



# Heat recovery

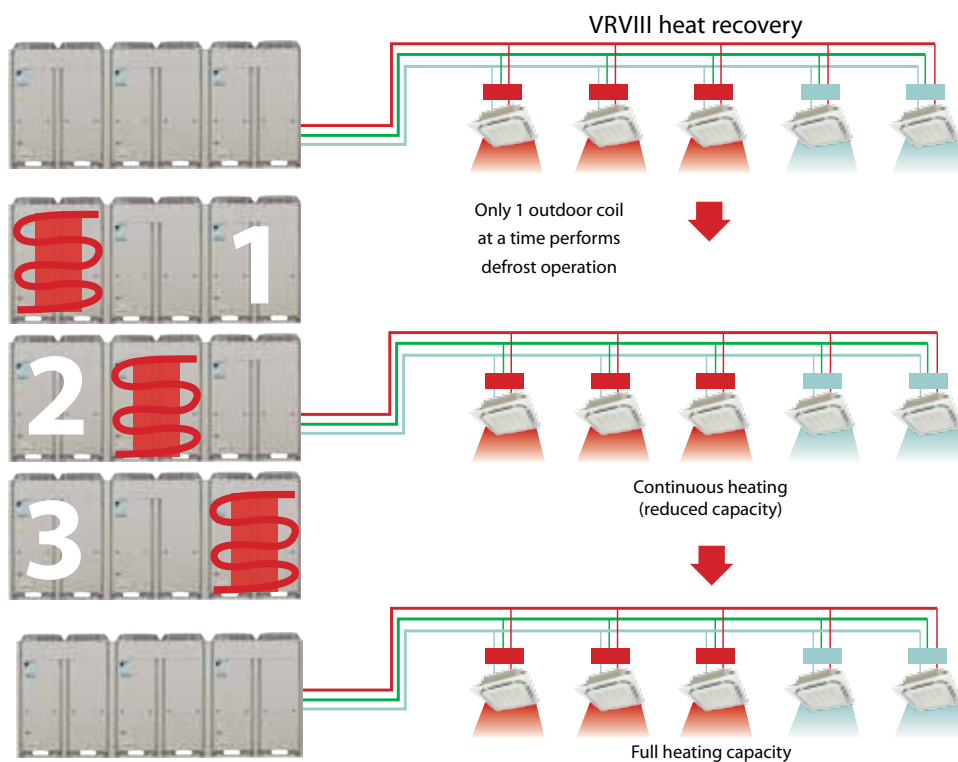
## CONTINUOUS HEATING DURING DEFROST

Ensuring the highest comfort level during defrost and oil return

### Benefits of the system

- › High comfort
  - No cold draft during defrost & oil return
  - No big temperature fluctuations in the room
- › Higher integrated heating capacity (indoor units continue to deliver heating)
  - Continuous heating during defrost results in a higher integrated heating capacity and much higher comfort levels for the users.

\* Only available for multi combination heat recovery systems (REYQ18-48P8/9, REYHQ16-24P)



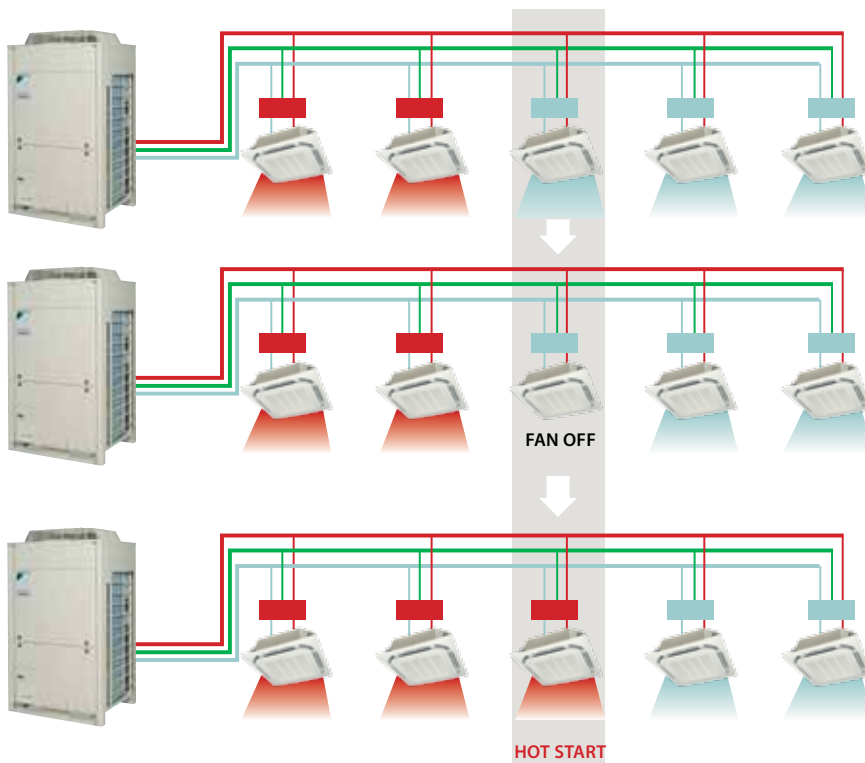
## INDIVIDUAL COMFORT THANKS TO VRVIII BS BOX

