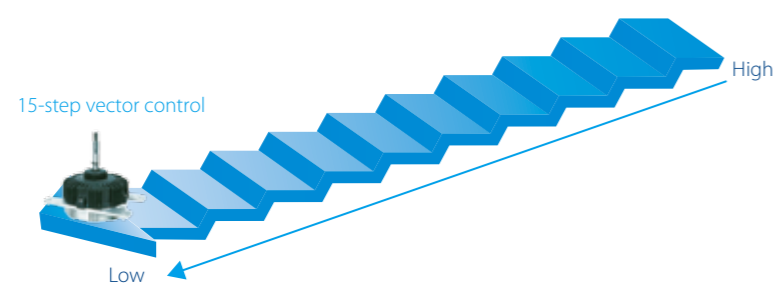
## All DC Inverter Compressors

At the heart of the Super Plus Series outdoor unit lies a world-leading DC inverter scroll compressor. The compressor's innovative design and numerous high performance features reduce power consumption by 25%.



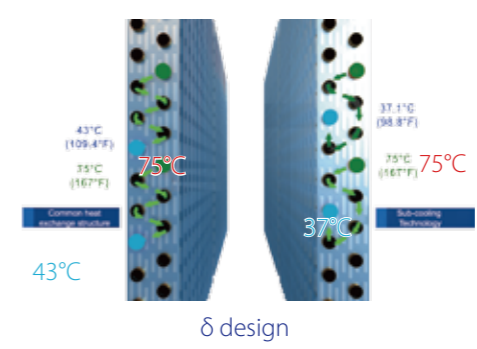
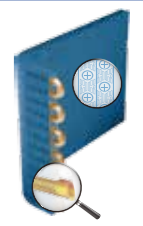
## All DC Fan Motors

Fan speed is controlled according to the system pressure and system load, minimizing energy consumption.



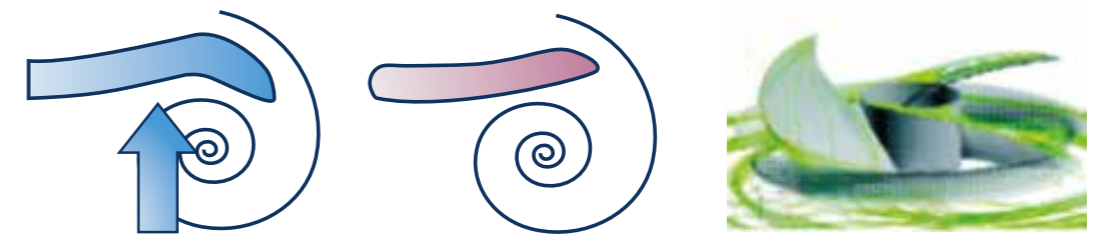
## High Efficiency Heat Exchanger

Newly designed fins enlarge the heat exchange area and decrease air resistance, enhance heat exchange performance and save more energy. Hydrophilic fins and internally threaded copper pipes optimize heat exchange efficiency.  $\delta$  design increases the degree of liquefaction in the condenser and improves heat-exchange efficiency.



## Newly Designed Fan

A new blade with sharp edges and a slight curve increases the airflow rate and lowers vibration and airflow resistance.

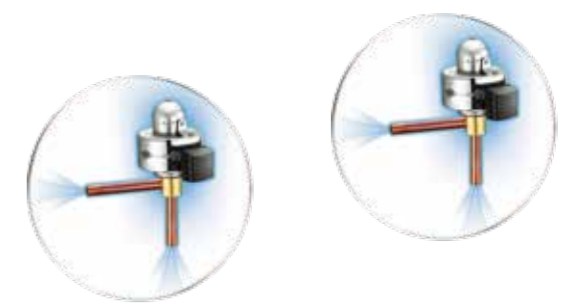


## Precise Control

Multiple solenoid valves ensure precise temperature control, stable and efficient operation, and improved comfort.

## Dual EXVs Control

Dual EXVs in one system, each EXV part achieves 480 Pulse rate to precisely adjust refrigerant flow.



