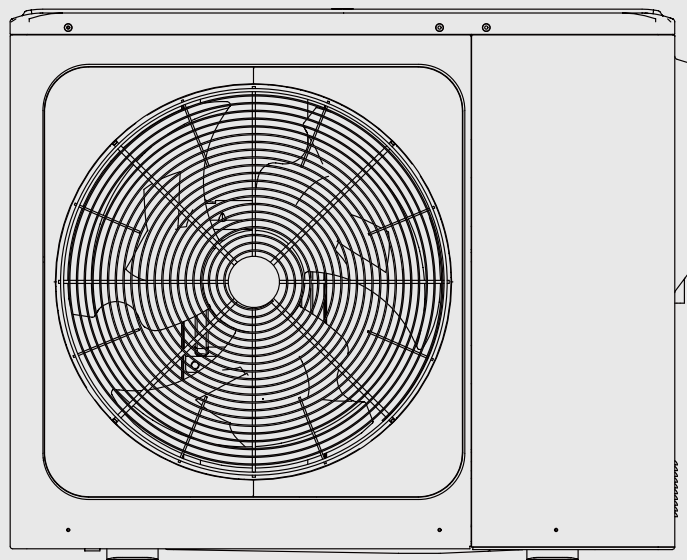


MONO HEAT PUMPS

TECHNICAL DATA MANUAL



IMPORTANT NOTE:



Thank you very much for purchasing our product,
Before using your unit , please read this manual carefully and keep it for future reference.

Temperature application

Model	For medium - temperature application										
	Energy efficiency class	Unit sound power	average climate			colder climate			warmer climate		
			Rated heat output	Seasonal space heating energy efficiency	For space heating annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating annual energy consumption
	-	dB	kW	%	kWh	kW	%	kWh	kW	%	kWh
MHPP5RP24MI	A++	60	6.4	140.7	3655	5.2	113.1	4428	6.2	170.9	1895
MHPP7RP24MI	A++	63	7.3	143.6	4088	6.1	117.7	4948	8.1	185.3	2303
MHPP9RP24MI	A++	65	8.2	145.5	4539	7.2	122.4	5665	9.0	193.4	2458
MHPP12RP24MI	A++	70	12.5	141.6	7148	11.3	126.0	8628	12.0	179.0	3524
MHPP12RP24P3MI	A++	70	12.5	141.6	7148	11.3	126.0	8628	12.0	179.0	3523
MHPP14RP24MI	A++	72	14.2	141.8	8079	12.5	126.6	9496	14.2	184.6	4040
MHPP14RP24P3MI	A++	72	14.2	141.8	8079	12.5	126.6	9496	14.2	184.7	4039
MHPP16RP24MI	A++	72	14.7	140.6	8471	13.5	124.3	10473	14.5	184.0	4154
MHPP16RP24P3MI	A++	72	14.7	140.7	8470	13.5	124.3	10473	14.5	184.0	4153

Model	For low - temperature application										
	Energy efficiency class	Unit sound power	average climate			colder climate			warmer climate		
			Rated heat output	Seasonal space heating energy efficiency	For space heating annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating annual energy consumption
	-	dB	kW	%	kWh	kW	%	kWh	kW	%	kWh
MHPP5RP24MI	A+++	60	6.5	201.8	2631	6.1	173.4	3425	6.2	268.2	1229
MHPP7RP24MI	A+++	63	7.9	204.0	3155	7.5	174.6	4166	8.1	274.7	1551
MHPP9RP24MI	A+++	65	9.1	201.9	3654	8.3	174.6	4591	9.0	279.1	1714
MHPP12RP24MI	A+++	70	12.3	200.1	5004	12.5	168.8	7153	12.1	262.3	2437
MHPP12RP24P3MI	A+++	70	12.3	200.2	5003	12.5	168.8	7153	12.1	262.5	2435
MHPP14RP24MI	A+++	72	14.2	192.5	5984	14.3	171.3	8095	13.2	260.5	2684
MHPP14RP24P3MI	A+++	72	14.2	192.5	5984	14.3	171.3	8095	13.2	260.6	2683
MHPP16RP24MI	A+++	72	15.2	190.5	6510	15.1	170.9	8546	14.2	255.3	2937
MHPP16RP24P3MI	A+++	72	15.2	190.5	6509	15.1	170.9	8546	14.2	255.5	2935

Product fiche 1

Heat pump space heating		Outdoor	MHPP5RP24MI	MHPP7RP24MI	MHPP9RP24MI	MHPP12RP24MI	MHPP14RP24MI
Outdoor unit sound power (*)	Average climate low temperature application	dB	60	63	65	70	72
	Average climate medium temperature application	dB	60	63	65	70	72
Space heating	Energy efficiency class 35°C (Low temp. app.)	-	A+++	A+++	A+++	A+++	A+++
Space heating	Energy efficiency class 55°C (Medium temp. app.)	-	A++	A++	A++	A++	A++
Average climate (Design temperature = -10°C)							
Space heating 35°C	Prated (declared heating capacity) @ -10°C	[kW]	6.5	7.9	9.1	12.3	14.2
	Seasonal space heating efficiency (ηs)	[%]	201.8	204.0	201.9	200.1	192.5
	Annual energy consumption	[kWh]	2,631	3,155	3,654	5,004	5,984
Space heating 55°C	Prated (declared heating capacity) @ -10°C	[kW]	6.4	7.3	8.2	12.5	14.2
	Seasonal space heating efficiency (ηs)	[%]	140.7	143.6	145.5	141.6	141.8
	Annual energy consumption	[kWh]	3,655	4,088	4,539	7,148	8,079
Part load conditions space heating average climate low temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	5.77	6.99	8.02	10.85	12.52
	COPd (declared COP)	-	3.43	3.29	3.09	3.11	2.97
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	3.74	4.51	5.06	6.79	7.98
	COPd (declared COP)	-	5.04	4.99	4.92	4.86	4.56
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	2.32	2.81	3.22	4.79	5.04
	COPd (declared COP)	-	6.06	6.72	7.03	6.98	7.01
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	1.87	1.87	1.87	3.73	3.73
	COPd (declared COP)	-	9.12	9.12	9.12	9.02	9.02
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00	-10.00
	Pdh (declared heating capacity)	[kW]	6.52	7.46	7.88	12.30	13.41
	COPd (declared COP)	-	3.00	2.87	2.87	2.80	2.66
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65

