



United Technologies

AIR CONDITIONING SOLUTIONS



Carrier XPower VRF Systems

Taking comfort to a whole new dimension





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Carrier delivers efficient, dependable performance, inside and out.

Reliability

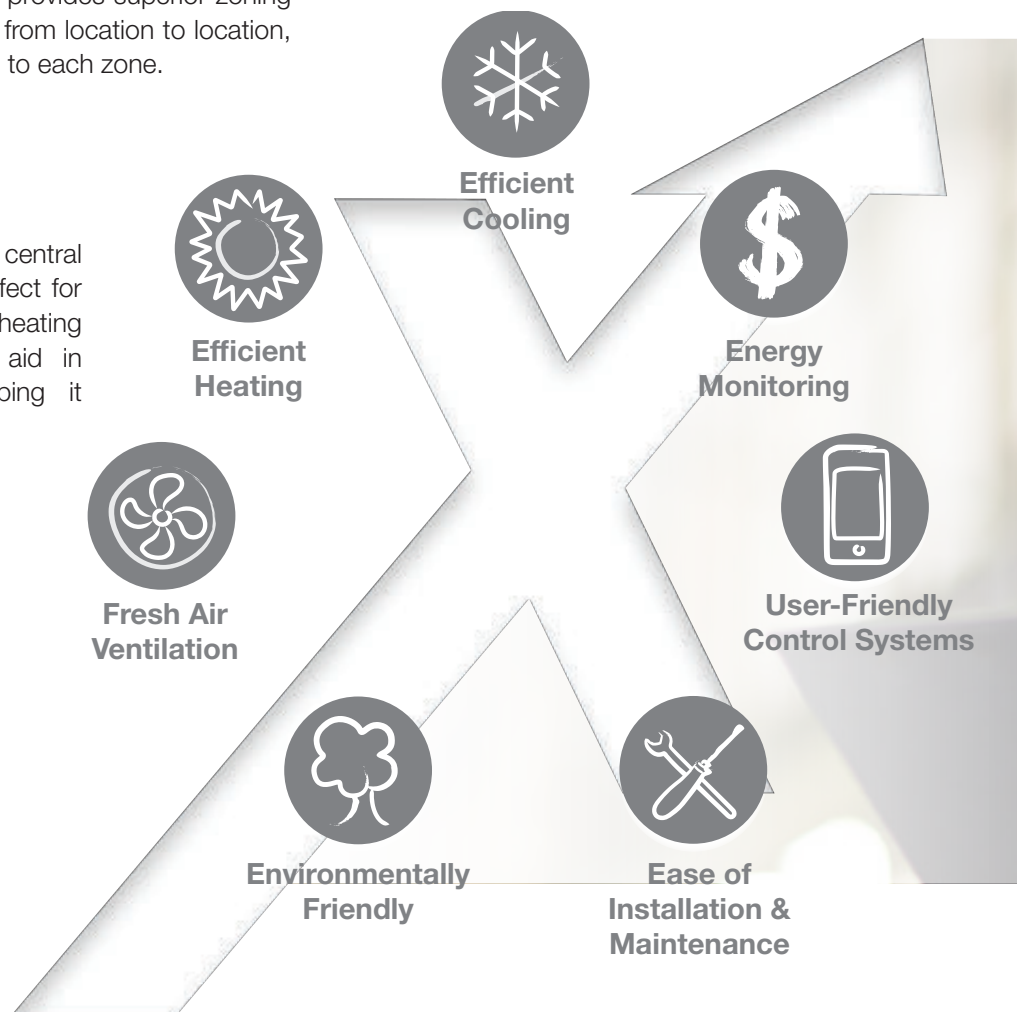
The operating sequence of the individual compressors is rotated, balancing their operating hours and distributing load evenly. Inverters reduce the risk of compressor failure and eliminate on/off power surges.

Functionality

A single VRF system can power up to 64 independent indoor units, depending on the system. This provides superior zoning because the refrigerant flow can vary from location to location, delivering only the necessary capacity to each zone.

Controllability

The entire system can be run from a central location or monitored remotely – perfect for diverse applications with a range of heating and cooling needs. Timely alerts aid in maintaining the system and keeping it running at its most efficient.





