

MINI CHILLER INVERTER H12

Product fiche
and information requirements

MUENR-H12 / MUENR-H12T



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
MUENR-05-H12	A++	60	6.4	140.7	3655	5.2	113.1	4428	6.2	170.9	1895
MUENR-07-H12	A++	63	7.3	143.6	4088	6.1	117.7	4948	7.9	186.7	2231
MUENR-09-H12	A++	65	8.2	145.5	4539	7.2	122.4	5665	9.0	193.4	2458
MUENR-12-H12	A++	70	12.5	141.6	7148	11.3	126.0	8628	12.0	179.0	3524
MUENR-12-H12T	A++	70	12.5	141.6	7148	11.3	126.0	8628	12.0	179.0	3523
MUENR-14-H12	A++	72	14.2	141.8	8079	12.5	126.6	9496	13.1	182.3	3784
MUENR-14-H12T	A++	72	14.2	141.8	8079	12.5	126.6	9496	13.1	182.4	3782
MUENR-16-H12	A++	72	14.7	140.6	8471	13.5	124.3	10473	13.9	185.7	3945
MUENR-16-H12T	A++	72	14.7	140.7	8470	13.5	124.3	10473	13.9	185.7	3943

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
MUENR-05-H12	A+++	60	6.5	201.8	2631	6.1	173.4	3425	6.2	268.2	1229
MUENR-07-H12	A+++	63	7.9	204.0	3155	7.5	174.6	4166	8.1	274.7	1551
MUENR-09-H12	A+++	65	9.1	201.9	3654	8.3	174.6	4591	9.0	279.1	1714
MUENR-12-H12	A+++	70	12.3	200.1	5004	12.5	168.8	7153	12.1	262.3	2437
MUENR-12-H12T	A+++	70	12.3	200.2	5003	12.5	168.8	7153	12.1	262.5	2435
MUENR-14-H12	A+++	72	14.2	192.5	5984	14.3	171.3	8095	13.2	260.5	2684
MUENR-14-H12T	A+++	72	14.2	192.5	5984	14.3	171.3	8095	13.2	260.6	2683
MUENR-16-H12	A+++	72	15.2	190.5	6510	15.1	170.9	8546	14.2	255.3	2937
MUENR-16-H12T	A+++	72	15.2	190.5	6509	15.1	170.9	8546	14.2	255.5	2935

Product fiche 1

Mini Inverter heat pump space heating								
Outdoor unit sound power (*)	Average climate low temperature application	Outdoor	MUENR-05-H12	MUENR-07-H12	MUENR-09-H12	MUENR-12-H12	MUENR-14-H12	
	Average climate medium 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+++	A+++
Space heating	Energy efficiency class 55°C (Medium temp. app.)	-	A++	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

Mini Inverter heat pump space heating						
Outdoor unit sound power (*)	Average climate low temperature application	Outdoor	MUENR-16-H12	MUENR-12-H12T	MUENR-14-H12T	MUENR-16-H12T
	dB		72	70	72	72
Space heating	Average climate medium temperature application		72	70	72	72
	dB					
Space heating	Energy efficiency class 35°C (Low temp. app.)	-	A+++	A+++	A+++	A+++
	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 (ηs)	[%]	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 (ηs)	[%]	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

Mini Inverter heat pump space heating									
(F) Tivalent temperature	Tblv		Outdoor [°C]	MUENR-05-H12	MUENR-07-H12	MUENR-09-H12	MUENR-12-H12	MUENR-14-H12	
	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	
	Psup (@Tdesignh: -10°C)		[kW]	0.00	0.44	1.18	0.00	0.75	
Supplementary capacity at P_design									
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	
	Pdh (declared heating capacity)		[kW]	3.52	4.03	4.56	6.91	7.71	
(B) condition (2°C)	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	
	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	
(C) condition (7°C)	Cdh(degradation coefficient)		-	0.90	0.90	0.90	0.90	0.90	
	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	
(D) condition (12°C)	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	
(E) Tivalent temperature	Tblv		[°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	
	Psup (@Tdesignh: -10°C)		[kW]	0.32	0.40	1.14	1.53	2.65	
Supplementary capacity at P_design									
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

