

IMMERGAS

Product Fiche





MAGIS

M4 - 6 - 8

Block heat pumps
Single-phase



1 TECHNICAL DATA MODELS 4 - 6 - 8 KW.

1.1 MEDIUM TEMPERATURE APPLICATIONS.

Model	For medium temperature applications				
	Energy efficiency class	Sound power of unit	Medium zone temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
	-	dB	kW	%	kWh
MAGIS M4	A++	55	4.4	129.5	2744
MAGIS M6	A++	58	5.7	137.9	3345
MAGIS M8	A++	59	6.6	131.5	4056

Model	For medium temperature applications				
	Energy efficiency class	Sound power of unit	Cold zones temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
	-	dB	kW	%	kWh
MAGIS M4	A++	55	3.4	102.1	3159
MAGIS M6	A++	58	4.3	111.1	3681
MAGIS M8	A++	59	5.8	112.0	4950

Model	For medium temperature applications				
	Energy efficiency class	Sound power of unit	Hot zones temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
	-	dB	kW	%	kWh
MAGIS M4	A++	55	5.0	162.4	1621
MAGIS M6	A++	58	5.1	164.7	1640
MAGIS M8	A++	59	8.37	176.9	2485

1.2 LOW TEMPERATURE APPLICATIONS.

Model	For low temperature applications				
	Energy efficiency class	Sound power of unit	Medium zone temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
			kW	%	kWh
MAGIS M4	A+++	55	5.5	191.0	2351
MAGIS M6	A+++	58	6.8	195.0	2845
MAGIS M8	A+++	59	8.1	205.6	3218

Model	For low temperature applications				
	Energy efficiency class	Sound power of unit	Cold zones temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
			kW	%	kWh
MAGIS M4	A+++	55	4.6	159.5	2769
MAGIS M6	A+++	58	5.6	165.3	3300
MAGIS M8	A+++	59	7.0	170.0	3976

Model	For low temperature applications				
	Energy efficiency class	Sound power of unit	Hot zones temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
			kW	%	kWh
MAGIS M4	A+++	55	5.5	255.4	1146
MAGIS M6	A+++	58	6.1	259.8	1244
MAGIS M8	A+++	59	8.1	276.6	1551

2 PRODUCT DATA SHEET MODELS 4 - 6 - 8 KW.

Space heating appliance with heat pump		Model	MAGIS M4	MAGIS M6	MAGIS M8
Sound power of unit (*)	Low temperature medium weather application	dB	55.0	58.0	59.0
	Medium weather temperature application	dB	55.0	58.0	59.0
Space heating	Energy efficiency class 35°C (low temperature application)	-	A+++	A+++	A+++
Space heating	Energy efficiency class 55°C (medium temperature application)	-	A++	A++	A++
Medium weather (design temperature = -10°C)					
Space heating 35°C	P_{rated} (declared heating capacity) @ -10°C	kW	5.5	6.8	8.1
	Space heating seasonal energy efficiency (η_s)	%	191.0	195.0	205.6
	Annual power consumption	kWh	2351	2845	3218
Space heating 55°C	P_{rated} (declared heating capacity) @ -10°C	kW	4.4	5.7	6.6
	Space heating seasonal energy efficiency (η_s)	%	129.5	137.9	131.5
	Annual power consumption	kWh	2744	3345	4056
Low temperature application medium weather space heating partial load conditions					
(A) Condition (-7°C)	P_{dh} (Declared heating capacity)	kW	4.88	6.03	7.18
	COP_d (Declared COP)	-	3.19	3.09	3.35
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	3.05	3.88	4.65
	COP_d (Declared COP)	-	4.78	4.85	5.09
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	1.93	2.39	2.90
	COP_d (Declared COP)	-	6.13	6.63	6.82
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	1.48	1.39	1.63
	COP_d (Declared COP)	-	8.05	7.93	8.35
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90