Benefits for the user

Infinite comfort

Achieved by fully controllable room temperature, a perfect alternative to traditional heating & cooling systems.

Infinite efficiency

High levels of efficiency via optimal load adjustment.

Infinite integration

Cooling, heating, fresh air ventilation all perfectly and conveniently attuned to one another within a single system.

Infinite reliability

Hassle-free operation based on intensive testing program for all systems.

A photograph of two construction workers, a man and a woman, wearing white hard hats and high-visibility safety vests. They are looking upwards and to the right, with the man gesturing with his hand. The background is a blurred industrial or construction site.

**CREATING
BENEFITS AROUND COMFORT**



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Benefits for the consultant

Absolute customisation

A wide range of indoors ensure that the customers' requirements are fully addressed.

Absolute control

Fully integrated controls network, allowing unlimited access to the system controls and its operation.

Absolute flexibility

A high degree of system flexibility, aided by a fully flexible piping specification and an extremely compact modular design.

Benefits for the installer

Simple

One supplier - one point of contact for a total solution: cooling, heating, & controls.

Versatile

Maximised installation flexibility.

Convenient

Easy access for all service and maintenance needs.

Assessable

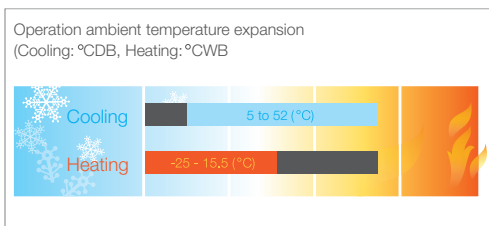
Simplified and swift commissioning.



Key Technologies

Innovative Compressor Technology

Xpower's infinitely variable, inverter driven control can continually adjust in real time, the operating speed of the compressors. This insures that the capacity output precisely matches that of the demand from the end user. The advantage of this control are optimized further by incorporating all inverter twin rotary compressors.



Increased Compressor Displacement

Increased compressor displacement extends the compressor's capacity output.

One single unit with two compressors can now achieve a capacity output of up to 20 HP.

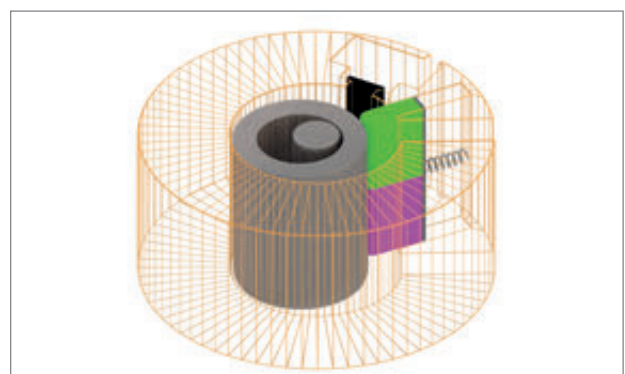
Increased operation range and a more precise control.

Dual Vane Technology

The new dual vane technology is unique to Xpower twin rotary compressors.

New design minimises pressure losses between high and low pressure chambers increasing system efficiency, whilst further enhancing compressor reliability.

Brand new "Diamond Like Carbon Coating" ensures maximum operations without the fear of increased mechanical wear and tear.



New dual vane and DLC technology ensures maximum performance and efficiency.



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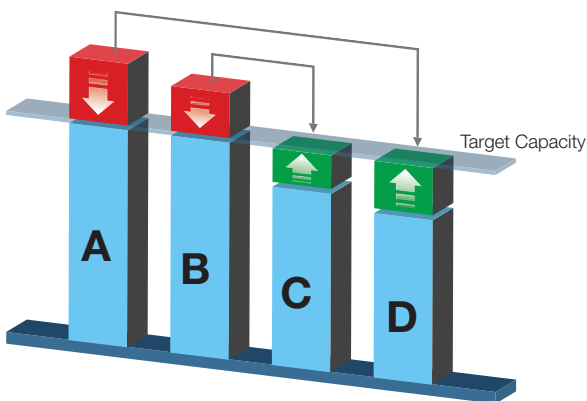
Intelligent Flow Technology

This unique control continually adjusts the operation of both indoor and outdoor units, based on the feedback from multiple sensors located throughout the system.

