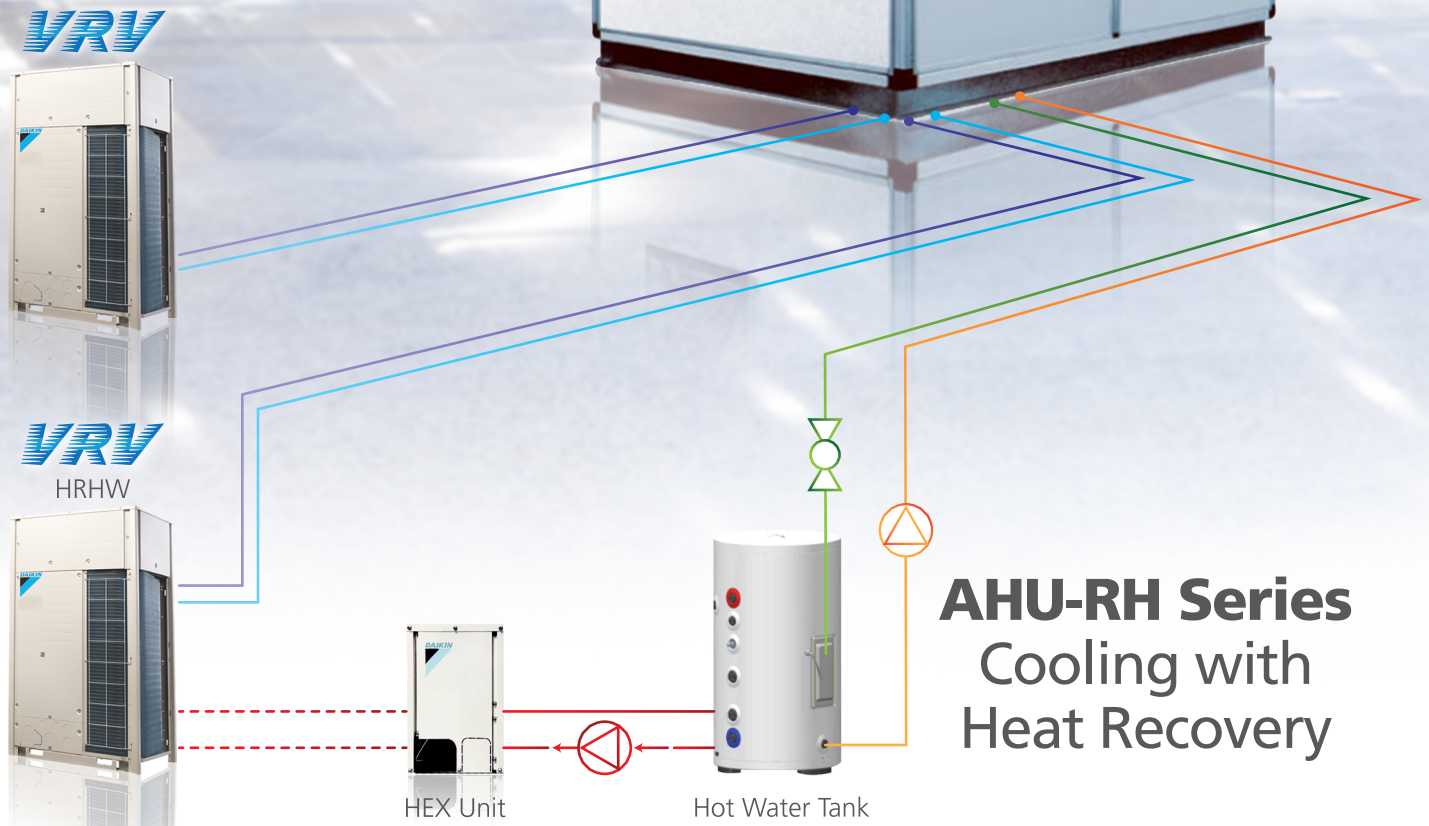
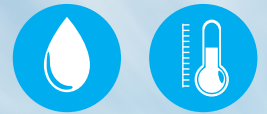




Perfecting the Air

The Definite Solution for Temperature & Humidity Control



AHU-RH Series
Cooling with
Heat Recovery

HEX Unit

Hot Water Tank

AHU-RH SERIES COOLING WITH HEAT RECOVERY

Daikin offers an innovative solution to control relative humidity by combining Daikin's World Leading VRV Heat Recovery Hot Water System & Air Handling Unit (AHU). The AHU-RH series is a special designed system (DX or chilled water) with integrated VRV Heat Recovery Hot Water system.