Mini Inverter heat pump space heating						
(F) Tivalent temperature	Tblv	Outdoor	MUENR-16-H12	MUENR-12-H12T	MUENR-14-H12T	MUENR-16-H12T
		[°C]	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	13.49	10.85	12.52	13.49
Supplementary capacity at P_design	COPd (declared COP)	-	2.87	3.11	2.97	2.87
	Psup (@Tdesignh: -10°C)	[kW]	1.18	0.00	0.80	1.15
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
(F) Tivalent temperature	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65
	Tblv	[°C]	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	13.03	11.06	12.52	13.03
Supplementary capacity at P_design	COPd (declared COP)	-	2.16	2.15	2.20	2.16
	Psup (@Tdesignh: -10°C)	[kW]	2.63	1.53	2.69	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

Mini Inverter heat pump space heating							
Space heating 55°C	Prated (declared heating capacity) @ -22°C	Outdoor	MUENR-05-H12	MUENR-07-H12	MUENR-09-H12	MUENR-12-H12	MUENR-14-H12
		[kW]	5.2	6.1	7.2	11.3	12.5
	Seasonal space heating efficiency (ηs)	[%]	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
(F) Tbiivalent temperature	WTOL (Heating water Operation Limit)	°C]	65	65	65	65	65
	Tblv	°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
Supplementary capacity at P_design	COPd (declared COP)	-	3.02	2.70	2.59	2.66	2.58
	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

Mini Inverter heat pump space heating						
Space heating 55°C	Prated (declared heating capacity) @ -22°C	[kW]	MUENR-16-H12	MUENR-12-H12T	MUENR-12-H12T	MUENR-16-H12T
	Seasonal space heating efficiency (ηs)	[%]	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
(F) TbiValent temperature	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65
	TbiV	[°C]	-15.00	-15.00	-15.00	-15.00
	Pdh (declared heating capacity)	[kW]	12.30	10.17	11.67	12.30
Supplementary capacity at P_design	COPd (declared COP)	-	2.58	2.66	2.58	2.58
	Psup (@Tdesignh: -22 °C)	[kW]	5.67	3.78	5.16	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

Mini Inverter heat pump space heating							
	Outdoor	MUENR-05-H12	MUENR-07-H12	MUENR-09-H12	MUENR-12-H12	MUENR-14-H12	
(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
(F) TbiValent temperature	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65
	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
Supplementary capacity at P_design	COPd (declared COP)	-	2.00	2.08	2.10	1.92	1.91
	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	7.9	9.0	12.0	13.1
	Seasonal space heating efficiency(ηs)	[%]	170.9	186.7	193.4	179.0	182.3
	Annual energy consumption	[kWh]	1,895	2,231	2,458	3,524	3,784
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

Mini Inverter heat pump space heating							MUENR-16-H12	MUENR-12-H12T	MUENR-14-H12T	MUENR-16-H12T
(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) Tivalent temperature	Tblv	[°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	5.22	5.98
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	2,944
Space heating 55°C	Prated (declared heating capacity) @ 2°C	[kW]					13.9	12.0	13.1	13.9
	Seasonal space heating efficiency (ηs)	[%]					185.7	179.0	182.4	185.7
	Annual energy consumption	[kWh]					3,945	3,523	3,782	3,943
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

