



REVERSIBLE HEAT PUMP UNITS FOR OUTDOOR INSTALLATION WITH DC INVERTER COMPRESSOR



Cod. 3QE46420 - Rev. 00 - 07/2020

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EN

TECHNICAL DATA MANUAL

ERP data

Models		4	6	8	10	12	14	16	12T	14T	16T	UM
Seasonal space heating energy efficiency class	low temperature (water outlet at 35°C)	1,91	1,95	2,05	2,04	1,89	1,85	1,817	1,89	1,85	1,82	ηs class
	medium temperature (water at 55°C)	1,29	1,38	1,31	1,36	1,35	1,35	1,333	1,35	1,35	1,33	ηs class
SCOP	low temperature (water outlet at 35°C)	4,85	4,95	5,21	5,19	4,81	4,72	4,62	4,81	4,72	4,62	W/W
	medium temperature (water at 55°C)	3,31	3,52	3,36	3,49	3,45	3,47	3,41	3,45	3,47	3,41	W/W
SEER	water at 7°C	4,99	5,34	5,83	5,98	4,89	4,86	4,69	4,86	4,83	4,67	W/W
	water at 18°C	7,77	8,21	8,95	8,78	7,10	6,90	6,75	7,04	6,85	6,71	W/W

NOTA: Declared according to **European regulation 811/2013**. The values are referred to units without options and accessories.

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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
4	-	dB	kW	%	kWh	kW	%	kWh	kW	%	kWh
4-BE30	A++	55	4.4	129.5	2742	3.4	102.1	3158	5.0	163.1	1614
6	A++	55	4.4	129.5	2742	3.4	102.1	3158	5.0	163.1	1614
6-BE30	A++	58	5.7	137.9	3343	4.3	111.1	3680	5.1	165.4	1634
8	A++	58	5.7	137.9	3343	4.3	111.1	3680	5.1	165.4	1634
8-BE30	A++	59	6.6	131.6	4054	5.8	112.1	4948	7.6	177.2	2242
8-BER90	A++	59	6.6	131.6	4054	5.8	112.1	4948	7.6	177.2	2242
10	A++	60	7.7	135.7	4567	6.7	116.5	5539	8.6	181.7	2496
10-BE30	A++	60	7.7	135.7	4567	6.7	116.5	5539	8.6	181.7	2496
10-BER90	A++	60	7.7	135.7	4567	6.7	116.5	5539	8.6	181.7	2496
12	A++	65	11.6	135.1	6927	10.3	117.8	8419	12.5	174.1	3376
12-BE30	A++	65	11.6	135.1	6927	10.3	117.8	8419	12.5	174.1	3376
12-BER90	A++	65	11.6	135.1	6927	10.3	117.8	8419	12.5	174.1	3376
14	A++	65	12.1	135.6	7202	11.0	118.9	8866	13.7	176.5	4088
14-BE30	A++	65	12.1	135.6	7202	11.0	118.9	8866	13.7	176.5	4088
14-BER90	A++	65	12.1	135.6	7202	11.0	118.9	8866	13.7	176.5	4088
16	A++	68	13.0	133.3	7895	11.8	121.8	9309	13.8	176.1	4112
16-BE30	A++	68	13.0	133.3	7895	11.8	121.8	9309	13.8	176.1	4112
16-BER90	A++	68	13.0	133.3	7895	11.8	121.8	9309	13.8	176.1	4112
12T	A++	65	11.6	135.1	6928	10.3	117.7	8420	12.5	173.8	3780
12T-BE30	A++	65	11.6	135.1	6928	10.3	117.7	8420	12.5	173.8	3780
12T-BER90	A++	65	11.6	135.1	6928	10.3	117.7	8420	12.5	173.8	3780
14T	A++	65	12.1	135.6	7203	11.0	118.9	8867	13.7	176.4	4092
14T-BE30	A++	65	12.1	135.6	7203	11.0	118.9	8867	13.7	176.4	4092
14T-BER90	A++	65	12.1	135.6	7203	11.0	118.9	8867	13.7	176.4	4092
16T-B	A++	68	13.0	133.2	7896	11.8	121.8	9310	13.8	175.9	4116
16T-BE30	A++	68	13.0	133.2	7896	11.8	121.8	9310	13.8	175.9	4116
16T-BER90	A++	68	13.0	133.2	7896	11.8	121.8	9310	13.8	175.9	4116

Model explanation:

- 8 , without back-up heater
- 8-BE30, with 3kW back-up heater and 1-Phase Source
- 8-BER90, with 9kW back-up heater and 3-Phase Source

Model	For low - temperature application										
	average climate			colder climate			warmer climate			Energy efficiency class	Unit sound power
	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		
4	kW	%	kWh	kW	%	kWh	kW	%	kWh		
4-BE30	55	191.0	2351	4.6	159.5	2769	5.5	255.4	1146	A+++	
6	55	191.0	2351	4.6	159.5	2769	5.5	255.4	1146	A+++	
6-BE30	58	195.0	2845	5.6	165.3	3300	6.1	259.8	1244	A+++	
8	58	195.0	2845	5.6	165.3	3300	6.1	259.8	1244	A+++	
8-BE30	59	205.6	3218	7.0	170.0	3976	8.1	276.6	1551	A+++	
8-BER90	59	205.6	3218	7.0	170.0	3976	8.1	276.6	1551	A+++	
10	60	204.8	3644	7.7	169.8	4423	8.6	280.5	1617	A+++	
10-BE30	60	204.8	3644	7.7	169.8	4423	8.6	280.5	1617	A+++	
10-BER90	60	204.8	3644	7.7	169.8	4423	8.6	280.5	1617	A+++	
12	65	189.4	5152	11.4	160.2	6870	11.1	256.1	2292	A+++	
12-BE30	65	189.4	5152	11.4	160.2	6870	11.1	256.1	2292	A+++	
12-BER90	65	189.4	5152	11.4	160.2	6870	11.1	256.1	2292	A+++	
14	65	185.7	6012	12.6	159.6	7667	12.1	260.3	2457	A+++	
14-BE30	65	185.7	6012	12.6	159.6	7667	12.1	260.3	2457	A+++	
14-BER90	65	185.7	6012	12.6	159.6	7667	12.1	260.3	2457	A+++	
16	68	181.7	6804	13.7	157.8	8431	13.1	248.5	2781	A+++	
16-BE30	68	181.7	6804	13.7	157.8	8431	13.1	248.5	2781	A+++	
16-BER90	68	181.7	6804	13.7	157.8	8431	13.1	248.5	2781	A+++	
12T	65	189.3	5153	11.4	160.2	6871	11.1	255.6	2296	A+++	
12T-BE30	65	189.3	5153	11.4	160.2	6871	11.1	255.6	2296	A+++	
12T-BER90	65	189.3	5153	11.4	160.2	6871	11.1	255.6	2296	A+++	
14T	65	185.6	6013	12.6	159.6	7667	12.1	259.8	2462	A+++	
14T-BE30	65	185.6	6013	12.6	159.6	7667	12.1	259.8	2462	A+++	
14T-BER90	65	185.6	6013	12.6	159.6	7667	12.1	259.8	2462	A+++	
16T-B	68	181.6	6805	13.7	157.8	8431	13.1	248.1	2786	A+++	
16T-BE30	68	181.6	6805	13.7	157.8	8431	13.1	248.1	2786	A+++	
16T-BER90	68	181.6	6805	13.7	157.8	8431	13.1	248.1	2786	A+++	

Model explanation:

- 8, without back-up heater
- 8-BE30, with 3kW back-up heater and 1-Phase Source
- 8-BER90, with 9kW back-up heater and 3-Phase Source

Product fiche 1

Heat pump space heater		Model	4 4-BE30	6 6-BE30	8 8-BE30 8-BER90	10 10-BE30 10-BER90	12 12-BE30 12-BER90
Unit sound power (*)	Average climate low temperature application	[dB(A)]	55.0	58.0	59.0	60.0	65.0
	Average climate medium temperature application	[dB(A)]	55.0	58.0	59.0	60.0	65.0
Capacity of the back-up heater integrated in the unit	Psup back-up heater (optional)	[kW]	0/3	0/3	0/3/9	0/3/9	0/3/9
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]	5.5	6.8	8.1	9.2	12.0
	Seasonal space heating efficiency (ηs)	[%]	191.0	195.0	205.6	204.8	189.4
	Annual energy consumption	[kWh]	2,351	2,845	3,218	3,644	5,152
Space heating 55°C	Prated (declared heating capacity) @ -10°C	[kW]	4.4	5.7	6.6	7.7	11.6
	Seasonal space heating efficiency (ηs)	[%]	129.5	137.9	131.6	135.7	135.1
	Annual energy consumption	[kWh]	2,742	3,343	4,054	4,567	6,927
Part load conditions space heating average climate low temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	4.88	6.03	7.18	8.10	10.61
	COPd (declared COP)	-	3.19	3.09	3.35	3.23	2.88
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	3.05	3.88	4.65	5.18	6.69
	COPd (declared COP)	-	4.78	4.85	5.09	5.01	4.65
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	1.93	2.39	2.90	3.32	4.44
	COPd (declared COP)	-	6.13	6.63	6.82	7.08	6.62
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	1.48	1.39	1.63	1.65	3.74
	COPd (declared COP)	-	8.05	7.93	8.35	8.58	8.47
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 1

Heat pump space heater									
Unit sound power (*)	Average climate low temperature application	Model	14 14-BE30 14-BER90	16 16-BE30 16-BER90	12T 12T-BE30 12T-BER90	14T 14T-BE30 14T-BER90	16T-B 16T-BE30 16T-BER90		
	[dB(A)]		65.0	68.0	65.0	65.0	68.0	65.0	68.0
Capacity of the back-up heater integrated in the unit	Average climate medium temperature application	[dB(A)]	65.0	68.0	65.0	65.0	68.0	65.0	68.0
Space heating	Ps up back-up heater (optional)	[kW]	0/3/9	0/3/9	0/3/9	0/3/9	0/3/9	A+++	A+++
Space heating	Energy efficiency class 35°C (Low temp. app.)	-	A+++	A+++	A+++	A+++	A+++	A+++	A+++
Space heating	Energy efficiency class 55°C (Medium temp. app.)	-	A++	A++	A++	A++	A++	A++	A++
Average climate (Design temperature = -10°C)									
Space heating 35°C	Prated (declared heating capacity) @ -10°C	[kW]	13.7	15.2	12.0	13.7	15.2	12.0	13.7
	Seasonal space heating efficiency (ηs)	[%]	185.7	181.7	189.3	185.6	181.6	189.3	181.6
	Annual energy consumption	[kWh]	6,012	6,804	5,153	6,013	6,805	5,153	6,805
Space heating 55°C	Prated (declared heating capacity) @ -10°C	[kW]	12.1	13.0	11.6	12.1	13.0	11.6	12.1
	Seasonal space heating efficiency (ηs)	[%]	135.6	133.3	135.1	135.6	133.2	135.1	133.2
	Annual energy consumption	[kWh]	7,202	7,895	6,928	7,203	7,896	6,928	7,896
Part load conditions space heating average climate low temperature application									
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	12.14	13.45	10.61	12.14	13.45	10.61	12.14
	COPd (declared COP)	-	2.79	2.72	2.88	2.79	2.72	2.88	2.72
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	7.94	8.56	6.69	7.94	8.56	6.69	7.94
	COPd (declared COP)	-	4.52	4.41	4.65	4.52	4.41	4.65	4.41
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	5.20	5.70	4.44	5.20	5.70	4.44	5.20
	COPd (declared COP)	-	6.68	6.56	6.62	6.68	6.56	6.62	6.56
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.75	3.78	3.74	3.75	3.78	3.74	3.75
	COPd (declared COP)	-	8.52	8.51	8.47	8.52	8.51	8.47	8.51
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90	0.90	0.90