It recovers waste heat from the condensing unit. This heat source raises up the low off-coil air dew point to meet process room air design condition. In this process, high efficiency and energy savings are achieved.

AHU-RH series comes with built-in control system for hassle free installation and high level interfacing with Building Management System (BMS).

BENEFITS



INTEGRATED SOLUTION



BUILT-IN UV-C LIGHT SYSTEM
eliminates bacteria & other allergens for improved indoor air quality.



HIGH SYSTEM EFFICIENCY



QUALIFY FOR GREEN MARK POINT



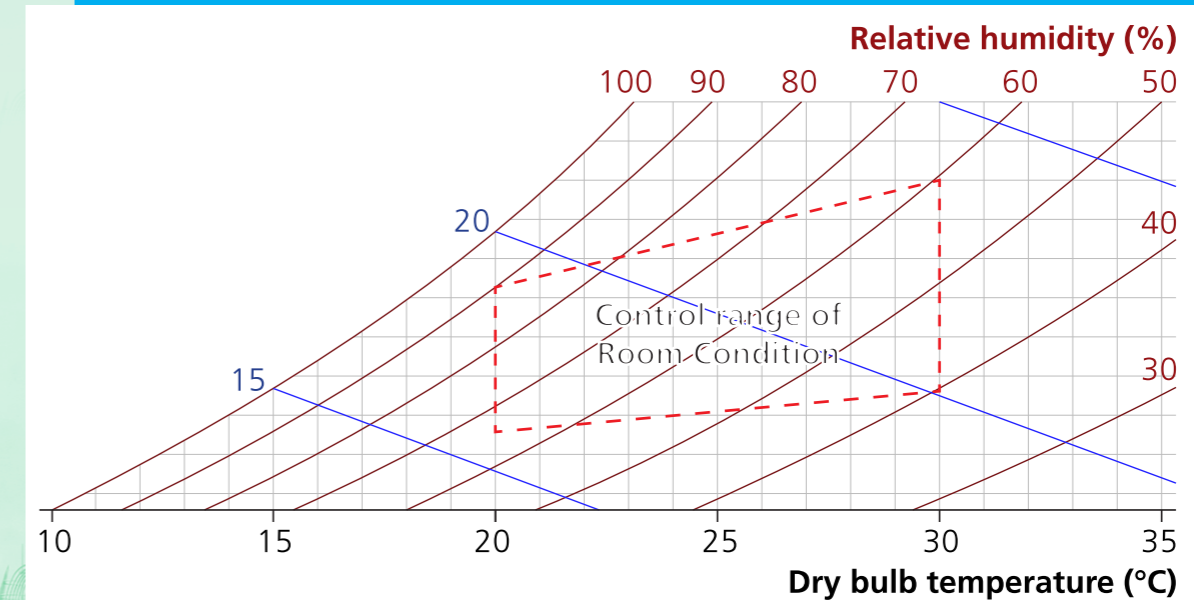
COST SAVINGS

- Equipment cost
- Installation cost
- Maintenance cost



IMPROVE ROOM COMFORT LEVEL
with RH Control

TEMPERATURE AND RH CONTROL



APPLICATIONS

Daikin AHU-RH series provides Temperature and RH Control solution for various applications.



