

YAMATO HP Monobloc

Model		YHP08M1	YHP10M1	YHP12M1	YHP12MT1	YHP16MT1
Series Name		Air-to-water Heat Pump	Air-to-water Heat Pump	Air-to-water Heat Pump	Air-to-water Heat Pump	Air-to-water Heat Pump
Heating Capacity(Floor Heating)	kW	8,20	10,20	12,00	12,00	15,70
Heating Capacity(Floor Heating)	Btu/h	27.978,40	34.802,40	40.944,00	40.944,00	53.568,40
Cooling Capacity(Floor Cooling)	kW	8,30	10,20	12,00	12,00	15,40
Cooling Capacity(Floor Cooling)	Btu/h	28.319,60	34.802,40	40.944,00	40.944,00	52.544,80
Heating Capacity(Fan Coil or Radiator)	kW	8,30	10,20	13,00	13,00	16,20
Heating Capacity(Fan Coil or Radiator)	Btu/h	28.319,60	34.802,40	44.356,00	44.356,00	55.274,40
Cooling Capacity(Fan Coil)	kW	7,40	9,00	11,10	11,10	13,80
Cooling Capacity(Fan Coil)	Btu/h	25.248,80	30.708,00	37.873,20	37.873,20	47.085,60
Heating Power Input(Floor Heating)	kW	1,54	2,02	2,43	2,49	3,57
Cooling Power Input(Floor Cooling)	kW	1,56	2,00	2,45	2,61	4,05
Heating Power Input(Fan Coil or Radiator)	kW	1,90	2,50	3,45	3,45	4,49
Cooling Power Input(Fan Coil)	kW	2,00	2,65	3,58	3,58	5,09
Heating Rated Power Input	kW	5,20	5,75			
Cooling Rated Power Input	kW	3,75	4,00			
Heating Rated Current	A	23,00	25,00	29,00	11,50	12,50
Cooling Rated Current	A	12,00	12,00	17,10	6,90	9,95
COP(Floor Heating)	W/W	5,32	5,05	4,94	4,82	4,40
COP(Floor Heating)	(Btu/h)/W	18,17	17,23	16,85	16,44	15,01
EER(Floor Cooling)	W/W	5,32	5,10	4,90	4,60	3,80
EER(Floor Cooling)	(Btu/h)/W	18,15	17,40	16,71	15,69	12,97
COP(Fan Coil or Radiator)	W/W	4,32	4,08	3,77	3,77	3,61
COP(Fan Coil or Radiator)	(Btu/h)/W	14,91	13,92	12,86	12,86	12,31
EER(Fan Coil)	W/W	3,70	3,40	3,10	3,10	2,71
EER(Fan Coil)	(Btu/h)/W	12,62	11,59	10,58	10,58	9,25
COP (A-7,W35)	W/W					
COP (A-7,W35)	(Btu/h)/W					
COP (A-7,W45)	W/W					
COP (A-7,W45)	(Btu/h)/W					
Aph Indoor (Floor Heating)	kpa					
Aph Indoor (Fan Coil Heating)	kpa					
Apc Indoor (Fan Coil Cooling)	kpa					
Apc Indoor (Floor Cooling)	kpa					
Dph Indoor (Floor Heating)	kpa					
Dph Indoor (Fan Coil Heating)	kpa					
Dpc Indoor (Fan Coil Cooling)	kpa					
Dpc Indoor (Floor Cooling)	kpa					
ESEER (Floor Cooling)	—					
Pdh (Low-temperature,Average)	kW	8	9	12	12	13
Pdh (Low-temperature,Warmer)	kW	9	10	12	12	14
Pdh (Low-temperature,Colder)	kW	9	10	11	11	12
SCOP (Low-temperature,Average)	%	187	178	188	180	179
SCOP (Low-temperature,Warmer)	%	257	217	273	244	240
SCOP (Low-temperature,Colder)	%	166	153	181	159	158
ESEER (Fan Coil)	—	/	/	/	/	/
Pdh (Medium-temperature,Average)	kW	9	10	12	12	14
Pdh (Medium-temperature,Warmer)	kW	9	10	12	12	14
Pdh (Medium-temperature,Colder)	kW	8	9	12	12	13
SCOP(Medium-temperature,Average)	%	146	136	144	137	138
SCOP (Medium-temperature,Warmer)	%	191	170	179	169	159
SCOP (Medium-temperature,Colder)	%	126	121	129	117	118
declared load profile	—	XL	XL	XL	XL	XL
Daily electricity consumption	kWh	6,5067	6,5067	7,243	7,243	7,243
Annual electricity consumption	kWh	1358	1358	1518	1518	1518
Water heating energy efficiency	%	123,35	123,35	110,3	110,3	110,3
Rated Water Supply	L/h					
Rated Water Supply	Pint/h					
Sanitary Water Set Temperature Range	°C	40~80	40~80	40~80	40~80	40~80
Sanitary Water Set Temperature Range	°F	104~176	104~176	104~176	104~176	104~176
Heating Rated Water Outlet	°C	65	65	65	65	65
Heating Rated Water Outlet	°F	149	149	149	149	149
Test Condition Standard Number	—	EN14511, EN14825, EN16147	EN14511, EN14825, EN16147	EN14511, EN14825, EN16147	EN14511, EN14825, EN16147	EN14511, EN14825, EN16147
Power Supply						
Rated Voltage	V	230	230	230	400	400
Rated Frequency	Hz	50	50	50	50	50