# Wide Application Range

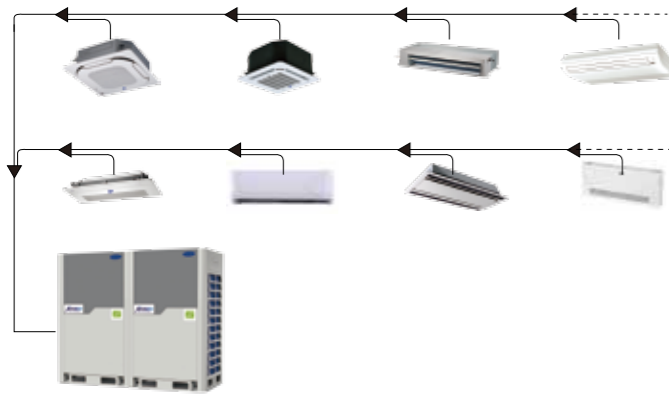
## Wide Capacity Range

The Super Plus series has an extensive range of capacities, from 8HP to 88HP(max.72HP for tropical model combination), meeting all customer requirements from small to large buildings.



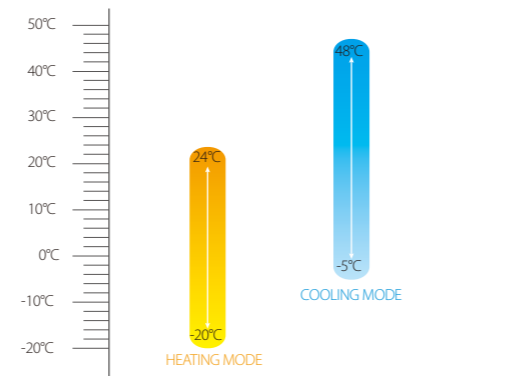
## Wide Range of Indoor Units

Carrier provides 12 types and more than 100 models of VRF indoor units to meet varied customer requirements in a wide range of locations including shopping malls, hospitals, office buildings, hotels and airports.



## Wide Operation Range

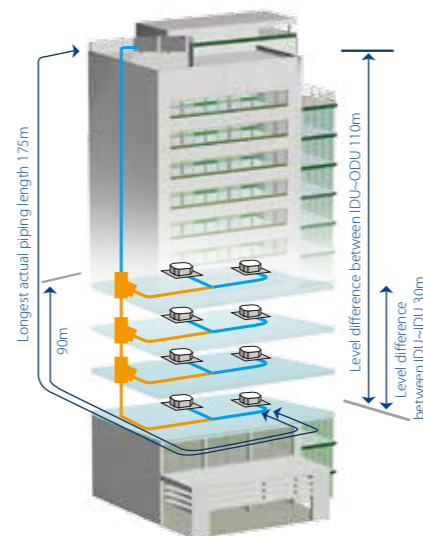
Super Plus Series operates stably under extreme conditions, ranging from minus 20° C to 48° C. (-20° C to 54° C for tropical model).



## Long Piping Capability

Piping length	Capability
Total piping length	1000m
Longest length - actual (equivalent)	175m (200m)
Longest length after first branch	90m*
Largest height difference between indoor and outdoor units - ODU up (down)	90m (110m)
Largest height difference between indoor units	30m

\*The longest length after first branch is 40m as standard but can be extended to up to 90m under certain conditions. Please contact your local Carrier sales companies for further information.



# High Reliability

## Duty Cycling

Duty cycling equalizes the running time of the outdoor units in a multiple-unit system and of the compressors in each unit, significantly extending compressor lifespan.



## Backup

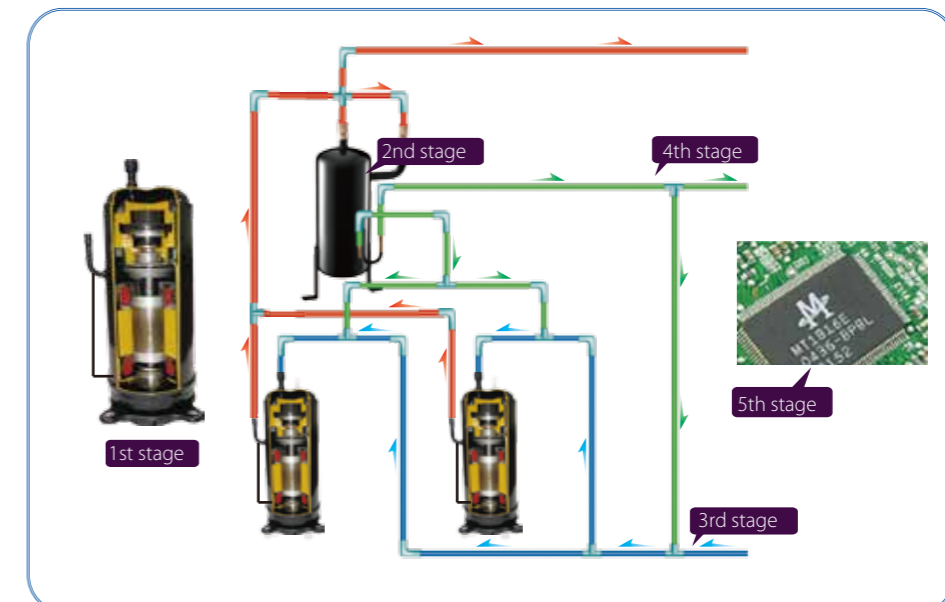
In a multi-unit system, if one module fails, the other modules provide backup so that the system can continue operating.