Refrigerating flow to each indoor unit is precisely controlled by the outdoor unit, ensuring even distribution of capacity throughout the entire system.

The evaporative and condensing temperature is continually adjusted automatically, to maintain an optimum indoor room temperature, regardless of the units load or its physical distance from the outdoor. This ensures optimum performance, whilst maximising system efficiency.

Excess capacity in units A & B can be re-distributed to units C & D, ensuring perfect operation throughout the entire system.

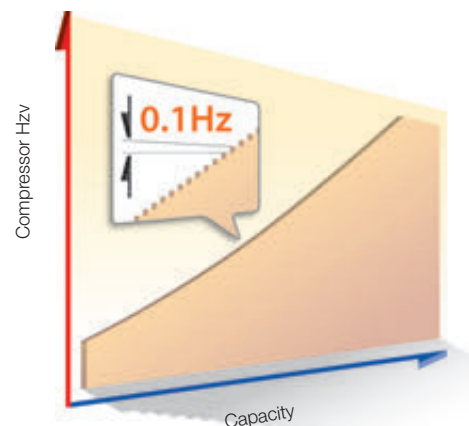


Xpower's "IFT" technology ensures that any surplus capacity can be re-distributed in order to achieve the optimum performance and efficiency throughout the entire system"

This unique technology ensures that the flow of refrigerant to the FCU's is precisely proportional to the demand of each individual indoor unit and where demand exceeds the output of the CDU, the refrigerant is evenly distributed throughout the indoor network, ensuring stable capacity regardless of the unit location within the building.

Infinite Variable Control

The control has the ability to adjust the compressor rotational speed in a near seamless 0.1 Hz steps. This control when matched with Xpower's newest and latest Twin Rotary compressors, allows the system to respond precisely to the capacity needs of the end user, whilst minimizing energy losses.



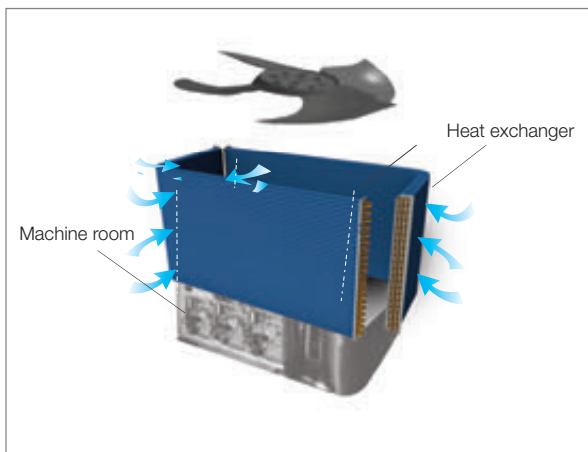
Innovation Heat Exchanger and Fan Blade Design

New 3-row heat exchanger design with reduced pipe size from 8mm to 7mm and an increase in the total number of passes, improves both system performance and efficiency.

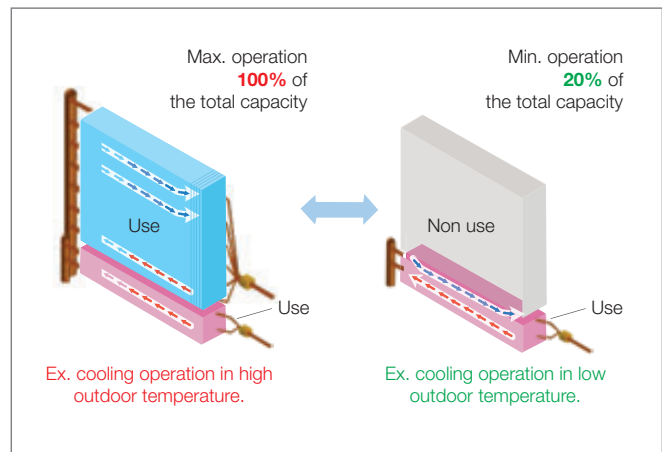
4-sided heat exchanger ensures maximum possible flow rate across the entire coil, maximizing system efficiency.