YAMATO HP Monobloc

Phases	—	1	1	1	3	3
Ling Quantity	—	3	3	3	5	5
Cross-sectional Area of Power Cable Conductor	mm2	4	4	6	2,5	2,5
Cross-sectional Area of Power Cable Conductor	sq in	0,0062	0,0062	0,0062	0,0031	0,0031
Recommended Power Cable(Core)	N	3	3	3	5	5
Fuse Current	A	32	32	40	16	16
Circuit Breaker	A	32	32	40	16	16
Starting Current	A			/	/	/
Max. Over Current Protection	A					

Compressor

Compressor Trademark	—	/	/	/	/	/
Compressor Manufacturer	—	LANDA (GREE)	LANDA (GREE)	LANDA (GREE)	LANDA (GREE)	LANDA (GREE)
Compressor Model	—	QXFT-D25zF050C	QXFT-D25zF050C	QXFT-F310zN450	QXFT-F310zN450	QXFT-F310zN450
Compressor Type	—	Inverter Rotary	Inverter Rotary	Inverter Rotary	Inverter Rotary	Inverter Rotary
Compressor Quantity	—	1	1	1	1	1
Compressor Power Input	W	2375	2375	3680	3680	3680
Compressor Rated Load Amp (RLA)	A	/	/	/	/	/
Compressor Locked Rotor Amp (L.R.A)	A	/	/	/	/	/
Compressor Thermal Protector	—	/	/	/	/	/
Compressor Refrigerant Oil Type	—	FW68DA	FW68DA	FW68DA	FW68DA	FW68DA
Compressor Refrigerant Oil Charge Volume	L	0,85	0,85	1,12	1,12	1,12
Compressor Exhaust Volume	m3/h	5,4	5,4	6,7	6,7	6,7

Fan

Fan Type	—	Axial-flow	Axial-flow	Axial-flow	Axial-flow	Axial-flow
Fan Quantity	—	1	1	1	1	1
Fan Diameter-height	mm	470-165	470-165	545-178	545-178	545-178
Fan Diameter-height	inch	18 1/2-6 1/2	18 1/2-6 1/2	21 1/2-7	21 1/2-7	21 1/2-7
Motor Model	—	B-SWZ150A	B-SWZ150A	B-SWZ150A	B-SWZ150A	B-SWZ150A
Motor Insulation Class	—	E/B	E/B	E/B	E/B	E/B
Motor Safe Class	—	IP44	IP44	IP44	IP44	IP44
Motor Overload Protector	—	internal	internal	internal	internal	internal
Motor Full Load Amp(FLA)	A	0,53	0,53	0,53	0,53	0,53
Fan Motor Quantity	—	1	1	1	1	1
Fan Motor Drive Type	—	internal drive	internal drive	internal drive	internal drive	internal drive
Fan Motor Speed	rpm	100~800	100~800	100~800	100~800	100~800
Fan Motor Power Output	W	120	120	150	150	150
Fan Motor Power Input	W	/	/	/	/	/
Fan Motor Running Current	A	0,53	0,53	0,53	0,53	0,53
Fan Motor Capacitor	µF	/	/	/	/	/
Fan Motor Cassette Method	—	side	side	side	side	side