## Precise Oil Control Technology

Five stages of oil control technology ensure all outdoor compressor oil is always kept at a safe level, eliminating any compressor oil shortage problems.

- The 1st stage:** Compressor internal oil separation.
- The 2nd stage:** High-efficiency centrifugal oil separator (with separation efficiency of up to 99%) ensures that oil is separated from the discharge gas and returned to the compressors in a timely fashion.
- The 3rd stage:** Oil balance pipes between compressors ensure even oil distribution to keep compressors running normally.
- The 4th stage:** Oil balance pipes among modules ensure even oil distribution among modules.
- The 5th stage:** Auto oil return program monitors the running time and system status to ensure reliable oil return.



# Enhanced Comfort

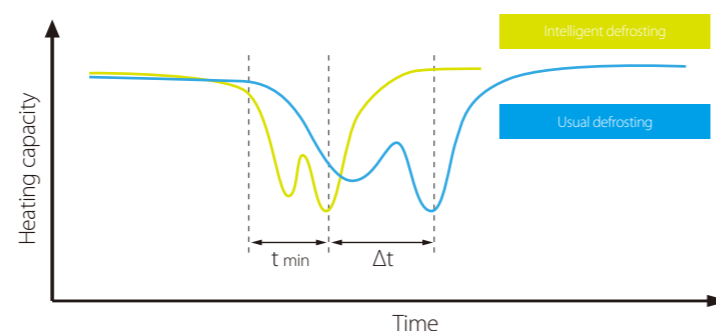
## Night Silent Mode

The night silent mode feature, which is easily configured on the outdoor unit's PCB, includes various scheduling options that can be used to reduce noise levels at times when low noise operation is required.



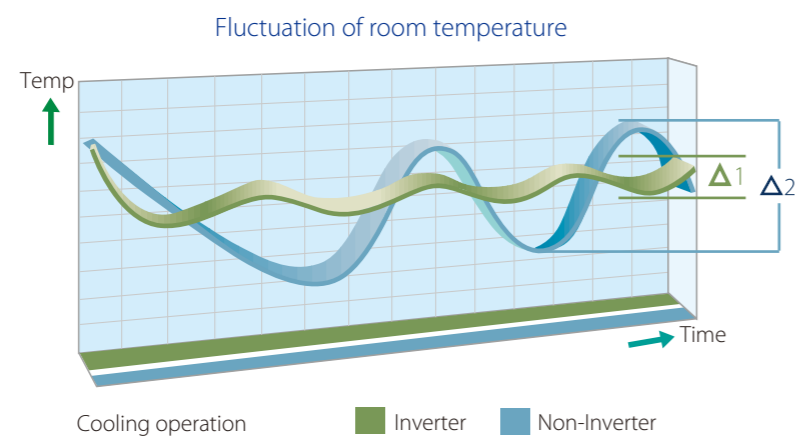
## Intelligent Defrosting Technology

The intelligent defrosting program calculates the time required for defrosting according to the actual system status, eliminating heat losses from unnecessary defrosting. A specialized defrosting valve reduces time required for defrosting to as little as four minutes.



## Rapid Cooling or Heating

The DC inverter compressor reaches full capacity rapidly, providing quicker cooling or heating with lower levels of temperature fluctuation during the cooling/heating operation.