Mini Inverter heat pump space heating								
	Outdoor	MUENR-05-H12	MUENR-07-H12	MUENR-09-H12	MUENR-12-H12	MUENR-14-H12		
(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	
(F) Tbivalent temperature	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65	
	Tblv	[°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	
Supplementary capacity at P_design	COPd (declared COP)	-	6.39	6.35	6.24	5.82	5.72	
	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	5.09	5.81	7.73	8.44	
	COPd (declared COP)	-	3.90	4.07	4.16	3.86	3.91	
	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	3.90	
	COPd (declared COP)	-	5.28	6.07	6.64	5.88	6.08	
	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	
(F) Tbivalent temperature	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65	
	Tblv	[°C]	7.00	7.00	7.00	7.00	7.00	
	Pdh (declared heating capacity)	[kW]	3.97	5.09	5.81	7.73	8.44	
Supplementary capacity at P_design	COPd (declared COP)	-	3.90	4.07	4.16	3.86	3.91	
	Psup (@Tdesignh: 2°C)	[kW]	0.00	0.12	0.61	0.00	0.09	

Product fiche 5

Mini Inverter heat pump space heating									
(D) condition (12°C)	Pdh (declared heating capacity)		Outdoor	MUENR-16-H12	MUENR-12-H12T	MUENR-14-H12T	MUENR-16-H12T		
			[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) Tivalent temperature	Tblv		[°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		
	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		
	Pdh (declared heating capacity)		[kW]	8.95	7.73	8.44	8.95		
(C) condition (7°C)	COPd (declared COP)		-	3.92	3.86	3.91	3.92		
	Cdh(degradation coefficient)		-	0.90	0.90	0.90	0.90		
	Pdh (declared heating capacity)		[kW]	4.26	3.59	3.90	4.26		
	COPd (declared COP)		-	6.37	5.88	6.08	6.37		
(D) condition (12°C)	Cdh(degradation coefficient)		-	0.90	0.90	0.90	0.90		
	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		
(E) Tol (temperature operating limit)	WTOL (Heating water Operation Limit)		[°C]	65	65	65	65		
	Tblv		[°C]	7.00	7.00	7.00	7.00		
	Pdh (declared heating capacity)		[kW]	8.95	7.73	8.44	8.95		
	COPd (declared COP)		-	3.92	3.86	3.91	3.92		
(F) Tivalent temperature	Psup (@Tdesignh: 2°C)		[kW]	0.28	0.00	0.09	0.28		

Product fiche 6

Mini Inverter heat pump space heating		Outdoor	MUENR-05-H12	MUENR-07-H12	MUENR-09-H12	MUENR-12-H12	MUENR-14-H12
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

Mini Inverter heat pump space heating						
Product description	Air-to-water heat pump	Outdoor	MUENR-16-H12	MUENR-12-H12T	MUENR-14-H12T	MUENR-16-H12T
	Water-to-water heat pump	Y/N	Yes	Yes	Yes	Yes
	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
	Rated water/brine flow (outdoor H/E)		/	/	/	/
Brine/water to water unit	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

Mini Inverter heat pump space cooling							
Outdoor unit sound power (*)	Average climate low temperature application	Outdoor	MUENR-05-H12	MUENR-07-H12	MUENR-09-H12	MUENR-12-H12	MUENR-14-H12
	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 (ns)	[%]	200.43	204.71	200.21	199.92	200.65
	Annual energy consumption	[kWh]	658	854	1,063	1,380	1,592
	Prated (declared cooling capacity) @ 35°C	[kW]	6.9	8.6	10.2	12.1	14.0
Space cooling 18°C	Seasonal space cooling efficiency (ns)	[%]	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

Mini Inverter heat pump space cooling						
Outdoor unit sound power (*)	Average climate low temperature application	Outdoor	MUENR-16-H12	MUENR-12-H12T	MUENR-14-H12T	MUENR-16-H12T
	Average climate medium temperature application	dB	71	69	71	71
Space cooling 7°C		dB	71	69	71	71
	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

Mini Inverter heat pump space cooling									
Part load conditions space cooling : medium temperature application@18°C									
	Outdoor	MUENR-05-H12	MUENR-07-H12	MUENR-09-H12	MUENR-09-H12	MUENR-14-H12			
(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)	[m³/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