Product fiche 2

Heat pump space heater		Model	4 4-BE30	6 6-BE30	8 8-BE30 8-BER90	10 10-BE30 10-BER90	12 12-BE30 12-BER90
(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]	4.41	5.36	6.44	7.40	10.74
	COPd (declared COP)	-	2.86	2.76	3.04	2.96	2.77
	WTOL (Heating water Operation Limit)	[°C]	60.00	60.00	60.00	60.00	60.00
(F) Tivalent temperature	Tblv	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	4.88	6.03	7.18	8.10	10.61
	COPd (declared COP)	-	3.19	3.09	3.35	3.23	2.88
	Psup (@Tdesignh: -10°C)	[kW]	1.11	1.45	1.68	1.76	1.26
Part load conditions space heating average climate medium temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	3.89	5.04	5.84	6.78	10.24
	COPd (declared COP)	-	2.17	2.17	2.16	2.24	2.01
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	2.38	3.12	3.76	4.28	6.52
(B) condition (2°C)	COPd (declared COP)	-	3.30	3.51	3.30	3.42	3.44
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	2.94	2.08	2.43	2.77	4.36
	COPd (declared COP)	-	4.41	4.54	4.34	4.52	4.59
(C) condition (7°C)	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	1.32	1.28	1.39	1.58	3.29
	COPd (declared COP)	-	5.66	5.59	5.33	5.68	6.05
	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]	3.42	4.52	4.91	5.38	9.10
	COPd (declared COP)	-	1.91	1.91	1.84	1.83	1.79
	WTOL (Heating water Operation Limit)	[°C]	60.00	60.00	60.00	60.00	60.00
(E) Tol (temperature operating limit)	Tblv	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	3.89	5.04	5.84	6.78	10.27
	COPd (declared COP)	-	2.17	2.17	2.16	2.24	2.01
	Psup (@Tdesignh: -10°C)	[kW]	1.11	1.45	1.68	1.76	1.26

Product fiche 2

Heat pump space heater							
	Model	14 14-BE30 14-BER90	16 16-BE30 16-BER90	12T 12T-BE30 12T-BER90	14T 14T-BE30 14T-BER90	16T-B 16T-BE 16T-BE	
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00	
	Pdh (declared heating capacity)	[kW]	11.47	12.52	10.74	11.47	
	COPd (declared COP)	-	2.59	2.48	2.77	2.59	
	WTOL (Heating water Operation Limit)	[°C]	60.00	60.00	60.00	60.00	
(F) Tbivalent temperature	Tblv	[°C]	-7.00	-7.00	-7.00	-7.00	
	Pdh (declared heating capacity)	[kW]	12.14	13.45	10.61	12.14	
	COPd (declared COP)	-	2.79	2.72	2.88	2.79	
	Psup (@Tdesignh: -10°C)	[kW]	2.23	2.68	1.26	2.23	
Supplementary capacity at P_design						2.68	
Part load conditions space heating average climate medium temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	10.68	11.52	10.24	10.68	11.52
	COPd (declared COP)	-	2.01	1.99	2.01	2.01	1.99
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	6.86	7.18	6.52	6.86	7.18
(B) condition (2°C)	COPd (declared COP)	-	3.43	3.34	3.44	3.43	3.34
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	4.63	4.67	4.36	4.63	4.67
	COPd (declared COP)	-	4.66	4.61	4.59	4.66	4.61
(C) condition (7°C)	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	3.31	3.32	3.29	3.31	3.32
	COPd (declared COP)	-	6.13	6.07	6.05	6.13	6.07
	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]	9.19	10.33	9.10	9.19	10.33
	COPd (declared COP)	-	1.76	1.80	1.79	1.76	1.80
	WTOL (Heating water Operation Limit)	[°C]	60.00	60.00	60.00	60.00	60.00
(E) Tol (temperature operating limit)	Tblv	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	10.68	11.52	10.27	10.68	11.52
	COPd (declared COP)	-	2.01	1.99	2.01	2.01	1.99
	Psup (@Tdesignh: -10°C)	[kW]	2.91	2.67	2.50	2.91	2.67

Product fiche 3

Heat pump space heater		Model	4 4-BE30	6 6-BE30	8 8-BE30 8-BER90	10 10-BE30 10-BER90	12 12-BE30 12-BER90
Supplementary capacity at P _{design}	P _{sup} (@T _{designh} : -10°C)	[kW]	0.98	1.18	1.69	2.28	2.50
Colder climate (Design temperature = -22°C)							
Space heating 35°C	Prated (declared heating capacity) @ -22°C	[kW]	4.6	5.6	7.0	7.7	11.4
	Seasonal space heating efficiency (η _s)	[%]	159.5	165.3	170.0	169.8	160.2
	Annual energy consumption	[kWh]	2,769	3,300	3,976	4,423	6,870
Space heating 55°C	Prated (declared heating capacity) @ -22°C	[kW]	3.4	4.3	5.8	6.7	10.3
	Seasonal space heating efficiency (η _s)	[%]	102.1	111.1	112.1	116.5	117.8
	Annual energy consumption	[kWh]	3,158	3,680	4,948	5,539	8,419
Part load conditions space heating colder climate low temperature application							
(A) condition (-7°C)	P _{dh} (declared heating capacity)	[kW]	2.75	3.42	4.46	4.83	7.05
	COP _d (declared COP)	-	3.49	3.59	3.66	3.60	3.48
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	P _{dh} (declared heating capacity)	[kW]	1.77	2.06	2.69	2.94	4.67
	COP _d (declared COP)	-	4.95	5.21	5.20	5.26	4.96
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	P _{dh} (declared heating capacity)	[kW]	1.17	1.46	1.65	1.92	3.14
	COP _d (declared COP)	-	5.53	6.24	6.53	7.08	6.10
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	P _{dh} (declared heating capacity)	[kW]	1.43	1.44	1.65	1.65	3.57
	COP _d (declared COP)	-	7.67	7.66	7.96	7.96	7.87
	C _{dh} (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
	P _{dh} (declared heating capacity)	[kW]	2.80	3.48	4.06	4.62	7.01
	COP _d (declared COP)	-	1.97	1.96	1.95	1.97	1.98
	WTOL (Heating water Operation Limit)	[°C]	51.00	51.00	51.00	51.00	51.00
(F) Tivalent temperature	T _{blv}	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
	P _{dh} (declared heating capacity)	[kW]	3.72	4.59	5.69	6.32	9.28
	COP _d (declared COP)	-	2.57	2.53	2.83	2.64	2.59
Supplementary capacity at P _{design}	P _{sup} (@T _{designh} : -22°C)	[kW]	1.76	2.15	2.91	3.08	4.40

Product fiche 3

Heat pump space heater		Model	14 14-BE30 14-BER90	16 16-BE30 16-BER90	12T 12T-BE30 12T-BER90	14T 14T-BE30 14T-BER90	16T-B 16T-BE 16T-BE
Colder climate (Design temperature = -22°C)							
Space heating 35°C	P _{rated} (declared heating capacity) @ -22°C	[kW]	12.6	13.7	11.4	12.6	13.7
	Seasonal space heating efficiency (η _s)	[%]	159.6	157.8	160.2	159.6	157.8
	Annual energy consumption	[kWh]	7,667	8,431	6,871	7,667	8,431
Space heating 55°C	P _{rated} (declared heating capacity) @ -22°C	[kW]	11.0	11.8	10.3	11.0	11.8
	Seasonal space heating efficiency (η _s)	[%]	118.9	121.8	117.7	118.9	121.8
	Annual energy consumption	[kWh]	8,866	9,309	8,420	8,867	9,310
Part load conditions space heating colder climate low temperature application							
(A) condition (-7°C)	P _{dh} (declared heating capacity)	[kW]	7.96	8.31	7.05	7.96	8.31
	COP _d (declared COP)	-	3.44	3.37	3.48	3.44	3.37
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	P _{dh} (declared heating capacity)	[kW]	5.05	5.26	4.67	5.05	5.26
	COP _d (declared COP)	-	4.92	4.86	4.96	4.92	4.86
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	P _{dh} (declared heating capacity)	[kW]	3.15	3.62	3.14	3.15	3.62
	COP _d (declared COP)	-	6.11	6.49	6.10	6.11	6.49
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	P _{dh} (declared heating capacity)	[kW]	3.57	3.34	3.57	3.57	3.34
	COP _d (declared COP)	-	7.82	7.40	7.87	7.82	7.40
	C _{dh} (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
	P _{dh} (declared heating capacity)	[kW]	7.57	8.88	7.01	7.57	8.88
	COP _d (declared COP)	-	1.92	1.97	1.98	1.92	1.97
(F) Tivalent temperature	WTOL (Heating water Operation Limit)	[°C]	51.00	51.00	51.00	51.00	51.00
	T _{blv}	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
	P _{dh} (declared heating capacity)	[kW]	10.31	11.22	9.28	10.31	11.22
Supplementary capacity at P _{design}	COP _d (declared COP)	-	2.53	2.43	2.59	2.53	2.43
	P _{sup} (@T _{designh} : -22°C)	[kW]	5.03	4.82	4.40	5.03	4.82

Product fiche 4

Heat pump space heater		Model	4 4-BE30	6 6-BE30	8 8-BE30 8-BER90	10 10-BE30 10-BER90	12 12-BE30 12-BER90
Part load conditions space heating colder climate medium temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	2.13	2.69	3.86	4.27	6.63
	COPd (declared COP)	-	2.32	2.46	2.48	2.54	2.63
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	1.28	1.60	2.21	2.57	4.06
	COPd (declared COP)	-	2.99	3.36	3.35	3.51	3.60
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	1.01	1.02	1.44	1.65	2.78
	COPd (declared COP)	-	3.86	3.94	4.11	4.37	4.54
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	1.36	1.37	1.47	1.48	3.33
	COPd (declared COP)	-	6.28	6.35	5.92	5.96	6.25
	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]	1.64	2.09	2.80	2.80	4.19
	COPd (declared COP)	-	1.02	1.13	1.22	1.22	1.13
(F) Tbivalent temperature	WTOL (Heating water Operation Limit)	[°C]	51.00	51.00	51.00	51.00	51.00
	Tbiv	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
	Pdh (declared heating capacity)	[kW]	2.74	3.47	4.71	5.47	8.41
Supplementary capacity at P _{design}	COPd (declared COP)	-	1.74	1.86	1.90	2.00	1.84
	Psup (@Tdesignh: -22°C)	[kW]	1.72	2.17	2.97	3.91	6.12
Warmer climate (Design temperature = 2°C)							
Space heating 35°C	Prated (declared heating capacity) @ 2°C	[kW]	5.5	6.1	8.1	8.6	11.1
	Seasonal space heating efficiency (ηs)	[%]	255.4	259.8	276.6	280.5	256.1
	Annual energy consumption	[kWh]	1,146	1,244	1,551	1,617	2,292
Space heating 55°C	Prated (declared heating capacity) @ 2°C	[kW]	5.0	5.1	7.6	8.6	12.5
	Seasonal space heating efficiency (ηs)	[%]	163.1	165.4	177.2	181.7	174.1
	Annual energy consumption	[kWh]	1,614	1,634	2,242	2,496	3,376

