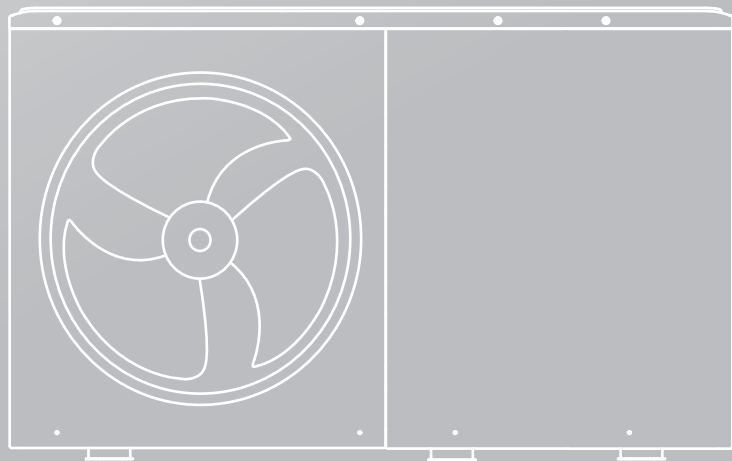


TECHNICAL DATA MANUAL

ATW Heat Pump



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.

For medium - temperature application													
Model	Outdoor unit	Energy efficiency class	Outdoor 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	kWh
MHC-V4WD2N7		A++	56	4.9	148.6	2668	4.3	124.3	3328	4.7	170.6	1446	1446
KHOA-04PMA1		A++	56	4.9	148.6	2668	4.3	124.3	3328	4.7	170.6	1446	1446
MHC-V6WD2N7		A++	58	5.9	149.7	3191	5.9	132.0	4325	6.0	179.0	1762	1762
KHOA-06PMA1		A++	58	5.9	149.7	3191	5.9	132.0	4325	6.0	179.0	1762	1762
MHC-V8WD2N7		A++	60	6.8	149.5	3684	7.0	135.2	4995	8.3	184.3	2368	2368
KHOA-08PMA1		A++	60	6.8	149.5	3684	7.0	135.2	4995	8.3	184.3	2368	2368
MHC-V8WD2N7-ER**		A++	60	6.8	149.5	3684	7.0	135.2	4995	8.3	184.3	2368	2368
MHC-V10WD2N7		A++	61	7.8	149.5	4226	8.0	136.5	5654	8.8	188.5	2456	2456
KHOA-10PMA1		A++	61	7.8	149.5	4226	8.0	136.5	5654	8.8	188.5	2456	2456
MHC-V10WD2N7-ER**		A++	61	7.8	149.5	4226	8.0	136.5	5654	8.8	188.5	2456	2456
MHC-V12WD2N7		A++	65	12.0	141.8	6843	10.8	127.3	8197	12.4	174.9	3724	3724
KHOA-12PMA1		A++	65	12.0	141.8	6843	10.8	127.3	8197	12.4	174.9	3724	3724
MHC-V12WD2N7-ER**		A++	65	12.0	141.8	6843	10.8	127.3	8197	12.4	174.9	3724	3724
MHC-V14WD2N7		A++	65	13.0	141.4	7438	12.0	126.1	9168	14.1	174.1	4256	4256
KHOA-14PMA1		A++	65	13.0	141.4	7438	12.0	126.1	9168	14.1	174.1	4256	4256
MHC-V14WD2N7-ER**		A++	65	13.0	141.4	7438	12.0	126.1	9168	14.1	174.1	4256	4256
MHC-V16WD2N7		A++	69	14.4	140.5	8290	13.9	128.4	10408	14.9	181.9	4306	4306
KHOA-16PMA1		A++	69	14.4	140.5	8290	13.9	128.4	10408	14.9	181.9	4306	4306
MHC-V16WD2N7-ER**		A++	69	14.4	140.5	8290	13.9	128.4	10408	14.9	181.9	4306	4306
MHC-V12WD2RN7		A++	65	12.0	141.8	6843	10.8	127.3	8197	12.4	174.9	3724	3724
KHOA-12PMA3		A++	65	12.0	141.8	6843	10.8	127.3	8197	12.4	174.9	3724	3724
MHC-V12WD2RN7-ER**		A++	65	12.0	141.8	6843	10.8	127.3	8197	12.4	174.9	3724	3724
MHC-V14WD2RN7		A++	65	13.0	141.4	7438	12.0	126.1	9168	14.1	174.1	4256	4256
KHOA-14PMA3		A++	65	13.0	141.4	7438	12.0	126.1	9168	14.1	174.1	4256	4256
MHC-V14WD2RN7-ER**		A++	65	13.0	141.4	7438	12.0	126.1	9168	14.1	174.1	4256	4256
MHC-V16WD2RN7		A++	69	14.4	140.5	8290	13.9	128.4	10408	14.9	181.9	4306	4306
KHOA-16PMA3		A++	69	14.4	140.5	8290	13.9	128.4	10408	14.9	181.9	4306	4306
MHC-V16WD2RN7-ER**		A++	69	14.4	140.5	8290	13.9	128.4	10408	14.9	181.9	4306	4306

Unit type explanation:

- 1.MHC-V*****N7, without back-up heater,
- 2.KHOA *****PMA1, with 3kW back-up heater and 1-Phase power source
- 3.MHC-V*****N7-ER60, with 6kW back-up heater and 3-Phase power source
- 4.KHO*****PMA3, with 9kW back-up heater and 3-Phase power source