Product fiche 1

Heat pump space heating		Outdoor	MHPP16RP24MI	MHPP12RP24P3MI	MHPP14RP24P3MI	MHPP16RP24P3MI
Outdoor unit sound power (*)	Average climate low temperature application	dB	72	70	72	72
	Average climate medium temperature application	dB	72	70	72	72
Space heating	Energy efficiency class 35°C (Low temp. app.)	-	A+++	A+++	A+++	A+++
Space heating	Energy efficiency class 55°C (Medium temp. app.)	-	A++	A++	A++	A++
Average climate (Design temperature = -10°C)						
Space heating 35°C	Prated (declared heating capacity) @ -10°C	[kW]	15.2	12.3	14.2	15.2
	Seasonal space heating efficiency (η_s)	[%]	190.5	200.2	192.5	190.5
	Annual energy consumption	[kWh]	6,510	5,003	5,984	6,509
Space heating 55°C	Prated (declared heating capacity) @ -10°C	[kW]	14.7	12.5	14.2	14.7
	Seasonal space heating efficiency (η_s)	[%]	140.6	141.6	141.8	140.7
	Annual energy consumption	[kWh]	8,471	7,148	8,079	8,470
Part load conditions space heating average climate low temperature application						
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	13.49	10.85	12.52	13.49
	COPd (declared COP)	-	2.87	3.11	2.97	2.87
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	8.59	6.79	7.98	8.59
	COPd (declared COP)	-	4.53	4.86	4.56	4.53
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	5.55	4.79	5.04	5.55
	COPd (declared COP)	-	7.01	6.98	7.01	7.01
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.73	3.73	3.73	3.73
	COPd (declared COP)	-	9.02	9.02	9.02	9.02
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00
	Pdh (declared heating capacity)	[kW]	14.05	12.30	13.41	14.05
	COPd (declared COP)	-	2.65	2.80	2.66	2.65
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65

Product fiche 2

Heat pump space heating		Outdoor	MHPP5RP24MI	MHPP7RP24MI	MHPP9RP24MI	MHPP12RP24MI	MHPP14RP24MI
(F) Tbivalent temperature	Tbiv	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	5.77	6.99	8.02	10.85	12.52
	COPd (declared COP)	-	3.43	3.29	3.09	3.11	2.97
Supplementary capacity at P_design	Psup (@Tdesignh: -10°C)	[kW]	0.00	0.44	1.18	0.00	0.75
Part load conditions space heating average climate medium temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	5.62	6.42	7.21	11.06	12.52
	COPd (declared COP)	-	2.36	2.31	2.24	2.15	2.20
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	3.52	4.03	4.56	6.91	7.71
	COPd (declared COP)	-	3.70	3.76	3.86	3.59	3.58
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	2.20	2.56	2.84	4.64	5.07
	COPd (declared COP)	-	4.21	4.48	4.58	5.07	5.06
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	1.31	1.31	1.31	2.15	2.15
	COPd (declared COP)	-	4.96	4.96	4.96	4.52	4.52
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00	-10.00
	Pdh (declared heating capacity)	[kW]	6.04	6.85	7.01	10.97	11.51
	COPd (declared COP)	-	2.02	1.98	1.97	1.98	1.96
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65
(F) Tbivalent temperature	Tbiv	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	5.62	6.42	7.21	11.06	12.52
	COPd (declared COP)	-	2.36	2.31	2.24	2.15	2.20
Supplementary capacity at P_design	Psup (@Tdesignh: -10°C)	[kW]	0.32	0.40	1.14	1.53	2.65
Colder climate (Design temperature = -22°C)							
Space heating 35°C	Prated (declared heating capacity) @ -22°C	[kW]	6.1	7.5	8.3	12.5	14.3
	Seasonal space heating efficiency (ηs)	[%]	173.4	174.6	174.6	168.8	171.3
	Annual energy consumption	[kWh]	3,425	4,166	4,591	7,153	8,095

Product fiche 2

Heat pump space heating		Outdoor	MHPP16RP24MI	MHPP12RP24P3MI	MHPP14RP24P3MI	MHPP16RP24P3MI
(F) Tivalent temperature	Tbiv	[°C]	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	13.49	10.85	12.52	13.49
	COPd (declared COP)	-	2.87	3.11	2.97	2.87
Supplementary capacity at P_design	Psup (@Tdesignh: -10°C)	[kW]	1.18	0.00	0.75	1.18
Part load conditions space heating average climate medium temperature application						
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	13.03	11.06	12.52	13.03
	COPd (declared COP)	-	2.16	2.15	2.20	2.16
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	8.50	6.91	7.71	8.50
	COPd (declared COP)	-	3.55	3.59	3.58	3.55
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	5.27	4.64	5.07	5.27
	COPd (declared COP)	-	5.05	5.07	5.06	5.05
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	2.15	2.15	2.15	2.15
	COPd (declared COP)	-	4.52	4.52	4.52	4.52
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00
	Pdh (declared heating capacity)	[kW]	12.07	10.97	11.51	12.07
	COPd (declared COP)	-	1.94	1.98	1.96	1.94
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65
(F) Tivalent temperature	Tbiv	[°C]	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	13.03	11.06	12.52	13.03
	COPd (declared COP)	-	2.16	2.15	2.20	2.16
Supplementary capacity at P_design	Psup (@Tdesignh: -10°C)	[kW]	2.63	1.53	2.65	2.63
Colder climate (Design temperature = -22°C)						
Space heating 35°C	Prated (declared heating capacity) @ -22°C	[kW]	15.1	12.5	14.3	15.1
	Seasonal space heating efficiency (ηs)	[%]	170.9	168.8	171.3	170.9
	Annual energy consumption	[kWh]	8,546	7,153	8,095	8,546