Space heating appliance with heat pump		Model	MAGIS M4	MAGIS M6	MAGIS M8
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-10.00	-10.00	-10.00
	P _{dh} (Declared heating capacity)	kW	4.41	5.36	6.44
	COP _d (Declared COP)	-	2.86	2.76	3.04
	W _{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) T _{bivalent} temperature	T _{blv}	°C	-7.00	-7.00	-7.00
	P _{dh} (Declared heating capacity)	kW	4.88	6.03	7.18
	COP _d (Declared COP)	-	3.19	3.09	3.35
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : -10°C)	kW	1.11	1.45	1.68
Medium temperature application average weather temperature space heating partial load conditions					
(A) Condition (-7°C)	P _{dh} (Declared heating capacity)	kW	3.89	5.04	5.84
	COP _d (Declared COP)	-	2.17	2.17	2.16
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(B) Condition (2°C)	P _{dh} (Declared heating capacity)	kW	2.38	3.12	3.75
	COP _d (Declared COP)	-	3.30	3.51	3.30
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P _{dh} (Declared heating capacity)	kW	2.94	2.08	2.42
	COP _d (Declared COP)	-	4.41	4.54	4.34
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P _{dh} (Declared heating capacity)	kW	1.32	1.28	1.39
	COP _d (Declared COP)	-	5.66	5.59	5.33
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-10.00	-10.00	-10.00
	P _{dh} (Declared heating capacity)	kW	3.42	4.52	4.90
	COP _d (Declared COP)	-	1.91	1.91	1.84
	W _{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) T _{bivalent} temperature	T _{blv}	°C	-7.00	-7.00	-7.00
	P _{dh} (Declared heating capacity)	kW	3.89	5.04	5.84
	COP _d (Declared COP)	-	2.17	2.17	2.16
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : -10°C)	kW	0.98	1.18	1.69

Space heating appliance with heat pump		Model	MAGIS M4	MAGIS M6	MAGIS M8
Cold weather (Design temperature = -22°C)					
Space heating 35°C	P_{rated} (declared heating capacity) @ -22°C	kW	4.6	5.6	7.0
	Space heating seasonal energy efficiency (η_s)	%	159.5	165.3	170.0
	Annual power consumption	kWh	2769	3300	3976
Space heating 55°C	P_{rated} (declared heating capacity) @ -22°C	kW	3.4	4.3	5.8
	Space heating seasonal energy efficiency (η_s)	%	102.1	111.1	112.0
	Annual power consumption	kWh	3159	3681	4950
Low temperature application cold weather space heating partial load conditions					
(A) Condition (-7°C)	P_{dh} (Declared heating capacity)	kW	2.75	3.42	4.46
	COP_d (Declared COP)	-	3.49	3.59	3.66
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	1.77	2.06	2.69
	COP_d (Declared COP)	-	4.95	5.21	5.20
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	1.17	1.46	1.65
	COP_d (Declared COP)	-	5.53	6.24	6.53
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	1.43	1.44	1.65
	COP_d (Declared COP)	-	7.67	7.66	7.96
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-22.00	-22.00	-22.00
	P_{dh} (Declared heating capacity)	kW	2.80	3.48	4.06
	COP_d (Declared COP)	-	1.97	1.96	1.95
	W_{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) $T_{bivalent}$ temperature	T_{blv}	°C	-15.00	-15.00	-15.00
	P_{dh} (Declared heating capacity)	kW	3.72	4.59	5.69
	COP_d (Declared COP)	-	2.57	2.53	2.83
Supplementary capacity to P_{design}	P_{sup} (@ $T_{designh}$: -22°C)	kW	1.76	2.15	2.91

Space heating appliance with heat pump		Model	MAGIS M4	MAGIS M6	MAGIS M8
Medium temperature application cold weather space heating partial load conditions					
(A) Condition (-7°C)	P_{dh} (Declared heating capacity)	kW	2.13	2.70	3.86
	COP_d (Declared COP)	-	2.32	2.46	2.48
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	1.28	1.60	2.21
	COP_d (Declared COP)	-	2.99	3.36	3.35
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	1.01	1.02	1.44
	COP_d (Declared COP)	-	3.86	3.94	4.11
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	1.36	1.37	1.46
	COP_d (Declared COP)	-	6.28	6.35	5.92
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-22.00	-22.00	-22.00
	P_{dh} (Declared heating capacity)	kW	1.64	2.09	2.80
	COP_d (Declared COP)	-	1.02	1.13	1.22
	W_{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) $T_{bivalent}$ temperature	T_{biv}	°C	-15.00	-15.00	-15.00
	P_{dh} (Declared heating capacity)	kW	2.74	3.47	4.71
	COP_d (Declared COP)	-	1.74	1.86	1.90
Supplementary capacity to P_{design}	P_{sup} (@ $T_{designh}$: -22°C)	kW	1.72	2.17	2.97