Product fiche 4

Heat pump space heater		Model	14 14-BE30 14-BER90	16 16-BE30 16-BER90	12T 12T-BE30 12T-BER90	14T 14T-BE30 14T-BER90	16T-B 16T-BE 16T-BE
Part load conditions space heating colder climate medium temperature application							
(A) condition (-7°C)	P _{dh} (declared heating capacity)	[kW]	6.89	7.64	6.63	6.89	7.64
	COP _d (declared COP)	-	2.66	2.65	2.63	2.66	2.65
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	P _{dh} (declared heating capacity)	[kW]	4.32	4.42	4.06	4.32	4.42
(B) condition (2°C)	COP _d (declared COP)	-	3.66	3.79	3.60	3.66	3.79
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	P _{dh} (declared heating capacity)	[kW]	3.06	2.97	2.78	3.06	2.97
	COP _d (declared COP)	-	4.72	4.81	4.54	4.72	4.81
(C) condition (7°C)	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	P _{dh} (declared heating capacity)	[kW]	3.33	3.43	3.33	3.33	3.43
	COP _d (declared COP)	-	6.25	6.29	6.25	6.25	6.29
	C _{dh} (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
	P _{dh} (declared heating capacity)	[kW]	4.20	5.21	4.19	4.20	5.21
	COP _d (declared COP)	-	1.13	1.23	1.13	1.13	1.23
	WTOL (Heating water Operation Limit)	[°C]	51.00	51.00	51.00	51.00	51.00
(F) Tivalent temperature	T _{biv}	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
	P _{dh} (declared heating capacity)	[kW]	8.94	9.61	8.41	8.94	9.61
	COP _d (declared COP)	-	1.79	1.86	1.84	1.79	1.86
	P _{sup} (@T _{designh} : -22°C)	[kW]	6.76	6.59	6.12	6.76	6.59
Warmer climate (Design temperature = 2°C)							
Space heating 35°C	P _{rated} (declared heating capacity) @ 2°C	[kW]	12.1	13.1	11.1	12.1	13.1
	Seasonal space heating efficiency (η _s)	[%]	260.3	248.5	255.6	259.8	248.1
	Annual energy consumption	[kWh]	2,457	2,781	2,296	2,462	2,786
	P _{rated} (declared heating capacity) @ 2°C	[kW]	13.7	13.8	12.5	13.7	13.8
Space heating 55°C	Seasonal space heating efficiency (η _s)	[%]	176.5	176.1	173.8	176.4	175.9
	Annual energy consumption	[kWh]	4,088	4,112	3,780	4,092	4,116

Product fiche 5

Heat pump space heater		Model	4 4-BE30	6 6-BE30	8 8-BE30 8-BER90	10 10-BE30 10-BER90	12 12-BE30 12-BER90
Part load conditions space heating warmer climate low temperature application							
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	5.34	5.93	7.56	8.44	11.26
	COPd (declared COP)	-	3.94	3.91	3.98	3.84	3.59
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	3.56	3.93	5.22	5.52	7.14
	COPd (declared COP)	-	5.92	5.89	6.26	6.18	5.87
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	1.63	1.79	2.62	2.62	3.55
	COPd (declared COP)	-	7.91	8.20	9.23	9.04	7.94
	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]	5.34	5.93	7.56	8.44	11.26
	COPd (declared COP)	-	3.94	3.91	3.98	3.84	3.59
	WTOL (Heating water Operation Limit)	[°C]	62.00	62.00	62.00	62.00	62.00
(F) Tivalent temperature	Tblv	[°C]	7.00	7.00	7.00	7.00	7.00
	Pdh (declared heating capacity)	[kW]	3.56	3.93	5.22	5.52	7.14
	COPd (declared COP)	-	5.92	5.89	6.26	6.18	5.87
Supplementary capacity at P_design	Psup (@Tdesignh: 2°C)	[kW]	0.18	0.18	0.55	0.14	0.00
Part load conditions space heating warmer climate medium temperature application							
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	4.83	5.02	7.55	8.06	12.07
	COPd (declared COP)	-	2.51	2.48	2.59	2.59	2.31
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	3.22	3.31	4.86	5.54	8.04
	COPd (declared COP)	-	3.68	3.67	3.92	4.10	3.86
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	1.47	1.59	2.32	2.53	3.75
	COPd (declared COP)	-	5.15	5.29	5.55	5.82	5.70
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 5

Heat pump space heater		Model	14 14-BE30 14-BER90	16 16-BE30 16-BER90	12T 12T-BE30 12T-BER90	14T 14T-BE30 14T-BER90	16T-B 16T-BE 16T-BE
Part load conditions space heating warmer climate low temperature application							
(B) condition (2°C)	P _{dh} (declared heating capacity)	[kW]	12.04	13.10	11.26	12.04	13.10
	COP _d (declared COP)	-	3.44	3.35	3.59	3.44	3.35
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	P _{dh} (declared heating capacity)	[kW]	7.78	8.41	7.14	7.78	8.41
	COP _d (declared COP)	-	5.84	5.36	5.87	5.84	5.36
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	P _{dh} (declared heating capacity)	[kW]	3.75	3.87	3.55	3.75	3.87
	COP _d (declared COP)	-	8.25	8.11	7.94	8.25	8.11
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	T _{ol} (temperature operating limit)	[°C]	2.00	2.00	2.00	2.00	2.00
	P _{dh} (declared heating capacity)	[kW]	12.04	13.10	11.26	12.04	13.10
	COP _d (declared COP)	-	3.44	3.35	3.59	3.44	3.35
(F) Tivalent temperature	WTOL (Heating water Operation Limit)	[°C]	62.00	62.00	62.00	62.00	62.00
	T _{biv}	[°C]	7.00	7.00	7.00	7.00	7.00
	P _{dh} (declared heating capacity)	[kW]	7.78	8.41	7.14	7.78	8.41
Supplementary capacity at P _{design}	COP _d (declared COP)	-	5.84	5.36	5.87	5.84	5.36
	P _{sup} (@T _{designh} : 2°C)	[kW]	0.00	0.00	0.00	0.00	0.00
Part load conditions space heating warmer climate medium temperature application							
(B) condition (2°C)	P _{dh} (declared heating capacity)	[kW]	13.04	13.38	12.07	13.04	13.38
	COP _d (declared COP)	-	2.20	2.29	2.31	2.20	2.29
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	P _{dh} (declared heating capacity)	[kW]	8.83	8.86	8.04	8.83	8.86
	COP _d (declared COP)	-	3.91	3.84	3.86	3.91	3.84
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	P _{dh} (declared heating capacity)	[kW]	4.08	4.06	3.75	4.08	4.06
	COP _d (declared COP)	-	5.90	5.86	5.70	5.90	5.86
	C _{dh} (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 6

Heat pump space heater		Model	4 4-BE30	6 6-BE30	8 8-BE30 8-BER90	10 10-BE30 10-BER90	12 12-BE30 12-BER90
(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]	4.83	5.02	7.83	8.15	12.07
	COPd (declared COP)	-	2.51	2.48	2.66	2.61	2.31
	WTOL (Heating water Operation Limit)	[°C]	62.00	62.00	62.00	62.00	62.00
(F) Tivalent temperature	Tblv	[°C]	7.00	7.00	7.00	7.00	7.00
	Pdh (declared heating capacity)	[kW]	3.22	3.31	4.86	5.54	8.04
	COPd (declared COP)	-	3.68	3.67	3.92	4.10	3.86
	Psup (@Tdesignh: 2°C)	[kW]	0.18	0.12	0.00	0.48	0.43
Supplementary capacity at P_design							
0							
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
	Rated airflow	[m³/h]	2770	2770	4030	4030	4060
	Rated water/brine flow (outdoor H/E)		/	/	/	/	/
	Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter
	Poff (Power consumption Off mode)	[kW]	0.014	0.014	0.014	0.014	0.014
Other	Pto (Power consumption Thermostat off mode)	[kW]	0.024	0.024	0.024	0.024	0.024
	Psb (Power consumption Standby mode)	[kW]	0.014	0.014	0.014	0.014	0.014
	PCK (Power crankcase heater mode I)	[kW]	0.000	0.000	0.000	0.000	0.000
	Qelec (Daily electricity consumption)	[kWh]	/	/	/	/	/
	Qfuel (Daily fuel consumption)	[kWh]	/	/	/	/	/
	Details and precautions on installation, maintenance and assembly can be found in the installation and or operation manuals.						

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

Product fiche 6

Heat pump space heater		Model	14 14-BE30 14-BER90	16 16-BE30 16-BER90	12T 12T-BE30 12T-BER90	14T 14T-BE30 14T-BER90	16T-B 16T-BE 16T-BE
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	2.00	2.00	2.00	2.00	2.00
	P _{dh} (declared heating capacity)	[kW]	13.04	13.38	12.07	13.04	13.38
	COP _d (declared COP)	-	2.20	2.29	2.31	2.20	2.29
	WTOL (Heating water Operation Limit)	[°C]	62.00	62.00	62.00	62.00	62.00
(F) Tivalent temperature	T _{biv}	[°C]	7.00	7.00	7.00	7.00	7.00
	P _{dh} (declared heating capacity)	[kW]	8.83	8.86	8.04	8.83	8.86
	COP _d (declared COP)	-	3.91	3.84	3.86	3.91	3.84
	P _{sup} (@T _{design} h: 2°C)	[kW]	0.66	0.42	0.43	0.66	0.42
Supplementary capacity at P _{design}							
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
	Rated airflow	[m³/h]	4060	4650	4060	4060	4650
	Rated water/brine flow (outdoor H/E)		/	/	/	/	/
	Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter
	P _{off} (Power consumption Off mode)	[kW]	0.014	0.014	0.02	0.02	0.02
Other	P _{to} (Power consumption Thermostat off mode)	[kW]	0.024	0.024	0.030	0.030	0.030
	P _{sb} (Power consumption Standby mode)	[kW]	0.014	0.014	0.02	0.02	0.02
	P _{CK} (Power crankcase heater model)	[kW]	0.000	0.000	0.000	0.000	0.000
	Q _{elec} (Daily electricity consumption)	[kWh]	/	/	/	/	/
	Q _{fuel} (Daily fuel consumption)	[kWh]	/	/	/	/	/

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

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

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 04 / 4-BE30 - Heating mode - Average climate - Medium temperature (55°C)

Technical parameters

Model(s):	Mod. 4 / 4-BE30
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE

Parameters are declared for medium-temperature (55°C) application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	4.4	kW	Seasonal space heating energy efficiency	η_s	129.5	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	3.89	kW	Tj = -7°C	COPd	2.17	-
Tj = 2°C	Pdh	2.38	kW	Tj = 2°C	COPd	3.30	-
Tj = 7°C	Pdh	2.94	kW	Tj = 7°C	COPd	4.41	-
Tj = 12°C	Pdh	1.32	kW	Tj = 12°C	COPd	5.66	-
Tj = bivalent temperature	Pdh	3.89	kW	Tj = bivalent temperature	COPd	2.17	-
Tj = operating limit	Pdh	3.42	kW	Tj = operating limit	COPd	1.91	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	0.98	kW
Standby mode	Psb	0.014	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.024	kW				
Crankcase heater mode	Pck	0.000	kW				

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	LWA	-55	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	2744	kWh				

For heat pump combination heater:

Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 4 / 4-BE30 - Heating mode - Colder climate - Medium temperature (55°C)

Technical parameters

Model(s):	Mod. 4 / 4-BE30
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature (55°C) application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	3.4	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	2.13	kW
Tj = 2°C	Pdh	1.28	kW
Tj = 7°C	Pdh	1.01	kW
Tj = 12°C	Pdh	1.36	kW
Tj = bivalent temperature	Pdh	2.74	kW
Tj = operating limit	Pdh	1.64	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-15	°C
Cycling interval capacity for heating	Pcyc	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.014	kW
Standby mode	Psb	0.014	kW
Thermostat-off mode	Pto	0.024	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η s	102.1	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	2.32	-
Tj = 2°C	COPd	2.99	-
Tj = 7°C	COPd	3.86	-
Tj = 12°C	COPd	6.28	-
Tj = bivalent temperature	COPd	1.74	-
Tj = operating limit	COPd	1.02	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	51	°C
Supplementary heater			
Rated heat output (**)	Psup	1.72	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	Q _{HE}	3159	kWh				

For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 4 / 4-BE30 - Heating mode - Warmer climate - Medium temperature (55°C)