Individual change over from cooling to heating or vice versa of the indoor units is possible. This means that all indoor units who do not change over continue to provide optimum comfort for users during this process. The BS box comes in individual and multi versions for maximum flexibility, faster installation and the best cost.



### VRVIII heat recovery

With the VRVIII BS box, the other indoor units can keep heating while the target indoor units are switched from cooling to heating.

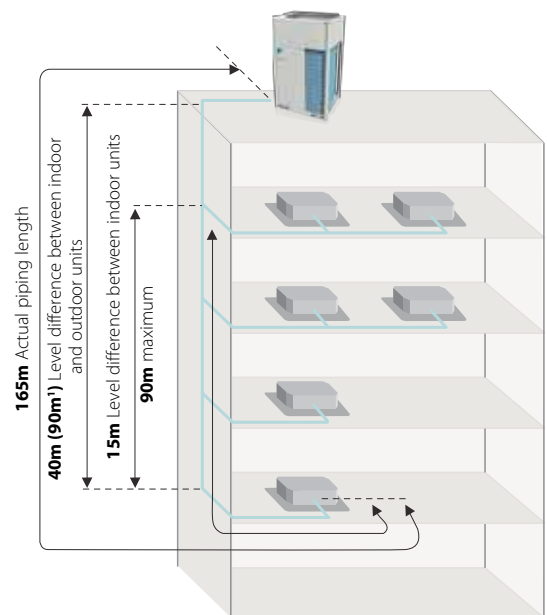


### FLEXIBLE PIPING DESIGN

VRV offers an extended piping length of 165m (190m equivalent piping length) with a total system piping length of 1,000m.

In case the outdoor unit is located above the indoor unit the height difference is 50m standard. It can be extended to 90m<sup>1</sup>. In case the outdoor unit is located below the indoor unit, the height difference is 40m standard. Height differences up to maximum 90m are possible<sup>1</sup>.

After the first branch, the difference between the longest piping length and the shortest piping length can be maximum 40m, provided that the longest piping length amounts to maximum 90m.



<sup>1</sup> For more information, please contact your local Daikin dealer.

<sup>1</sup> Branch selectors (BS units) are not taken into account, as their installation does not influence the piping design.



# VRVIII Heat recovery small footprint combination

## SPECIFICATIONS

OUTDOOR UNIT				REYQ8P9	REYQ10P8	REYQ12P9	REYQ14P8	REYQ16P8
Capacity range			HP	8	10	12	14	16
Cooling capacity	Nom.		kW	22.4 <sup>1</sup>	28.0 <sup>1</sup>	33.5 <sup>1</sup>	40.0 <sup>1</sup>	45.0 <sup>1</sup>
	Heating capacity		Nom.	kW	25.0 <sup>2</sup>	31.5 <sup>2</sup>	37.5 <sup>2</sup>	45.0 <sup>2</sup>
Power input - 50Hz	Cooling	Nom.	kW	5.20	7.09	8.72	11.4	14.1
	Heating	Nom.	kW	5.71	7.38	8.84	11.0	12.8
EER				4.31	3.95	3.84	3.51	3.19
COP				4.38	4.27	4.24	4.09	3.91
Maximum number of connectable indoor units				17	21	26	30	34
Indoor index connection	Min.			100	125	150	175	200
	Nom.			200	250	300	350	400
	Max.			260	325	390	455	520
Dimensions	Unit	HeightxWidthxDepth	mm	1,680x1,300x765				
Weight	Unit		kg	331			339	
Heat exchanger	Type			Cross fin coil				
Fan	Type			Propeller fan				
	Air flow rate	Cooling	Nom.	m <sup>3</sup> /min	190	210	235	240
	External static pressure	Max.		Pa	-			
Sound power level	Cooling	Nom.	dBA	78	80	83	84	
Sound pressure level	Cooling	Nom.	dBA	58	60	62	63	
Compressor	Type			Hermetically sealed scroll compressor				
Compressor 2	Type			Hermetically sealed scroll compressor				
Operation range	Cooling	Min.~Max.	°CDB	-20 (15) / -5~43				
	Heating	Min.~Max.	°CWB	-20~15.5				
Refrigerant	Type			R-410A				
	Charge			kg	10.3	10.6	10.8	11.1
	Control				Expansion valve (electronic type)			
Piping connections	Liquid	Type	Brze connection					
		OD	mm	9.52			12.7	
	Gas	Type	Brze connection					
		OD	mm	19.1	22.2	28.6		
	Discharge gas	Type	Brze connection					
		OD	mm	15.9	19.10			22.2
Piping length	OU - IU	Max.	m	165				
	After branch	Max.	m	90 (8)				
Total piping length	System	Actual	m	1,000				
Level difference	OU - IU	Outdoor unit in highest position/Indoor unit in highest position	m	50/40				
	IU - IU	Max.	m	15				
Power supply	Phase/Frequency/Voltage			3~/50/380-415				
Current - 50Hz	Maximum fuse amps (MFA)			A	20	25	40	