Space heating appliance with heat pump		Model	MAGIS M4	MAGIS M6	MAGIS M8
Warm weather (Design temperature = 2°C)					
Space heating 35°C	P_{rated} (declared heating capacity) @ -2°C	kW	5.5	6.1	8.1
	Space heating seasonal energy efficiency (η_s)	%	255.4	259.8	276.6
	Annual power consumption	kWh	1146	1244	1551
Space heating 55°C	P_{rated} (declared heating capacity) @ -2°C	kW	5.0	5.1	8.37
	Space heating seasonal energy efficiency (η_s)	%	162.4	164.7	176.9
	Annual power consumption	kWh	1621	1640	2485
Low temperature application warm weather space heating partial load conditions					
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	5.34	5.93	7.56
	COP_d (Declared COP)	-	3.94	3.91	3.98
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	3.56	3.93	5.22
	COP_d (Declared COP)	-	5.92	5.89	6.26
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	1.63	1.79	2.62
	COP_d (Declared COP)	-	7.91	8.20	9.23
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	2.00	2.00	2.00
	P_{dh} (Declared heating capacity)	kW	5.34	5.93	7.56
	COP_d (Declared COP)	-	3.94	3.91	3.98
	W_{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) $T_{bivalent}$ temperature	T_{blv}	°C	7.00	7.00	7.00
	P_{dh} (Declared heating capacity)	kW	3.56	3.93	5.22
	COP_d (Declared COP)	-	5.92	5.89	6.26
Supplementary capacity to P_{design}	P_{sup} (@ $T_{designh}$: 2°C)	kW	0.18	0.18	0.55

Space heating appliance with heat pump		Model	MAGIS M4	MAGIS M6	MAGIS M8
Medium temperature application warm weather space heating partial load conditions					
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	4.83	5.02	7.55
	COP_d (Declared COP)	-	2.51	2.48	2.59
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	3.22	3.31	5.38
	COP_d (Declared COP)	-	3.68	3.67	4.01
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	1.47	1.60	2.31
	COP_d (Declared COP)	-	5.15	5.29	5.55
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	2.00	2.00	2.00
	P_{dh} (Declared heating capacity)	kW	4.83	5.02	7.55
	COP_d (Declared COP)	-	2.51	2.48	2.59
	W_{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) $T_{bivalent}$ temperature	T_{biv}	°C	7.00	7.00	7.00
	P_{dh} (Declared heating capacity)	kW	3.22	3.31	5.38
	COP_d (Declared COP)	-	3.68	3.67	4.01
Supplementary capacity to P_{design}	P_{sup} (@ $T_{designh}$: 2°C)	kW	0.18	0.12	0.82
0					
Description of the product	Air-water heat pump	Y/N	Yes	Yes	Yes
	Water-water heat pump	Y/N	No	No	No
	Brine to water heat pump	Y/N	No	No	No
	Low temperature heat pump	Y/N	No	No	No
	Equipped with additional heater	Y/N	Yes	Yes	Yes
	Mixed central heating device with heat pump:	Y/N	No	No	No
Air-water unit	Nominal air flow	m³/h	2770	2770	4030
Brine/water to water unit	Water/brine at nominal flow rate (H/E outdoor)		/	/	/

Space heating appliance with heat pump		Model	MAGIS M4	MAGIS M6	MAGIS M8
Other	Capacity control	-	Inverter	Inverter	Inverter
	P_{off} (Power consumption OFF Mode)	kW	0.014	0.014	0.014
	P_{to} (Power consumption with thermostat at OFF Mode)	kW	0.024	0.024	0.024
	P_{sb} (Power consumption in Standby Mode)	kW	0.014	0.014	0.014
	P_{CK} (Electric crankcase heater model)	kW	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 use and installation manual.