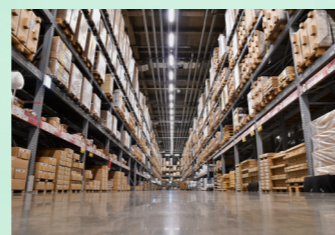
Laboratories



Museums



Libraries



Warehouses



Offices



Hospitals



Factories



Cleanrooms

NOMENCLATURE

AHU-RH

150

DW

EC

EC : EC Fan
- : Centrifugal Fan

1st Order : Pre-Cool Coil Type
2nd Order : Main Coil Type

D : DX Coil

DD : DX Coil + DX Coil

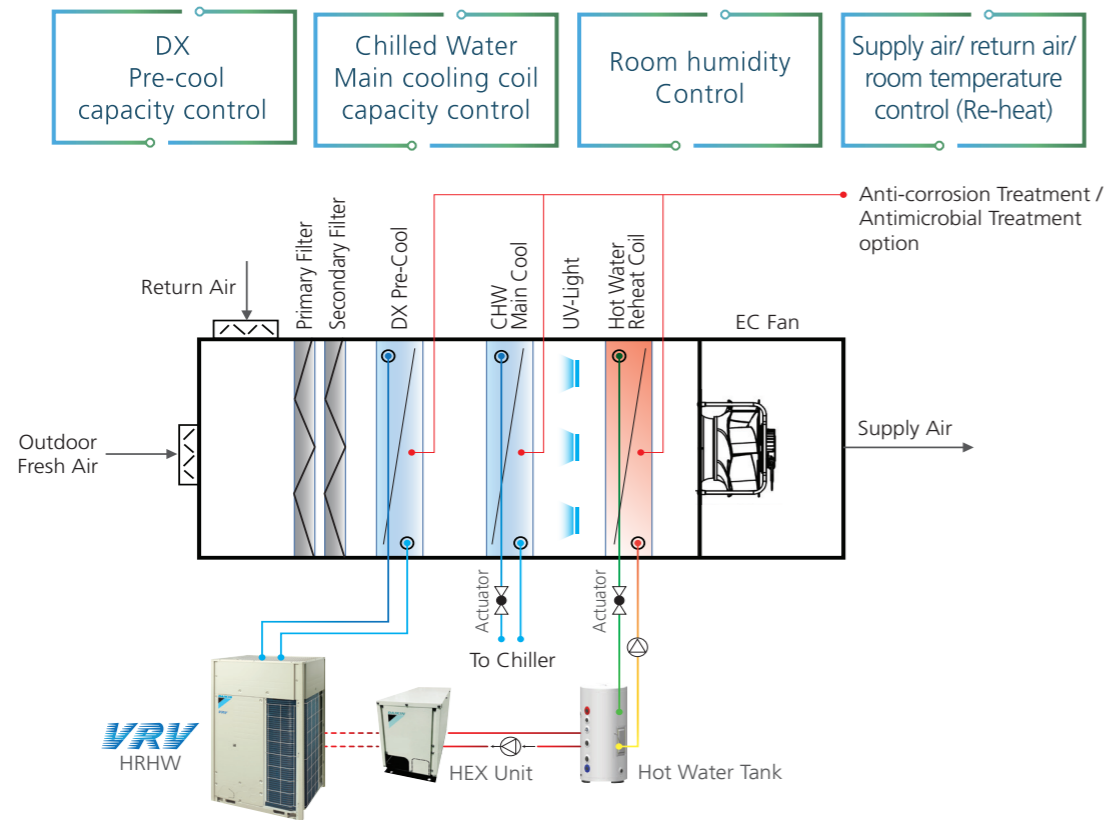
DW : DX Coil + Chilled Water Coil

Total AHU Cooling Capacity kW

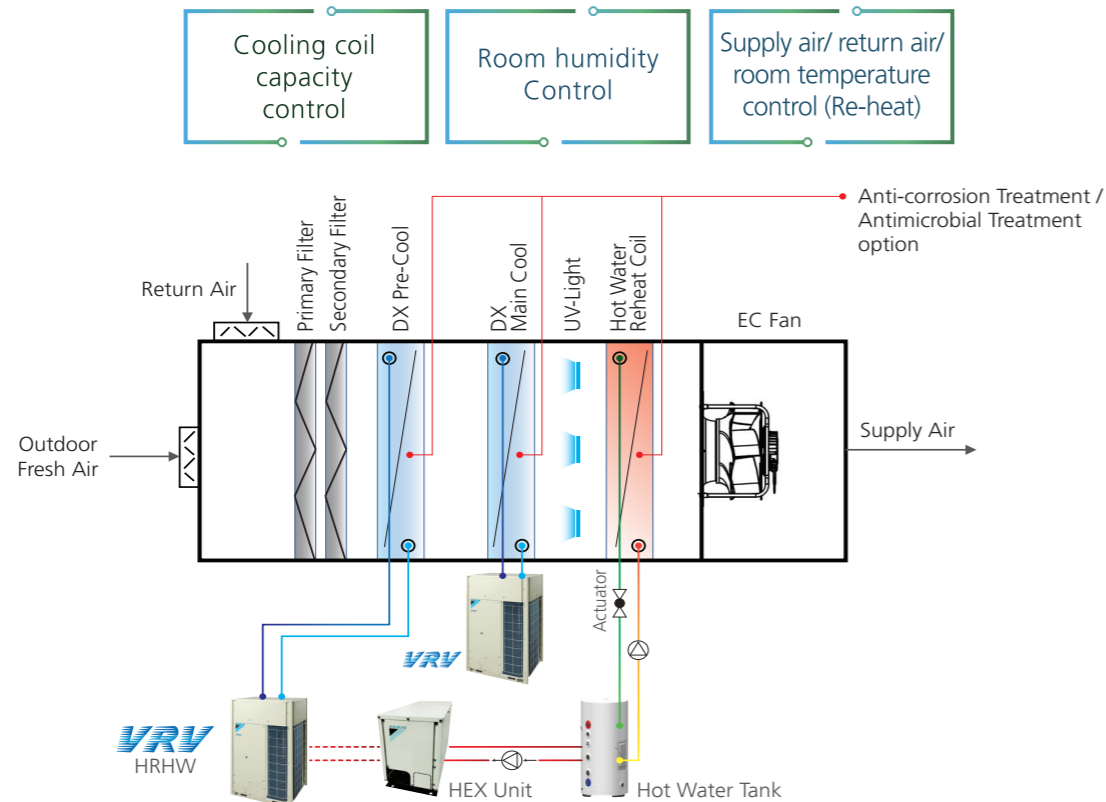
AHU-RH = AHU for Humidity Control with Reheat Coil