For low - temperature application													
Model	Outdoor unit	Energy efficiency class	Outdoor 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	kWh
MHC-V4WD2N7		A+++	56	5.0	199.8	2034	5.0	158.3	3056	4.6	235.9	1024	1024
KHOA-04PMA1		A+++	56	5.0	199.8	2034	5.0	158.3	3056	4.6	235.9	1024	1024
MHC-V6WD2N7		A+++	58	6.4	192.6	2700	6.3	166.7	3663	5.5	242.4	1198	1198
KHOA-06PMA1		A+++	58	6.4	192.6	2700	6.3	166.7	3663	5.5	242.4	1198	1198
MHC-V8WD2N7		A+++	60	8.0	200.4	3251	6.8	174.5	3772	8.2	259.2	1669	1669
KHOA-08PMA1		A+++	60	8.0	200.4	3251	6.8	174.5	3772	8.2	259.2	1669	1669
MHC-V8WD2N7-ER**		A+++	60	8.0	200.4	3251	6.8	174.5	3772	8.2	259.2	1669	1669
MHC-V10WD2N7		A+++	61	9.2	196.3	3814	7.9	177.8	4308	8.6	270.7	1679	1679
KHOA-10PMA1		A+++	61	9.2	196.3	3814	7.9	177.8	4308	8.6	270.7	1679	1679
MHC-V10WD2N7-ER**		A+++	61	9.2	196.3	3814	7.9	177.8	4308	8.6	270.7	1679	1679
MHC-V12WD2N7		A+++	65	12.1	183.7	5352	11.5	162.1	6869	11.7	232.9	2651	2651
KHOA-12PMA1		A+++	65	12.1	183.7	5352	11.5	162.1	6869	11.7	232.9	2651	2651
MHC-V12WD2N7-ER**		A+++	65	12.1	183.7	5352	11.5	162.1	6869	11.7	232.9	2651	2651
MHC-V14WD2N7		A+++	65	13.7	182.2	6110	12.6	162.3	7513	12.7	231.1	2897	2897
KHOA-14PMA1		A+++	65	13.7	182.2	6110	12.6	162.3	7513	12.7	231.1	2897	2897
MHC-V14WD2N7-ER**		A+++	65	13.7	182.2	6110	12.6	162.3	7513	12.7	231.1	2897	2897
MHC-V16WD2N7		A+++	69	14.7	180.5	6617	14.6	160.2	8813	14.3	238.9	3159	3159
KHOA-16PMA1		A+++	69	14.7	180.5	6617	14.6	160.2	8813	14.3	238.9	3159	3159
MHC-V16WD2N7-ER**		A+++	69	14.7	180.5	6617	14.6	160.2	8813	14.3	238.9	3159	3159
MHC-V12WD2RN7		A+++	65	12.1	183.7	5352	11.5	162.1	6869	11.7	232.9	2651	2651
KHOA-12PMA3		A+++	65	12.1	183.7	5352	11.5	162.1	6869	11.7	232.9	2651	2651
MHC-V12WD2RN7-ER**		A+++	65	12.1	183.7	5352	11.5	162.1	6869	11.7	232.9	2651	2651
MHC-V14WD2RN7		A+++	65	13.7	182.2	6110	12.6	162.3	7513	12.7	231.1	2897	2897
KHOA-14PMA3		A+++	65	13.7	182.2	6110	12.6	162.3	7513	12.7	231.1	2897	2897
MHC-V14WD2RN7-ER**		A+++	65	13.7	182.2	6110	12.6	162.3	7513	12.7	231.1	2897	2897
MHC-V16WD2RN7		A+++	69	14.7	180.5	6617	14.6	160.2	8813	14.3	238.9	3159	3159
KHOA-16PMA3		A+++	69	14.7	180.5	6617	14.6	160.2	8813	14.3	238.9	3159	3159
MHC-V16WD2RN7-ER**		A+++	69	14.7	180.5	6617	14.6	160.2	8813	14.3	238.9	3159	3159

Unit type explanation:

- 1.MHC-V*****N7, without back-up heater,
- 2.MHC-V*****N7-E30, with 3kW back-up heater and 1-Phase power source
- 3.MHC-V*****N7-ER60, with 6kW back-up heater and 3-Phase power source
- 4.MHC-V*****N7-ER90, with 9kW back-up heater and 3-Phase power source

Product fiche 1

Heat pump space heater

	Outdoor	KHOA-04PMA1	KHOA-06PMA1	KHOA-08PMA1	KHOA-10PMA1	KHOA-12PMA1
Outdoor unit sound power (*)	dB	56	58	60	61	65
Average climate low temperature application	dB	56	58	60	61	65
Capacity of the back-up heater integrated in the unit	[kW]	0/3	0/3	0/3/6/9	0/3/6/9	0/3/6/9
Space heating	-	A+++	A+++	A+++	A+++	A+++
Space heating	-	A++	A++	A++	A++	A++
Average climate (Design temperature = -10°C)						
Prated (declared heating capacity) @ -10°C	[kW]	5.0	6.4	8.0	9.2	12.1
Seasonal space heating efficiency (ηs)	[%]	199.8	192.6	200.4	196.3	183.7
Annual energy consumption	[kWh]	2034	2700	3251	3814	5352
Prated (declared heating capacity) @ -10°C	[kW]	4.9	5.9	6.8	7.8	12.0
Seasonal space heating efficiency (ηs)	[%]	148.6	149.7	149.5	149.5	141.8
Annual energy consumption	[kWh]	2668	3191	3684	4226	6843
Part load conditions space heating average climate low temperature application						
(A) condition (-7°C)	[kW]	4.45	5.75	7.09	8.11	10.75
COPd (declared COP)	-	3.39	3.10	3.06	2.84	2.78
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
Pdh (declared heating capacity)	[kW]	2.75	3.71	4.53	5.10	6.73
COPd (declared COP)	-	5.04	4.73	5.10	4.96	4.55
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	[kW]	2.72	2.72	3.77	3.77	5.23
COPd (declared COP)	-	6.72	6.92	6.84	6.94	6.89
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	[kW]	3.14	3.15	4.46	4.46	5.34
COPd (declared COP)	-	8.52	8.65	9.13	9.18	7.41
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00	-10.00
Pdh (declared heating capacity)	[kW]	5.00	5.50	7.97	8.50	10.77
COPd (declared COP)	-	2.92	2.87	2.56	2.52	2.61
WTOL (Heating water Operation Limit)	[°C]	75	75	75	75	75