Data of the product data sheets according to the directive on energy labelling 2010/30/EC (EU) 811/2013.

3 TECHNICAL PARAMETERS MODELS 4 - 6 - 8 KW.

Technical Parameters								
Model:	MAGIS M4							
Air-water heat pump:	Yes							
Water-water heat pump:	No							
Brine to water heat pump:	No							
Low temperature heat pump:	No							
Equipped with additional heater:	No							
Mixed central heating device with heat pump:	No							
Declared weather condition:	MEDIUM							
The parameters are declared for the medium temperature application.								
Element	Symbol	Value	Unit		Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	4.4	kW		Space heating seasonal energy efficiency	η _s	129.5	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj					Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj			
Tj = -7°C	P _{dh}	3.89	kW		Tj = -7°C	COPd	2.17	-
Tj = 2°C	P _{dh}	2.38	kW		Tj = 2°C	COPd	3.30	-
Tj = 7°C	P _{dh}	2.94	kW		Tj = 7°C	COPd	4.41	-
Tj = 12°C	P _{dh}	1.32	kW		Tj = 12°C	COPd	5.66	-
Tj = bivalent temperature	P _{dh}	3.89	kW		Tj = bivalent temperature	COPd	2.17	-
Tj = operating limit	P _{dh}	3.42	kW		Tj = operating limit	COPd	1.91	-
For air-water heat pumps: Tj = -15°C	P _{dh}	-	kW		For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T _{biv}	-7	°C		For air-water heat pumps: Operation limit temperature	TOL	-10	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW		Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-		Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode					Additional heater			
OFF mode	P _{off}	0.014	kW		Rated heat output (*)	P _{sup}	0.98	kW
Standby Mode	P _{sb}	0.014	kW		Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.024	kW					
Crankcase heater mode electrical	P _{ck}	0.000	kW					
Other items								
Capacity control	Variable				For air-water heat pumps: Rated air flow rate outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/55	dB		For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	2744	kWh					
For mixed central heating appliances with a heat pump:								
Declared load profile	-				Water central heating energy efficiency	η _{WH}	-	%
Daily electrical power consumption	Q _{elec}	-	kWh		Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh		Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95							
(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P _{rated} is equal to the design load for heating. P _{designh} and the rated heat output of an additional heater P _{sup} is equal to the supplementary heating capacity sup(Tj).								
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.								