Product fiche 3

Heat pump space heating		Outdoor	MHPP5RP24MI	MHPP7RP24MI	MHPP9RP24MI	MHPP12RP24MI	MHPP14RP24MI
Space heating 55°C	Prated (declared heating capacity) @ -22°C	[kW]	5.2	6.1	7.2	11.3	12.5
	Seasonal space heating efficiency (η_s)	[%]	113.1	117.7	122.4	126.0	126.6
	Annual energy consumption	[kWh]	4,428	4,948	5,665	8,628	9,496
Part load conditions space heating colder climate low temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	4.11	4.42	5.42	8.08	8.74
	COPd (declared COP)	-	3.76	3.67	3.72	3.64	3.59
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	2.38	2.99	3.14	4.93	5.52
	COPd (declared COP)	-	5.33	5.50	5.56	5.34	5.35
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	1.66	2.03	2.16	3.17	3.70
	COPd (declared COP)	-	5.78	6.69	6.55	5.28	7.06
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	1.87	1.87	1.87	3.69	3.69
	COPd (declared COP)	-	9.12	9.12	9.12	9.34	9.34
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-22.00	-22.00	-22.00	-22.00	-22.00
	Pdh (declared heating capacity)	[kW]	4.21	4.78	5.08	8.72	9.14
	COPd (declared COP)	-	2.12	2.16	2.01	2.08	2.02
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65
(F) Tbivalent temperature	Tbiv	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
	Pdh (declared heating capacity)	[kW]	5.00	6.12	6.75	10.17	11.67
	COPd (declared COP)	-	3.02	2.70	2.59	2.66	2.58
Supplementary capacity at P_design	Psup (@Tdesignh: -22°C)	[kW]	1.92	2.72	3.19	3.78	5.17
Part load conditions space heating colder climate medium temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	3.21	3.95	4.59	7.09	7.80
	COPd (declared COP)	-	2.60	2.75	2.72	2.75	2.77
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 3

Heat pump space heating		Outdoor	MHPP16RP24MI	MHPP12RP24P3MI	MHPP14RP24P3MI	MHPP16RP24P3MI
Space heating 55°C	Prated (declared heating capacity) @ -22°C	[kW]	13.5	11.3	12.5	13.5
	Seasonal space heating efficiency (η_s)	[%]	124.3	126.0	126.6	124.3
	Annual energy consumption	[kWh]	10,473	8,628	9,496	10,473
Part load conditions space heating colder climate low temperature application						
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	9.26	8.08	8.74	9.26
	COPd (declared COP)	-	3.59	3.64	3.59	3.59
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	5.76	4.93	5.52	5.76
	COPd (declared COP)	-	5.35	5.34	5.35	5.35
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	3.76	3.17	3.70	3.76
	COPd (declared COP)	-	7.04	5.28	7.06	7.04
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.72	3.69	3.69	3.72
	COPd (declared COP)	-	8.78	9.34	9.34	8.78
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-22.00	-22.00	-22.00	-22.00
	Pdh (declared heating capacity)	[kW]	9.43	8.72	9.14	9.43
	COPd (declared COP)	-	2.00	2.08	2.02	2.00
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65
(F) Tbivalent temperature	Tbiv	[°C]	-15.00	-15.00	-15.00	-15.00
	Pdh (declared heating capacity)	[kW]	12.30	10.17	11.67	12.30
	COPd (declared COP)	-	2.58	2.66	2.58	2.58
Supplementary capacity at P_design	Psup (@Tdesignh: -22°C)	[kW]	5.67	3.78	5.17	5.67
Part load conditions space heating colder climate medium temperature application						
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	8.43	7.09	7.80	8.43
	COPd (declared COP)	-	2.77	2.75	2.77	2.77
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90

Product fiche 4

Heat pump space heating		Outdoor	MHPP5RP24MI	MHPP7RP24MI	MHPP9RP24MI	MHPP12RP24MI	MHPP14RP24MI
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	2.03	2.25	2.82	4.44	4.64
	COPd (declared COP)	-	3.18	3.30	3.60	3.88	3.91
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	1.56	1.56	1.76	3.00	3.00
	COPd (declared COP)	-	4.50	4.50	4.84	4.88	4.88
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	1.44	1.44	1.44	3.60	3.61
	COPd (declared COP)	-	5.83	5.83	5.83	6.61	6.61
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-22.00	-22.00	-22.00	-22.00	-22.00
	Pdh (declared heating capacity)	[kW]	3.24	3.24	3.24	7.00	7.28
	COPd (declared COP)	-	1.32	1.32	1.32	1.38	1.35
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65
(F) Tbivalent temperature	Tbiv	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
	Pdh (declared heating capacity)	[kW]	4.25	4.94	5.88	9.21	10.19
	COPd (declared COP)	-	2.00	2.08	2.10	1.92	1.91
Supplementary capacity at P_design	Psup (@Tdesignh: -22°C)	[kW]	1.98	2.82	3.97	4.30	5.21
Warmer climate (Design temperature = 2°C)							
Space heating 35°C	Prated (declared heating capacity) @ 2°C	[kW]	6.2	8.1	9.0	12.1	13.2
	Seasonal space heating efficiency (ηs)	[%]	268.2	274.7	279.1	262.3	260.5
	Annual energy consumption	[kWh]	1,229	1,551	1,714	2,437	2,684
Space heating 55°C	Prated (declared heating capacity) @ 2°C	[kW]	6.2	8.1	9.0	12.0	14.2
	Seasonal space heating efficiency (ηs)	[%]	170.9	185.3	193.4	179.0	184.6
	Annual energy consumption	[kWh]	1,895	2,303	2,458	3,524	4,040
Part load conditions space heating warmer climate low temperature application							
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	5.69	7.23	8.29	12.10	12.94
	COPd (declared COP)	-	4.31	4.04	3.85	3.53	3.51
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	4.01	5.18	5.81	7.78	8.51
	COPd (declared COP)	-	6.39	6.35	6.24	5.82	5.72
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 4