Product fiche 1

Heat pump space heater

		Outdoor	KHOA-14PMA1	KHOA-16PMA1	KHOA-12PMA3	KHOA-14PMA3	KHOA-16PMA3
Outdoor unit sound power (*)	Average climate low temperature application	dB	65	69	65	65	69
	Average climate medium temperature application	dB	65	69	65	65	69
Capacity of the back-up heater integrated in the unit	P _{sup} back-up heater (optional)	[kW]	0/3/6/9	0/3/6/9	0/3/6/9	0/3/6/9	0/3/6/9
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]	13.7	14.7	12.1	13.7	14.7
	Seasonal space heating efficiency (η _s)	[%]	182.2	180.5	183.7	182.2	180.5
	Annual energy consumption	[kWh]	6110	6617	5352	6110	6617
Space heating 55°C	Prated (declared heating capacity) @ -10°C	[kW]	13.0	14.4	12.0	13.0	14.4
	Seasonal space heating efficiency (η _s)	[%]	141.4	140.5	141.8	141.4	140.5
	Annual energy consumption	[kWh]	7438	8290	6843	7438	8290
Part load conditions space heating average climate low temperature application							
(A) condition (-7°C)	P _{dh} (declared heating capacity)	[kW]	12.08	13.04	10.75	12.08	13.04
	COP _d (declared COP)	-	2.66	2.54	2.78	2.66	2.54
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	P _{dh} (declared heating capacity)	[kW]	7.55	8.00	6.73	7.55	8.00
	COP _d (declared COP)	-	4.45	4.40	4.55	4.45	4.40
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	P _{dh} (declared heating capacity)	[kW]	5.25	5.26	5.23	5.25	5.26
	COP _d (declared COP)	-	7.06	7.12	6.89	7.06	7.12
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	P _{dh} (declared heating capacity)	[kW]	5.23	5.28	5.34	5.23	5.28
	COP _d (declared COP)	-	7.46	7.56	7.41	7.46	7.56
	C _{dh} (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
	P _{dh} (declared heating capacity)	[kW]	11.62	12.81	10.77	11.62	12.81
	COP _d (declared COP)	-	2.53	2.37	2.61	2.53	2.37
	WTOL (Heating water Operation Limit)	[°C]	75	75	75	75	75

Product fiche 2

Heat pump space heater

		Outdoor	KHOA-04PMA1	KHOA-06PMA1	KHOA-08PMA1	KHOA-10PMA1	KHOA-12PMA1
(F) Tivalent temperature	Tblv	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	4.45	5.75	7.09	8.11	10.75
	COPd (declared COP)	-	3.39	3.10	3.06	2.84	2.78
	Psup (@Tdesign: -10°C)	[kW]	0.00	0.90	0.03	0.66	1.33
Part load conditions space heating average climate medium temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	4.36	5.36	5.97	6.88	10.58
	COPd (declared COP)	-	2.60	2.41	2.37	2.31	2.23
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	2.65	3.12	3.71	4.23	6.59
	COPd (declared COP)	-	3.75	3.73	3.85	3.80	3.52
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	2.57	2.62	3.62	3.62	4.78
	COPd (declared COP)	-	4.97	5.21	5.12	5.21	4.99
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.04	3.03	4.23	4.23	5.59
	COPd (declared COP)	-	6.55	6.78	6.61	6.65	6.41
	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]	4.36	5.10	6.46	7.42	10.15
	COPd (declared COP)	-	2.08	2.15	2.08	1.99	2.05
(F) Tivalent temperature	WTOL (Heating water Operation Limit)	[°C]	75	75	75	75	75
	Tblv	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	4.36	5.36	5.97	6.88	10.58
Supplementary capacity at P_design	COPd (declared COP)	-	2.60	2.41	2.37	2.31	2.23
	Psup (@Tdesign: -10°C)	[kW]	0.57	0.75	0.34	0.35	1.95
Colder climate (Design temperature = -22°C)							
Space heating 35°C	Prated (declared heating capacity) @ -22°C	[kW]	5.0	6.3	6.8	7.9	11.5
	Seasonal space heating efficiency (ns)	[%]	158.3	166.7	174.5	177.8	162.1
	Annual energy consumption	[kW/h]	3056	3663	3772	4308	6869

Product fiche 2

Heat pump space heater

	Outdoor	KHOA-14PMA1	KHOA-16PMA1	KHOA-12PMA3	KHOA-14PMA3	KHOA-16PMA3
(F) Tivalent temperature	Outdoor					
Tblv	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
Pdh (declared heating capacity)	[kW]	12.08	13.04	10.75	12.08	13.04
COPd (declared COP)	-	2.66	2.54	2.78	2.66	2.54
Psup (@Tdesignh: -10°C)	[kW]	2.08	1.89	1.33	2.08	1.89
Supplementary capacity at P_design						
Part load conditions space heating average climate medium temperature application						
(A) condition (-7°C)	[kW]	11.47	12.57	10.58	11.47	12.57
Pdh (declared heating capacity)	[kW]	11.47	12.57	10.58	11.47	12.57
COPd (declared COP)	-	2.15	2.01	2.23	2.15	2.01
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
Pdh (declared heating capacity)	[kW]	7.29	8.00	6.59	7.29	8.00
COPd (declared COP)	-	3.50	3.55	3.52	3.50	3.55
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
Pdh (declared heating capacity)	[kW]	4.85	4.67	4.78	4.85	4.67
COPd (declared COP)	-	5.10	5.02	4.99	5.10	5.02
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	[kW]	5.60	5.34	5.59	5.60	5.34
Pdh (declared heating capacity)	[kW]	5.60	5.34	5.59	5.60	5.34
COPd (declared COP)	-	6.46	6.28	6.41	6.46	6.28
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00	-10.00
Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00	-10.00
Pdh (declared heating capacity)	[kW]	10.97	11.77	10.15	10.97	11.77
COPd (declared COP)	-	2.02	1.90	2.05	2.02	1.90
WTOL (Heating water Operation Limit)	[°C]	75	75	75	75	75
(F) Tivalent temperature	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
Tblv	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
Pdh (declared heating capacity)	[kW]	11.47	12.75	10.58	11.47	12.75
COPd (declared COP)	-	2.15	2.01	2.23	2.15	2.01
Psup (@Tdesignh: -10°C)	[kW]	2.03	2.63	1.95	2.03	2.63
Supplementary capacity at P_design						
Colder climate (Design temperature = -22°C)						
Prated (declared heating capacity) @ -22°C	[kW]	12.6	14.6	11.5	12.6	14.6
Seasonal space heating efficiency (ns)	[%]	162.3	160.2	162.1	162.3	160.2
Annual energy consumption	[kWh]	7513	8813	6869	7513	8813