(1) Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB; equivalent piping length: 7.5m; level difference: 0m (2) Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; equivalent refrigerant piping: 7.5m; level difference: 0m (3) MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker). (4) In accordance with EN/IEC 61000-3-11, respectively EN/IEC 61000-3-12, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with  $Z_{sys} \leq Z_{max}$ , respectively  $S_{sc} \geq$  minimum  $S_{sc}$  value. (5) EN/IEC 61000-3-11: European/international technical standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated  $\leq 75A$  (6) EN/IEC 61000-3-12: European/international technical standard setting the limits for harmonic currents produced by equipment connected to public low-voltage system with input current > 16A and  $\leq 75A$  per phase (7) Technical cooling setting, refer to the installation manual for more information (8) Refer to refrigerant pipe selection or installation manual

OUTDOOR SYSTEM				REYQ18P9	REYQ20P9	REYQ22P8	REYQ24P8	REYQ26P8	REYQ28P8	REYQ30P8	REYQ32P8	REYQ34P9	REYQ36P9	
System	Outdoor unit module 1			REM08P9		REM010P8	REM012P8	REM010P8	REM012P8	REM014P8	REM016P8	REM08P9		
	Outdoor unit module 2			REM010P8	REM012P8			REM016P8				REM010P8	REM012P8	
	Outdoor unit module 3			REM016P8										
Capacity range	HP			18	20	22	24	26	28	30	32	34	36	
Cooling capacity	Nom.			kW	50.4 <sup>1</sup>	55.9 <sup>1</sup>	61.5 <sup>1</sup>	67.0 <sup>1</sup>	73.0 <sup>1</sup>	78.5 <sup>1</sup>	85.0 <sup>1</sup>	90.0 <sup>1</sup>	95.4 <sup>1</sup>	101 <sup>1</sup>
Heating capacity	Nom.			kW	56.5 <sup>2</sup>	62.5 <sup>2</sup>	69.0 <sup>2</sup>	75.0 <sup>2</sup>	81.5 <sup>2</sup>	87.5 <sup>2</sup>	95.0 <sup>2</sup>	107 <sup>2</sup>	113 <sup>2</sup>	
Power input - 50Hz	Cooling	Nom.		kW	12.7	14.9	17.0	19.2	21.8	23.8	26.6	28.4	29.1	
	Heating	Nom.		kW	13.4	15.2	17.1	18.9	20.6	22.3	24.2	25.8	26.3	28.1
EER					3.97	3.75	3.62	3.49	3.35	3.29	3.19	3.16	3.55	3.47
COP					4.22	4.11	4.04	3.97	3.96	3.92		3.87	4.07	4.02
Maximum number of connectable indoor units					39	43	47	52	56	60	64			
Indoor index connection	Min./Nom./Max.				225/450/585	250/500/650	275/550/715	300/600/780	325/650/845	350/700/910	375/750/975	400/800/1,040	425/850/1,105	450/900/1,170
Sound power level	Cooling	Nom.		dB(A)	81				83				84	85
Sound pressure level	Cooling	Nom.		dB(A)	61	62		63				64		
Piping connections	Liquid	Type/OD		mm	Braze connection/15.9				Braze connection/19.1					
	Gas	Type/OD		mm	Braze connection/28.6				Braze connection/34.9				Braze connection/41.3	
	Discharge gas	Type/OD		mm	Braze connection/22.2	Braze connection/28.6								
	Oil equalizing	OD		mm	19.1									
	Piping length	OU - IU	Max.		m	165								
		After branch	Max.		m	90 (18)								
	Total piping length	System		Actual	m	1,000								
Level difference	OU - IU	Outdoor unit in highest position/ Indoor unit in highest position		m	50/40									
	IU - IU	Max.		m	15									
Current - 50Hz	Maximum fuse amps (MFA)			A	45	50		60		70		80		