3-way variable heat exchanger design, allows the CDU to select the most efficient heat exchanger size, which precisely matches the indoor capacity load.

New Sub cooling heat exchanger increase system operating performance and allows the total piping length to reach a total of 1,000 m.



4-way heat exchanger realizing balanced airflow



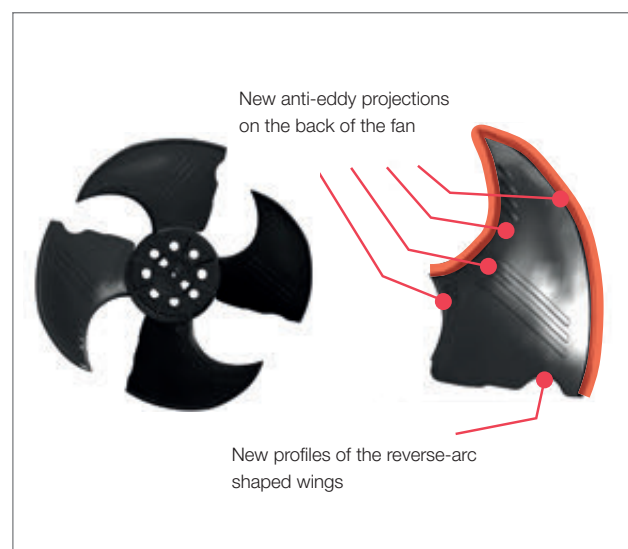
Variable heat exchanger

Outdoor Fan

New outdoor fan blade includes a unique profile, ensuring smoother uninterrupted air flow.

New propeller design reduces sound pressure level whilst maximizing the air flow volume.

Outdoor fan motor now incorporates a 3-phase motor to maximise performance and efficiency, whilst reducing the minimum circuit amps value of the outdoor unit.



Advanced blade shapes for a better air flow management



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Expanded Installation Flexibility

The new compact design of the Outdoor units gives increased performance that defies their compact module size. This delivers greater freedom in layout design and minimizes weight-related restrictions and allows for quicker installation.

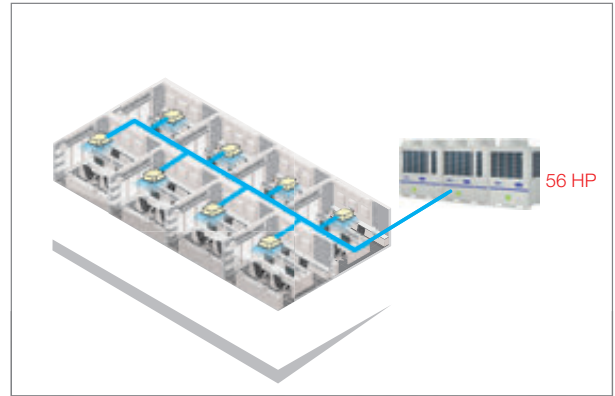
Compact design with reduced footprint.

Capacity up to 20HP can be covered with a single module, reducing pipe work and overall installation time.