Other features

Air Flow Volume	m3/h	5800	5800			
Air Flow Volume	CFM	3413,3	3413,3			
Sound Pressure Level(Heating)	dB(A)	49,7	49,7	62,5	62,5	62,5
Sound Pressure Level(Cooling)	dB(A)	52,9	52,9	60,6	60,6	60,6
Permissible Excessive Operating Pressure for the Discharge Side	MPa	4,7	4,7	4,7	4,7	4,7
Permissible Excessive Operating Pressure for the Suction Side	MPa	2,5	2,5	2,5	2,5	2,5
Maximum Allowable Pressure	MPa	4,8	4,8	4,8	4,8	4,8
Safety Protection	—	High-low pressure protection, discharge temp. protection, motor overload protection, anti-freeze, water flow protection , compressor overload protection	High-low pressure protection, discharge temp. protection, motor overload protection, anti-freeze, water flow protection , compressor overload protection	High-low pressure protection, discharge temp. protection, motor overload protection, anti-freeze, water flow protection , compressor overload protection	High-low pressure protection, discharge temp. protection, motor overload protection, anti-freeze, water flow protection , compressor overload protection	High-low pressure protection, discharge temp. protection, motor overload protection, anti-freeze, water flow protection , compressor overload protection
System Operation Control		string control	string control	string control	string control	string control
Defrosting Method	--	automatic	automatic	automatic	automatic	automatic
Isolation	—	I	I	I	I	I
Moisture Protection	--	IPX4	IPX4	IPX4	IPX4	IPX4
Overload Protector	—	breaker	breaker	breaker	breaker	breaker
Climate Type	—	T1	T1	T1	T1	T1
Refrigerant	—	R32	R32	R32	R32	R32
Refrigerant Charge	kg	1,6	1,6	2,2	2,2	2,2
Refrigerant Charge	oz	56,448	56,448	77,616	77,616	77,616
Throttling Method	—	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve

Heat Exchanger

Heat Exchanger Type	-	Aluminum Fin-copper Tube	Aluminum Fin-copper Tube	Aluminum Fin-copper Tube	Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
Heat Exchanger Quantity	—	1	1	1	1	1
Heat Exchanger Material	—	copper, aluminium	copper, aluminium	copper, aluminium	copper, aluminium	copper, aluminium
Heat Exchanger Face Area	m2	0,61	0,61	0,61	0,61	0,61

YAMATO HP Monobloc

Heat Exchanger Face Area	sq.ft	6,56604	6,56604	6,56604	6,56604	6,56604
Heat Exchanger Pipe Diameter	mm	φ7	φ7	φ7	φ7	φ7
Heat Exchanger Pipe Diameter	inch	φ4/16"	φ4/16"	φ4/16"	φ4/16"	φ4/16"
Heat Exchanger Number of Rows	—	2	2	3	3	3
Heat Exchanger Tube Pitch(a)×Row Pitch(b)	mm	22×19.05	22×19.05	22×19.05	22×19.05	22×19.05
Heat Exchanger Tube Pitch(a)×Row Pitch(b)	inch	6/7 × 3/4	6/7 × 3/4	6/7 × 3/4	6/7 × 3/4	6/7 × 3/4
Heat Exchanger Fin Pitch	mm	1,4	1,4	1,4	1,4	1,4
Heat Exchanger Fin Pitch	inch	0,0555555556	0,0555555556	0,0555555556	0,0555555556	0,0555555556
Heat Exchanger Fins per Inch(FPI)	—	16	16	16	16	16
Heat Exchanger Fin Type	—	wavy fin	wavy fin	wavy fin	wavy fin	wavy fin
Heat Exchanger Fin Colour	—	golden	golden	golden	golden	golden
Heat Exchanger Number of Circuits	—	6	6	9	9	9
Heat Exchanger (LxHxW)	mm	764×792×366	764×792×366	764×792×366	764×792×366	764×792×366
Heat Exchanger (LxHxW)	inch	30 1/16×31 3/16×14 2/5	30 1/16×31 3/16×14 2/5	30 1/16×31 3/16×14 2/5	30 1/16×31 3/16×14 2/5	30 1/16×31 3/16×14 2/5
Heat Exchanger Max. Allowable Pressure	MPa	12,7	12,7	12,7	12,7	12,7