Heat pump space heating		Outdoor	MHPP16RP24MI	MHPP12RP24P3MI	MHPP14RP24P3MI	MHPP16RP24P3MI
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	5.20	4.44	4.64	5.20
	COPd (declared COP)	-	3.74	3.88	3.91	3.74
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	3.53	3.00	3.00	3.53
	COPd (declared COP)	-	5.19	4.88	4.88	5.19
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.61	3.60	3.61	3.61
	COPd (declared COP)	-	6.61	6.61	6.61	6.61
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-22.00	-22.00	-22.00	-22.00
	Pdh (declared heating capacity)	[kW]	7.52	7.00	7.28	7.52
	COPd (declared COP)	-	1.30	1.38	1.35	1.30
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65
(F) Tbivalent temperature	Tbiv	[°C]	-15.00	-15.00	-15.00	-15.00
	Pdh (declared heating capacity)	[kW]	11.03	9.21	10.19	11.03
	COPd (declared COP)	-	1.85	1.92	1.91	1.85
Supplementary capacity at P_design	Psup (@Tdesignh: -22°C)	[kW]	6.00	4.30	5.21	6.00
Warmer climate (Design temperature = 2°C)						
Space heating 35°C	Prated (declared heating capacity) @ 2°C	[kW]	14.2	12.1	13.2	14.2
	Seasonal space heating efficiency (ηs)	[%]	255.3	262.5	260.6	255.5
	Annual energy consumption	[kWh]	2,937	2,435	2,683	2,935
Space heating 55°C	Prated (declared heating capacity) @ 2°C	[kW]	14.5	12.0	14.2	14.5
	Seasonal space heating efficiency (ηs)	[%]	184.0	179.0	184.7	184.0
	Annual energy consumption	[kWh]	4,154	3,523	4,039	4,153
Part load conditions space heating warmer climate low temperature application						
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	14.20	12.10	12.94	14.20
	COPd (declared COP)	-	3.22	3.53	3.51	3.22
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	9.15	7.78	8.51	9.15
	COPd (declared COP)	-	5.41	5.82	5.72	5.41
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90

Product fiche 5

Heat pump space heating		Outdoor	MHPP5RP24MI	MHPP7RP24MI	MHPP9RP24MI	MHPP12RP24MI	MHPP14RP24MI
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	2.07	2.46	2.67	3.64	3.96
	COPd (declared COP)	-	8.71	9.30	9.63	8.31	8.51
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	2.00	2.00	2.00	2.00	2.00
	Pdh (declared heating capacity)	[kW]	5.69	7.23	8.29	12.10	12.94
	COPd (declared COP)	-	4.31	4.04	3.85	3.53	3.51
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65
(F) Tbivalent temperature	Tbiv	[°C]	7.00	7.00	7.00	7.00	7.00
	Pdh (declared heating capacity)	[kW]	4.01	5.18	5.81	7.78	8.51
	COPd (declared COP)	-	6.39	6.35	6.24	5.82	5.72
Supplementary capacity at P_design	Psup (@Tdesignh: 2°C)	[kW]	0.55	0.84	0.75	0.00	0.26
Part load conditions space heating warmer climate medium temperature application							
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	6.17	7.80	8.42	12.00	13.01
	COPd (declared COP)	-	2.77	2.68	2.68	2.39	2.37
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	3.97	5.22	5.81	7.73	9.12
	COPd (declared COP)	-	3.90	4.07	4.16	3.86	3.95
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	2.06	2.36	2.74	3.59	4.26
	COPd (declared COP)	-	5.28	6.07	6.64	5.88	6.37
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	2.00	2.00	2.00	2.00	2.00
	Pdh (declared heating capacity)	[kW]	6.17	7.80	8.42	12.00	13.01
	COPd (declared COP)	-	2.77	2.68	2.68	2.39	2.37
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65
(F) Tbivalent temperature	Tbiv	[°C]	7.00	7.00	7.00	7.00	7.00
	Pdh (declared heating capacity)	[kW]	3.97	5.22	5.81	7.73	9.12
	COPd (declared COP)	-	3.90	4.07	4.16	3.86	3.95
Supplementary capacity at P_design	Psup (@Tdesignh: 2°C)	[kW]	0.00	0.32	0.61	0.00	1.18