SYSTEM DESIGN

TYPE 1 AHU-RH DW SERIES (CHILLED WATER + VRV HRHW)

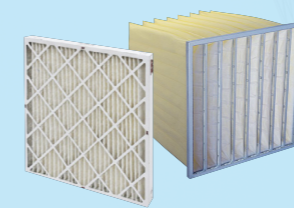


TYPE 2 AHU-RH DD SERIES (VRV-DX + VRV HRHW)



AHU GENERAL SPECIFICATIONS

1	CASING	DB = 50 mm thick double skinned panel (Thermal Break) 0.5mm thick White Colourbond Steel Sheet
2	INSULATION	50 mm thick polyurethane foam 40kg/m3 density
	CASING-FRAME	Steel with Black Epoxy Paint
3	DRAIN PAN	1.5mm (SUS304) Beneath the Drain Pan is covered with PU insulation 40kg/m3 density
4	AIR FILTER (FIELD SUPPLY)	(Brand = AAF) Size = Full (24"x24"x2"/595x595x50mm), Half (12"x24"x2"/290x595x50mm)
5	DX COIL	
	TUBE / FIN / HEADER / FRAME	Copper Tube / Aluminum silt /Copper Tube/ Galvanised steel
	WORKING PRESSURE	9.8 bar
	STANDARD SERIES PCB	EKEQMCBAV3
	EXPANSION VALVE	EKEXV140, EKEXV200, EKEXV250, EKEXV400, EKEXV500
6	CHILLED WATER COIL	
	TUBE / FIN / HEADER / FRAME	Copper Tube / Aluminum silt /Copper Tube/ Galvanised steel
	WORKING PRESSURE	< 10 bar
	CONTROL VALVE (FIELD SUPPLY)	Modulating valve
7	REHEAT COIL	
	TUBE / FIN / HEADER / FRAME	Copper Tube / Aluminum silt /Copper Tube/ Galvanised steel
	OPERATING TEMPERATURE	30 - 50°C
	WORKING PRESSURE	< 10 bar
	CONTROL VALVE (FIELD SUPPLY)	Modulating valve
8	FAN	
	FAN	EC Plug Fan



Air Filter



Coil



UV-C Light



EC Fan

HOT WATER RECOVERY COMPONENTS

HEAT EXCHANGER (HEX)

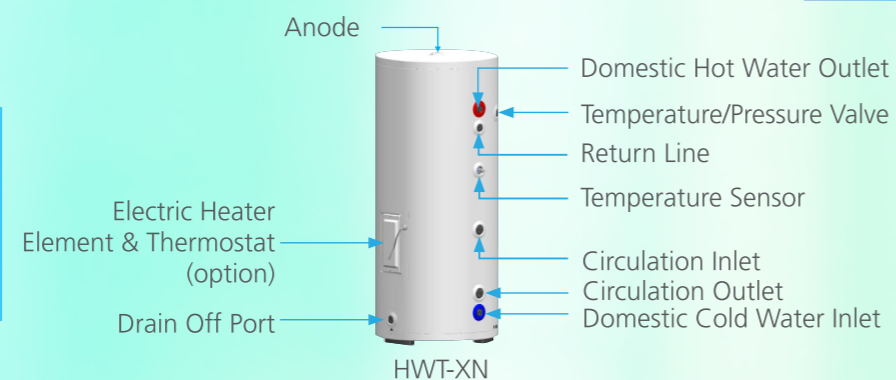
The refrigerant to water heat exchanger (HEX) is plate type heat exchanger which is highly efficient with a small footprint. 2 models of HEX for selection. HEX will be paired based on the HP of the connected outdoor unit. Pairing will be strictly one HEX to one CU module.