# Anti-corrosion Protection

Outdoor units are given anti-corrosion treatment for non-extreme conditions as standard and can also be customized with heavy anti-corrosion treatment on steel sheets, grills, coil fins, electric control box case and screws/bolts for surface protection against corrosive air, acid rain and saline air (for installations in coastal regions) to extend overall useful life.

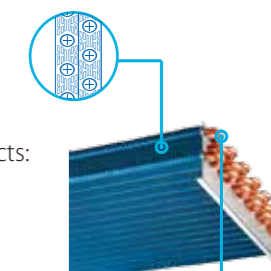
The integrity of the anti-corrosion treatment is ensured by subjecting major components and parts to salt mist testing, moisture and heating testing and light aging testing.



## Heat Exchanger Aluminum Foil

Standard products:  
72h of neutral salt mist

Heavy anti-corrosion products:  
1000h of neutral salt mist  
140h of acid salt mist



## Motor

Standard products:  
72h of neutral salt mist

Heavy anti-corrosion products:  
240h of neutral salt mist



## Copper

Standard products:  
24h of neutral salt mist

Heavy anti-corrosion products:  
120h of neutral salt mist



## Painted Sheet Metal

Standard products:  
500h of neutral salt mist  
1000h of moisture and heating test  
500h of light aging test

Heavy anti-corrosion products:  
1000h of neutral salt mist  
2000h of moisture and heating test  
720h of light aging test



## Electric Control Box Case

Standard products:  
96h of neutral salt mist

Heavy anti-corrosion products:  
240h of neutral salt mist



## Screws / Bolts / Gaskets

Standard products:  
300h of neutral salt mist

Heavy anti-corrosion products:  
720h of neutral salt mist



## Compressor / Motor Bolts

Standard products:  
72h of neutral salt mist

Heavy anti-corrosion products:  
168h of neutral salt mist

## Specifications (Super Plus)



8-12HP

Model name		38VF008H117015 38VF008H116015 38VF008H119015	38VF010H117015 38VF010H116015 38VF010H119015	38VF012H117015 38VF012H116015 38VF012H119015	38VF014H117015 38VF014H116015 38VF014H119015	
Power supply		220V/3/60Hz 460V/3/60 380-415V/3/50(60)Hz				
Cooling	Capacity	kW	25.2	28.0	33.5	40.0
		kBtu/h	86.0	95.6	114.3	136.5
	Power input	kW	5.36	6.22	7.79	9.30
	EER	KBtu/h/kW	16.04	15.35	14.67	14.67
	IPLV	KBtu/h/kW	27.30	27.80	26.61	26.27
Heating	Capacity	kW	27.0	31.5	37.5	45.0
		kBtu/h	92.1	107.5	128.0	153.6
	Power input	kW	4.82	5.94	7.65	9.38
	COP	KBtu/h/kW	19.11	18.08	16.72	16.38
Connectable indoor unit	Total capacity	50~130% of outdoor unit capacity				
	Max. quantity	13	16	20	23	
Compressor	Type	DC inverter				
	Quantity	1	1	1	2	
	Crankcase heater	W	27.6x2	27.6x2	27.6x2	27.6x4
	Refrigerant oil type	FVC68D				
	Refrigerant oil charge	ml	500	500	500	500x2
Fan motor	Type	DC motor				
	Quantity	1	1	1	2	
	Insulation class	E				
	Safe class	IP23				
Static pressure	Pa	0-20 (default)				
	Pa	20-60 (customized)				
Fan	Material	Plastic				
	Type	Axial				
	Quantity	1	1	1	2	
Outdoor coil	Number of rows	2	2	3	2	
	Fin type	Hydrophilic aluminum				
	Tube OD	mm	Φ7.94			
	Tube type	Inner-grooved				
Number of circuits	22					
Refrigerant	Type	R410A				
	Factory charging	kg	9	9	11	13
Pipe connection	Liquid pipe	mm	Φ12.7	Φ12.7	Φ15.9	Φ15.9
	Gas pipe	mm	Φ25.4	Φ25.4	Φ28.6	Φ31.8
	Oil balance pipe	mm	Φ8			
Design pressure(High/low)	MPa	4.4/2.6				
	PSI	640/380				
Air flow rate	m <sup>3</sup> /h	12000	12000	12000	14000	
Sound pressure level	dB(A)	58	59	60	62	
Net dimension (WxHxD)	mm	990x1635x790			1340x1635x790	
Packing size (WxHxD)	mm	1090x1805x860			1405x1805x855	
Net weight (460V)	kg	326	334	369	369	
Gross weight (460V)	kg	353	361	396	396	
Operating temperature range	°C	Cooling: -5~48; Heating: -20~24				

## Notes:

- Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
- Diameters given are those of the unit's stop valve.
- Sound pressure level is measured at a position 1m in front of the unit and 1.3m above the floor in a semi-anechoic chamber.
- The data in this catalogue may be changed without notice for further improvement on quality and performance.
- IPLV are complied with GB 21454 - 2008.