Technical parameters													
Model(s):		Mod. 4 / 4-BE30											
Air-to-water heat pump:		YES											
Water-to-water heat pump:		NO											
Brine-to-water heat pump:		NO											
Low-temperature heat pump:		NO											
Equipped with a supplementary heater:		NO											
Heat pump combination heater:		NO											
Declared climate condition:		WARMER											
Parameters are declared for medium-temperature (55°C) application.													
Item				Symbol	Value	Unit	Item				Symbol	Value	Unit
Rated heat output (*)				Prated	5.0	kW	Seasonal space heating energy efficiency				η_s	162.4	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj						Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj							
Tj = -7°C				Pdh	-	kW	Tj = -7°C				COPd	-	-
Tj = 2°C				Pdh	4.83	kW	Tj = 2°C				COPd	2.51	-
Tj = 7°C				Pdh	3.22	kW	Tj = 7°C				COPd	3.68	-
Tj = 12°C				Pdh	1.47	kW	Tj = 12°C				COPd	5.15	-
Tj = bivalent temperature				Pdh	3.22	kW	Tj = bivalent temperature				COPd	3.68	-
Tj = operating limit				Pdh	4.83	kW	Tj = operating limit				COPd	2.51	-
For air-to-water heat pumps: Tj = -15°C				Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C				COPd	-	-
Bivalent temperature				Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature				TOL	2	°C
Cycling interval capacity for heating				Pcyc	-	kW	Cycling interval efficiency				COPcyc	-	-
Degradation co-efficient (**)				Cdh	0.9	--	Heating water operating limit temperature				WTOL	62	°C
Power consumption in modes other than active mode						Supplementary heater							
Off mode				Poff	0.014	kW	Rated heat output (**)				Psup	0.18	kW
Standby mode				Psb	0.014	kW	Type of energy input				Electrical		
Thermostat-off mode				Pto	0.024	kW							
Crankcase heater mode				Pck	0.000	kW							
Other items													
Capacity control				variable			For air-to-water heat pumps: Rated air flow rate, outdoors				-	2770	m³/h
Sound power level, indoors/outdoors				LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger				-	-	m³/h
Annual energy consumption				QHE	1621	kWh							
For heat pump combination heater:													
Declared load profile				-			Water heating energy efficiency				η_{wh}	-	%
Daily electricity consumption				Qelec	-	kWh	Daily fu5.1el consumption				Qfuel	-	kWh
Annual electricity consumption				AEC	-	kWh	Annual fuel consumption				AFC	-	GJ
Contact details										Ferrolli spa ~ 37047 San Bonifacio (Verona) Italy ~ Via Ritonda 78/A - tel. +39.045.6139411 ~ fax +39.045.6100933 ~ www.ferrolli.com			
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).													
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.													

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 4 / 4-BE30 - Cooling mode - Average climate - Medium temperature (18°C)

Model(s):				Mod. 4 / 4-BE30				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	4.7	kW		Seasonal space cooling energy efficiency	η _{s,c}	196.5	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	4.66	kW		T _j =+35°C	EER _d	3.52	-
T _j =+30°C	P _{dc}	3.66	kW		T _j =+30°C	EER _d	4.76	-
T _j =+25°C	P _{dc}	2.21	kW		T _j =+25°C	EER _d	5.72	-
T _j =+20°C	P _{dc}	0.94	kW		T _j =+20°C	EER _d	5.72	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	2770	m³/h
Sound power level, indoors / outdoors	L _{WA}	-56	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 4 / 4-BE30 - Cooling mode - Average climate - Low temperature (7°C)

Model(s):				Mod. 4 / 4-BE30				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	4.5	kW		Seasonal space cooling energy efficiency	η _{s,c}	307.7	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	4.51	kW		T _j =+35°C	EER _d	5.54	-
T _j =+30°C	P _{dc}	3.44	kW		T _j =+30°C	EER _d	7.23	-
T _j =+25°C	P _{dc}	2.19	kW		T _j =+25°C	EER _d	8.94	-
T _j =+20°C	P _{dc}	1.13	kW		T _j =+20°C	EER _d	10.48	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	2770	m³/h
Sound power level, indoors / outdoors	L _{WA}	-56	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used				Medium temperature application				
Contact details				Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com				
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 6 / 6-BE30 - Heating mode - Average climate - Medium temperature (55°C)

Technical parameters

Model(s):		Mod. 6 / 6-BE30					
Air-to-water heat pump:		YES					
Water-to-water heat pump:		NO					
Brine-to-water heat pump:		NO					
Low-temperature heat pump:		NO					
Equipped with a supplementary heater:		NO					
Heat pump combination heater:		NO					
Declared climate condition:		AVERAGE					
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	5.7	kW	Seasonal space heating energy efficiency	η s	137.9	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	5.04	kW	Tj = -7°C	COPd	2.17	-
Tj = 2°C	Pdh	3.12	kW	Tj = 2°C	COPd	3.51	-
Tj = 7°C	Pdh	2.08	kW	Tj = 7°C	COPd	4.54	-
Tj = 12°C	Pdh	1.28	kW	Tj = 12°C	COPd	5.59	-
Tj = bivalent temperature	Pdh	5.04	kW	Tj = bivalent temperature	COPd	2.17	-
Tj = operating limit	Pdh	4.52	kW	Tj = operating limit	COPd	1.91	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	1.18	kW
Standby mode	Psb	0.014	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.024	kW				
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	LWA	-58	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	3345	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	ηwh	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 6 / 6-BE30 - Heating mode - Colder climate - Medium temperature (55°C)

Technical parameters

Model(s):	Mod. 6 / 6-BE30
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature (55°C) application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	4.3	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	2.70	kW
Tj = 2°C	Pdh	1.60	kW
Tj = 7°C	Pdh	1.02	kW
Tj = 12°C	Pdh	1.37	kW
Tj = bivalent temperature	Pdh	3.47	kW
Tj = operating limit	Pdh	2.09	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-15	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.014	kW
Standby mode	Psb	0.014	kW
Thermostat-off mode	Pto	0.024	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η s	111.1	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	2.46	-
Tj = 2°C	COPd	3.36	-
Tj = 7°C	COPd	3.94	-
Tj = 12°C	COPd	6.35	-
Tj = bivalent temperature	COPd	1.86	-
Tj = operating limit	COPd	1.13	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	51	°C
Supplementary heater			
Rated heat output (**)	Psup	5.10	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	3681	kWh				

For heat pump combination heater:

Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).

(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 6 / 6-BE30 - Heating mode - Warmer climate - Medium temperature (55°C)

Technical parameters

Model(s):	Mod. 6 / 6-BE30
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	WARMER

Parameters are declared for medium-temperature (55°C) application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	5.1	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	-	kW
Tj = 2 °C	Pdh	5.02	kW
Tj = 7 °C	Pdh	3.31	kW
Tj = 12 °C	Pdh	1.60	kW
Tj = bivalent temperature	Pdh	3.31	kW
Tj = operating limit	Pdh	5.02	kW
For air-to-water heat pumps: Tj = -15 °C	Pdh	-	kW
Bivalent temperature	Tbiv	7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.014	kW
Standby mode	Psb	0.014	kW
Thermostat-off mode	Pto	0.024	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η s	164.7	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	COPd	-	-
Tj = 2 °C	COPd	2.48	-
Tj = 7 °C	COPd	3.67	-
Tj = 12 °C	COPd	5.29	-
Tj = bivalent temperature	COPd	3.67	-
Tj = operating limit	COPd	2.48	-
For air-to-water heat pumps: Tj = -15 °C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	62	°C
Supplementary heater			
Rated heat output (**)	Psup	0	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	1640	kWh				

For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qclec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
 (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 6 / 6-BE30 - Cooling mode - Average climate - Medium temperature (18°C)

Model(s):				Mod. 6 / 6-BE30				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	6.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	210.7	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	6.35	kW		T _j =+35°C	EER _d	2.93	-
T _j =+30°C	P _{dc}	4.76	kW		T _j =+30°C	EER _d	4.53	-
T _j =+25°C	P _{dc}	3.02	kW		T _j =+25°C	EER _d	6.32	-
T _j =+20°C	P _{dc}	1.39	kW		T _j =+20°C	EER _d	7.20	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	2770	m³/h
Sound power level, indoors / outdoors	L _{WA}	-60	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 6 / 6-BE30 - Cooling mode - Average climate - Low temperature (7°C)

Model(s):				Mod. 6 / 6-BE30				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	6.5	kW		Seasonal space cooling energy efficiency	η _{s,c}	325.2	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	6.55	kW		T _j =+35°C	EER _d	4.69	-
T _j =+30°C	P _{dc}	4.84	kW		T _j =+30°C	EER _d	7.16	-
T _j =+25°C	P _{dc}	3.26	kW		T _j =+25°C	EER _d	9.64	-
T _j =+20°C	P _{dc}	1.41	kW		T _j =+20°C	EER _d	11.48	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	2770	m³/h
Sound power level, indoors / outdoors	L _{WA}	-58	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used				Medium temperature application				
Contact details				Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com				
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 8 / 8-BE30 / 8-BR90 - Heating mode - Average climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 8 / 8-BE30 / 8-BER90					
Air-to-water heat pump:				YES					
Water-to-water heat pump:				NO					
Brine-to-water heat pump:				NO					
Low-temperature heat pump:				NO					
Equipped with a supplementary heater:				NO					
Heat pump combination heater:				NO					
Declared climate condition:				AVERAGE					
Parameters are declared for medium-temperature (55°C) application.									
Item		Symbol	Value	Unit	Item		Symbol	Value	Unit
Rated heat output (*)		Prated	6.6	kW	Seasonal space heating energy efficiency		η_s	131.5	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj					
Tj = -7°C		Pdh	5.84	kW	Tj = -7°C		COPd	2.16	-
Tj = 2°C		Pdh	3.75	kW	Tj = 2°C		COPd	3.30	-
Tj = 7°C		Pdh	2.42	kW	Tj = 7°C		COPd	4.34	-
Tj = 12°C		Pdh	1.39	kW	Tj = 12°C		COPd	5.33	-
Tj = bivalent temperature		Pdh	5.84	kW	Tj = bivalent temperature		COPd	2.16	-
Tj = operating limit		Pdh	4.90	kW	Tj = operating limit		COPd	1.84	-
For air-to-water heat pumps: Tj = -15°C		Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C		COPd	-	-
Bivalent temperature		Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature		TOL	-10	°C
Cycling interval capacity for heating		Pcych	-	kW	Cycling interval efficiency		COPcyc	-	-
Degradation co-efficient (**)		Cdh	0.9	--	Heating water operating limit temperature		WTOL	60	°C
Power consumption in modes other than active mode				Supplementary heater					
Off mode		Poff	0.014	kW	Rated heat output (**)		Psup	1.69	kW
Standby mode		Psb	0.014	kW	Type of energy input		Electrical		
Thermostat-off mode		Pto	0.024	kW					
Crankcase heater mode		Pck	0.000	kW					
Other items									
Capacity control		variable			For air-to-water heat pumps: Rated air flow rate, outdoors		-	4030	m³/h
Sound power level, indoors/outdoors		LWA	-59	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		-	-	m³/h
Annual energy consumption		QHE	4056	kWh					
For heat pump combination heater:									
Declared load profile		-			Water heating energy efficiency		η_{wh}	-	%
Daily electricity consumption		Qelec	-	kWh	Daily fuel consumption		Qfuel	-	kWh
Annual electricity consumption		AEC	-	kWh	Annual fuel consumption		AFC	-	GJ
Contact details		Ferrol spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com							
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).									
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.									

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 8 / 8-BE30 / 8-BR90 - Heating mode - Colder climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 8 / 8-BE30 / 8-BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				COLDER			
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	5.8	kW	Seasonal space heating energy efficiency	η_s	112.0	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	3.86	kW	Tj = -7°C	COPd	2.48	-
Tj = 2°C	Pdh	2.21	kW	Tj = 2°C	COPd	3.35	-
Tj = 7°C	Pdh	1.44	kW	Tj = 7°C	COPd	4.11	-
Tj = 12°C	Pdh	1.46	kW	Tj = 12°C	COPd	5.92	-
Tj = bivalent temperature	Pdh	4.71	kW	Tj = bivalent temperature	COPd	1.90	-
Tj = operating limit	Pdh	2.80	kW	Tj = operating limit	COPd	1.22	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-15	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval capacity for heating	Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	51	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	2.97	kW
Standby mode	Psb	0.014	kW				
Thermostat-off mode	Pto	0.024	kW	Type of energy input	Electrical		
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4030	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	4950	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferroli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 8 / 8-BE30 / 8-BR90 - Heating mode - Warmer climate - Medium temperature (55°C)

Technical parameters

Model(s):	Mod. 8 / 8-BE30 / 8-BER90
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	WARMER

Parameters are declared for medium-temperature (55°C) application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	7.6	kW	Seasonal space heating energy efficiency	η_s	175.8	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	-	kW	Tj = -7°C	COPd	-	-
Tj = 2°C	Pdh	7.55	kW	Tj = 2°C	COPd	2.59	-
Tj = 7°C	Pdh	4.86	kW	Tj = 7°C	COPd	3.92	-
Tj = 12°C	Pdh	2.31	kW	Tj = 12°C	COPd	5.55	-
Tj = bivalent temperature	Pdh	4.86	kW	Tj = bivalent temperature	COPd	3.92	-
Tj = operating limit	Pdh	7.55	kW	Tj = operating limit	COPd	2.59	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	62	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	0	kW
Standby mode	Psb	0.014	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.024	kW				
Crankcase heater mode	Pck	0.000	kW				

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4030	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	2259	kWh				

For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

Contact details	Ferrol spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com						
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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).