HEX SPECIFICATION

Daikin HEX Model	Units	HWHQA34H				HWHQA58H			
Outdoor Unit Combination	HP	6	8	10	12	14	16	18	20
Hot Water Capacity	kW	8.0	11.2	14.0	16.8	20.0	22.5	25.0	28.0
Dimensions (H x W x D)	mm	700 x 140 x 170				700 x 140 x 170			
Heat Exchanger		Braze Plate Heat Exchanger (Counter Flow)							
Connection Piping	Refrigerant Side (Inlet /Outlet)	Ø 19.1 (Soldering Connection)							
	Water Side (Inlet/Outlet)	Ø 25.4 (External Thread Connection)							
Working Fluid		Water / Refrigerant (R410A)							
Rated Water Flow Rate	L/min	14	21	28	35				
Rated Water Inlet Temperature	°C	30				30			
Pressure Loss (Water Side)	kPa	2.0	4.1	3.0	4.5				
	mH ₂ O	0.20	0.42	0.31	0.46				
Weight	Kg	8.1				12.3			
Operating Weight	Kg	10.15				15.83			
Power Supply (PCB Controller & Circulation Pump)		230V / 1Ph / 50Hz (Max Fuse Amp: 15A)							

Refrigerant side: Indoor temperature: 27°CDB, 19°CWB / Outdoor temperature: 35°CDB / Equivalent piping length: 2m, Level difference: 0m, VRV CU at Full Load condition.

HOT WATER TANK



The water tank will be a centralized hot water tank for all AHUs within a facility or zone depending on design and piping considerations. The tank can be installed either indoors or outdoors. The stored hot water temperature can be up to 65°C.

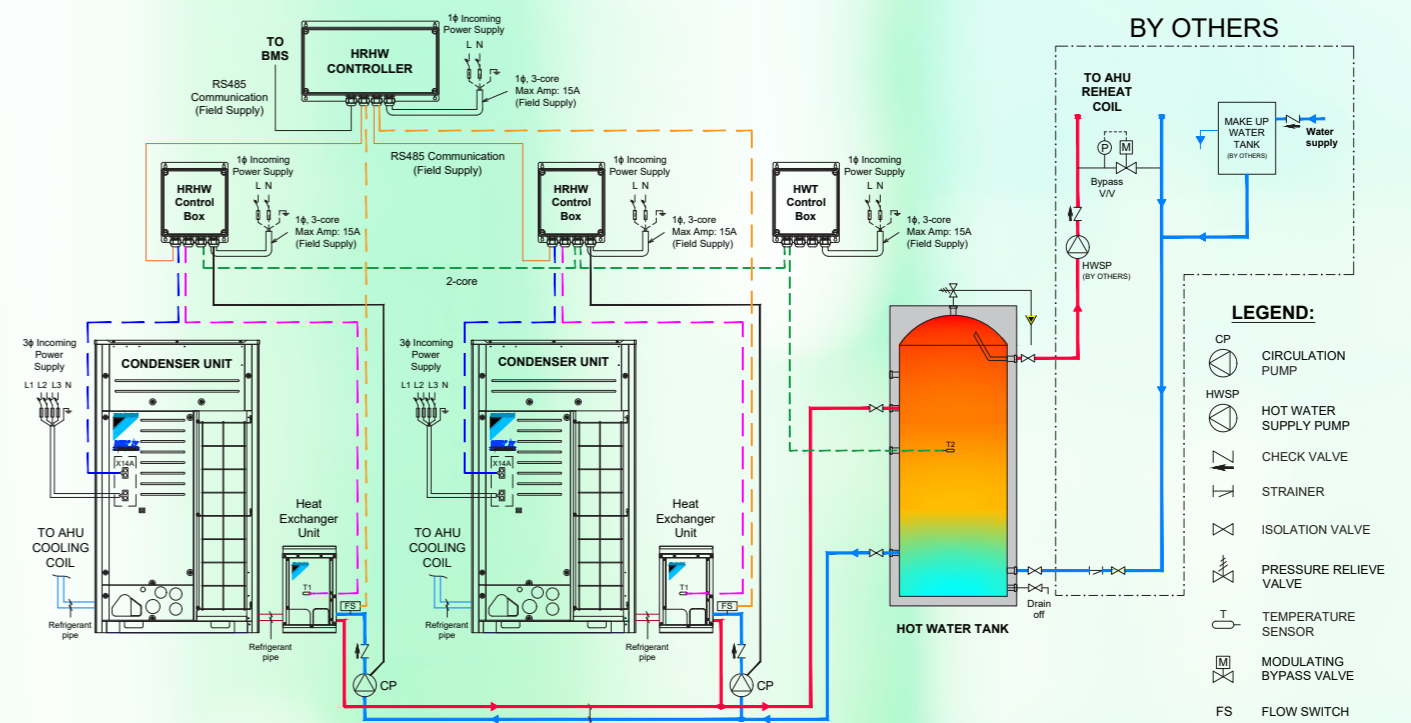
Water tank capacities range from 100L to 500L. Tank is constructed of galvanized iron sheet, and powder coated on the exterior of the unit. Internally, it has a steel tank, thermally insulated with polyurethane (PU).