## Specifications (Super Plus)



14-22HP

Model name		38VF016H117015 38VF016H116015 38VF016H119015	38VF018H117015 38VF018H116015 38VF018H119015	38VF020H117015 38VF020H116015 38VF020H119015	38VF022H117015 38VF022H116015 38VF022H119015	
Power supply		220V/3/60Hz 460V/3/60 380-415V/3/50(60)Hz				
Cooling	Capacity	kW	45.0	50.0	56.0	61.5
		kBtu/h	153.6	170.6	191.1	209.9
	Power input	kW	10.98	12.82	14.51	16.44
	EER	KBtu/h/kW	13.99	13.31	13.31	12.62
	IPLV	KBtu/h/kW	25.93	25.93	25.59	25.25
Heating	Capacity	kW	50.0	56.0	63.0	69.0
		kBtu/h	170.6	191.1	215.0	235.5
	Power input	kW	10.87	13.18	15.29	17.12
	COP	KBtu/h/kW	15.70	14.33	13.99	13.65
Connectable indoor unit	Total capacity	50~130% of outdoor unit capacity				
	Max. quantity	26	29	33	36	
Compressor	Type	DC inverter				
	Quantity	2				
	Crankcase heater	W	27.6x4			
	Refrigerant oil type	FVC68D				
	Refrigerant oil charge	ml	500x2			
Fan motor	Type	DC motor				
	Quantity	2				
	Insulation class	E				
	Safe class	IP23				
Static pressure	Pa	0-20 (default)				
	Pa	20-60 (customized)				
Fan	Material	Plastic				
	Type	Axial				
	Quantity	2				
Outdoor coil	Number of rows	2	2	3	3	
	Fin type	Hydrophilic aluminum				
	Tube OD	mm	Φ7.94			
	Tube type	Inner-grooved				
Number of circuits	22					
Refrigerant	Type	R410A				
	Factory charging	kg	13	13	16	16
Pipe connection	Liquid pipe	mm	Φ15.9	Φ19.1	Φ19.1	Φ19.1
	Gas pipe	mm	Φ31.8	Φ31.8	Φ31.8	Φ31.8
	Oil balance pipe	mm	Φ8			
Design pressure(High/low)	MPa	4.4/2.6				
	PSI	640/380				
Air flow rate	m <sup>3</sup> /h	14000	16000	16000	16000	
Sound pressure level	dB(A)	62	63	63	63	
Net dimension (WxHxD)	mm	1340x1635x790				
Packing size (WxHxD)	mm	1405x1805x855				
Net weight (460V)	kg	326	334	369	369	
Gross weight (460V)	kg	353	361	396	396	
Operating temperature range	°C	Cooling: -5~48; Heating: -20~24				

## Notes:

- Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
- Diameters given are those of the unit's stop valve.
- Sound pressure level is measured at a position 1m in front of the unit and 1.3m above the floor in a semi-anechoic chamber.
- The data in this catalogue may be changed without notice for further improvement on quality and performance.
- IPLV are complied with GB 21454 - 2008.