OUTDOOR SYSTEM				REYQ34P9	REYQ36P9	REYQ38P8	REYQ40P8	REYQ42P8	REYQ44P8	REYQ46P8	REYQ48P8	
System	Outdoor unit module 1			REM08P9		REM010P8	REM012P8	REM010P8	REM012P8	REM014P8	REM016P8	
	Outdoor unit module 2			REM010P8	REM012P8			REM016P8		REM016P8	REM016P8	
	Outdoor unit module 3			REM016P8								
Capacity range	HP			34	36	38	40	42	44	46	48	
Cooling capacity	Nom.			kW	95.4 <sup>1</sup>	101 <sup>1</sup>	107 <sup>1</sup>	112 <sup>1</sup>	118 <sup>1</sup>	124 <sup>1</sup>	130 <sup>1</sup>	150 <sup>2</sup>
Heating capacity	Nom.			kW	107 <sup>2</sup>	113 <sup>2</sup>	119 <sup>2</sup>	125 <sup>2</sup>	132 <sup>2</sup>	138 <sup>2</sup>	145 <sup>2</sup>	42.6
Power input - 50Hz	Cooling	Nom.		kW	26.9	29.1	31.2	33.4	35.8	38.0	40.8	38.7
	Heating	Nom.		kW	26.3	28.1	30.0	31.8	33.5	35.2	37.1	3.16
EER					3.55	3.47	3.43	3.35	3.29	3.26	3.18	3.87
COP					4.07	4.02	3.96	3.93	3.94	3.92	3.90	64
Maximum number of connectable indoor units					64							
Indoor index connection	Min./Nom./Max.				425/850/1,105	450/900/1,170	475/950/1,235	500/1,000/1,300	525/1,050/1,365	550/1,100/1,430	575/1,150/1,495	600/1,200/1,560
Sound power level	Cooling	Nom.		dB(A)	84				85			
Sound pressure level	Cooling	Nom.		dB(A)	64				65			
Piping connections	Liquid	OD		mm	19.1							
	Gas	OD		mm	34.9	41.3						
	Discharge gas	OD		mm	28.6				34.9			
	Oil equalizing	OD		mm	19.1							
	Total piping length	System		Actual	m	40 (14)	1,000					
	Level difference	OU - IU	Outdoor unit in highest position/ Indoor unit in highest position		m	50/40						
		IU - IU	Max.		m	15						
Current - 50Hz	Maximum fuse amps (MFA)			A	80		90		100		110	

OUTDOOR UNIT MODULE				REM08P9	REM010P8	REM012P8	REM014P8	REM016P8	
Dimensions	Unit	HeightxWidthxDepth		mm	1,680x930x765			1,680x1,240x765	
Weight	Unit			kg	204	254		334	
Heat exchanger	Type			Cross fin coil					
Fan-Type				Propeller fan					
Fan-Air flow rate	Cooling	Nom.		m <sup>3</sup> /min	180	185	200	230	
Fan-External static pressure	Max.			Pa	78				
Compressor	Type			Hermetically sealed scroll compressor					
Compressor 2	Type			Hermetically sealed scroll compressor					
Compressor 3	Type			Hermetically sealed scroll compressor					
Operation range	Cooling	Standard	Min.	°CDB	-5				
		Max.		°CDB	43				
	Heating	Min.~Max.		°CWB	-20~-15.5				
Refrigerant	Type			R-410A					
	Charge		kg	8.2	9.0	9.1	11.7		
	Control			Expansion valve (electronic type)					
Power supply	Phase/Frequency/Voltage			Hz/V					3~/50/380-415

(1) Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB; equivalent piping length: 7.5m; level difference: 0m (2) Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; equivalent refrigerant piping: 7.5m; level difference: 0m (3) Technical cooling setting, contact your local dealer for more information