HOT WATER TANK SPECIFICATION

Model		HWT100XN	HWT200XN	HWT300XN	HWT400XN	HWT500XN
Capacity	Litres	100	200	300	400	500
External Tank Material	Galvanized Steel	Yes				
	Thickness – mm	0.5				
Internal Tank Material	Enameled Steel	Yes				
	Thickness – mm	2.5				
	Steel Specification	BTC340CR				
Insulation	Polyurethane	Yes				
	Thickness – mm	45		50		
Domestic Pipe Connection	Inlet	1"				
	Outlet	1"				
Circulation Pipe Connection	Inlet	1"			1.5"	
	Outlet	1"			1.5"	
Water Pressure (Max)	Bar	6				
Pressure Relief Valve	Outlet	1"				
Sensor Port Size	Diameter – mm	10				
Dimension	Diameter – mm	520	580	650	710	710
	Height – mm	924 ± 5	1357 ± 5	1507 ± 5	1610 ± 5	1958 ± 5
Weight (Empty)	kg	35.4	63.0	78.3	96.4	112.6
Operation Weight	Kg	135.4	263.0	378.3	496.4	612.6

Note: Electric Heater is optional, external power supply (1ph / 230V / 50Hz) is required
 1.5kW Electric heater for 100L tank
 2.5kW Electric heater for 200L, 300L, 400L & 500L tank