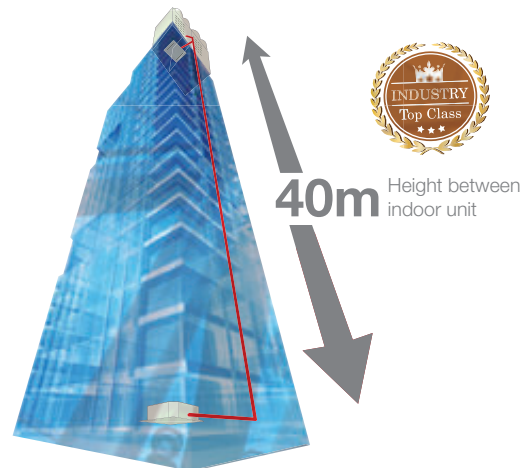
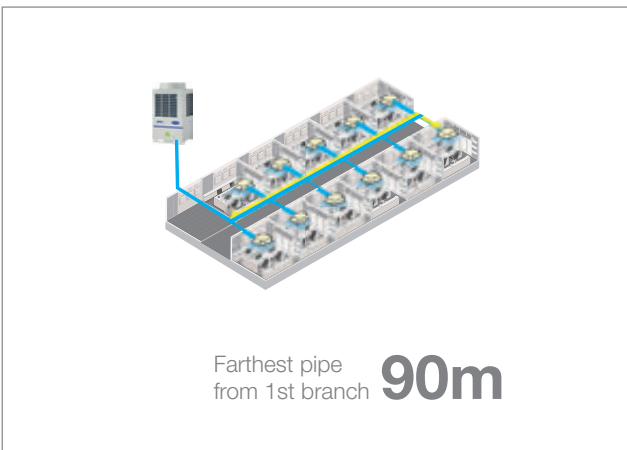
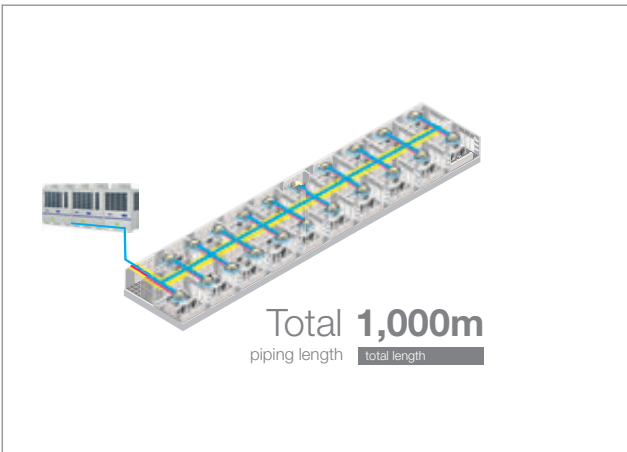
Expanding the maximum combination to 56 HP in one system, with up to 64 connectable indoor units.

Maximum piping length of 1,000 m, farthest equivalent length 235 m.

Maximum vertical distance between indoor units, which reaches up to 40 meters.