Technical Parameters							
Model:	MAGIS M4						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	No						
Mixed central heating device with heat pump:	No						
Declared weather condition:	COLD						
The parameters are declared for the medium temperature application.							
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	3.4	kW	Space heating seasonal energy efficiency	η _i	102.1	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	2.13	kW	T _j = -7°C	COP _d	2.32	-
T _j = 2°C	P _{dh}	1.28	kW	T _j = 2°C	COP _d	2.99	-
T _j = 7°C	P _{dh}	1.01	kW	T _j = 7°C	COP _d	3.86	-
T _j = 12°C	P _{dh}	1.36	kW	T _j = 12°C	COP _d	6.28	-
T _j = bivalent temperature	P _{dh}	2.74	kW	T _j = bivalent temperature	COP _d	1.74	-
T _j = operating limit	P _{dh}	1.64	kW	T _j = operating limit	COP _d	1.02	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-15	°C	For air-water heat pumps: Operation limit temperature	TOL	-22	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	1.72	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.024	kW				
Crankcase heater mode electrical	P _{ck}	0.000	kW				
Other items							
Capacity control	Variable			For air-water heat pumps: Rated air flow rate outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	3159	kWh				
For mixed central heating appliances with a heat pump:							
Declared load profile	-			Water central heating energy efficiency	η _{WH}	-	%
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						
(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P _{rated} is equal to the design load for heating. P _{designh} and the rated heat output of an additional heater P _{sup} is equal to the supplementary heating capacity sup(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M4						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	No						
Mixed central heating device with heat pump:	No						
Declared weather condition:	WARM						
The parameters are declared for the medium temperature application.							
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	5.0	kW	Space heating seasonal energy efficiency	η _i	162.4	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	-	kW	T _j = -7°C	COP _d	-	-
T _j = 2°C	P _{dh}	4.83	kW	T _j = 2°C	COP _d	2.51	-
T _j = 7°C	P _{dh}	3.22	kW	T _j = 7°C	COP _d	3.68	-
T _j = 12°C	P _{dh}	1.47	kW	T _j = 12°C	COP _d	5.15	-
T _j = bivalent temperature	P _{dh}	3.22	kW	T _j = bivalent temperature	COP _d	3.68	-
T _j = operating limit	P _{dh}	4.83	kW	T _j = operating limit	COP _d	2.51	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	7	°C	For air-water heat pumps: Operation limit temperature	TOL	2	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	0.18	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.024	kW				
Crankcase heater mode electrical	P _{ck}	0.000	kW				
Other items							
Capacity control	Variable			For air-water heat pumps: Rated air flow rate outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	1621	kWh				
For mixed central heating appliances with a heat pump:							
Declared load profile	-			Water central heating energy efficiency	η _{WH}	-	%
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						
(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P _{rated} is equal to the design load for heating. P _{designh} and the rated heat output of an additional heater P _{sup} is equal to the supplementary heating capacity sup(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M6						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	No						
Mixed central heating device with heat pump:	No						
Declared weather condition:	MEDIUM						
The parameters are declared for the medium temperature application.							
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	5.7	kW	Space heating seasonal energy efficiency	η _s	137.9	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	5.04	kW	T _j = -7°C	COP _d	2.17	-
T _j = 2°C	P _{dh}	3.12	kW	T _j = 2°C	COP _d	3.51	-
T _j = 7°C	P _{dh}	2.08	kW	T _j = 7°C	COP _d	4.54	-
T _j = 12°C	P _{dh}	1.28	kW	T _j = 12°C	COP _d	5.59	-
T _j = bivalent temperature	P _{dh}	5.04	kW	T _j = bivalent temperature	COP _d	2.17	-
T _j = operating limit	P _{dh}	4.52	kW	T _j = operating limit	COP _d	1.91	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-7	°C	For air-water heat pumps: Operation limit temperature	TOL	-10	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	1.18	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.024	kW				
Crankcase heater mode electrical	P _{ck}	0.000	kW				
Other items							
Capacity control	Variable			For air-water heat pumps: Rated air flow rate outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/58	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	3345	kWh				
For mixed central heating appliances with a heat pump:							
Declared load profile	-			Water central heating energy efficiency	η _{WH}	-	%
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						
(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P _{rated} is equal to the design load for heating. P _{designh} and the rated heat output of an additional heater P _{sup} is equal to the supplementary heating capacity sup(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M6						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	No						
Mixed central heating device with heat pump:	No						
Declared weather condition:	COLD						
The parameters are declared for the medium temperature application.							
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	4.3	kW	Space heating seasonal energy efficiency	η _i	111.1	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	2.70	kW	T _j = -7°C	COP _d	2.46	-
T _j = 2°C	P _{dh}	1.60	kW	T _j = 2°C	COP _d	3.36	-
T _j = 7°C	P _{dh}	1.02	kW	T _j = 7°C	COP _d	3.94	-
T _j = 12°C	P _{dh}	1.37	kW	T _j = 12°C	COP _d	6.35	-
T _j = bivalent temperature	P _{dh}	3.47	kW	T _j = bivalent temperature	COP _d	1.86	-
T _j = operating limit	P _{dh}	2.09	kW	T _j = operating limit	COP _d	1.13	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-15	°C	For air-water heat pumps: Operation limit temperature	TOL	-22	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	2.17	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.024	kW				
Crankcase heater mode electrical	P _{ck}	0.000	kW				
Other items							
Capacity control	Variable			For air-water heat pumps: Rated air flow rate outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	3681	kWh				
For mixed central heating appliances with a heat pump:							
Declared load profile	-			Water central heating energy efficiency	η _{WH}	-	%
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						
(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P _{rated} is equal to the design load for heating. P _{designh} and the rated heat output of an additional heater P _{sup} is equal to the supplementary heating capacity sup(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters								
Model:	MAGIS M6							
Air-water heat pump:	Yes							
Water-water heat pump:	No							
Brine to water heat pump:	No							
Low temperature heat pump:	No							
Equipped with additional heater:	No							
Mixed central heating device with heat pump:	No							
Declared weather condition:	WARM							
The parameters are declared for the medium temperature application.								
Element	Symbol	Value	Unit		Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	5.1	kW		Space heating seasonal energy efficiency	η _s	164.7	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j					Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	-	kW		T _j = -7°C	COP _d	-	-
T _j = 2°C	P _{dh}	5.02	kW		T _j = 2°C	COP _d	2.48	-
T _j = 7°C	P _{dh}	3.31	kW		T _j = 7°C	COP _d	3.67	-
T _j = 12°C	P _{dh}	1.60	kW		T _j = 12°C	COP _d	5.29	-
T _j = bivalent temperature	P _{dh}	3.31	kW		T _j = bivalent temperature	COP _d	3.67	-
T _j = operating limit	P _{dh}	5.02	kW		T _j = operating limit	COP _d	2.48	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW		For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	7	°C		For air-water heat pumps: Operation limit temperature	TOL	2	°C
Capacity of the cycle range for central heating	P _{cych}	-	kW		Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-		Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode					Additional heater			
OFF mode	P _{off}	0.014	kW		Rated heat output (*)	P _{sup}	0.12	kW
Standby Mode	P _{sb}	0.014	kW		Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.024	kW					
Crankcase heater mode electrical	P _{ck}	0.000	kW					
Other items								
Capacity control	Variable				For air-water heat pumps: Rated air flow rate outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB		For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	1640	kWh					
For mixed central heating appliances with a heat pump:								
Declared load profile	-				Water central heating energy efficiency	η _{WH}	-	%
Daily electrical power consumption	Q _{elec}	-	kWh		Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh		Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95							
(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P _{rated} is equal to the design load for heating. P _{designh} and the rated heat output of an additional heater P _{sup} is equal to the supplementary heating capacity sup(T _j).								
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.								