Product fiche 3

Heat pump space heater		Outdoor	KHOA-04PMA1	KHOA-06PMA1	KHOA-08PMA1	KHOA-10PMA1	KHOA-12PMA1
Space heating 55°C	Prated (declared heating capacity) @ -22°C	[kW]	4.3	5.9	7.0	8.0	10.8
	Seasonal space heating efficiency (ηs)	[%]	124.3	132.0	135.2	136.5	127.3
	Annual energy consumption	[kWh]	3328	4325	4995	5654	8197
Part load conditions space heating colder climate low temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	3.02	3.90	4.11	4.89	7.11
	COPd (declared COP)	-	3.54	3.71	3.97	3.74	3.47
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	2.20	2.34	3.18	3.07	4.33
	COPd (declared COP)	-	4.89	5.15	5.60	5.66	5.18
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.84
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	2.61	2.69	3.90	3.89	5.08
	COPd (declared COP)	-	6.60	6.85	6.46	7.34	6.46
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	2.86	2.91	4.43	4.46	5.15
	COPd (declared COP)	-	7.03	7.46	8.67	8.98	6.84
	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]	3.40	3.96	5.64	6.39	7.70
	COPd (declared COP)	-	1.98	1.95	2.09	2.08	2.04
(F) Tivalent temperature	WTOL (Heating water Operation Limit)	[°C]	75	75	75	75	75
	Tbiv	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
	Pdh (declared heating capacity)	[kW]	4.08	5.15	5.48	6.42	9.39
Supplementary capacity at P_design	COPd (declared COP)	-	2.56	2.56	2.73	2.69	2.49
	P sup (@Tdesignh: -22°C)	[kW]	1.60	2.35	1.15	1.48	3.80
Part load conditions space heating colder climate medium temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	2.60	3.56	4.49	4.85	6.76
	COPd (declared COP)	-	2.75	2.89	2.87	2.90	2.72
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 3

Heat pump space heater

	Outdoor	KHOA-14PMA1	KHOA-16PMA1	KHOA-12PMA3	KHOA-14PMA3	KHOA-16PMA3
Space heating 55°C						
Prated (declared heating capacity) @ -22°C	[kW]	12.0	13.9	10.8	12.0	13.9
Seasonal space heating efficiency (ηs)	[%]	126.1	128.4	127.3	126.1	128.4
Annual energy consumption	[kWh]	9168	10408	8197	9168	10408
Part load conditions space heating colder climate low temperature application						
(A) condition (-7°C)						
Pdh (declared heating capacity)	[kW]	7.83	8.89	7.11	7.83	8.89
COPd (declared COP)	-	3.35	3.25	3.47	3.35	3.25
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)						
Pdh (declared heating capacity)	[kW]	4.77	5.87	4.33	4.77	5.87
COPd (declared COP)	-	5.37	5.22	5.18	5.37	5.22
Cdh(degradation coefficient)	-	0.89	0.90	0.84	0.89	0.90
(C) condition (7°C)						
Pdh (declared heating capacity)	[kW]	5.08	5.24	5.08	5.08	5.24
COPd (declared COP)	-	6.50	6.67	6.46	6.50	6.67
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)						
Pdh (declared heating capacity)	[kW]	5.15	5.32	5.15	5.15	5.32
COPd (declared COP)	-	6.85	7.26	6.84	6.85	7.26
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
(F) Tivalent temperature						
Pdh (declared heating capacity)	[kW]	8.57	10.06	7.70	8.57	10.06
COPd (declared COP)	-	2.01	2.02	2.04	2.01	2.02
WTOL (Heating water Operation Limit)	[°C]	75	75	75	75	75
Tblv	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
(Supplementary capacity at P_design)						
Pdh (declared heating capacity)	[kW]	10.31	11.91	9.39	10.31	11.91
COPd (declared COP)	-	2.39	2.41	2.49	2.39	2.41
Psup (@Tdesign: -22°C)	[kW]	4.03	4.54	3.80	4.03	4.54
Part load conditions space heating colder climate medium temperature application						
(A) condition (-7°C)						
Pdh (declared heating capacity)	[kW]	7.39	8.30	6.76	7.39	8.30
COPd (declared COP)	-	2.67	2.70	2.72	2.67	2.70
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 4

Heat pump space heater

	Outdoor	KHOA-04PMA1	KHOA-06PMA1	KHOA-08PMA1	KHOA-10PMA1	KHOA-12PMA1	
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	2.11	2.28	3.07	3.09	4.14
	COPd (declared COP)	-	3.91	4.12	4.38	4.38	4.05
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	2.47	2.55	3.67	3.76	5.00
	COPd (declared COP)	-	5.04	5.31	5.58	5.64	5.15
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	2.77	2.82	4.36	4.36	5.01
	COPd (declared COP)	-	6.14	6.22	7.13	7.22	5.66
	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]	2.96	3.44	5.08	5.80	6.84
	COPd (declared COP)	-	1.43	1.44	1.54	1.57	1.52
(F) Tivalent temperature	WTOL (Heating water Operation Limit)	[°C]	75	75	75	75	75
	Tblv	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
	Pdh (declared heating capacity)	[kW]	3.51	4.94	5.69	6.55	8.84
Supplementary capacity at P_design	COPd (declared COP)	-	2.11	2.08	2.09	1.99	1.98
	Psup (@Tdesign: -22°C)	[kW]	1.34	2.48	1.92	2.20	3.96
Warmer climate (Design temperature = 2°C)							
Space heating 35°C	Prated (declared heating capacity) @ 2°C	[kW]	4.6	5.5	8.2	8.6	11.7
	Seasonal space heating efficiency (ηs)	[%]	235.9	242.4	259.2	270.7	232.9
	Annual energy consumption	[kWh]	1024	1198	1669	1679	2651
Space heating 55°C	Prated (declared heating capacity) @ 2°C	[kW]	4.7	6.0	8.3	8.8	12.4
	Seasonal space heating efficiency (ηs)	[%]	170.6	179.0	184.3	188.5	174.9
	Annual energy consumption	[kWh]	1446	1762	2368	2456	3724
Part load conditions space heating warmer climate low temperature application							
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	4.47	5.48	8.20	8.60	11.58
	COPd (declared COP)	-	4.08	3.87	3.59	3.62	3.30
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	2.97	3.57	5.27	5.52	7.57
	COPd (declared COP)	-	5.78	5.77	6.03	6.26	5.78
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 4