Product fiche 5

Heat pump space heating		Outdoor	MHPP16RP24MI	MHPP12RP24P3MI	MHPP14RP24P3MI	MHPP16RP24P3MI
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	4.24	3.64	3.96	4.24
	COPd (declared COP)	-	8.56	8.31	8.51	8.56
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	2.00	2.00	2.00	2.00
	Pdh (declared heating capacity)	[kW]	14.20	12.10	12.94	14.20
	COPd (declared COP)	-	3.22	3.53	3.51	3.22
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65
(F) Tbivalent temperature	Tbiv	[°C]	7.00	7.00	7.00	7.00
	Pdh (declared heating capacity)	[kW]	9.15	7.78	8.51	9.15
	COPd (declared COP)	-	5.41	5.82	5.72	5.41
Supplementary capacity at P_design	Psup (@Tdesignh: 2°C)	[kW]	0.00	0.00	0.26	0.00
Part load conditions space heating warmer climate medium temperature application						
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	13.62	12.00	13.01	13.62
	COPd (declared COP)	-	2.35	2.39	2.37	2.35
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	9.35	7.73	9.12	9.35
	COPd (declared COP)	-	3.94	3.86	3.95	3.94
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	4.26	3.59	4.26	4.26
	COPd (declared COP)	-	6.37	5.88	6.37	6.37
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	2.00	2.00	2.00	2.00
	Pdh (declared heating capacity)	[kW]	13.62	12.00	13.01	13.62
	COPd (declared COP)	-	2.35	2.39	2.37	2.35
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65
(F) Tbivalent temperature	Tbiv	[°C]	7.00	7.00	7.00	7.00
	Pdh (declared heating capacity)	[kW]	9.35	7.73	9.12	9.35
	COPd (declared COP)	-	3.94	3.86	3.95	3.94
Supplementary capacity at P_design	Psup (@Tdesignh: 2°C)	[kW]	0.91	0.00	1.18	0.91

Product fiche 6

Heat pump space heating		Outdoor	MHPP5RP24MI	MHPP7RP24MI	MHPP9RP24MI	MHPP12RP24MI	MHPP14RP24MI
Product description	Air-to-water heat pump	Y/N	Yes	Yes	Yes	Yes	Yes
	Water-to-water heat pump	Y/N	No	No	No	No	No
	Brine-to-water heat pump	Y/N	No	No	No	No	No
	Low-temperature heat pump	Y/N	No	No	No	No	No
	Equipped with a supplementary heater	Y/N	Yes	Yes	Yes	Yes	Yes
	Heat pump combination heater	Y/N	Yes	Yes	Yes	Yes	Yes
Air to water unit	Rated airflow (outdoor)	[m ³ /h]	3900	4500	4500	5200	5200
Brine/water to water unit	Rated water/brine flow (outdoor H/E)	-	/	/	/	/	/
Other	Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter
	Poff (Power consumption Off mode)	[kW]	0.013	0.013	0.013	0.013	0.013
	Pto (Power consumption Thermostat off mode)	[kW]	0.020	0.020	0.020	0.020	0.020
	Psb (Power consumption Standby mode)	[kW]	0.013	0.013	0.013	0.013	0.013
	Pck (Power crankcase heater model)	[kW]	0.000	0.000	0.000	0.000	0.000
	Qelec (Daily electricity consumption)	[kWh]	/	/	/	/	/
	Qfuel (Daily fuel consumption)	[kWh]	/	/	/	/	/

Note :

Product fiche data according to energy label directive 2010/30/EC regulation (EU) 811/2013.

Sound power measured according to the EN12102 under conditions of the EN14825.

Details and precautions on installation, maintenance and assembly can be found in the installation and or operation manuals.

Product fiche 6

Heat pump space heating		Outdoor	MHPP16RP24MI	MHPP12RP24P3MI	MHPP14RP24P3MI	MHPP16RP24P3MI
Product description	Air-to-water heat pump	Y/N	Yes	Yes	Yes	Yes
	Water-to-water heat pump	Y/N	No	No	No	No
	Brine-to-water heat pump	Y/N	No	No	No	No
	Low-temperature heat pump	Y/N	No	No	No	No
	Equipped with a supplementary heater	Y/N	Yes	Yes	Yes	Yes
	Heat pump combination heater	Y/N	Yes	Yes	Yes	Yes
Air to water unit	Rated airflow (outdoor)	[m ³ /h]	5200	5200	5200	5200
Brine/water to water unit	Rated water/brine flow (outdoor H/E)	-	/	/	/	/
Other	Capacity control	-	Inverter	Inverter	Inverter	Inverter
	Poff (Power consumption Off mode)	[kW]	0.013	0.006	0.006	0.006
	Pto (Power consumption Thermostat off mode)	[kW]	0.020	0.018	0.018	0.018
	Psb (Power consumption Standby mode)	[kW]	0.013	0.006	0.006	0.006
	Pck (Power crankcase heater model)	[kW]	0.000	0.000	0.000	0.000
	Qelec (Daily electricity consumption)	[kWh]	/	/	/	/
	Qfuel (Daily fuel consumption)	[kWh]	/	/	/	/

Note :

a) represents the hydraulic module series ;

b) represents the m-thermal tank series ;

Product fiche data according to energy label directive 2010/30/EC regulation (EU) 811/2013.

Sound power measured according to the EN12102 under conditions of the EN14825.

Details and precautions on installation, maintenance and assembly can be found in the installation and or operation manuals.