Technical Parameters							
Model:	MAGIS M8						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	No						
Mixed central heating device with heat pump:	No						
Declared weather condition:	MEDIUM						
The parameters are declared for the medium temperature application.							
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	6.6	kW	Space heating seasonal energy efficiency	η _i	131.5	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	5.84	kW	T _j = -7°C	COP _d	2.16	-
T _j = 2°C	P _{dh}	3.75	kW	T _j = 2°C	COP _d	3.30	-
T _j = 7°C	P _{dh}	2.42	kW	T _j = 7°C	COP _d	4.34	-
T _j = 12°C	P _{dh}	1.39	kW	T _j = 12°C	COP _d	5.33	-
T _j = bivalent temperature	P _{dh}	5.84	kW	T _j = bivalent temperature	COP _d	2.16	-
T _j = operating limit	P _{dh}	4.90	kW	T _j = operating limit	COP _d	1.84	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-7	°C	For air-water heat pumps: Operation limit temperature	TOL	-10	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	1.69	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.024	kW				
Crankcase heater mode electrical	P _{ck}	0.000	kW				
Other items							
Capacity control	Variable			For air-water heat pumps: Rated air flow rate outdoors	-	4030	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/59	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	4056	kWh				
For mixed central heating appliances with a heat pump:							
Declared load profile	-			Water central heating energy efficiency	η _{WH}	-	%
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						
(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P _{rated} is equal to the design load for heating. P _{designh} and the rated heat output of an additional heater P _{sup} is equal to the supplementary heating capacity sup(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M8						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	No						
Mixed central heating device with heat pump:	No						
Declared weather condition:	COLD						
The parameters are declared for the medium temperature application.							
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	5.8	kW	Space heating seasonal energy efficiency	η _s	112.0	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	3.86	kW	T _j = -7°C	COP _d	2.48	-
T _j = 2°C	P _{dh}	2.21	kW	T _j = 2°C	COP _d	3.35	-
T _j = 7°C	P _{dh}	1.44	kW	T _j = 7°C	COP _d	4.11	-
T _j = 12°C	P _{dh}	1.46	kW	T _j = 12°C	COP _d	5.92	-
T _j = bivalent temperature	P _{dh}	4.71	kW	T _j = bivalent temperature	COP _d	1.90	-
T _j = operating limit	P _{dh}	2.80	kW	T _j = operating limit	COP _d	1.22	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-15	°C	For air-water heat pumps: Operation limit temperature	TOL	-22	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	2.97	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.024	kW				
Crankcase heater mode electrical	P _{ck}	0.000	kW				
Other items							
Capacity control	Variable			For air-water heat pumps: Rated air flow rate outdoors	-	4030	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	4950	kWh				
For mixed central heating appliances with a heat pump:							
Declared load profile	-			Water central heating energy efficiency	η _{WH}	-	%
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						
(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P _{rated} is equal to the design load for heating. P _{designh} and the rated heat output of an additional heater P _{sup} is equal to the supplementary heating capacity sup(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M8						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	No						
Mixed central heating device with heat pump:	No						
Declared weather condition:	WARM						
The parameters are declared for the medium temperature application.							
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	8.37	kW	Space heating seasonal energy efficiency	η _s	176.9	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	-	kW	T _j = -7°C	COP _d	-	-
T _j = 2°C	P _{dh}	7.55	kW	T _j = 2°C	COP _d	2.59	-
T _j = 7°C	P _{dh}	5.38	kW	T _j = 7°C	COP _d	4.01	-
T _j = 12°C	P _{dh}	2.31	kW	T _j = 12°C	COP _d	5.55	-
T _j = bivalent temperature	P _{dh}	5.38	kW	T _j = bivalent temperature	COP _d	4.01	-
T _j = operating limit	P _{dh}	7.55	kW	T _j = operating limit	COP _d	2.59	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	7	°C	For air-water heat pumps: Operation limit temperature	TOL	2	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	0.82	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.024	kW				
Crankcase heater mode electrical	P _{ck}	0.000	kW				
Other items							
Capacity control	Variable			For air-water heat pumps: Rated air flow rate outdoors	-	4030	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	2485	kWh				
For mixed central heating appliances with a heat pump:							
Declared load profile	-			Water central heating energy efficiency	η _{WH}	-	%
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						
(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P _{rated} is equal to the design load for heating. P _{designh} and the rated heat output of an additional heater P _{sup} is equal to the supplementary heating capacity sup(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