CU HOT WATER CIRCUIT



AHU-RH DD SERIES (VRV-DX + VRV HRHW) – OUTDOOR AIR UNIT MODEL SPECIFICATIONS

Model		AHU-RH 50 DDEC	AHU-RH 100 DDEC	AHU-RH 150 DDEC
Dimension (H x W x D)		(mm)	1100 x 1300 x 6050	1200 x 1800 x 6050
Power Supply			400V / 3Ph / 50Hz	400V / 3Ph / 50Hz
Total Cooling Capacity		(kW)	51.5	103.0
Sensible Capacity		(kW)	20.3	41.1
Air Flow Rate		(CMH)	3,300	6,600
External Static Pressure		(Pa)	500	500
Total Static Pressure		(Pa)	1139	1147
Air Filter (Primary)			2" Washable Filter (G4)	
Air Filter (Secondary)			15" Bag Filter (F8)	
Fan	Fan Model	(Model x Qty)	K3G400P9205 x 1	K3G450PB2405 x 1
	Motor Capacity	(kW)	2.50	5.25
	Power Input	(kW)	1.93	3.18
	Running Ampere	(A)	3.00	5.00
	Fan Efficiency	W/CMH	0.58	0.48
	Unit Efficiency	kW/RT	0.13	0.11
Pre-Cooling Coil	Cooling Capacity	(kW)	26.6	53.6
	Sensible Capacity	(kW)	11.1	22.5
	Ent. Air Temp	°CDB / °CWB	33.0 / 27.0	33.0 / 27.0
	Lev. Air Temp	°CDB / °CWB	23.0 / 21.0	22.8 / 20.9
	Air Pressure Drop	(Pa)	81.5	82.5
	Face Area	(m ²)	0.37	0.72
	Face Velocity	(m/s)	2.52	2.54
	Coil Material		Cu Tube / Al Fin	
	Cooling Medium		Refrigerant R410A	
	Piping Connections	Liquid Pipes (mm)	9.5 x 1	15.9 x 1
		Gas Pipes (mm)	22.2 x 1	28.6 x 1
Main Cooling Coil	Cooling Capacity	(kW)	26.9	52.6
	Sensible Capacity	(kW)	11.2	21.8
	Ent. Air Temp	°CDB / °CWB	23.0 / 21.0	22.8 / 20.9
	Lev. Air Temp	°CDB / °CWB	13.0 / 12.9	13.0 / 12.9
	Air Pressure Drop	(Pa)	235.0	238.5
	Face Area	(m ²)	0.37	0.72
	Face Velocity	(m/s)	2.52	2.54
	Coil Material		Cu Tube / Al Fin	
	Cooling Medium		Refrigerant R410A	
	Piping Connections	Liquid Pipes (mm)	9.5 x 1	15.9 x 1
		Gas Pipes (mm)	22.2 x 1	28.6 x 1
Reheat Coil	Reheat Capacity	(kW)	9.1	19.7
	Ent. Air Temp	°CDB / °CWB	13.0 / 12.9	13.0 / 12.9
	Lev. Air Temp	°CDB / °CWB	21.0 / 15.9	21.0 / 15.9
	Ent. Water Temp	°C	35.0	35.0
	Lev. Water Temp	°C	25.0	25.0
	Air Pressure Drop	(Pa)	62.5	65.8
	Water Pressure Drop	(kPa)	1.51	6.48
	Water Flow Rate	(l/s)	0.22	0.47
	Face Area	(m ²)	0.36	0.69
	Face Velocity	(m/s)	2.59	2.67
	Coil Material		Cu Tube / Al Fin	
Cooling Medium		Water		
Piping Connections	Inlet (mm)		38.1	
	Outlet (mm)		38.1	
System Combination	Condensing Unit (Pre-Cool)	(Model x Qty)	RWHQ10TYM x 1	RWHQ20TYM x 1
	Condensing Unit (Main Cool)	(Model x Qty)	RXQ10AYM x 1	RXQ20AYM x 1
	Heat Exchanger Unit	(Model x Qty)	HWHQA34H x 1	HWHQA58H x 1
	Circulation Pump	(Model x Qty)	UPS 15-65 x 1	UPS 25-80 x 1
	Hot Water Tank	(Model x Qty)	HWT200XN x 1	HWT300XN x 1

- Notes:
 1) Cooling capacity based on ambient 33°CDB/27°CWB with 100% outdoor fresh air. Design dew point = 13°C
 2) Net capacity includes deduction of indoor fan motor heat
 3) Power input values are based on rated external static pressure
 4) UV-light equipped as standard accessory
 5) For AHU-RH...DW series, AHU design to be customized according to the given chilled water condition & room design requirement