Product fiche 7

Heat pump space cooling		Outdoor	MHPP5RP24MI	MHPP7RP24MI	MHPP9RP24MI	MHPP12RP24MI	MHPP14RP24MI
Outdoor unit sound power (*)	Average climate low temperature application	dB	62	64	66	69	71
	Average climate medium temperature application	dB	62	64	66	69	71
Space cooling 7°C	Prated (declared cooling capacity) @ 35°C	[kW]	5.6	7.4	9.0	11.7	13.5
	Seasonal space cooling efficiency (η_s)	[%]	200.43	204.71	200.21	199.92	200.65
	Annual energy consumption	[kWh]	658	854	1,063	1,380	1,592
Space cooling 18°C	Prated (declared cooling capacity) @ 35°C	[kW]	6.9	8.6	10.2	12.1	14.0
	Seasonal space cooling efficiency (η_s)	[%]	309.5	320.48	329.48	308.53	300.52
	Annual energy consumption	[kWh]	527	635	739	932	1,109
Part load conditions space cooling : low temperature application@7°C							
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	5.58	7.39	9.00	11.67	13.51
	EERd (declared EER)	-	3.38	3.28	2.92	3.11	3.01
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	4.27	5.63	6.91	8.84	10.06
	EERd (declared EER)	-	4.52	4.54	4.08	4.14	4.17
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	2.90	3.60	4.58	5.64	6.49
	EERd (declared EER)	-	5.46	5.87	5.95	5.71	5.64
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	1.33	1.74	2.07	2.75	3.06
	EERd (declared EER)	-	6.91	6.51	6.74	6.76	6.95
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 7

Heat pump space cooling		Outdoor	MHPP16RP24MI	MHPP12RP24P3MI	MHPP14RP24P3MI	MHPP16RP24P3MI
Outdoor unit sound power (*)	Average climate low temperature application	dB	71	69	71	71
	Average climate medium temperature application	dB	71	69	71	71
Space cooling 7°C	Prated (declared cooling capacity) @ 35°C	[kW]	14.2	11.7	13.5	14.2
	Seasonal space cooling efficiency (ηs)	[%]	201.37	201.25	201.81	202.48
	Annual energy consumption	[kWh]	1,670	1,371	1,583	1,661
Space cooling 18°C	Prated (declared cooling capacity) @ 35°C	[kW]	15.3	12.1	14.0	15.3
	Seasonal space cooling efficiency (ηs)	[%]	296.54	311.56	303	298.74
	Annual energy consumption	[kWh]	1,229	923	1,100	1,220
Part load conditions space cooling : low temperature application@7°C						
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	14.22	11.67	13.51	14.22
	EERd (declared EER)	-	2.96	3.11	3.01	2.96
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	10.62	8.84	10.06	10.62
	EERd (declared EER)	-	4.16	4.14	4.17	4.16
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	7.11	5.64	6.49	7.11
	EERd (declared EER)	-	5.72	5.71	5.64	5.72
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	3.06	2.75	3.06	3.06
	EERd (declared EER)	-	6.95	6.76	6.95	6.95
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90

Product fiche 8

Heat pump space cooling		Outdoor	MHPP5RP24MI	MHPP7RP24MI	MHPP9RP24MI	MHPP12RP24MI	MHPP14RP24MI
Part load conditions space cooling : medium temperature application@18°C							
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	6.86	8.55	10.24	12.10	14.03
	EERd (declared EER)	-	5.29	4.99	4.42	4.77	4.55
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	5.27	6.66	7.81	9.24	10.60
	EERd (declared EER)	-	7.03	6.56	6.34	6.67	6.43
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	3.32	4.51	5.16	5.83	7.08
	EERd (declared EER)	-	8.14	9.48	9.50	9.38	8.93
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	1.61	1.96	2.51	3.86	3.89
	EERd (declared EER)	-	11.31	11.08	13.78	9.38	9.38
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
Air to water unit	Rated airflow (outdoor)	[m ³ /h]	3900	4500	4500	5200	5200
Brine/water to water unit	Rated water/brine flow (outdoor H/E)	-	/	/	/	/	/
Other	Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter
	Poff (Power consumption Off mode)	[kW]	0.013	0.013	0.013	0.013	0.013
	Pto (Power consumption Thermostat off mode)	[kW]	0.005	0.005	0.005	0.005	0.005
	Psb (Power consumption Standby mode)	[kW]	0.013	0.013	0.013	0.013	0.013
	Pck (Power crankcase heater mode)	[kW]	0.000	0.000	0.000	0.000	0.000
	Qelec (Daily electricity consumption)	[kWh]	/	/	/	/	/
	Qfuel (Daily fuel consumption)	[kWh]	/	/	/	/	/

Product fiche 8

Heat pump space cooling		Outdoor	MHPP16RP24MI	MHPP12RP24P3MI	MHPP14RP24P3MI	MHPP16RP24P3MI
Part load conditions space cooling : medium temperature application@18°C						
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	15.34	12.10	14.03	15.34
	EERd (declared EER)	-	4.33	4.77	4.55	4.33
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	11.44	9.24	10.60	11.44
	EERd (declared EER)	-	6.14	6.67	6.43	6.14
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	7.93	5.83	7.08	7.93
	EERd (declared EER)	-	8.95	9.38	8.93	8.95
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	3.89	3.86	3.89	3.89
	EERd (declared EER)	-	9.38	9.38	9.38	9.38
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90
Air to water unit	Rated airflow (outdoor)	[m ³ /h]	5200	5200	5200	5200
Brine/water to water unit	Rated water/brine flow (outdoor H/E)	-	/	/	/	/
Other	Capacity control	-	Inverter	Inverter	Inverter	Inverter
	Poff (Power consumption Off mode)	[kW]	0.013	0.006	0.006	0.006
	Pto (Power consumption Thermostat off mode)	[kW]	0.005	0.006	0.006	0.006
	Psb (Power consumption Standby mode)	[kW]	0.013	0.006	0.006	0.006
	Pck (Power crankcase heater mode)	[kW]	0.000	0.000	0.000	0.000
	Qelec (Daily electricity consumption)	[kWh]	/	/	/	/
	Qfuel (Daily fuel consumption)	[kWh]	/	/	/	/