4 INFORMATION REQUIREMENTS FOR SPACE CHILLERS MODELS 4 - 6 - 8 KW.

Information requirements for space chillers								
Model:	MAGIS M4							
Heat exchanger:	Air-Water							
Type:	Steam compression cycle							
Compressor start-up:	Electric motor							
Element	Symbol	Value	Unit		Element	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	4.7	kW		Space heating seasonal energy efficiency	η _{s,c}	196.5	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at 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 coefficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than “active mode”								
OFF mode	P _{OFF}	0.014	kW		Crankcase heater mode electrical	P _{CK}	0.000	kW
Thermostat OFF mode	P _{TO}	0.010	kW		Standby Mode	P _{SB}	0.014	kW
Other items								
Capacity control	Variable				For air-water emergency chillers: air flow rate, measured outdoors	-	2770	m³/h
Sound power level, indoors/ outdoors	L _{WA}	-/56	dB		For water / brine-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/ kWh input GCV					
GWP of refrigerant	-	675	kg CO _{2eq}					
Standard rating conditions used	Low temperature application							
Contact information	Immergas S.p.A. via Cisa Ligure n.95							
(*) If C _{dh} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.								
(**) Since September 26, 2018								

Information requirements for space chillers								
Model:		MAGIS M4						
Heat exchanger:		Air-Water						
Type:		Steam compression cycle						
Compressor start-up:		Electric motor						
Element	Symbol	Value	Unit		Element	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	4.5	kW		Space heating seasonal energy efficiency	η _{s,c}	307.7	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at 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 coefficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than “active mode”								
OFF mode	P _{OFF}	0.014	kW		Crankcase heater mode electrical	P _{CK}	0.000	kW
Thermostat OFF mode	P _{TO}	0.010	kW		Standby Mode	P _{SB}	0.014	kW
Other items								
Capacity control	Variable				For air-water emergency chillers: air flow rate, measured outdoors	-	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-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	m³/h
GWP of refrigerant	-	675	kg CO _{2eq}					
Standard rating conditions used	Medium temperature application							
Contact information	Immergas S.p.A. via Cisa Ligure n.95							
(*) If C _{dh} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.								
(**) Since September 26, 2018								