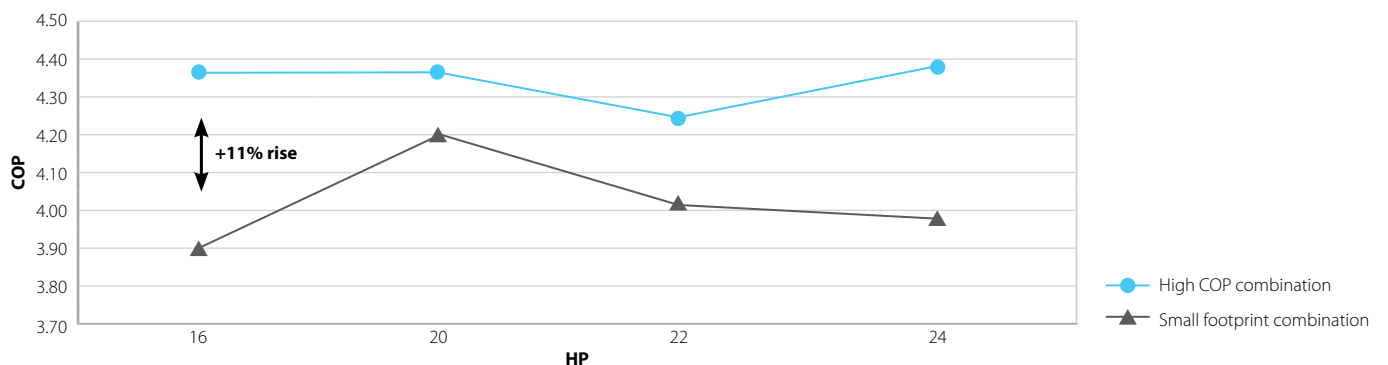
# Heat recovery, high COP combination

## BENEFITS



### Top energy efficiency

The high COP combination has a top energy efficiency within the Daikin heat recovery range. It is up to 11% more efficient, compared to the small footprint combination.



HP		16	20	22	24
High COP combination	combination	8 + 8	8 + 12	10 + 12	12 + 12
	COP	4.36	4.36	4.24	4.37
	EER	4.29	4.04	3.84	3.89
Small footprint combination	combination	16	8 + 12	10 + 12	12 + 12
	COP	3.90	4.12	4.03	3.97
	EER	3.19	3.77	3.61	3.49