Product fiche 8

Outdoor unit	Ambient Temperature: 35/24 Water temperature: 23/18			Ambient Temperature: 35/24 Water temperature: 12/7			Ambient Temperature: 7/6 Water temperature: 30/35			Ambient Temperature: 2/1 Water temperature: 30/35		
	Capacity kW	Power input kW	EER	Capacity kW	Power input kW	EER	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP
MHPP5RP24MI	6.50	1.275	5.10	5.50	1.692	3.25	6.50	1.226	5.30	5.60	1.333	4.20
MHPP7RP24MI	8.30	1.711	4.85	7.40	2.349	3.15	8.40	1.663	5.05	7.10	1.797	3.95
MHPP9RP24MI	10.00	2.326	4.30	9.00	3.103	2.90	10.00	2.128	4.70	8.20	2.158	3.80
MHPP12RP24MI	12.20	2.652	4.60	11.60	3.742	3.10	12.20	2.490	4.90	12.30	3.417	3.60
MHPP12RP24P3MI	12.20	2.652	4.60	11.60	3.742	3.10	12.20	2.490	4.90	12.30	3.417	3.60
MHPP14RP24MI	13.90	3.159	4.40	13.40	4.573	2.93	14.10	3.000	4.70	13.00	3.714	3.50
MHPP14RP24P3MI	13.90	3.159	4.40	13.40	4.573	2.93	14.10	3.000	4.70	13.00	3.714	3.50
MHPP16RP24MI	15.40	3.667	4.20	14.00	4.828	2.90	16.00	3.556	4.50	14.50	4.462	3.25
MHPP16RP24P3MI	15.40	3.667	4.20	14.00	4.828	2.90	16.00	3.556	4.50	14.50	4.462	3.25

Outdoor unit	Ambient Temperature: -7/-8 Water temperature: 30/35			Ambient Temperature: 7/6 Water temperature: 40/45			Ambient Temperature: 2/1 Water temperature: 40/45			Ambient Temperature: -7/-8 Water temperature: 40/45		
	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP
MHPP5RP24MI	6.20	1.938	3.20	6.60	1.650	4.00	6.50	2.063	3.15	6.10	2.346	2.60
MHPP7RP24MI	7.10	2.254	3.15	8.50	2.237	3.80	7.50	2.459	3.05	6.80	2.720	2.50
MHPP9RP24MI	8.00	2.667	3.00	10.20	2.795	3.65	8.50	2.881	2.95	7.40	3.083	2.40
MHPP12RP24MI	11.60	4.070	2.85	12.50	3.378	3.70	12.00	4.138	2.90	11.50	4.792	2.40
MHPP12RP24P3MI	11.60	4.070	2.85	12.50	3.378	3.70	12.00	4.138	2.90	11.50	4.792	2.40
MHPP14RP24MI	12.50	4.464	2.80	14.50	4.085	3.55	13.00	4.643	2.80	12.50	5.435	2.30
MHPP14RP24P3MI	12.50	4.464	2.80	14.50	4.085	3.55	13.00	4.643	2.80	12.50	5.435	2.30
MHPP16RP24MI	13.50	5.000	2.70	16.20	4.696	3.45	14.30	5.296	2.70	13.50	6.000	2.25
MHPP16RP24P3MI	13.50	5.000	2.70	16.20	4.696	3.45	14.30	5.296	2.70	13.50	6.000	2.25

Outdoor unit	Ambient Temperature: 7/6 Water temperature: 47/55			Ambient Temperature: 2/1 Water temperature: 47/55			Ambient Temperature: -7/-8 Water temperature: 47/55		
	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP
MHPP5RP24MI	6.30	1.969	3.20	6.30	2.250	2.80	5.70	2.651	2.15
MHPP7RP24MI	8.20	2.603	3.15	7.60	2.815	2.70	6.60	3.143	2.10
MHPP9RP24MI	9.40	3.032	3.10	8.40	3.170	2.65	7.20	3.512	2.05
MHPP12RP24MI	12.00	4.000	3.00	12.00	5.106	2.35	10.80	5.143	2.10
MHPP12RP24P3MI	12.00	4.000	3.00	12.00	5.106	2.35	10.80	5.143	2.10
MHPP14RP24MI	14.00	4.746	2.95	13.00	5.603	2.32	11.70	5.625	2.08
MHPP14RP24P3MI	14.00	4.746	2.95	13.00	5.603	2.32	11.70	5.625	2.08
MHPP16RP24MI	16.00	5.614	2.85	13.50	5.870	2.30	12.80	6.244	2.05
MHPP16RP24P3MI	16.00	5.614	2.85	13.50	5.870	2.30	12.80	6.244	2.05

ErP Information

Fan Types	Axial fan		
Directive (or Standard) for Regulation	ErP Directive 2009/125/EC COMMISSION REGULATION (EU) No 327/2011		
Model Name	ZKSN-170-8-3L	Rev.	
Prepare by			

Specified Information of Fan:

No.	Information Item	Comment
1	$\eta_{\text{target}} =$	28.6%
2	Overall efficiency (η_e) =	34.0%
3	Pass or not (Criteria: $\eta_e \geq \eta_{\text{target}}$)	Pass
4	Measurement category (A-D)	A
5	Efficiency category (static or total)	Static
6	Efficiency grade at optimum energy efficiency point	N =45.4
7	VSD is integrated within the fan	YES
8	Year of Manufacture	Ref. to the Unit Nameplate
9	Manufacturer's name and place of manufacture	Ref. to the Unit Nameplate
10.1	Rated motor power input(s) (kW), at optimum energy efficiency	0.156kw
10.2	Rated motor flow rate(s) at optimum energy efficiency	1.290m ³ /s
10.3	Rated motor pressure(s) at optimum energy efficiency	36Pa
11	Rotations per minute (R.P.M)at the optimum energy efficiency point	750r/min
12	Specific ratio	1.001
13	Information relevant for facilitating disassembly, recycling or disposal at end-of-life	all materials can be recycled
14	Information relevant to minimize impact on the environment and ensure optimal life expectancy as regards installation, use and maintenance of the fan	For installation, the clearance of 500 mm shall be kept from inlet
15	Description of additional items used when determining the fan energy efficiency, such as ducts, that are not described in the measurement category and not supplied with the fan.	Measurement category A, fan is free inlet and outlet conditions
16	Motor manufacturer	SHISHISHI TONGDA MOTOR CO.,LTD.