Heat pump space heater

	Outdoor	KHOA-14PMA1	KHOA-16PMA1	KHOA-12PMA3	KHOA-14PMA3	KHOA-16PMA3	
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	4.56	5.18	4.14	4.56	5.18
	COPd (declared COP)	-	4.00	4.03	4.05	4.00	4.03
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	4.99	5.17	5.00	4.99	5.17
	COPd (declared COP)	-	5.20	5.44	5.15	5.20	5.44
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	5.06	5.23	5.01	5.06	5.23
	COPd (declared COP)	-	5.81	6.07	5.66	5.81	6.07
	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]	7.63	9.07	6.84	7.63	9.07
	COPd (declared COP)	-	1.53	1.56	1.52	1.53	1.56
	WTOL (Heating water Operation Limit)	[°C]	75	75	75	75	75
	Tblv	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
(F) Tivalent temperature	Pdh (declared heating capacity)	[kW]	9.77	11.32	8.84	9.77	11.32
	COPd (declared COP)	-	1.95	1.97	1.98	1.95	1.97
Supplementary capacity at P_design	[kW]	4.37	4.83	3.96	4.37	4.83	
Warmer climate (Design temperature = 2°C)							
Space heating 35°C	Prated (declared heating capacity) @ 2°C	[kW]	12.7	14.3	11.7	12.7	14.3
	Seasonal space heating efficiency (ηs)	[%]	231.1	238.9	232.9	231.1	238.9
	Annual energy consumption	[kWh]	2897	3159	2651	2897	3159
Space heating 55°C	Prated (declared heating capacity) @ 2°C	[kW]	14.1	14.9	12.4	14.1	14.9
	Seasonal space heating efficiency (ηs)	[%]	174.1	181.9	174.9	174.1	181.9
	Annual energy consumption	[kWh]	4256	4306	3724	4256	4306
Part load conditions space heating warmer climate low temperature application							
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	12.41	13.82	11.58	12.41	13.82
	COPd (declared COP)	-	3.21	3.18	3.30	3.21	3.18
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	8.19	9.17	7.57	8.19	9.17
	COPd (declared COP)	-	5.67	5.82	5.78	5.67	5.82
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 5

Heat pump space heater

	Outdoor	KHOA-04PMA1	KHOA-06PMA1	KHOA-08PMA1	KHOA-10PMA1	KHOA-12PMA1	
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.05	3.03	4.46	4.46	5.17
	COPd (declared COP)	-	7.64	7.67	8.58	8.91	6.98
	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]	4.47	5.48	8.27	8.61	11.58
	COPd (declared COP)	-	4.08	3.87	3.59	3.62	3.30
(F) Tivalent temperature	WTOL (Heating water Operation Limit)	[°C]	75	75	75	75	75
	Tblv	[°C]	7.00	7.00	7.00	7.00	7.00
	Pdh (declared heating capacity)	[kW]	2.97	3.57	5.27	5.52	7.57
Supplementary capacity at P_design	Psup (@Tdesignh: 2°C)	[kW]	0.13	0.02	0.00	0.00	0.12
Part load conditions space heating warmer climate medium temperature application							
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	4.61	5.96	7.99	8.54	11.41
	COPd (declared COP)	-	2.69	2.59	2.54	2.50	2.55
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	3.08	3.89	5.36	5.68	7.85
	COPd (declared COP)	-	3.91	4.00	4.15	4.20	3.99
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	2.94	2.99	4.21	4.29	5.47
	COPd (declared COP)	-	5.85	6.05	6.35	6.53	5.90
	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]	4.61	5.96	7.99	8.54	11.41
	COPd (declared COP)	-	2.69	2.59	2.54	2.50	2.55
(F) Tivalent temperature	WTOL (Heating water Operation Limit)	[°C]	75	75	75	75	75
	Tblv	[°C]	7.00	7.00	7.00	7.00	7.00
	Pdh (declared heating capacity)	[kW]	3.08	3.89	5.36	5.68	7.85
Supplementary capacity at P_design	Psup (@Tdesignh: 2°C)	[kW]	0.09	0.04	0.30	0.26	0.99