56 HP in one system, up to 64 connectable indoor units



Technical Specifications






Model name	38VT		008168HTMM	010168HTMM	012168HTMM	014168HTMM	016168HTMM	018168HTMM	020168HTMM		
Unit Size	HP		8	10	12	14	16	18	20		
Cooling Capacity (*1)	kW		22.4	28.0	33.5	40.0	45.0	50.4	56.0		
	Btu/h		76,000	96,000	114,000	136,000	152,000	172,000	190,000		
Cooling Capacity (*2)	kW		20.3	25.2	26.8	32.5	36.0	42.8	44.8		
	Btu/h		69,000	86,000	91,000	110,000	122,000	146,000	152,000		
Heating Capacity (*1)	kW		25.0	31.5	37.5	45.0	50.0	56.0	63.0		
	Btu/h		85,000	107,000	127,000	152,000	170,000	190,000	214,000		
Power Supply (V/PH/HZ)			380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50		
Volting range (*3)	Minimum	V	342	342	342	342	342	342	342		
	Maximum	V	456	456	456	456	456	456	456		
Performance	Cooling (*1)	Running Current	A	8.1	10.6	13.3	16.2	19.9	20.0	25.0	
		Power Input	kW	5.09	6.60	8.66	10.4	12.4	12.9	15.5	
		EER	kW/kW	4.40	4.24	3.87	3.85	3.63	3.91	3.61	
			Btu/Wh	14.95	14.55	13.15	13.05	12.25	13.35	12.25	
	Cooling (*2)	Power Input	kW	6.90	9.20	9.44	12.2	13.1	15.0	15.7	
		EER	kW/kW	2.94	2.74	2.84	2.66	2.75	2.85	2.85	
			Btu/Wh	10.00	9.35	9.65	9.00	9.30	9.75	9.70	
	Heating (*1)	Running Current	A	9.0	11.7	15.0	17.7	20.6	22.4	26.6	
		Power Input	kW	5.66	7.45	9.72	11.1	13.2	14.3	17.4	
		COP	kW/kW	4.42	4.23	3.86	4.05	3.79	3.92	3.62	
			Btu/Wh	15.00	14.35	13.05	13.70	12.90	13.30	12.30	
	Starting Current	A								Soft Start	
Dimension	Height	mm	1800	1800	1800	1800	1800	1800	1800		
	Width	mm	990	990	990	1210	1210	1600	1600		
	Depth	mm	780	780	780	780	780	780	780		
Weight	Net	kg	242	242	242	299	299	370	370		
Compressor	Type									Hermetic Twin Rotary	
	Motor Output	kW	2.1 x 2	3.1 x 2	3.9 x 2	4.8 x 2	5.8 x 2	6.5 x 2	7.6 x 2		
Fan unit	Type									Propeller fan	
	Motor Output	W	1.0	1.0	1.0	1.0	1.0	2.0	2.0		
	Air Volume	m3/h	9700	9700	12200	12200	12600	17300	17900		
Max. External Static Pressure	Pa	60	60	50	50	40	50	40			
Heat Exchanger									Finned tube		
Refrigerant	Name		R410A	R410A	R410A	R410A	R410A	R410A	R410A		
	Charge	Heat Pump	kg	11.5	11.5	11.5	11.5	11.5	11.5		
High-pressure switch	Pa	OFF:3.2 ON:4.15	OFF:3.2 ON:4.15	OFF:3.2 ON:4.15	OFF:3.2 ON:4.15	OFF:3.2 ON:4.15	OFF:3.2 ON:4.15	OFF:3.2 ON:4.15	OFF:3.2 ON:4.15		
Protective devices			(*4)	(*4)	(*4)	(*4)	(*4)	(*4)	(*4)		
Power Supply Wiring	MCA (*5)	A	20.5	21.5	26.1	31.0	35.8	40.6	44.9		
	MOCP (*6)	A	25.0	25.0	32.0	40.0	40.0	50.0	63.0		
Piping Connections	Gas	Type								Brazing	
		Diameter	mm	19.1	22.2	28.6	28.6	28.6	28.6	28.6	
	Liquid	Type									Flare
		Diameter	mm	12.7	12.7	12.7	15.9	15.9	15.9	15.9	
	Balance	Type									Flare
		Diameter	mm	9.5	9.5	9.5	9.5	9.5	9.5	9.5	
Max. Number of Connected Indoor Units			13	16	20	23	27	30	33		
Sound Pressure Level	Cooling	dB(A)	55	57	59	60	62	60	61		
	Heating	dB(A)	56	58	61	62	64	61	62		
Sound Power Level	Cooling	dB(A)	74	74	80	80	81	81	82		
	Heating	dB(A)	74	74	82	82	83	83	84		
Operation Temperature Range	Cooling	Deg C	-5 to 52	-5 to 52	-5 to 52	-5 to 52	-5 to 52	-5 to 52	-5 to 52		
	Heating (*7)	Deg C	-25 to 15.5	-25 to 15.5	-25 to 15.5	-25 to 15.5	-25 to 15.5	-25 to 15.5	-25 to 15.5		

Note:
 (*1) Rated Conditions Cooling : Indoor 27 degC Dry Bulb / 19 degC Wet Bulb , Outdoor 35 degC Dry Bulb.
 Heating : Indoor 20 degC Dry Bulb , Outdoor 7 degC Dry Bulb / 6 degC Wet Bulb.
 (*2) Rated Conditions Cooling : Indoor 27 degC Dry Bulb / 19 degC Wet Bulb , Outdoor 46 degC Dry Bulb.
 Based on equivalent piping length of 7.5m and piping height difference of 0m.
 (*3) Voltage range : Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
 (*4) Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / Compressor case thermostat / PC board fuse
 (*5) Select wire size base on the larger value of MCA.
 MCA : Minimum Circuit Amps
 (*6) MOCP : Maximum Overcurrent Protection(Amps)
 (*7) Low ambient heating (20-degC or less) for extended periods of time is not allowed



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Outdoor Lineup

								
Model (50HZ)		38VT008168HTMM	38VT010168HTMM	38VT012168HTMM	38VT014168HTMM	38VT016168HTMM	38VT018168HTMM	38VT020168HTMM
Capacity	HP	8	10	12	14	16	18	20
Cooling Capacity (35C)	kW	22.4	28.0	33.5	40.0	45.0	50.4	56.0
Cooling Capacity (46C)	kW	20.3	25.2	26.8	32.5	36.0	42.8	44.8
Heating Capacity (35C)	kW	25.0	31.5	37.5	45.0	50.0	56.0	63.0
Max. number of connected indoor units	Qty	13	16	20	23	27	30	33