Mini Inverter heat pump space cooling		Outdoor	MUENR-16-H12	MUENR-12-H12T	MUENR-14-H12T	MUENR-16-H12T
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)	[m³/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]	/	/	/	/

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
MUENR-05-H12	6.50	1.275	5.10	5.50	1.692	3.25	6.50	1.226	5.30	5.60	1.333	4.20
MUENR-07-H12	8.30	1.711	4.85	7.40	2.349	3.15	8.40	1.663	5.05	7.10	1.797	3.95
MUENR-09-H12	10.00	2.326	4.30	9.00	3.103	2.90	10.00	2.128	4.70	8.20	2.158	3.80
MUENR-12-H12	12.20	2.652	4.60	11.60	3.742	3.10	12.20	2.490	4.90	12.30	3.417	3.60
MUENR-12-H12T	12.20	2.652	4.60	11.60	3.742	3.10	12.20	2.490	4.90	12.30	3.417	3.60
MUENR-14-H12	13.90	3.159	4.40	13.40	4.573	2.93	14.10	3.000	4.70	13.00	3.714	3.50
MUENR-14-H12T	13.90	3.159	4.40	13.40	4.573	2.93	14.10	3.000	4.70	13.00	3.714	3.50
MUENR-16-H12	15.40	3.667	4.20	14.00	4.828	2.90	16.00	3.556	4.50	14.50	4.462	3.25
MUENR-16-H12T	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
MUENR-05-H12	6.20	1.938	3.20	6.60	1.650	4.00	6.50	2.063	3.15	6.10	2.346	2.60
MUENR-07-H12	7.10	2.254	3.15	8.50	2.237	3.80	7.50	2.459	3.05	6.80	2.720	2.50
MUENR-09-H12	8.00	2.667	3.00	10.20	2.795	3.65	8.50	2.881	2.95	7.40	3.083	2.40
MUENR-12-H12	11.60	4.070	2.85	12.50	3.378	3.70	12.00	4.138	2.90	11.50	4.792	2.40
MUENR-12-H12T	11.60	4.070	2.85	12.50	3.378	3.70	12.00	4.138	2.90	11.50	4.792	2.40
MUENR-14-H12	12.50	4.464	2.80	14.50	4.085	3.55	13.00	4.643	2.80	12.50	5.435	2.30
MUENR-14-H12T	12.50	4.464	2.80	14.50	4.085	3.55	13.00	4.643	2.80	12.50	5.435	2.30
MUENR-16-H12	13.50	5.000	2.70	16.20	4.696	3.45	14.30	5.296	2.70	13.50	6.000	2.25
MUENR-16-H12T	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
MUENR-05-H12	6.30	1.969	3.20	6.30	2.250	2.80	5.70	2.651	2.15
MUENR-07-H12	8.20	2.603	3.15	7.60	2.815	2.70	6.60	3.143	2.10
MUENR-09-H12	9.40	3.032	3.10	8.40	3.170	2.65	7.20	3.512	2.05
MUENR-12-H12	12.00	4.000	3.00	12.00	5.106	2.35	10.80	5.143	2.10
MUENR-12-H12T	12.00	4.000	3.00	12.00	5.106	2.35	10.80	5.143	2.10
MUENR-14-H12	14.00	4.746	2.95	13.00	5.603	2.32	11.70	5.625	2.08
MUENR-14-H12T	14.00	4.746	2.95	13.00	5.603	2.32	11.70	5.625	2.08
MUENR-16-H12	16.00	5.614	2.85	13.50	5.870	2.30	12.80	6.244	2.05
MUENR-16-H12T	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	$\eta_{\text{target}} =$	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	0.186kw
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	$\eta_{target} =$	28.9%
2	Overall efficiency (η_e) =	33.0%
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 =44.1
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.

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