AHU-RH DD SERIES (VRV-DX + VRV HRHW) - OUTDOOR AIR UNIT MODEL SPECIFICATIONS

Model		AHU-RH 200 DDEC	AHU-RH 250 DDEC	AHU-RH 300 DDEC	AHU-RH 350 DDEC
Dimension (H x W x D)		(mm)	1500 x 2100 x 6150	1600 x 2100 x 6150	1800 x 2100 x 5750
Power Supply			400V / 3Ph / 50Hz	400V / 3Ph / 50Hz	400V / 3Ph / 50Hz
Total Cooling Capacity		(kW)	203.0	252.0	297.0
Sensible Capacity		(kW)	81.1	100.5	118.7
Air Flow Rate		(CMH)	13,000	16,000	19,000
External Static Pressure		(Pa)	500	500	500
Total Static Pressure		(Pa)	1148	1147	1151
Air Filter (Primary)			2" Washable Filter (G4)		
Air Filter (Secondary)			15" Bag Filter (F8)		
Fan	Fan Model	(Model x Qty)	K3G450PB2405 x 2	K3G450PB2405 x 2	K3G500PB3305 x 2
	Motor Capacity	(kW)	2 x 5.25	2 x 5.25	2 x 5.70
	Power Input	(kW)	6.28	7.58	9.15
	Running Ampere	(A)	9.80	11.70	14.10
	Fan Efficiency	W/CMH	0.48	0.47	0.48
	Unit Efficiency	kW/RT	0.11	0.10	0.11
Pre-Cooling Coil	Cooling Capacity	(kW)	105.7	131.2	155.1
	Sensible Capacity	(kW)	44.5	54.9	65.2
	Ent. Air Temp	°CDB / °CWB	33.0 / 27.0	33.0 / 27.0	33.0 / 27.0
	Lev. Air Temp	°CDB / °CWB	22.8 / 20.9	22.8 / 20.8	22.8 / 20.8
	Air Pressure Drop	(Pa)	82.4	83.4	84.0
	Face Area	(m ²)	1.42	1.73	2.04
	Face Velocity	(m/s)	2.54	2.56	2.58
	Coil Material		Cu Tube / Al Fin		
	Cooling Medium		Refrigerant R410A		
	Piping Connections	Liquid Pipes (mm)	15.9 x 2	12.7 x 3	12.7 x 4
		Gas Pipes (mm)	28.6 x 2	28.6 x 3	28.6 x 4
Main Cooling Coil	Cooling Capacity	(kW)	103.6	128.4	151.1
	Sensible Capacity	(kW)	43.0	53.2	62.7
	Ent. Air Temp	°CDB / °CWB	22.8 / 20.9	22.8 / 20.8	22.8 / 20.8
	Lev. Air Temp	°CDB / °CWB	13.0 / 12.9	12.9 / 12.8	13.0 / 12.9
	Air Pressure Drop	(Pa)	238.0	241.4	243.5
	Face Area	(m ²)	1.42	1.73	2.04
	Face Velocity	(m/s)	2.54	2.56	2.58
	Coil Material		Cu Tube / Al Fin		
	Cooling Medium		Refrigerant R410A		
	Piping Connections	Liquid Pipes (mm)	15.9 x 2	12.7 x 3	12.7 x 4
		Gas Pipes (mm)	28.6 x 2	28.6 x 3	28.6 x 4
Reheat Coil	Reheat Capacity	(kW)	39.0	44.0	51.6
	Ent. Air Temp	°CDB / °CWB	13.0 / 12.9	12.9 / 12.8	13.0 / 12.9
	Lev. Air Temp	°CDB / °CWB	21.0 / 15.9	21.0 / 15.9	21.0 / 15.9
	Ent. Water Temp	°C	35.0	35.0	35.0
	Lev. Water Temp	°C	25.0	25.0	25.0
	Air Pressure Drop	(Pa)	67.4	62.1	63.7
	Water Pressure Drop	(kPa)	9.01	4.38	5.70
	Water Flow Rate	(l/s)	0.93	1.05	1.24
	Face Area	(m ²)	1.33	1.72	2.02
	Face Velocity	(m/s)	2.71	2.58	2.62
	Coil Material		Cu Tube / Al Fin		
Cooling Medium		Water			
Piping Connections	Inlet (mm)			38.1	
	Outlet (mm)			38.1	
System Combination	Condensing Unit (Pre-Cool)	(Model x Qty)	RWHQ20TYM x 2	RWHQ16TYM x 3	RWHQ14TYM x 4
	Condensing Unit (Main Cool)	(Model x Qty)	RXQ20AYM x 2	RXQ16AYM x 3	RXQ14AYM x 4
	Heat Exchanger Unit	(Model x Qty)	HWHQA58H x 2	HWHQA58H x 3	HWHQA58H x 4
	Circulation Pump	(Model x Qty)	UPS 25-80 x 2	UPS 25-80 x 3	UPS 25-80 x 4
	Hot Water Tank	(Model x Qty)	HWT500XN x 1	HWT300XN x 2	HWT400XN x 2

- Notes:
 1) Cooling capacity based on ambient 33°CDB/27°CWB with 100% outdoor fresh air. Design dew point = 13°C
 2) Net capacity includes deduction of indoor fan motor heat
 3) Power input values are based on rated external static pressure
 4) UV-light equipped as standard accessory
 5) For AHU-RH...DW series, AHU design to be customized according to the given chilled water condition & room design requirement



Perfecting the Air

Warning



- Ask a qualified 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 qualified installer or contractor to install those parts and accessories. Use of unauthorised 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.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided. If you need to install the outdoor unit close to the sea shore, contact your local distributor.

Daikin Airconditioning (Singapore) Pte Ltd

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