Product fiche 5

Heat pump space heater

	Outdoor	KHOA-14PMA1	KHOA-16PMA1	KHOA-12PMA3	KHOA-14PMA3	KHOA-16PMA3
(D) condition (12°C)						
Pdh (declared heating capacity)	[kW]	5.17	5.34	5.17	5.17	5.34
COPd (declared COP)	-	7.02	7.33	6.98	7.02	7.33
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
Tol (temperature operating limit)	[°C]	2.00	2.00	2.00	2.00	2.00
(E) Tol (temperature operating limit)	[kW]	12.41	13.82	11.58	12.41	13.82
COPd (declared COP)	-	3.21	3.18	3.30	3.21	3.18
WTOL (Heating water Operation Limit)	[°C]	75	75	75	75	75
Tblv	[°C]	7.00	7.00	7.00	7.00	7.00
(F) Tblvalent temperature	[kW]	8.19	9.17	7.57	8.19	9.17
COPd (declared COP)	-	5.67	5.82	5.78	5.67	5.82
Supplementary capacity at P_design	[kW]	0.29	0.48	0.12	0.29	0.48
Part load conditions space heating warmer climate medium temperature application						
(B) condition (2°C)	[kW]	12.05	13.47	11.41	12.05	13.47
Pdh (declared heating capacity)	-	2.48	2.48	2.55	2.48	2.48
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	[kW]	9.11	9.58	7.85	9.11	9.58
Pdh (declared heating capacity)	-	3.98	4.04	3.99	3.98	4.04
COPd (declared COP)	-	0.90	0.90	0.90	0.90	0.90
Cdh(degradation coefficient)	[kW]	5.49	5.64	5.47	5.49	5.64
(D) condition (12°C)	-	6.01	6.31	5.90	6.01	6.31
Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	[°C]	2.00	2.00	2.00	2.00	2.00
Pdh (declared heating capacity)	[kW]	12.05	13.47	11.41	12.05	13.47
COPd (declared COP)	-	2.48	2.48	2.55	2.48	2.48
WTOL (Heating water Operation Limit)	[°C]	75	75	75	75	75
Tblv	[°C]	7.00	7.00	7.00	7.00	7.00
(F) Tblvalent temperature	[kW]	9.11	9.58	7.85	9.11	9.58
COPd (declared COP)	-	3.98	4.04	3.99	3.98	4.04
Supplementary capacity at P_design	[kW]	2.35	1.43	1.38	2.35	1.43

Product fiche 6

Heat pump space heater

		Outdoor	KHOA-04PMA1	KHOA-06PMA1	KHOA-08PMA1	KHOA-10PMA1	KHOA-12PMA1
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	No	No	No	No	No
Air to water unit	Rated airflow (outdoor)	[m³/h]	2770	2770	4030	4030	4450
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]	0.009	0.009	0.009	0.009	0.009
	Pto (Power consumption Thermostat off mode)	[kW]	0.014	0.014	0.014	0.014	0.014
	Psb (Power consumption Standby mode)	[kW]	0.009	0.009	0.009	0.009	0.009
	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 heater

		Outdoor	KHOA-14PMA1	KHOA-16PMA1	KHOA-12PMA3	KHOA-14PMA3	KHOA-16PMA3
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	No	No	No	No	No
Air to water unit	Rated airflow (outdoor)	[m ³ /h]	4450	5040	4450	4450	5040
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]	0.009	0.009	0.009	0.009	0.009
	Pto (Power consumption Thermostat off mode)	[kW]	0.014	0.014	0.014	0.014	0.014
	Psb (Power consumption Standby mode)	[kW]	0.009	0.009	0.009	0.009	0.009
	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 7

Heat pump space cooling

		Outdoor	KHOA-04PMA1	KHOA-06PMA1	KHOA-08PMA1	KHOA-10PMA1	KHOA-12PMA1
Outdoor unit sound power (*)	Average climate low temperature application	dB	56	58	60	61	65
	Average climate medium temperature application	dB	56	58	60	61	65
Space cooling 7°C	Prated (declared cooling capacity) @ 35°C	[kW]	4.7	6.8	7.5	8.9	11.5
	Seasonal space cooling efficiency (ηs)	[%]	206.3	209.8	224.0	213.8	204.4
	Annual energy consumption	[kWh]	539	767	793	985	1331
Space cooling 18°C	Prated (declared cooling capacity) @ 35°C	[kW]	4.5	6.5	8.3	10.0	12.0
	Seasonal space cooling efficiency (ηs)	[%]	251.4	263.1	297.5	312.2	253.8
	Annual energy consumption	[kWh]	424	586	663	761	1122
Part load conditions space cooling : low temperature application@7°C							
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	4.72	6.86	7.57	9.02	11.61
	EERd (declared EER)	-	3.64	3.10	3.51	3.25	3.06
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	3.57	5.22	5.74	6.85	8.58
	EERd (declared EER)	-	4.73	4.58	4.89	4.61	4.61
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	2.88	3.23	3.80	4.36	5.71
	EERd (declared EER)	-	6.16	6.19	6.68	5.98	5.89
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	2.88	2.89	3.84	3.98	5.15
	EERd (declared EER)	-	7.34	7.35	7.71	8.08	6.85
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 7

Heat pump space cooling

		Outdoor	KHOA-14PMA1	KHOA-16PMA1	KHOA-12PMA3	KHOA-14PMA3	KHOA-16PMA3
Outdoor unit sound power (*)	Average climate low temperature application	dB	66	69	65	66	69
	Average climate medium temperature application	dB	66	69	65	66	69
Space cooling 7°C	Prated (declared cooling capacity) @ 35°C	[kW]	12.7	14.0	11.5	12.7	14.0
	Seasonal space cooling efficiency (ηs)	[%]	204.1	201.6	204.4	204.1	201.6
	Annual energy consumption	[kWh]	1472	1624	1331	1472	1624
	Prated (declared cooling capacity) @ 35°C	[kW]	14.0	16.0	12.0	14.0	16.0
Space cooling 18°C	Seasonal space cooling efficiency (ηs)	[%]	266.8	263.1	253.8	266.8	263.1
	Annual energy consumption	[kWh]	1245	1443	1122	1245	1443
	Part load conditions space cooling : low temperature application@7°C						
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	12.87	14.42	11.61	12.87	14.42
	EERd (declared EER)	-	2.87	2.73	3.06	2.87	2.73
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	9.72	10.78	8.58	9.72	10.78
	EERd (declared EER)	-	4.43	4.22	4.61	4.43	4.22
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	6.19	6.94	5.71	6.19	6.94
	EERd (declared EER)	-	6.05	6.06	5.89	6.05	6.06
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	5.18	5.20	5.15	5.18	5.20
	EERd (declared EER)	-	6.88	6.93	6.85	6.88	6.93
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 8

