

Outdoor Units - DC Inverter

General Data

Models (RAS)	RAS-3HRNE	RAS-4HRNE	RAS-5HRNE	RAS-4HRNE	RAS-5HRNE
Power Supply	1-230V / 50Hz		3-400V / 50Hz		
Colour (Munsell Code)	Natural Grey (1.0Y8.5/0.5)				
Sound Pressure Level					
Night Mode	dB (A)	43 / (41)	45 / (41)	47 / (43)	45 / (41)
Sound Pressure Level	dB (A)	64	66	69	66
Outer Dimension					
Height	mm	800	1240	1240	1240
Width	mm	850	950	950	950
Depth	mm	315	315	315	315
Net Weight	kg	60	95	97	100
Refrigerant Type	R410A				
Flow Control	Micro Processor Controlled Expansion Valve				
Type Compressor	Hermetic (Rotary)	Hermetic (Scroll)	Hermetic (Scroll)	Hermetic (Scroll)	Hermetic (Scroll)
Quantity	1	1	1	1	1
Power	mm	0.98	1.38	1.38	2.2
Heat Exchanger	Multi-Pass Cross-Finned Tube				
Condenser Fan (Type)	Propeller Fan	Propeller Fan	Propeller Fan	Propeller Fan	Propeller Fan
Quantity	1	2	2	2	2
Air Flow Rate	m ³ /min	45	80	90	80
Power	W	50	30 + 50	50 + 70	30 + 50
Refrigeration Piping	Connection with nuts				
Connections Size					
Gas	mm (inches)	Ø9.53 (3/8")			
Liquid	mm (inches)	Ø15.88 (5/8")			
Refrigerant Charge	kg	2.4	3.6	3.6	3.6
Maximum Current	A	25	32	32	11
Packaging Dimensions	m ³	0.34	0.55	0.55	0.55

NOTES:

The nominal cooling and heating capacity is the combined capacity of HITACHI's AquaFree system, and it based with the following standards:

Cooling capacity EN 12055

Heating capacity reverse cycle units EN 255

Operation conditions	Cooling	Heating
Water Temperature Inlet	23.0°C	36.0°C
Water Temperature Outlet	18.0°C	30.0°C
Outdoor Air inlet Temperature DB	35.0°C	7.0°C
Water Temperature WB	-	6.0°C

Piping Length: 7.5 metres / **Piping lift:** 0 meters

DB: dry bulb / **WB:** wet bulb

The Sound Pressure Level is based on the following conditions:

1 meter from unit's front surface
Voltage of the power source is 230V

The above data was measured in an anaechoic chamber so that reflected sound should be taken into consideration when installing the unit.

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AquaFREE



AquaFREE System

Hitachi's AquaFREE system is a Heat Pump heating system for winter, and a partial cooling system for summer. The system consists of an Inverter Heat Pump outdoor unit and a hydraulic module indoor unit. The heat pump absorbs or sends the heat to the outside, and transfers it to the water circuit by means of the AquaFREE module.

The AquaFREE air conditioning system incorporates a set of technical benefits that make it one of the most attractive on the market. Right from selection of the ideal type of equipment in each case, up to its maintenance, and through installation, start up and operation. AquaFREE always provides the best solution for every user and greatly simplifies and eases the user's selection process.

AquaFREE systems provide great comfort, high reliability, rigorous design, low electrical consumption and require less installation space than a conventional boiler.

Applications

- Under floor heating and cooling
- Low temperature radiators
- Swimming pool heater

Savings and Ecology

- Use of highly efficient Hitachi DC Inverter technology
- Estimated savings of approx. 60% over traditional heating methods
- Manufactured to RoHS Environmental Directive



AquaFREE Standard Models (Swimming Pool models also available)

General Data

Models (RWM)		RWM-3FSN1E	RWM-4FSN1E	RWM-5FSN1E
Power Supply	–	1-230V / 50Hz		
Cooling for Radiant Floor				
Min	kW	3.9	4.9	6.7
Norm	kW	7.1	10.0	12.5
Max	kW	8.0	11.2	14.0
EER	–	3.51	3.22	3.54
Heating for Radiant Floor				
Min	kW	4.0	5.7	7.0
Norm	kW	8.0	11.2	14.0
Max	kW	10	14.6	16.7
COP	–	4.05	3.46	3.47
Pump Input Power	W	93	93	132
Sound Pressure Level	dB (A)	27	28	28
Outer Dimension				
Height	mm	900		
Width	mm	526		
Depth	mm	372		
Net Weight	kg	38	39	40
Refrigerant Type	–	R410A		
Refrigerant Piping Connections	–	Connection with nuts		
Connections Size				
Gas	mm (inches)	Ø9.53 (3/8")		
Liquid	mm (inches)	Ø15.88 (5/8")		
Water Pipe Connection	–	Connection with nuts		
Connections Size				
Circuit	mm (inches)	Ø25.4 (1")		
Supply	mm (inches)	Ø19.05 (3/4")		
Water Working Pressure (Nom)	mAq	3.5	2.5	2.3
Expansion Vessel Volume	–	5		
Maximum Current	A	0.5	0.5	0.6
Packaging Dimensions	m ³	0.2		
Cabinet Colour	–	Aluminium Grey		
Remote Control SW	–	CTA-IMH RF A		

AquaFREE Models with Electric Heaters (Swimming Pool models also available)

General Data

Models (RWM)		RWM-3FSN1E / 4.5H1	RWM-4FSN1E / 6H1	RWM-5FSN1E / 6H1	RWM-4FSN1E / 6H3	RWM-5FSN1E / 6H3
Power Supply	–	1-230V / 50Hz		3-400V / 50Hz		
Cooling for Radiant Floor						
Min	kW	3.9	4.9	6.7	4.9	6.7
Norm	kW	7.1	10.0	12.5	10.0	12.5
Max	kW	8.0	11.2	14.0	11.2	14.0
EER	–	3.51	3.22	3.54	3.22	3.54
Heating for Radiant Floor						
Min	kW	4.0	5.7	7.0	5.7	7.0
Norm	kW	8.0	11.2	14.0	11.2	14.0
Max	kW	11.5	14.6	16.7	14.6	16.7
COP	–	4.05	3.46	3.47	3.46	3.47
Auxiliary Heating						
Min / Med / Max	kW	1.50/3.00/4.50	2.00/4.00/6.00	2.00/4.00/6.00	2.00/4.00/6.00	2.00/4.00/6.00
Pump Input Power	W	93	93	132	93	132
Sound Pressure Level	dB (A)	27	28	28	28	28
Outer Dimension						
Height	mm	900				
Width	mm	526				
Depth	mm	372				
Net Weight	kg	42	44	45	44	45
Refrigerant Type	–	R410A				
Refrigerant Piping Connections	–	Connection with nuts				
Connections Size						
Gas	mm (inches)	Ø9.53 (3/8")				
Liquid	mm (inches)	Ø15.88 (5/8")				
Water Pipe Connection	–	Connection with nuts				
Connections Size						
Circuit	mm (inches)	Ø25.4 (1")				
Supply	mm (inches)	Ø19.05 (3/4")				
Water Working Pressure (Nom)	mAq	3.5	2.5	2.3	2.5	2.3
Expansion Vessel Volume	–	5				
Maximum Current	A	20.1	26.5	26.6	26.5	26.
Packaging Dimensions	m ³	0.2				
Cabinet Colour	–	Aluminium Grey				
Remote Control SW	–	CTA-IMH RF A				