## Recommended combination table

Model	No. of Outdoor Units	No. of Compressors	Outdoor Unit Combination								Max No. of Connectable Indoor Unit	Capacity			
			8	10	12	14	16	18	20	22		Cooling		Heating	
												kW	kBtu/h	kW	kBtu/h
8	1	1	•								13	25.2	86.0	27	92.1
10	1	1		•							16	28	95.5	31.5	107.5
12	1	1			•						20	33.5	114.3	37.5	128.0
14	1	2				•					23	40	136.5	45	153.5
16	1	2					•				26	45	153.5	50	170.6
18	1	2						•			29	50	170.6	56	191.1
20	1	2							•		33	56	191.1	63	215.0
22	1	2								•	36	61.5	209.8	69	235.4
24	2	2			••						39	67	228.6	75	255.9
26	2	3		•				•			43	73	249.1	81.5	278.1
28	2	3		•					•		46	78	266.1	87.5	298.6
30	2	3		•						•	50	84	286.6	94.5	322.4
32	2	3		•						•	53	89.5	305.4	100.5	342.9
34	2	3			•					•	56	95	324.1	106.5	363.4
36	2	4							••		59	100	341.2	112	382.1
38	2	4						•		•	63	106.5	363.4	119	406.0
40	2	4							•	•	64	111.5	380.4	125	426.5
42	2	4								•	64	117.5	400.9	132	450.4
44	2	4								••	64	123	419.7	138	470.9
46	3	4			••					•	64	128.5	438.4	144	491.3
48	3	5		•				•		•	64	134.5	458.9	150.5	513.5
50	3	5		•					•	•	64	139.5	476.0	156.5	534.0
52	3	5		•						•	64	145.5	496.4	163.5	557.9
54	3	5		•						••	64	151	515.2	169.5	578.3
56	3	5			•					••	64	156.5	534.0	175.5	598.8
58	3	6							••	•	64	161.5	551.0	181	617.6
60	3	6						•		••	64	168	573.2	188	641.5
62	3	6							•	••	64	173	590.3	194	661.9
64	3	6								•	64	179	610.7	201	685.8
66	3	6								•••	64	184.5	629.5	207	706.3
68	4	6			••					••	64	190	648.3	213	726.8
70	4	7		•				•		••	64	196	668.8	219.5	748.9
72	4	7		•					•	••	64	201	685.8	225.5	769.4
74	4	7		•						•	64	207	706.3	232.5	793.3
76	4	7		•						•••	64	212.5	725.1	238.5	813.8
78	4	7			•					•••	64	218	743.8	244.5	834.2
80	4	8							••	••	64	223	760.9	250	853.0
82	4	8						•		•••	64	229.5	783.1	257	876.9
84	4	8							•	•••	64	234.5	800.1	263	897.4
86	4	8								•	64	240.5	820.6	270	921.2
88	4	8								••••	64	246	839.4	276	941.7

Notes:

Capacities are based on the following conditions:

Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

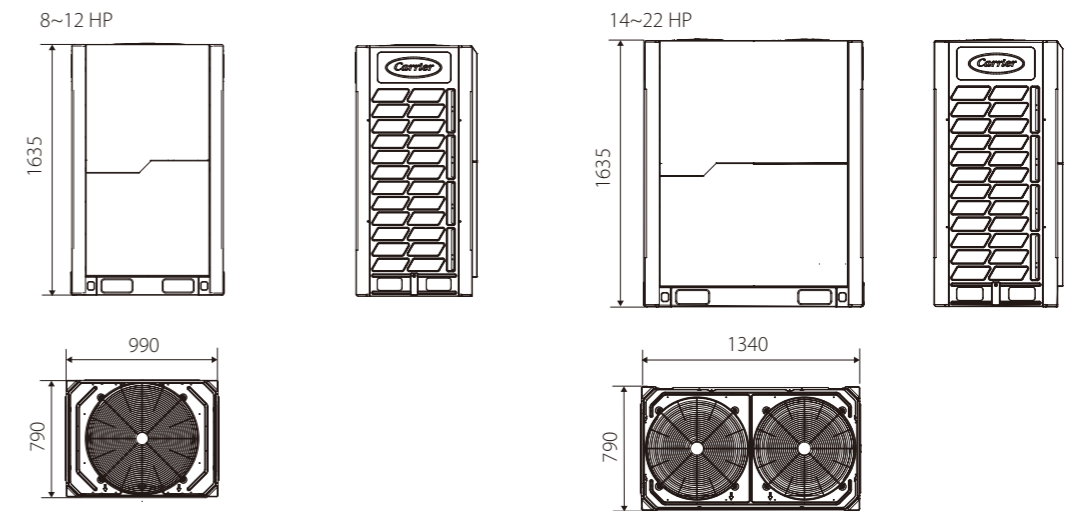
Piping length: Interconnecting piping length is 7.5m, level difference is zero.

The above combination models are factory-recommended models

## Dimensions

### Body dimension

Unit: in.(mm)



### Installation dimension

Unit: in.(mm)