								
Model (50HZ)		38VT022S68HTMM	38VT024S68HTMM	38VT026S68HTMM	38VT028S68HTMM	38VT030S68HTMM	38VT032S68HTMM	38VT034S68HTMM
Combination Models		38VT012168HTMM	38VT012168HTMM	38VT014168HTMM	38VT014168HTMM	38VT016168HTMM	38VT016168HTMM	38VT018168HTMM
		38VT010168HTMM	38VT012168HTMM	38VT012168HTMM	38VT014168HTMM	38VT014168HTMM	38VT016168HTMM	38VT016168HTMM
Capacity	HP	22	24	26	28	30	32	34
Cooling Capacity (35C)	kW	61.5	67.0	73.5	80.0	85	90	95.4
Cooling Capacity (46C)	kW	52.0	53.6	59.3	65.0	68.5	72	78.8
Heating Capacity (35C)	kW	69.0	75.0	82.5	90.0	95	100	106
Max. number of connected indoor units	Qty	37	40	43	47	50	54	57



Model (50HZ)		38VT036S68HTMM	38VT038S68HTMM	38VT040S68HTMM	38VT042S68HTMM	38VT044S68HTMM	38VT046S68HTMM	38VT048S68HTMM	
Combination Models		38VT018168HTMM	38VT020168HTMM	38VT020168HTMM	38VT014168HTMM	38VT016168HTMM	38VT016168HTMM	38VT016168HTMM	
		38VT018168HTMM	38VT018168HTMM	38VT020168HTMM	38VT014168HTMM	38VT014168HTMM	38VT016168HTMM	38VT016168HTMM	38VT016168HTMM
		-	-	-	38VT014168HTMM	38VT014168HTMM	38VT014168HTMM	38VT016168HTMM	
Capacity	HP	36	38	40	42	44	46	48	
Cooling Capacity (35C)	kW	100.8	106.4	112	120	125	130	135	
Cooling Capacity (46C)	kW	85.6	87.6	89.6	97.5	101	104.5	108	
Heating Capacity (C)	kW	112	119	126	135	140	145	150	
Max. number of connected indoor units	Qty	60	64	64	64	64	64	64	



Model (50HZ)		38VT050S68HTMM	38VT052S68HTMM	38VT054S68HTMM	38VT056S68HTMM
Combination Models		38VT018168HTMM	38VT018168HTMM	38VT020168HTMM	38VT020168HTMM
		38VT016168HTMM	38VT018168HTMM	38VT020168HTMM	38VT020168HTMM
		38VT016168HTMM	38VT016168HTMM	38VT014168HTMM	38VT016168HTMM
Capacity	HP	50	52	54	56
Cooling Capacity (35C)	kW	140.4	145.8	152	157
Cooling Capacity (46C)	kW	114.8	121.6	122.1	125.6
Heating Capacity (C)	kW	156	162	171	176
Max. number of connected indoor units	Qty	64	64	64	64

Controls

Comfort, economic efficiency and safety can be further maximised with modern control mechanisms. Whether wired or remotely controlled units, Web-based control devices or elegant touch screen systems, the important thing is to achieve the right temperature at the right time and at the right place! It's about balance - and we've got it just right.

Wired Remote Controls

Lite-Vision Plus



Remote Controller with weekly timer



Simple wired remote controller



Central Controllers

Central remote controller



Schedule Timer



BMS Controllers

Touch Screen controller



Smart BMS Manager



Wireless Remote Controls

Infrared Remote Control



Receiver kit for the installation on the wall or ceiling.



Receiver kit to be installed directly in the frame of the indoor unit.



Receiver kit to be installed directly in the frame of the indoor unit.



Receiver kit to be installed directly in the frame of the indoor unit.

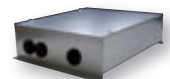


Connectable Open Network

BACnet®



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