ErP Information

Fan Types	Axial fan		
Directive (or Standard) for Regulation	ErP Directive 2009/125/EC COMMISSION REGULATION (EU) No 327/2011		
Model Name	ZKSN-170-8-3L	Rev.	
Prepare by			

Specified Information of Fan:

No.	Information Item	Comment
1	$\eta_{\text{target}} =$	28.5%
2	Overall efficiency (η_e) =	33.9%
3	Pass or not (Criteria: $\eta_e \geq \eta_{\text{target}}$)	Pass
4	Measurement category (A-D)	A
5	Efficiency category (static or total)	Static
6	Efficiency grade at optimum energy efficiency point	N =45.4
7	VSD is integrated within the fan	YES
8	Year of Manufacture	Ref. to the Unit Nameplate
9	Manufacturer's name and place of manufacture	Ref. to the Unit Nameplate
10.1	Rated motor power input(s) (kW), at optimum energy efficiency	0.153kw
10.2	Rated motor flow rate(s) at optimum energy efficiency	1.248m ³ /s
10.3	Rated motor pressure(s) at optimum energy efficiency	36Pa
11	Rotations per minute (R.P.M)at the optimum energy efficiency point	750r/min
12	Specific ratio	1.001
13	Information relevant for facilitating disassembly, recycling or disposal at end-of-life	all materials can be recycled
14	Information relevant to minimize impact on the environment and ensure optimal life expectancy as regards installation, use and maintenance of the fan	For installation, the clearance of 500 mm shall be kept from inlet
15	Description of additional items used when determining the fan energy efficiency, such as ducts, that are not described in the measurement category and not supplied with the fan.	Measurement category A, fan is free inlet and outlet conditions
16	Motor manufacturer	GUANGDONG WELLING MOTOR MANUFACTURING CO.,LTD.

ErP Information

Fan Types	Axial fan		
Directive (or Standard) for Regulation	ErP Directive 2009/125/EC COMMISSION REGULATION (EU) No 327/2011		
Model Name	ZKSN-200-10-2L	Rev.	
Prepare by			

Specified Information of Fan:

No.	Information Item	Comment
1	$\eta_{target} =$	29.1%
2	Overall efficiency (η_e) =	33.6%
3	Pass or not (Criteria: $\eta_e \geq \eta_{target}$)	Pass
4	Measurement category (A-D)	A
5	Efficiency category (static or total)	Static
6	Efficiency grade at optimum energy efficiency point	N =44.6
7	VSD is integrated within the fan	YES
8	Year of Manufacture	Ref. to the Unit Nameplate
9	Manufacturer's name and place of manufacture	Ref. to the Unit Nameplate
10.1	Rated motor power input(s) (kW), at optimum energy efficiency	0.186kw
10.2	Rated motor flow rate(s) at optimum energy efficiency	1.292m ³ /s
10.3	Rated motor pressure(s) at optimum energy efficiency	43Pa
11	Rotations per minute (R.P.M)at the optimum energy efficiency point	800r/min
12	Specific ratio	1.001
13	Information relevant for facilitating disassembly, recycling or disposal at end-of-life	all materials can be recycled
14	Information relevant to minimize impact on the environment and ensure optimal life expectancy as regards installation, use and maintenance of the fan	For installation, the clearance of 500 mm shall be kept from inlet
15	Description of additional items used when determining the fan energy efficiency, such as ducts, that are not described in the measurement category and not supplied with the fan.	Measurement category A, fan is free inlet and outlet conditions
16	Motor manufacturer	GUANGDONG WELLING MOTOR MANUFACTURING CO.,LTD.

ErP Information

Fan Types	Axial fan		
Directive (or Standard) for Regulation	ErP Directive 2009/125/EC COMMISSION REGULATION (EU) No 327/2011		
Model Name	ZKSN-200-10-2L	Rev.	
Prepare by			

Specified Information of Fan:

No.	Information Item	Comment
1	$\eta_{\text{target}} =$	28.9%
2	Overall efficiency (η_e) =	33.0%
3	Pass or not (Criteria: $\eta_e \geq \eta_{\text{target}}$)	Pass
4	Measurement category (A-D)	A
5	Efficiency category (static or total)	Static
6	Efficiency grade at optimum energy efficiency point	N =44.1
7	VSD is integrated within the fan	YES
8	Year of Manufacture	Ref. to the Unit Nameplate
9	Manufacturer's name and place of manufacture	Ref. to the Unit Nameplate
10.1	Rated motor power input(s) (kW), at optimum energy efficiency	0.178kw
10.2	Rated motor flow rate(s) at optimum energy efficiency	1.420m ³ /s
10.3	Rated motor pressure(s) at optimum energy efficiency	36Pa
11	Rotations per minute (R.P.M)at the optimum energy efficiency point	800r/min
12	Specific ratio	1.001
13	Information relevant for facilitating disassembly, recycling or disposal at end-of-life	all materials can be recycled
14	Information relevant to minimize impact on the environment and ensure optimal life expectancy as regards installation, use and maintenance of the fan	For installation, the clearance of 500 mm shall be kept from inlet
15	Description of additional items used when determining the fan energy efficiency,such as ducts, that are not described in the measurement category and not supplied with the fan.	Measurement category A, fan is free inlet and outlet conditions
16	Motor manufacturer	JIANGSU SHANGQI GROUP CO., LTD.

NOTES

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