Heat pump space cooling

Part load conditions space cooling : medium temperature application@18°C

	Outdoor	KHOA-04PMA1	KHOA-06PMA1	KHOA-08PMA1	KHOA-10PMA1	KHOA-12PMA1
(A) condition (35°C)	[kW]	4.66	6.77	8.53	10.14	12.29
Pdc (declared cooling capacity)						
EERd (declared EER)	-	5.51	5.12	5.34	4.87	4.62
Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (30°C)	[kW]	3.50	5.09	6.55	7.68	9.26
Pdc (declared cooling capacity)						
EERd (declared EER)	-	7.36	6.16	7.27	6.91	6.62
Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (25°C)	[kW]	3.29	3.46	4.66	5.05	6.27
Pdc (declared cooling capacity)						
EERd (declared EER)	-	7.06	7.74	8.50	9.60	7.12
Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (20°C)	[kW]	3.29	3.21	4.58	4.58	5.94
Pdc (declared cooling capacity)						
EERd (declared EER)	-	7.98	8.14	9.65	9.72	7.29
Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
Air to water unit	[m ³ /h]	2770	2770	4030	4030	4450
Brine/water to water unit		/	/	/	/	/
Rated water/brine flow (outdoor H/E)						
Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter
Poff (Power consumption Off mode)	[kW]	0.009	0.009	0.009	0.009	0.009
Pto (Power consumption Thermostat off mode)	[kW]	0.011	0.011	0.011	0.011	0.011
Psb (Power consumption Standby mode)	[kW]	0.009	0.009	0.009	0.009	0.009
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 8

Heat pump space cooling

Part load conditions space cooling : medium temperature application@18°C

	Outdoor	KHOA-14PMA1	KHOA-16PMA1	KHOA-12PMA3	KHOA-14PMA3	KHOA-16PMA3
(A) condition (35°C)	[kW]	14.16	16.00	12.29	14.16	16.00
Pdc (declared cooling capacity)						
EERd (declared EER)	-	4.19	3.94	4.62	4.19	3.94
Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (30°C)	[kW]	10.60	11.81	9.26	10.60	11.81
Pdc (declared cooling capacity)						
EERd (declared EER)	-	6.34	5.93	6.62	6.34	5.93
Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (25°C)	[kW]	6.77	7.69	6.27	6.77	7.69
Pdc (declared cooling capacity)						
EERd (declared EER)	-	8.20	8.23	7.12	8.20	8.23
Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (20°C)	[kW]	5.96	5.99	5.94	5.96	5.99
Pdc (declared cooling capacity)						
EERd (declared EER)	-	7.31	7.34	7.29	7.31	7.34
Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
Air to water unit	[m ³ /h]	4450	5040	4450	4450	5040
Rated airflow (outdoor)						
Rated water/brine flow (outdoor H/E)		/	/	/	/	/
Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter
Poff (Power consumption Off mode)	[kW]	0.009	0.009	0.009	0.009	0.009
Pto (Power consumption Thermostat off mode)	[kW]	0.011	0.011	0.011	0.011	0.011
Psb (Power consumption Standby mode)	[kW]	0.009	0.009	0.009	0.009	0.009
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.

Condition(°C)	Model	Capacity (kW)	Power input (kW)	EER/COP (/)
Ambient Temperature: 35/24 Water temperature: 12/7	KHOA-04PMA1	4.7	1.29	3.65
	KHOA-06PMA1	6.8	2.19	3.10
	KHOA-08PMA1	7.5	2.17	3.45
	KHOA-10PMA1	8.9	2.74	3.25
	KHOA-12PMA1	11.5	3.77	3.05
	KHOA-14PMA1	12.7	4.38	2.90
	KHOA-16PMA1	14.0	5.09	2.75
	KHOA-12PMA3	11.5	3.77	3.05
	KHOA-14PMA3	12.7	4.38	2.90
	KHOA-16PMA3	14.0	5.09	2.75
Ambient Temperature: 35/24 Water temperature: 23/18	KHOA-04PMA1	4.5	0.82	5.50
	KHOA-06PMA1	6.5	1.27	5.10
	KHOA-08PMA1	8.3	1.61	5.15
	KHOA-10PMA1	10.0	2.11	4.75
	KHOA-12PMA1	12.0	2.67	4.50
	KHOA-14PMA1	14.0	3.33	4.20
	KHOA-16PMA1	16.0	4.10	3.90
	KHOA-12PMA3	12.0	2.67	4.50
	KHOA-14PMA3	14.0	3.33	4.20
	KHOA-16PMA3	16.0	4.10	3.90
Ambient Temperature: 7/6 Water temperature: 30/35	KHOA-04PMA1	4.5	0.87	5.15
	KHOA-06PMA1	6.2	1.27	4.90
	KHOA-08PMA1	8.4	1.68	5.00
	KHOA-10PMA1	10.0	2.13	4.70
	KHOA-12PMA1	12.0	2.50	4.80
	KHOA-14PMA1	14.0	3.11	4.50
	KHOA-16PMA1	15.0	3.41	4.40
	KHOA-12PMA3	12.0	2.50	4.80
	KHOA-14PMA3	14.0	3.11	4.50
	KHOA-16PMA3	15.0	3.41	4.40
Ambient Temperature: 2/1 Water temperature: 30/35	KHOA-04PMA1	4.4	1.07	4.10
	KHOA-06PMA1	5.6	1.44	3.90
	KHOA-08PMA1	7.1	1.84	3.85
	KHOA-10PMA1	8.2	2.25	3.65
	KHOA-12PMA1	9.1	2.39	3.80
	KHOA-14PMA1	10.8	3.09	3.50
	KHOA-16PMA1	12.8	4.00	3.20
	KHOA-12PMA3	9.1	2.39	3.80
	KHOA-14PMA3	10.8	3.09	3.50
	KHOA-16PMA3	12.8	4.00	3.20