Plate Heat Exchanger

Heat Exchanger Type	—	Brazed Plate HEX	Brazed Plate HEX	Brazed Plate HEX	Brazed Plate HEX	Brazed Plate HEX
Water Flow Volume	m3/h	1,44	1,72	2,064	2,064	2,752
Water Flow Volume	GPM	6,35	7,58	9,10	9,10	12,13
Water Flow Pressure Drop	kPa					
Water Flow Pressure Drop	Ft-WG					
Design Pressure(Water Side)	kPa	150	150	150	150	150
Design Pressure(Refrigerant Side)	kPa	4500~5400	4500~5400	4500~5400	4500~5400	4500~5400
Heat Exchanger Fouling Factor	m2•C/kW	/	/	/	/	/
Heat Exchanger Pipe Diameter	mm	/	/	/	/	/
Heat Exchanger Pipe Diameter	inch	/	/	/	/	/
Inlet/Outlet Water Pipe Coupling Type	—	Female BSP	Female BSP	Female BSP	Female BSP	Female BSP
Inlet/Outlet Water Pipe Diameter	mm	25	25	25	25	25
Inlet/Outlet Water Pipe Diameter	inch	1	1	1	1	1

Operating Conditions

Cooling Nominal Operating Condition Outdoor Temperature(DB)	°C	35	35	35	35	35
Cooling Nominal Operating Condition Outdoor Temperature(DB)	°F	95	95	95	95	95
Cooling Nominal Operating Condition Outdoor Temperature(WB)	°C	24	24	24	24	24
Cooling Nominal Operating Condition Outdoor Temperature(WB)	°F	75,2	75,2	75,2	75,2	75,2
Heating Nominal Operating Condition Outdoor Temperature(DB)	°C	7	7	7	7	7
Heating Nominal Operating Condition Outdoor Temperature(DB)	°F	44,6	44,6	44,6	44,6	44,6
Heating Nominal Operating Condition Outdoor Temperature(WB)	°C	6	6	6	6	6
Heating Nominal Operating Condition Outdoor Temperature(WB)	°F	42,8	42,8	42,8	42,8	42,8
Water Heating Nominal Operating Condition Outdoor Temperature(DB)	°C	7	7	7	7	7
Water Heating Nominal Operating Condition Outdoor Temperature(DB)	°F	44,6	44,6	44,6	44,6	44,6
Water Heating Nominal Operating Condition Outdoor Temperature(WB)	°C	6	6	6	6	6
Water Heating Nominal Operating Condition Outdoor Temperature(WB)	°F	42,8	42,8	42,8	42,8	42,8
Cooling Operating Range Outdoor Temperature(DB)	°C	-15~48	-15~48	-15~48	-15~48	-15~48
Cooling Operating Range Outdoor Temperature(DB)	°F	5~118.4	5~118.4	5~118.4	5~118.4	5~118.4
Heating Operating Range Outdoor Temperature(DB)	°C	-25~35	-25~35	-25~35	-25~35	-25~35
Heating Operating Range Outdoor Temperature(DB)	°F	-13~95	-13~95	-13~95	-13~95	-13~95
Water Heating Operating Range Outdoor Temperature(DB)	°C	-25~45	-25~45	-25~45	-25~45	-25~45

Heating Operating Range Outdoor Temperature(DB)	°F	-13~113	-13~113	-13~113	-13~113	-13~113
---	----	---------	---------	---------	---------	---------

Performances

Outflow Water Temperature(Cooling to Fan Coil)	°C	5	5	5	5	5
Outflow Water Temperature(Cooling to Fan Coil)	°F	41	41	41	41	41
Outflow Water Temperature(Cooling to Floor)	°C	18	18	18	18	18
Outflow Water Temperature(Cooling to Floor)	°F	64,4	64,4	64,4	64,4	64,4
Outflow Water Temperature(Heating to Fan Coil)	°C	45	45	45	45	45
Outflow Water Temperature(Heating to Fan Coil)	°F	113	113	113	113	113
Outflow Water Temperature(Heating to Floor)	°C	35	35	35	35	35
Outflow Water Temperature(Heating to Floor)	°F	95	95	95	95	95
Electric Heater Type	—	/	/	/	/	/
Electric Heater Material	—	/	/	/	/	/
Electric Heater Operation	—	/	/	/	/	/
Electric Heater Steps	—	2	2	2	2	2
Electric Heater Capacity	kW	6	6	6	6	6
Electric Heater Combination	—	3+3	3+3	3+3	3+3	3+3
Electric Heater Power input	kW	6	6	6	6	6
Expansion Vessel Volume	L	2	2	3	3	3
Expansion Vessel Water Pressure(Max)	Bar	3	3	3	3	3
Expansion Vessel Water Pressure(Pre)	Bar	1	1	1	1	1
Pump Type	—	Water-cooled	Water-cooled	Water-cooled	Water-cooled	Water-cooled
Pump Nr. of Speed	—	variable-speed	variable-speed	variable-speed	variable-speed	variable-speed
Pump Power Input	W	3~87	3~87	3~87	3~87	3~87
Pump Water Flow Limit	LPM	12	12	12	12	12
Safety valve						