(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 8 / 8-BE30 / 8-BR90 - Cooling mode - Average climate - Medium temperature (18°C)

Model(s):				Mod. 8 / 8-BE30 / 8-BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	7.4	kW		Seasonal space cooling energy efficiency	η _{s,c}	230.1	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	7.38	kW		T _j =+35°C	EER _d	3.39	-
T _j =+30°C	P _{dc}	5.72	kW		T _j =+30°C	EER _d	4.71	-
T _j =+25°C	P _{dc}	3.62	kW		T _j =+25°C	EER _d	6.65	-
T _j =+20°C	P _{dc}	1.64	kW		T _j =+20°C	EER _d	8.55	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4030	m³/h
Sound power level, indoors / outdoors	L _{WA}	-/60	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 8 / 8-BE30 / 8-BR90 - Cooling mode - Average climate - Low temperature (7°C)

Model(s):				Mod. 8 / 8-BE30 / 8-BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	8.4	kW		Seasonal space cooling energy efficiency	η _{s,c}	355.1	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	8.37	kW		T _j =+35°C	EER _d	5.09	-
T _j =+30°C	P _{dc}	6.47	kW		T _j =+30°C	EER _d	7.02	-
T _j =+25°C	P _{dc}	4.31	kW		T _j =+25°C	EER _d	10.67	-
T _j =+20°C	P _{dc}	1.80	kW		T _j =+20°C	EER _d	13.61	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4030	m³/h
Sound power level, indoors / outdoors	L _{WA}	-60	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		Ferroli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 10 / 10-BE30 / 10-BR90 - Heating mode - Average climate - Medium temperature (55°C)

Technical parameters

Model(s):	Mod. 10 / 10-BE30 / 10-BER90
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE

Parameters are declared for medium-temperature application.

Parameters are declared for medium-temperature (55°C) application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	7.7	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	6.78	kW
Tj = 2°C	Pdh	4.28	kW
Tj = 7°C	Pdh	2.77	kW
Tj = 12°C	Pdh	1.58	kW
Tj = bivalent temperature	Pdh	6.78	kW
Tj = operating limit	Pdh	5.38	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-7	°C
Cycling interval capacity for heating	Pcyc	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.014	kW
Standby mode	Psb	0.014	kW
Thermostat-off mode	Pto	0.024	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	ηs	136.6	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	2.24	-
Tj = 2°C	COPd	3.42	-
Tj = 7°C	COPd	4.52	-
Tj = 12°C	COPd	5.68	-
Tj = bivalent temperature	COPd	2.24	-
Tj = operating limit	COPd	1.83	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	60	°C
Supplementary heater			
Rated heat output (**)	Psup	2.29	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4030	m³/h
Sound power level, indoors/outdoors	LWA	-60	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	4539	kWh				

For heat pump combination heater:

Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).

(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 10 / 10-BE30 / 10-BR90 - Heating mode - Colder climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 10 / 10-BE30 / 10-BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				COLDER			
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	6.7	kW	Seasonal space heating energy efficiency	η_s	116.4	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	4.27	kW	Tj = -7°C	COPd	2.54	-
Tj = 2°C	Pdh	2.57	kW	Tj = 2°C	COPd	3.51	-
Tj = 7°C	Pdh	1.65	kW	Tj = 7°C	COPd	4.37	-
Tj = 12°C	Pdh	1.47	kW	Tj = 12°C	COPd	5.96	-
Tj = bivalent temperature	Pdh	5.47	kW	Tj = bivalent temperature	COPd	2.00	-
Tj = operating limit	Pdh	2.80	kW	Tj = operating limit	COPd	1.22	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-15	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	51	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	3.91	kW
Standby mode	Psb	0.014	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.024	kW				
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4030	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	5540	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).

(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 10 / 10-BE30 / 10-BR90 - Heating mode - Warmer climate - Medium temperature (55°C)

Technical parameters

Model(s):	Mod. 10 / 10-BE30 / 10-BER90
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	WARMER

Parameters are declared for medium-temperature application.

Parameters are declared for medium-temperature (55°C) application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	8.6	kW	Seasonal space heating energy efficiency	η_s	180.3	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	-	kW	Tj = -7°C	COPd	-	-
Tj = 2°C	Pdh	8.06	kW	Tj = 2°C	COPd	2.59	-
Tj = 7°C	Pdh	5.54	kW	Tj = 7°C	COPd	4.10	-
Tj = 12°C	Pdh	2.53	kW	Tj = 12°C	COPd	5.82	-
Tj = bivalent temperature	Pdh	5.54	kW	Tj = bivalent temperature	COPd	4.10	-
Tj = operating limit	Pdh	8.15	kW	Tj = operating limit	COPd	2.61	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	62	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	0.48	kW
Standby mode	Psb	0.014	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.024	kW				
Crankcase heater mode	Pck	0.000	kW				

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4030	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	2516	kWh				

For heat pump combination heater:

Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).

(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 10 / 10-BE30 / 10-BR90 - Cooling mode - Average climate - Medium temperature (18°C)

Model(s):				Mod. 10 / 10-BE30 / 10-BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	8.7	kW		Seasonal space cooling energy efficiency	η _{s,c}	236.2	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	8.73	kW		T _j =+35°C	EER _d	3.21	-
T _j =+30°C	P _{dc}	6.68	kW		T _j =+30°C	EER _d	4.47	-
T _j =+25°C	P _{dc}	4.26	kW		T _j =+25°C	EER _d	7.02	-
T _j =+20°C	P _{dc}	1.94	kW		T _j =+20°C	EER _d	9.54	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4030	m³/h
Sound power level, indoors / outdoors	L _{WA}	-/60	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
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(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 10 / 10-BE30 / 10-BR90 - Cooling mode - Average climate - Low temperature (7°C)

Model(s):				Mod. 10 / 10-BE30 / 10-BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	10.0	kW		Seasonal space cooling energy efficiency	η _{s,c}	348.1	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	10.01	kW		T _j =+35°C	EER _d	4.64	-
T _j =+30°C	P _{dc}	7.71	kW		T _j =+30°C	EER _d	6.45	-
T _j =+25°C	P _{dc}	5.03	kW		T _j =+25°C	EER _d	10.36	-
T _j =+20°C	P _{dc}	2.32	kW		T _j =+20°C	EER _d	14.98	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4030	m ³ /h
Sound power level, indoors / outdoors	L _{WA}	-/60	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m ³ /h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
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(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 12 / 12-BE30 / 12-BR90 - Heating mode - Average climate - Medium temperature (55°C)

Technical parameters

Model(s):	Mod. 12 / 12-BE30 / 12-BER90
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE

Parameters are declared for medium-temperature application.

Parameters are declared for medium-temperature (55°C) application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	11.6	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	10.24	kW
Tj = 2°C	Pdh	6.52	kW
Tj = 7°C	Pdh	4.36	kW
Tj = 12°C	Pdh	3.29	kW
Tj = bivalent temperature	Pdh	10.24	kW
Tj = operating limit	Pdh	9.10	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.014	kW
Standby mode	Psb	0.014	kW
Thermostat-off mode	Pto	0.024	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η s	135.1	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	2.01	-
Tj = 2°C	COPd	3.44	-
Tj = 7°C	COPd	4.59	-
Tj = 12°C	COPd	6.05	-
Tj = bivalent temperature	COPd	2.01	-
Tj = operating limit	COPd	1.79	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	60	°C
Supplementary heater			
Rated heat output (**)	Psup	1.23	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-65	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	6927	kWh				

For heat pump combination heater:

Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qdec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

Contact details

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).

(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 12 / 12-BE30 / 12-BR90 - Heating mode - Colder climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 12 / 12-BE30 / 12-BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				COLDER			
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	10.3	kW	Seasonal space heating energy efficiency	η s	117.8	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	6.63	kW	Tj = -7°C	COPd	2.63	-
Tj = 2°C	Pdh	4.06	kW	Tj = 2°C	COPd	3.60	-
Tj = 7°C	Pdh	2.78	kW	Tj = 7°C	COPd	4.54	-
Tj = 12°C	Pdh	3.33	kW	Tj = 12°C	COPd	6.25	-
Tj = bivalent temperature	Pdh	8.41	kW	Tj = bivalent temperature	COPd	1.84	-
Tj = operating limit	Pdh	4.19	kW	Tj = operating limit	COPd	1.13	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-15	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	51	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	6.11	kW
Standby mode	Psb	0.014	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.024	kW				
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	8419	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	ηwh	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 12 / 12-BE30 / 12-BR90 - Heating mode - Warmer climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 12 / 12-BE30 / 12-BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				WARMER			
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	12.5	kW	Seasonal space heating energy efficiency	η_s	174.0	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	-	kW	Tj = -7 °C	COPd	-	-
Tj = 2 °C	Pdh	12.07	kW	Tj = 2 °C	COPd	2.31	-
Tj = 7 °C	Pdh	8.04	kW	Tj = 7 °C	COPd	3.86	-
Tj = 12 °C	Pdh	3.75	kW	Tj = 12 °C	COPd	5.70	-
Tj = bivalent temperature	Pdh	8.04	kW	Tj = bivalent temperature	COPd	3.86	-
Tj = operating limit	Pdh	12.07	kW	Tj = operating limit	COPd	2.31	-
For air-to-water heat pumps: Tj = -15 °C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15 °C	COPd	-	-
Bivalent temperature	Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	62	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	0.43	kW
Standby mode	Psb	0.014	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.024	kW				
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	3776	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferrol spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 12 / 12-BE30 / 12-BR90 - Cooling mode - Average climate - Medium temperature (18°C)

Model(s):				Mod. 12 / 12-BE30 / 12-BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	11.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	192.4	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	11.31	kW		T _j =+35°C	EER _d	2.61	-
T _j =+30°C	P _{dc}	8.76	kW		T _j =+30°C	EER _d	3.93	-
T _j =+25°C	P _{dc}	5.81	kW		T _j =+25°C	EER _d	5.73	-
T _j =+20°C	P _{dc}	2.63	kW		T _j =+20°C	EER _d	6.75	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m³/h
Sound power level, indoors / outdoors	L _{WA}	-65	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used				Low temperature application				
Contact details				Ferroli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com				
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 12 / 12-BE30 / 12-BR90 - Cooling mode - Average climate - Low temperature (7°C)

Model(s):				Mod. 12 / 12-BE30 / 12-BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	11.8	kW		Seasonal space cooling energy efficiency	η _{s,c}	280.9	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	11.77	kW		T _j =+35°C	EER _d	3.87	-
T _j =+30°C	P _{dc}	9.21	kW		T _j =+30°C	EER _d	5.50	-
T _j =+25°C	P _{dc}	5.74	kW		T _j =+25°C	EER _d	8.66	-
T _j =+20°C	P _{dc}	3.33	kW		T _j =+20°C	EER _d	10.07	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m ³ /h
Sound power level, indoors / outdoors	L _{WA}	-/64	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m ³ /h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 14 / 14-BE30 / 14-BR90 - Heating mode - Average climate - Medium temperature (55°C)