Condition(°C)	Model	Capacity (kW)	Power input (kW)	EER/COP (/)
Ambient Temperature: -7/-8 Water temperature: 30/35	KHOA-04PMA1	4.5	1.45	3.10
	KHOA-06PMA1	5.9	2.00	2.95
	KHOA-08PMA1	7.0	2.33	3.00
	KHOA-10PMA1	8.0	2.81	2.85
	KHOA-12PMA1	10.0	3.57	2.80
	KHOA-14PMA1	11.5	4.26	2.70
	KHOA-16PMA1	12.7	5.08	2.50
	KHOA-12PMA3	10.0	3.57	2.80
	KHOA-14PMA3	11.5	4.26	2.70
	KHOA-16PMA3	12.7	5.08	2.50
Ambient Temperature: 7/6 Water temperature: 40/45	KHOA-04PMA1	4.5	1.11	4.05
	KHOA-06PMA1	6.4	1.68	3.80
	KHOA-08PMA1	8.2	2.13	3.85
	KHOA-10PMA1	10.0	2.74	3.65
	KHOA-12PMA1	12.0	3.24	3.70
	KHOA-14PMA1	14.0	4.00	3.50
	KHOA-16PMA1	15.0	4.48	3.35
	KHOA-12PMA3	12.0	3.24	3.70
	KHOA-14PMA3	14.0	4.00	3.50
	KHOA-16PMA3	15.0	4.48	3.35
Ambient Temperature: 2/1 Water temperature: 40/45	KHOA-04PMA1	4.4	1.31	3.35
	KHOA-06PMA1	5.8	1.87	3.10
	KHOA-08PMA1	7.7	2.57	3.00
	KHOA-10PMA1	8.2	2.78	2.95
	KHOA-12PMA1	11.3	3.90	2.90
	KHOA-14PMA1	12.0	4.21	2.85
	KHOA-16PMA1	13.1	4.76	2.75
	KHOA-12PMA3	11.3	3.90	2.90
	KHOA-14PMA3	12.0	4.21	2.85
	KHOA-16PMA3	13.1	4.76	2.75
Ambient Temperature: -7/-8 Water temperature: 40/45	KHOA-04PMA1	4.7	1.74	2.70
	KHOA-06PMA1	5.5	2.20	2.50
	KHOA-08PMA1	7.1	3.09	2.30
	KHOA-10PMA1	7.6	3.38	2.25
	KHOA-12PMA1	10.5	4.29	2.45
	KHOA-14PMA1	11.4	4.96	2.30
	KHOA-16PMA1	12.5	5.56	2.25
	KHOA-12PMA3	10.5	4.29	2.45
	KHOA-14PMA3	11.4	4.96	2.30
	KHOA-16PMA3	12.5	5.56	2.25

Condition(°C)	Model	Capacity (kW)	Power input (kW)	EER/COP (/)
Ambient Temperature: 7/6 Water temperature: 47/55	KHOA-04PMA1	4.6	1.44	3.20
	KHOA-06PMA1	6.2	2.00	3.10
	KHOA-08PMA1	7.8	2.44	3.20
	KHOA-10PMA1	9.5	3.11	3.05
	KHOA-12PMA1	12.0	3.87	3.10
	KHOA-14PMA1	14.0	4.67	3.00
	KHOA-16PMA1	15.0	5.26	2.85
	KHOA-12PMA3	12.0	3.87	3.10
	KHOA-14PMA3	14.0	4.67	3.00
	KHOA-16PMA3	15.0	5.26	2.85
Ambient Temperature: 2/1 Water temperature: 47/55	KHOA-04PMA1	4.6	1.70	2.70
	KHOA-06PMA1	5.8	2.19	2.65
	KHOA-08PMA1	7.8	3.06	2.55
	KHOA-10PMA1	8.4	3.36	2.50
	KHOA-12PMA1	11.3	4.43	2.55
	KHOA-14PMA1	12.0	4.80	2.50
	KHOA-16PMA1	13.1	5.35	2.45
	KHOA-12PMA3	11.3	4.43	2.55
	KHOA-14PMA3	12.0	4.80	2.50
	KHOA-16PMA3	13.1	5.35	2.45
Ambient Temperature: -7/-8 Water temperature: 47/55	KHOA-04PMA1	4.7	2.14	2.20
	KHOA-06PMA1	5.2	2.42	2.15
	KHOA-08PMA1	6.9	3.21	2.15
	KHOA-10PMA1	7.4	3.52	2.10
	KHOA-12PMA1	10.4	4.84	2.15
	KHOA-14PMA1	11.3	5.38	2.10
	KHOA-16PMA1	12.4	6.05	2.05
	KHOA-12PMA3	10.4	4.84	2.15
	KHOA-14PMA3	11.3	5.38	2.10
	KHOA-16PMA3	12.4	6.05	2.05

Unit type explanation:

- 1.MHC-V*****N7, without back-up heater,
- 2.KHOA*****PMA1, with 3kW back-up heater and 1-Phase power source
- 3.MHC-V*****N7-ER60, with 6kW back-up heater and 3-Phase power source
- 4.KHOA*****PMA3, with 9kW back-up heater and 3-Phase power source

Note

EER and COP calculation is based in accordance to EN14511

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-1+ZL-580*190*12-3	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	0.156
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-1+ZL-580*190*12-3	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	0.153
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-200-10-4L-1+ZL-580*190*12-3	Rev.	
Prepare by			

Specified Information of Fan:

No.	Information Item	Comment
1	$\eta_{\text{target}} =$	29.41%
2	Overall efficiency (η_e) =	33.44%
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 =42.6
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	0.211
10.2	Rated motor flow rate(s) at optimum energy efficiency	1.35 m ³ /s
10.3	Rated motor pressure(s) at optimum energy efficiency	50 Pa
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-200-10-4L-1+ZL-580*190*12-3	Rev.	
Prepare by			

Specified Information of Fan:

No.	Information Item	Comment
1	$\eta_{\text{target}} =$	29.23%
2	Overall efficiency (η_e) =	36.14%
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 =45.3
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	0.198
10.2	Rated motor flow rate(s) at optimum energy efficiency	1.35 m ³ /s
10.3	Rated motor pressure(s) at optimum energy efficiency	50 Pa
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.

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-1+ZL-580*190*12-3	Rev.	
Prepare by			

Specified Information of Fan:

No.	Information Item	Comment
1	$\eta_{\text{target}} =$	29.1%
2	Overall efficiency (η_e) =	33.6%
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 =44.6
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	0.186
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-1+ZL-580*190*12-3	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	0.178
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.

NOTE

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Manufacturer / Producent:

Klima-Therm Sp. z o.o.
Ostrobramska 101a
04-041 Warsaw, Poland

Importer / Importer:

Klima-Therm Sp. z o.o.
Ostrobramska 101a
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