Dimensions &weight

Dimension of Outline(W)	mm	1.206,00	1.206,00	1.206,00	1.206,00	1.206,00
Dimension of Outline(W)	inch	47,50	47,50	47,50	47,50	47,50
Dimension of Outline(H)	mm	878,00	878,00	878,00	878,00	878,00
Dimension of Outline(H)	inch	34,57	34,57	34,57	34,57	34,57
Dimension of Outline(D)	mm	445,00	445,00	445,00	445,00	445,00
Dimension of Outline(D)	inch	17,50	17,50	17,50	17,50	17,50
Dimension of Carton Box (L)	mm	1.320,00	1.320,00	1.320,00	1.320,00	1.320,00
Dimension of Carton Box (L)	inch	51,97	51,97	51,97	51,97	51,97
Dimension of Carton Box (W)	mm	525,00	525,00	525,00	525,00	525,00
Dimension of Carton Box (W)	inch	20,67	20,67	20,67	20,67	20,67
Dimension of Carton Box (H)	mm	885,00	885,00	885,00	885,00	885,00
Dimension of Carton Box (H)	inch	34,84	34,84	34,84	34,84	34,84
Dimension of Package(L)	mm	1.338,00	1.338,00	1.338,00	1.338,00	1.338,00
Dimension of Package(L)	inch	52,68	52,68	52,68	52,68	52,68
Dimension of Package(W)	mm	553,00	553,00	553,00	553,00	553,00
Dimension of Package(W)	inch	21,77	21,77	21,77	21,77	21,77
Dimension of Package(H)	mm	1.020,00	1.020,00	1.020,00	1.020,00	1.020,00
Dimension of Package(H)	inch	40,16	40,16	40,16	40,16	40,16
Net Weight	kg	120,00	120,00	138,00	144,00	144,00
Net Weight	lb	264,60	264,60	304,29	317,52	317,52
Gross Weight	kg	139,00	139,00	156,00	162,00	162,00
Gross Weight	lb	306,50	306,50	343,98	357,21	357,21

Loading Quantity

Loading Quantity (20' Container)	unit	32	32	32	32	32
Loading Quantity (40' Container)	unit	66	66	66	66	66
Loading Quantity (40' High Cube Container)	unit	66	66	66	66	66

Functions

Cooling		YES	YES	YES	YES	YES
Heating		YES	YES	YES	YES	YES
Water Heating		YES	YES	YES	YES	YES
Cooling + Water Heating		YES	YES	YES	YES	YES
Heating + Water Heating		YES	YES	YES	YES	YES
Emergency Mode		YES	YES	YES	YES	YES
Water Quick Heating		YES	YES	YES	YES	YES
Holiday Mode		YES	YES	YES	YES	YES
Quiet Mode		YES	YES	YES	YES	YES
Forced Mode		YES	YES	YES	YES	YES
Ambient Reliant Mode		YES	YES	YES	YES	YES
Sterilizing Mode		YES	YES	YES	YES	YES

YAMATO HP Monobloc

Gate Control		YES	YES	YES	YES	YES
Extremity Control Function		YES	YES	YES	YES	YES
Compressor High Pressure Protection		YES	YES	YES	YES	YES
Compressor Low Pressure Protection		YES	YES	YES	YES	YES
Overload Protection		YES	YES	YES	YES	YES
Flow Switch Error Protection		YES	YES	YES	YES	YES
Superheating Protection		YES	YES	YES	YES	YES
High Temperature Protection		YES	YES	YES	YES	YES
Phase Loss or Reverse Protection		YES	YES	YES	YES	YES
High Pressure Sensor Error		YES	YES	YES	YES	YES
Communication Error Protection		YES	YES	YES	YES	YES
Automatic Anti-freezing Inwinter Memory		YES	YES	YES	YES	YES
Temperature Sensor Protection		YES	YES	YES	YES	YES
Refrigerant loss protection		YES	YES	YES	YES	YES