Technical parameters									
Model(s):				Mod. 14 / 14-BE30 / 14-BER90					
Air-to-water heat pump:				YES					
Water-to-water heat pump:				NO					
Brine-to-water heat pump:				NO					
Low-temperature heat pump:				NO					
Equipped with a supplementary heater:				NO					
Heat pump combination heater:				NO					
Declared climate condition:				AVERAGE					
Parameters are declared for medium-temperature application.									
Parameters are declared for medium-temperature (55°C) application.									
Item		Symbol	Value	Unit	Item		Symbol	Value	Unit
Rated heat output (*)		Prated	12.08	kW	Seasonal space heating energy efficiency		η_s	135.6	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj					Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj				
Tj = -7°C		Pdh	10.68	kW	Tj = -7°C		COPd	2.01	-
Tj = 2°C		Pdh	6.86	kW	Tj = 2°C		COPd	3.43	-
Tj = 7°C		Pdh	4.63	kW	Tj = 7°C		COPd	4.66	-
Tj = 12°C		Pdh	3.31	kW	Tj = 12°C		COPd	6.13	-
Tj = bivalent temperature		Pdh	10.68	kW	Tj = bivalent temperature		COPd	2.01	-
Tj = operating limit		Pdh	9.19	kW	Tj = operating limit		COPd	1.76	-
For air-to-water heat pumps: Tj = -15°C		Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C		COPd	-	-
Bivalent temperature		Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature		TOL	-10	°C
Cycling interval capacity for heating		Pcyc	-	kW	Cycling interval efficiency		COPcyc	-	-
Degradation co-efficient (**)		Cdh	0.9	--	Heating water operating limit temperature		WTOL	60	°C
Power consumption in modes other than active mode					Supplementary heater				
Off mode		Poff	0.014	kW	Rated heat output (**)		Psup	1.40	kW
Standby mode		Psb	0.014	kW	Type of energy input		Electrical		
Thermostat-off mode		Pto	0.024	kW					
Crankcase heater mode		Pck	0.000	kW					
Other items									
Capacity control		variable			For air-to-water heat pumps: Rated air flow rate, outdoors		-	4060	m³/h
Sound power level, indoors/outdoors		LWA	-65	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		-	-	m³/h
Annual energy consumption		QHE	7202	kWh					
For heat pump combination heater:									
Declared load profile		-			Water heating energy efficiency		η_{wh}	-	%
Daily electricity consumption		Qelec	-	kWh	Daily fuel consumption		Qfuel	-	kWh
Annual electricity consumption		AEC	-	kWh	Annual fuel consumption		AFC	-	GJ
Contact details		Ferrol spa ~ 37047 San Bonifacio (Verona) Italy ~ Via Ritonda 78/A - tel. +39.045.6139411 ~ fax +39.045.6100933 ~ www.ferroli.com							
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).									
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.									

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 14 / 14-BE30 / 14-BR90 - Heating mode - Colder climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 14 / 14-BE30 / 14-BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				COLDER			
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	11.0	kW	Seasonal space heating energy efficiency	η_s	118.9	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	6.89	kW	Tj = -7°C	COPd	2.66	-
Tj = 2°C	Pdh	4.32	kW	Tj = 2°C	COPd	3.66	-
Tj = 7°C	Pdh	3.06	kW	Tj = 7°C	COPd	4.72	-
Tj = 12°C	Pdh	3.33	kW	Tj = 12°C	COPd	6.25	-
Tj = bivalent temperature	Pdh	8.94	kW	Tj = bivalent temperature	COPd	1.79	-
Tj = operating limit	Pdh	4.20	kW	Tj = operating limit	COPd	1.13	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-15	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval capacity for heating	Pcyh	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	51	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	6.80	kW
Standby mode	Psb	0.014	kW				
Thermostat-off mode	Pto	0.024	kW	Type of energy input	Electrical		
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	8866	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qdec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferroli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 14 / 14-BE30 / 14-BR90 - Heating mode - Warmer climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 14 / 14-BE30 / 14-BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				WARMER			
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13.7	kW	Seasonal space heating energy efficiency	η_s	176.5	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	-	kW	Tj = -7°C	COPd	-	-
Tj = 2°C	Pdh	13.04	kW	Tj = 2°C	COPd	2.20	-
Tj = 7°C	Pdh	8.83	kW	Tj = 7°C	COPd	3.91	-
Tj = 12°C	Pdh	4.08	kW	Tj = 12°C	COPd	5.90	-
Tj = bivalent temperature	Pdh	8.83	kW	Tj = bivalent temperature	COPd	3.91	-
Tj = operating limit	Pdh	13.04	kW	Tj = operating limit	COPd	2.20	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pcyh	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	62	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	0.66	kW
Standby mode	Psb	0.014	kW				
Thermostat-off mode	Pto	0.024	kW	Type of energy input	Electrical		
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	4088	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qdec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferroli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 14 / 14-BE30 / 14-BR90 - Cooling mode - Average climate - Medium temperature (18°C)

Model(s):				Mod. 14 / 14-BE30 / 14-BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	12.2	kW		Seasonal space cooling energy efficiency	η _{s,c}	191.4	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	12.19	kW		T _j =+35°C	EER _d	2.46	-
T _j =+30°C	P _{dc}	9.41	kW		T _j =+30°C	EER _d	3.85	-
T _j =+25°C	P _{dc}	6.16	kW		T _j =+25°C	EER _d	5.80	-
T _j =+20°C	P _{dc}	2.63	kW		T _j =+20°C	EER _d	6.74	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m³/h
Sound powerlevel, indoors / outdoors	L _{WA}	-65	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 14 / 14-BE30 / 14-BR90 - Cooling mode - Average climate - Low temperature (7°C)

Model(s):				Mod. 14 / 14-BE30 / 14-BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	13.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	272.8	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	13.30	kW		T _j =+35°C	EER _d	3.47	-
T _j =+30°C	P _{dc}	10.20	kW		T _j =+30°C	EER _d	5.26	-
T _j =+25°C	P _{dc}	6.57	kW		T _j =+25°C	EER _d	8.45	-
T _j =+20°C	P _{dc}	3.33	kW		T _j =+20°C	EER _d	10.07	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m³/h
Sound powerlevel, indoors / outdoors	L _{WA}	-64	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 16 / 16-BE30 / 16-BR90 - Heating mode - Average climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 16 / 16-BE30 / 16-BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				AVERAGE			
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13.0	kW	Seasonal space heating energy efficiency	η_s	133.3	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	11.52	kW	Tj = -7°C	COPd	1.99	-
Tj = 2°C	Pdh	7.18	kW	Tj = 2°C	COPd	3.34	-
Tj = 7°C	Pdh	4.67	kW	Tj = 7°C	COPd	4.61	-
Tj = 12°C	Pdh	3.31	kW	Tj = 12°C	COPd	6.07	-
Tj = bivalent temperature	Pdh	11.52	kW	Tj = bivalent temperature	COPd	1.99	-
Tj = operating limit	Pdh	10.33	kW	Tj = operating limit	COPd	1.80	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcyh	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	2.68	kW
Standby mode	Psb	0.014	kW				
Thermostat-off mode	Pto	0.024	kW	Type of energy input	Electrical		
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4650	m³/h
Sound power level, indoors/outdoors	LWA	-68	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	7895	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferrolli spa ~ 37047 San Bonifacio (Verona) Italy ~ Via Ritonda 78/A - tel. +39.045.6139411 ~ fax +39.045.6100933 ~ www.ferrolli.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 16 / 16-BE30 / 16-BR90 - Heating mode - Colder climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 16 / 16-BE30 / 16-BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				COLDER			
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	11.8	kW	Seasonal space heating energy efficiency	η s	121.8	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	7.64	kW	Tj = -7°C	COPd	2.65	-
Tj = 2°C	Pdh	4.42	kW	Tj = 2°C	COPd	3.79	-
Tj = 7°C	Pdh	2.97	kW	Tj = 7°C	COPd	4.81	-
Tj = 12°C	Pdh	3.43	kW	Tj = 12°C	COPd	6.29	-
Tj = bivalent temperature	Pdh	9.61	kW	Tj = bivalent temperature	COPd	1.86	-
Tj = operating limit	Pdh	5.21	kW	Tj = operating limit	COPd	1.23	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-15	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval capacity for heating	Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	51	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	6.59	kW
Standby mode	Psb	0.014	kW				
Thermostat-off mode	Pto	0.024	kW	Type of energy input	Electrical		
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors			
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Annual energy consumption	QHE	9309	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency		ηwh	-
Daily electricity consumption	Qdec	-	kWh	Daily fuel consumption		Qfuel	-
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption		AFC	-
Contact details	Ferroli spa ~ 37047 San Bonifacio (Verona) Italy ~ Via Ritonda 78/A - tel. +39.045.6139411 ~ fax +39.045.6100933 ~ www.ferroli.com						

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 16 / 16-BE30 / 16-BR90 - Heating mode - Warmer climate - Medium temperature (55°C)

Technical parameters

Model(s):		Mod. 16 / 16-BE30 / 16-BER90					
Air-to-water heat pump:		YES					
Water-to-water heat pump:		NO					
Brine-to-water heat pump:		NO					
Low-temperature heat pump:		NO					
Equipped with a supplementary heater:		NO					
Heat pump combination heater:		NO					
Declared climate condition:		WARMER					
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13.8	kW	Seasonal space heating energy efficiency	η_s	176.1	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	-	kW	Tj = -7°C	COPd	-	-
Tj = 2°C	Pdh	13.38	kW	Tj = 2°C	COPd	2.29	-
Tj = 7°C	Pdh	8.86	kW	Tj = 7°C	COPd	3.84	-
Tj = 12°C	Pdh	4.06	kW	Tj = 12°C	COPd	5.86	-
Tj = bivalent temperature	Pdh	8.86	kW	Tj = bivalent temperature	COPd	3.84	-
Tj = operating limit	Pdh	13.38	kW	Tj = operating limit	COPd	2.29	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	62	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	0.42	kW
Standby mode	Psb	0.014	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.024	kW				
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4650	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	4112	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferrol spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrol.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 16 / 16-BE30 / 16-BR90 - Cooling mode - Average climate - Medium temperature (18°C)

Model(s):				Mod. 16 / 16-BE30 / 16-BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	14.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	184.4	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	14.31	kW		T _j =+35°C	EER _d	2.47	-
T _j =+30°C	P _{dc}	10.68	kW		T _j =+30°C	EER _d	3.63	-
T _j =+25°C	P _{dc}	6.76	kW		T _j =+25°C	EER _d	5.27	-
T _j =+20°C	P _{dc}	3.41	kW		T _j =+20°C	EER _d	7.29	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4650	m ³ /h
Sound power level, indoors / outdoors	L _{WA}	-69	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m ³ /h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used				Low temperature application				
Contact details				Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com				
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 16 / 16-BE30 / 16-BR90 - Cooling mode - Average climate - Low temperature (7°C)

Model(s):				Mod. 16 / 16-BE30 / 16-BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	15.4	kW		Seasonal space cooling energy efficiency	η _{s,c}	266.9	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	15.40	kW		T _j =+35°C	EER _d	3.50	-
T _j =+30°C	P _{dc}	11.42	kW		T _j =+30°C	EER _d	5.14	-
T _j =+25°C	P _{dc}	7.27	kW		T _j =+25°C	EER _d	7.83	-
T _j =+20°C	P _{dc}	3.40	kW		T _j =+20°C	EER _d	10.35	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4650	m³/h
Sound power level, indoors / outdoors	L _{WA}	-/69	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 12-T / 12-T-BE30 / 12-T-BR90 - Heating mode - Average climate - Medium temperature (55°C)

Technical parameters

Model(s):		Mod. 12-T / 12-T-BE30 / 12-T - BER90					
Air-to-water heat pump:		YES					
Water-to-water heat pump:		NO					
Brine-to-water heat pump:		NO					
Low-temperature heat pump:		NO					
Equipped with a supplementary heater:		NO					
Heat pump combination heater:		NO					
Declared climate condition:		AVERAGE					
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	11.6	kW	Seasonal space heating energy efficiency	η s	135.1	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	10.24	kW	Tj = -7°C	COPd	2.01	-
Tj = 2°C	Pdh	6.52	kW	Tj = 2°C	COPd	3.44	-
Tj = 7°C	Pdh	4.36	kW	Tj = 7°C	COPd	4.59	-
Tj = 12°C	Pdh	3.29	kW	Tj = 12°C	COPd	6.05	-
Tj = bivalent temperature	Pdh	10.24	kW	Tj = bivalent temperature	COPd	2.01	-
Tj = operating limit	Pdh	9.10	kW	Tj = operating limit	COPd	1.79	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.020	kW	Rated heat output (**)	Psup	1.23	kW
Standby mode	Psb	0.020	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.030	kW				
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-65	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	6928	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	ηwh	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferroli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 12-T / 12-T-BE30 / 12-T-BR90 - Heating mode - Colder climate - Medium temperature (55°C)

Technical parameters

Model(s):	Mod. 12-T / 12-T-BE30 / 12-T - BER90
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature application.