# SPECIFICATIONS

## VRV Heat recovery - High COP combination

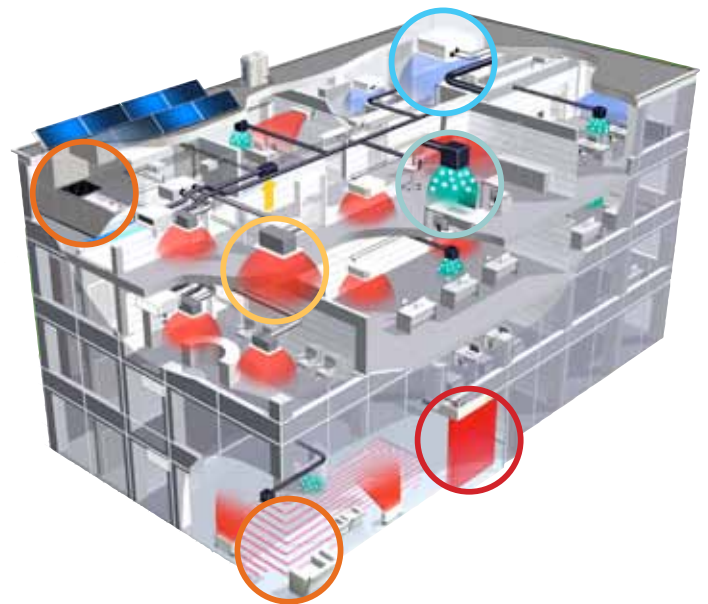
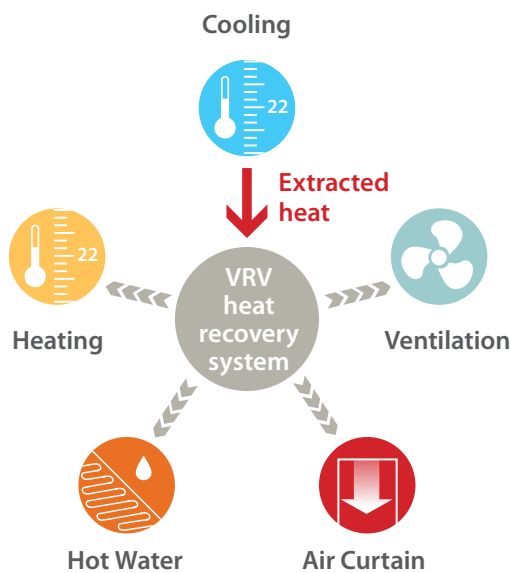
OUTDOOR SYSTEM				REYHQ16P	REYHQ20P	REYHQ22P	REYHQ24P	
System	Outdoor unit module 1			REM8P9		REM10P8	REM12P8	
	Outdoor unit module 2			REM8P9		REM12P8		
Capacity range			HP	16	20	22	24	
Cooling capacity	Nom.		kW	45.0 <sup>1</sup>	56.0 <sup>1</sup>	61.5 <sup>1</sup>	67.0 <sup>1</sup>	
Heating capacity	Nom.		kW	50.0 <sup>2</sup>	62.5 <sup>2</sup>	69.0 <sup>2</sup>	75.0 <sup>2</sup>	
Power input - 50Hz	Cooling	Nom.	kW	10.5	13.9	16.0	17.2	
	Heating	Nom.	kW	11.5	14.3	16.3	17.2	
EER				4.29	4.04	3.84	3.89	
COP				4.36		4.24	4.37	
Maximum number of connectable indoor units				34	43	47	52	
Indoor index connection	Min./Nom./Max.			200/400/520	225/450/585	250/500/650	275/550/715	
Sound power level	Cooling	Nom.	dBA	82		85	87	
Sound pressure level	Cooling	Nom.	dBA	62		64	66	
Refrigerant	Circuits	Quantity		1				
Piping connections	Liquid	Type/OD	mm	Braze connection/12.7		Braze connection/15.9		
	Gas	Type/OD	mm	Braze connection/28.6				Braze connection/34.9
	Piping length	OU - IU	Max.	m	165			
		After branch	Max.	m	90 (18)			
	Total piping length	System	Actual	m	1,000			
	Level difference	OU - IU	Outdoor unit in highest position/ Indoor unit in highest position	m	50/40			
	IU - IU	Max.	m	15				
Current - 50Hz	Maximum fuse amps (MFA)			A	50	63	80	

OUTDOOR UNIT MODULE				REM8P9	REM10P8	REM12P8
Dimensions	Unit	HeightxWidthxDepth	mm	1,680x930x765		1,680x1,300x765
Weight	Unit		kg	204	254	331
Heat exchanger	Type			Cross fin coil		-
Fan-Type				Propeller fan		
Fan-Air flow rate	Cooling	Nom.	m <sup>3</sup> /min	180	185	230
	Heating	Nom.	m <sup>3</sup> /min			230
Fan-External static pressure	Max.		Pa			78
Sound power level	Cooling	Nom.	dBA		78	
Compressor	Type			Hermetically sealed scroll compressor		
Compressor 2	Type			Hermetically sealed scroll compressor		
Operation range	Cooling	Min.	°CDB	-5		
		Max.	°CDB	43		
	Heating	Min.~Max.	°CWB	-20~-15		
Refrigerant	Type			R-410A		
	Charge		kg	8.2	9.0	11.7
	Control				Expansion valve (electronic type)	
Refrigerant oil	Type			-		Synthetic (ether) oil
	Charged volume			-		2.5
Power supply	Phase/Frequency/Voltage			3~/50/380-415		
Current - 50Hz	Maximum fuse amps (MFA)			A	25	40

1) Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB; equivalent piping length: 7.5m; level difference: 0m (2) Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; equivalent refrigerant piping: 7.5m; level difference: 0m



## VRV heat recovery, for connection to heating only hydrobox



Daikin has been the market leader in variable refrigerant flow systems for the last twenty-five years and benefits from a large experience in energy efficient hot water systems based on heat pump technology.

The Daikin VRV total solution provides a single point of contact for the design and maintenance of your integrated climate control system. Our heat recovery approach is a year-round solution: even when the outside temperature is 0°C or below, our total solution will still be cooling interior spaces in which people or equipment are generating heat. This heat will be recovered to produce hot water or to heat spaces that are below optimal temperature. Our wide product portfolio enables you to select the right mix of equipment and technology to ensure that you achieve the optimal balance of temperature, humidity and air freshness for the perfect comfort zone with maximum energy efficiency and cost effectiveness.