Parameters are declared for medium-temperature (55°C) application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	10.3	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	6.63	kW
Tj = 2°C	Pdh	4.06	kW
Tj = 7°C	Pdh	2.78	kW
Tj = 12°C	Pdh	3.33	kW
Tj = bivalent temperature	Pdh	8.41	kW
Tj = operating limit	Pdh	4.19	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-15	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.020	kW
Standby mode	Psb	0.020	kW
Thermostat-off mode	Pto	0.030	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η s	117.7	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	2.63	-
Tj = 2°C	COPd	3.60	-
Tj = 7°C	COPd	4.54	-
Tj = 12°C	COPd	6.25	-
Tj = bivalent temperature	COPd	1.84	-
Tj = operating limit	COPd	1.13	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	51	°C
Supplementary heater			
Rated heat output (**)	Psup	6.11	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	Q _{HE}	8420	kWh				

For heat pump combination heater:

Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).

(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 12-T / 12-T-BE30 / 12-T-BR90 - Heating mode - Warmer climate - Medium temperature (55°C)

Technical parameters

Model(s):	Mod. 12-T / 12-T-BE30 / 12-T - BER90
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	WARMER

Parameters are declared for medium-temperature application.

Parameters are declared for medium-temperature (55°C) application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	12.5	kW	Seasonal space heating energy efficiency	η_s	173.8	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	-	kW	Tj = -7°C	COPd	-	-
Tj = 2°C	Pdh	12.07	kW	Tj = 2°C	COPd	2.31	-
Tj = 7°C	Pdh	8.04	kW	Tj = 7°C	COPd	3.86	-
Tj = 12°C	Pdh	3.75	kW	Tj = 12°C	COPd	5.70	-
Tj = bivalent temperature	Pdh	8.04	kW	Tj = bivalent temperature	COPd	3.86	-
Tj = operating limit	Pdh	12.07	kW	Tj = operating limit	COPd	2.31	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	62	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.020	kW	Rated heat output (**)	Psup	0.43	kW
Standby mode	Psb	0.020	kW	Type of energy input			
Thermostat-off mode	Pto	0.030	kW				
Crankcase heater mode	Pck	0.000	kW	Electrical			

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	3780	kWh				

For heat pump combination heater:

Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).

(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 12-T / 12-T-BE30 / 12-T-BR90 - Cooling mode - Average climate - Medium temperature (18°C)

Model(s):				Mod. 12-T / 12-T-BE30 / 12-T - BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	11.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	191.2	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	11.31	kW		T _j =+35°C	EER _d	2.61	-
T _j =+30°C	P _{dc}	8.76	kW		T _j =+30°C	EER _d	3.93	-
T _j =+25°C	P _{dc}	5.81	kW		T _j =+25°C	EER _d	5.73	-
T _j =+20°C	P _{dc}	2.63	kW		T _j =+20°C	EER _d	6.75	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.020	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.020	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m ³ /h
Sound power level, indoors / outdoors	L _{WA}	-65	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m ³ /h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 12-T / 12-T-BE30 / 12-T-BR90 - Cooling mode - Average climate - Low temperature (7°C)

Model(s):				Mod. 12-T / 12-T-BE30 / 12-T - BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	11.8	kW		Seasonal space cooling energy efficiency	η _{s,c}	278.6	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	11.77	kW		T _j =+35°C	EER _d	3.87	-
T _j =+30°C	P _{dc}	9.21	kW		T _j =+30°C	EER _d	5.50	-
T _j =+25°C	P _{dc}	5.74	kW		T _j =+25°C	EER _d	8.66	-
T _j =+20°C	P _{dc}	3.33	kW		T _j =+20°C	EER _d	10.07	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.020	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.020	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m ³ /h
Sound power level, indoors / outdoors	L _{WA}	-64	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m ³ /h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		Ferroli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 14-T / 14-T-BE30 / 14-T-BR90 - Heating mode - Average climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 14-T / 14-T-BE30 / 14-T - BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				AVERAGE			
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	12.08	kW	Seasonal space heating energy efficiency	η_s	135.6	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	10.68	kW	Tj = -7°C	COPd	2.01	-
Tj = 2°C	Pdh	6.86	kW	Tj = 2°C	COPd	3.43	-
Tj = 7°C	Pdh	4.63	kW	Tj = 7°C	COPd	4.66	-
Tj = 12°C	Pdh	3.31	kW	Tj = 12°C	COPd	6.13	-
Tj = bivalent temperature	Pdh	10.68	kW	Tj = bivalent temperature	COPd	2.01	-
Tj = operating limit	Pdh	9.19	kW	Tj = operating limit	COPd	1.76	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.020	kW	Rated heat output (**)	Psup	1.40	kW
Standby mode	Psb	0.020	kW				
Thermostat-off mode	Pto	0.030	kW	Type of energy input	Electrical		
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-65	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	7203	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferrol spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrol.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 14-T / 14-T-BE30 / 14-T-BR90 - Heating mode - Colder climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 14-T / 14-T-BE30 / 14-T - BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				COLDER			
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	11.0	kW	Seasonal space heating energy efficiency	η_s	118.9	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	6.89	kW	Tj = -7°C	COPd	2.66	-
Tj = 2°C	Pdh	4.32	kW	Tj = 2°C	COPd	3.66	-
Tj = 7°C	Pdh	3.06	kW	Tj = 7°C	COPd	4.72	-
Tj = 12°C	Pdh	3.33	kW	Tj = 12°C	COPd	6.25	-
Tj = bivalent temperature	Pdh	8.94	kW	Tj = bivalent temperature	COPd	1.79	-
Tj = operating limit	Pdh	4.20	kW	Tj = operating limit	COPd	1.13	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-15	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	51	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.020	kW	Rated heat output (**)	Psup	6.80	kW
Standby mode	Psb	0.020	kW				
Thermostat-off mode	Pto	0.030	kW	Type of energy input	Electrical		
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	8867	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferroli spa ~ 37047 San Bonifacio (Verona) Italy ~ Via Ritonda 78/A - tel. +39.045.6139411 ~ fax +39.045.6100933 ~ www.ferroli.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 14-T / 14-T-BE30 / 14-T-BR90 - Heating mode - Warmer climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 14-T / 14-T-BE30 / 14-T - BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				WARMER			
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13.7	kW	Seasonal space heating energy efficiency	η_s	176.4	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	-	kW	Tj = -7°C	COPd	-	-
Tj = 2°C	Pdh	13.04	kW	Tj = 2°C	COPd	2.20	-
Tj = 7°C	Pdh	8.83	kW	Tj = 7°C	COPd	3.91	-
Tj = 12°C	Pdh	4.08	kW	Tj = 12°C	COPd	5.90	-
Tj = bivalent temperature	Pdh	8.83	kW	Tj = bivalent temperature	COPd	3.91	-
Tj = operating limit	Pdh	13.04	kW	Tj = operating limit	COPd	2.20	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	62	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.020	kW	Rated heat output (**)	Psup	0.66	kW
Standby mode	Psb	0.020	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.030	kW				
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	4092	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferroli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 14-T / 14-T-BE30 / 14-T-BR90 - Cooling mode - Average climate - Medium temperature (18°C)

Model(s):				Mod. 14-T / 14-T-BE30 / 14-T - BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	12.2	kW		Seasonal space cooling energy efficiency	η _{s,c}	190.3	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	12.19	kW		T _j =+35°C	EER _d	2.46	-
T _j =+30°C	P _{dc}	9.41	kW		T _j =+30°C	EER _d	3.85	-
T _j =+25°C	P _{dc}	6.16	kW		T _j =+25°C	EER _d	5.80	-
T _j =+20°C	P _{dc}	2.63	kW		T _j =+20°C	EER _d	6.74	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.020	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.020	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m³/h
Sound power level, indoors / outdoors	L _{WA}	-65	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		Ferroli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 14-T / 14-T-BE30 / 14-T-BR90 - Cooling mode - Average climate - Low temperature (7°C)

Model(s):				Mod. 14-T / 14-T-BE30 / 14-T - BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	13.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	270.9	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	13.30	kW		T _j =+35°C	EER _d	3.47	-
T _j =+30°C	P _{dc}	10.20	kW		T _j =+30°C	EER _d	5.26	-
T _j =+25°C	P _{dc}	6.57	kW		T _j =+25°C	EER _d	8.45	-
T _j =+20°C	P _{dc}	3.33	kW		T _j =+20°C	EER _d	10.07	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.020	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.020	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m³/h
Sound power level, indoors / outdoors	L _{WA}	-/64	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		Ferrol spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrol.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 16-T / 16-T-BE30 / 16-T-BR90 - Heating mode - Average climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 16-T / 16-T-BE30 / 16-T - BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				AVERAGE			
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13.0	kW	Seasonal space heating energy efficiency	η_s	133.2	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	11.52	kW	Tj = -7°C	COPd	1.99	-
Tj = 2°C	Pdh	7.18	kW	Tj = 2°C	COPd	3.34	-
Tj = 7°C	Pdh	4.67	kW	Tj = 7°C	COPd	4.61	-
Tj = 12°C	Pdh	3.31	kW	Tj = 12°C	COPd	6.07	-
Tj = bivalent temperature	Pdh	11.52	kW	Tj = bivalent temperature	COPd	1.99	-
Tj = operating limit	Pdh	10.33	kW	Tj = operating limit	COPd	1.80	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcyh	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.020	kW	Rated heat output (**)	Psup	2.67	kW
Standby mode	Psb	0.020	kW				
Thermostat-off mode	Pto	0.030	kW	Type of energy input Electrical			
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4650	m³/h
Sound power level, indoors/outdoors	LWA	-68	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	7896	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferrol spa ~ 37047 San Bonifacio (Verona) Italy ~ Via Ritonda 78/A - tel. +39.045.6139411 ~ fax +39.045.6100933 ~ www.ferroli.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 16-T / 16-T-BE30 / 16-T-BR90 - Heating mode - Colder climate - Medium temperature (55°C)

Technical parameters

Model(s):	Mod. 16-T / 16-T-BE30 / 16-T - BER90
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature application.

Parameters are declared for medium-temperature (55°C) application.			
Item	Symbol	Value	Unit
Rated heat output (*)	Prated	11.8	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	7.64	kW
Tj = 2°C	Pdh	4.42	kW
Tj = 7°C	Pdh	2.97	kW
Tj = 12°C	Pdh	3.43	kW
Tj = bivalent temperature	Pdh	9.61	kW
Tj = operating limit	Pdh	5.21	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-15	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.020	kW
Standby mode	Psb	0.020	kW
Thermostat-off mode	Pto	0.030	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	ηs	121.8	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	2.65	-
Tj = 2°C	COPd	3.79	-
Tj = 7°C	COPd	4.81	-
Tj = 12°C	COPd	6.29	-
Tj = bivalent temperature	COPd	1.86	-
Tj = operating limit	COPd	1.23	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	51	°C
Supplementary heater			
Rated heat output (**)	Psup	6.59	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4650	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	9310	kWh				

For heat pump combination heater:

Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

Contact details: Ferroli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferroli.com

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).

(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 16-T / 16-T-BE30 / 16-T-BR90 - Heating mode - Warmer climate - Medium temperature (55°C)

Technical parameters

Model(s):				Mod. 16-T / 16-T-BE30 / 16-T - BER90			
Air-to-water heat pump:				YES			
Water-to-water heat pump:				NO			
Brine-to-water heat pump:				NO			
Low-temperature heat pump:				NO			
Equipped with a supplementary heater:				NO			
Heat pump combination heater:				NO			
Declared climate condition:				WARMER			
Parameters are declared for medium-temperature application.							
Parameters are declared for medium-temperature (55°C) application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13.8	kW	Seasonal space heating energy efficiency	η_s	175.9	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	-	kW	Tj = -7°C	COPd	-	-
Tj = 2°C	Pdh	13.38	kW	Tj = 2°C	COPd	2.29	-
Tj = 7°C	Pdh	8.86	kW	Tj = 7°C	COPd	3.84	-
Tj = 12°C	Pdh	4.06	kW	Tj = 12°C	COPd	5.86	-
Tj = bivalent temperature	Pdh	8.86	kW	Tj = bivalent temperature	COPd	3.84	-
Tj = operating limit	Pdh	13.38	kW	Tj = operating limit	COPd	2.29	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	62	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	0.42	kW
Standby mode	Psb	0.014	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.029	kW				
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4650	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	4116	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	Ferroli spa ~ 37047 San Bonifacio (Verona) Italy ~ Via Ritonda 78/A - tel. +39.045.6139411 ~ fax +39.045.6100933 ~ www.ferroli.com						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 16-T / 16-T-BE30 / 16-T-BR90 - Cooling mode - Average climate - Medium temperature (18°C)

Model(s):				Mod. 16-T / 16-T-BE30 / 16-T - BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	14.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	183.6	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	14.31	kW		T _j =+35°C	EER _d	2.47	-
T _j =+30°C	P _{dc}	10.68	kW		T _j =+30°C	EER _d	3.63	-
T _j =+25°C	P _{dc}	6.76	kW		T _j =+25°C	EER _d	5.27	-
T _j =+20°C	P _{dc}	3.41	kW		T _j =+20°C	EER _d	7.29	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.020	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.020	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4650	m³/h
Sound power level, indoors / outdoors	L _{WA}	-69	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

ERP DATA (TDS = TECHNICAL DATA SHEET)

Mod. 16-T / 16-T-BE30 / 16-T-BR90 - Cooling mode - Average climate - Low temperature (7°C)

Model(s):				Mod. 16-T / 16-T-BE30 / 16-T - BER90				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	15.4	kW		Seasonal space cooling energy efficiency	η _{s,c}	265.3	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	15.40	kW		T _j =+35°C	EER _d	3.50	-
T _j =+30°C	P _{dc}	11.42	kW		T _j =+30°C	EER _d	5.14	-
T _j =+25°C	P _{dc}	7.27	kW		T _j =+25°C	EER _d	7.83	-
T _j =+20°C	P _{dc}	3.40	kW		T _j =+20°C	EER _d	10.35	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.020	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.020	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4650	m³/h
Sound power level, indoors / outdoors	L _{WA}	-69	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		Ferrolli spa - 37047 San Bonifacio (Verona) Italy - Via Ritonda 78/A - tel. +39.045.6139411 - fax +39.045.6100933 - www.ferrolli.com						
(*) If C _{dc} is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.								

Condition(°C)	Model	Capacity (kW)	Power input (kW)	EER/COP (/)
Ambient Temperature: 35/24 Water temperature: 12/7	MHC-V4W/D2N8-B	4.70	1.36	3.45
	MHC-V6W/D2N8-B	7.00	2.33	3.00
	MHC-V8W/D2N8-B	7.45	2.22	3.35
	MHC-V10W/D2N8-B	8.20	2.52	3.25
	MHC-V12W/D2N8-B	11.5	4.18	2.75
	MHC-V14W/D2N8-B	12.4	4.96	2.50
	MHC-V16W/D2N8-B	14.0	5.60	2.50
	MHC-V12W/D2RN8-B	11.5	4.18	2.75
	MHC-V14W/D2RN8-B	12.4	4.96	2.50
	MHC-V16W/D2RN8-B	14.0	5.60	2.50
Ambient Temperature: 35/24 Water temperature: 23/18	MHC-V4W/D2N8-B	4.50	0.82	5.50
	MHC-V6W/D2N8-B	6.50	1.35	4.80
	MHC-V8W/D2N8-B	8.30	1.64	5.05
	MHC-V10W/D2N8-B	9.90	2.18	4.55
	MHC-V12W/D2N8-B	12.00	3.04	3.95
	MHC-V14W/D2N8-B	13.50	3.75	3.60
	MHC-V16W/D2N8-B	14.90	4.38	3.40
	MHC-V12W/D2RN8-B	12.00	3.04	3.95
	MHC-V14W/D2RN8-B	13.50	3.75	3.60
	MHC-V16W/D2RN8-B	14.90	4.38	3.40
Ambient Temperature: 7/6 Water temperature: 30/35	MHC-V4W/D2N8-B	4.20	0.82	5.10
	MHC-V6W/D2N8-B	6.35	1.28	4.95
	MHC-V8W/D2N8-B	8.40	1.63	5.15
	MHC-V10W/D2N8-B	10.0	2.02	4.95
	MHC-V12W/D2N8-B	12.1	2.44	4.95
	MHC-V14W/D2N8-B	14.5	3.15	4.60
	MHC-V16W/D2N8-B	15.9	3.53	4.50
	MHC-V12W/D2RN8-B	12.1	2.44	4.95
	MHC-V14W/D2RN8-B	14.5	3.15	4.60
	MHC-V16W/D2RN8-B	15.9	3.53	4.50
Ambient Temperature: 2/1 Water temperature: 30/35	MHC-V4W/D2N8-B	4.40	1.10	4.00
	MHC-V6W/D2N8-B	5.50	1.41	3.90
	MHC-V8W/D2N8-B	7.10	1.73	4.10
	MHC-V10W/D2N8-B	8.20	2.05	4.00
	MHC-V12W/D2N8-B	9.2	2.36	3.90
	MHC-V14W/D2N8-B	11.0	3.06	3.60
	MHC-V16W/D2N8-B	13.0	3.77	3.45
	MHC-V12W/D2RN8-B	9.2	2.36	3.90
	MHC-V14W/D2RN8-B	11.0	3.06	3.60
	MHC-V16W/D2RN8-B	13.0	3.77	3.45

Condition(°C)	Model	Capacity (kW)	Power input (kW)	EER/COP (/)
Ambient Temperature: -7/-8 Water temperature: 30/35	MHC-V4W/D2N8-B	4.70	1.52	3.10
	MHC-V6W/D2N8-B	6.00	2.00	3.00
	MHC-V8W/D2N8-B	7.00	2.19	3.20
	MHC-V10W/D2N8-B	8.00	2.62	3.05
	MHC-V12W/D2N8-B	10.00	3.33	3.00
	MHC-V14W/D2N8-B	12.00	4.21	2.85
	MHC-V16W/D2N8-B	13.10	4.85	2.70
	MHC-V12W/D2RN8-B	10.00	3.33	3.00
	MHC-V14W/D2RN8-B	12.00	4.21	2.85
	MHC-V16W/D2RN8-B	13.10	4.85	2.70
Ambient Temperature: 7/6 Water temperature: 40/45	MHC-V4W/D2N8-B	4.30	1.13	3.80
	MHC-V6W/D2N8-B	6.30	1.70	3.70
	MHC-V8W/D2N8-B	8.10	2.10	3.85
	MHC-V10W/D2N8-B	10.0	2.67	3.75
	MHC-V12W/D2N8-B	12.3	3.32	3.70
	MHC-V14W/D2N8-B	14.1	3.92	3.60
	MHC-V16W/D2N8-B	16.0	4.57	3.50
	MHC-V12W/D2RN8-B	12.3	3.32	3.70
	MHC-V14W/D2RN8-B	14.1	3.92	3.60
	MHC-V16W/D2RN8-B	16.0	4.57	3.50
Ambient Temperature: 2/1 Water temperature: 40/45	MHC-V4W/D2N8-B	5.10	1.70	3.00
	MHC-V6W/D2N8-B	5.80	1.93	3.00
	MHC-V8W/D2N8-B	7.40	2.28	3.25
	MHC-V10W/D2N8-B	7.85	2.45	3.20
	MHC-V12W/D2N8-B	10.60	3.53	3.00
	MHC-V14W/D2N8-B	11.50	4.04	2.85
	MHC-V16W/D2N8-B	12.70	4.46	2.85
	MHC-V12W/D2RN8-B	10.60	3.53	3.00
	MHC-V14W/D2RN8-B	11.50	4.04	2.85
	MHC-V16W/D2RN8-B	12.70	4.46	2.85
Ambient Temperature: -7/-8 Water temperature: 40/45	MHC-V4W/D2N8-B	4.30	1.83	2.35
	MHC-V6W/D2N8-B	5.40	2.25	2.40
	MHC-V8W/D2N8-B	6.60	2.59	2.55
	MHC-V10W/D2N8-B	7.35	2.88	2.55
	MHC-V12W/D2N8-B	10.20	4.25	2.40
	MHC-V14W/D2N8-B	11.70	4.98	2.35
	MHC-V16W/D2N8-B	12.80	5.69	2.25
	MHC-V12W/D2RN8-B	10.20	4.25	2.40
	MHC-V14W/D2RN8-B	11.70	4.98	2.35
	MHC-V16W/D2RN8-B	12.80	5.69	2.25

Condition(°C)	Model	Capacity (kW)	Power input (kW)	EER/COP (/)
Ambient Temperature: 7/6 Water temperature: 47/55	MHC-V4W/D2N8-B	4.40	1.49	2.95
	MHC-V6W/D2N8-B	6.00	2.03	2.95
	MHC-V8W/D2N8-B	7.50	2.36	3.18
	MHC-V10W/D2N8-B	9.50	3.06	3.10
	MHC-V12W/D2N8-B	11.9	3.90	3.05
	MHC-V14W/D2N8-B	13.8	4.68	2.95
	MHC-V16W/D2N8-B	16.0	5.61	2.85
	MHC-V12W/D2RN8-B	11.9	3.90	3.05
	MHC-V14W/D2RN8-B	13.8	4.68	2.95
	MHC-V16W/D2RN8-B	16.0	5.61	2.85
Ambient Temperature: 2/1 Water temperature: 47/55	MHC-V4W/D2N8-B	5.10	2.08	2.45
	MHC-V6W/D2N8-B	5.65	2.31	2.45
	MHC-V8W/D2N8-B	7.10	2.73	2.60
	MHC-V10W/D2N8-B	8.10	3.16	2.56
	MHC-V12W/D2N8-B	11.30	4.52	2.50
	MHC-V14W/D2N8-B	12.40	5.06	2.45
	MHC-V16W/D2N8-B	13.30	5.54	2.40
	MHC-V12W/D2RN8-B	11.30	4.52	2.50
	MHC-V14W/D2RN8-B	12.40	5.06	2.45
	MHC-V16W/D2RN8-B	13.30	5.54	2.40
Ambient Temperature: -7/-8 Water temperature: 47/55	MHC-V4W/D2N8-B	4.00	2.05	1.95
	MHC-V6W/D2N8-B	5.15	2.58	2.00
	MHC-V8W/D2N8-B	6.15	3.00	2.05
	MHC-V10W/D2N8-B	6.85	3.43	2.00
	MHC-V12W/D2N8-B	9.80	4.78	2.05
	MHC-V14W/D2N8-B	11.00	5.37	2.05
	MHC-V16W/D2N8-B	12.50	6.25	2.00
	MHC-V12W/D2RN8-B	9.80	4.78	2.05
	MHC-V14W/D2RN8-B	11.00	5.37	2.05
	MHC-V16W/D2RN8-B	12.50	6.25	2.00



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