Information requirements for space chillers								
Model:	MAGIS M6							
Heat exchanger:	Air-Water							
Type:	Steam compression cycle							
Compressor start-up:	Electric motor							
Element	Symbol	Value	Unit		Element	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	6.3	kW		Space heating seasonal energy efficiency	η _{s,c}	210.7	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at 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 coefficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than “active mode”								
OFF mode	P _{OFF}	0.014	kW		Crankcase heater mode electrical	P _{CK}	0.000	kW
Thermostat OFF mode	P _{TO}	0.010	kW		Standby Mode	P _{SB}	0.014	kW
Other items								
Capacity control	Variable				For air-water emergency chillers: air flow rate, measured outdoors	-	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-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	m³/h
GWP of refrigerant	-	675	kg CO _{2eq}					
Standard rating conditions used	Low temperature application							
Contact information	Immergas S.p.A. via Cisa Ligure n.95							
(*) If C _{dh} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.								
(**) Since September 26, 2018								

Information requirements for space chillers								
Model:		MAGIS M6						
Heat exchanger:		Air-Water						
Type:		Steam compression cycle						
Compressor start-up:		Electric motor						
Element	Symbol	Value	Unit		Element	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	6.5	kW		Space heating seasonal energy efficiency	η _{s,c}	325.2	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at 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 coefficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than “active mode”								
OFF mode	P _{OFF}	0.014	kW		Crankcase heater mode electrical	P _{CK}	0.000	kW
Thermostat OFF mode	P _{TO}	0.010	kW		Standby Mode	P _{SB}	0.014	kW
Other items								
Capacity control	Variable				For air-water emergency chillers: air flow rate, measured outdoors	-	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-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	m³/h
GWP of refrigerant	-	675	kg CO _{2eq}					
Standard rating conditions used	Medium temperature application							
Contact information	Immergas S.p.A. via Cisa Ligure n.95							
(*) If C _{dh} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.								
(**) Since September 26, 2018								

Information requirements for space chillers								
Model:	MAGIS M8							
Heat exchanger:	Air-Water							
Type:	Steam compression cycle							
Compressor start-up:	Electric motor							
Element	Symbol	Value	Unit		Element	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	7.4	kW		Space heating seasonal energy efficiency	η _{s,c}	230.1	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at 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 coefficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than “active mode”								
OFF mode	P _{OFF}	0.014	kW		Crankcase heater mode electrical	P _{CK}	0.000	kW
Thermostat OFF mode	P _{TO}	0.010	kW		Standby Mode	P _{SB}	0.014	kW
Other items								
Capacity control	Variable				For air-water emergency chillers: air flow rate, measured outdoors	-	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-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	m³/h
GWP of refrigerant	-	675	kg CO _{2eq}					
Standard rating conditions used	Low temperature application							
Contact information	Immergas S.p.A. via Cisa Ligure n.95							
(*) If C _{dh} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.								
(**) Since September 26, 2018								

Information requirements for space chillers								
Model:		MAGIS M8						
Heat exchanger:		Air-Water						
Type:		Steam compression cycle						
Compressor start-up:		Electric motor						
Element	Symbol	Value	Unit		Element	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	8.4	kW		Space heating seasonal energy efficiency	η _{s,c}	355.1	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at 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 coefficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than “active mode”								
OFF mode	P _{OFF}	0.014	kW		Crankcase heater mode electrical	P _{CK}	0.000	kW
Thermostat OFF mode	P _{TO}	0.010	kW		Standby Mode	P _{SB}	0.014	kW
Other items								
Capacity control	Variable				For air-water emergency chillers: air flow rate, measured outdoors	-	4030	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/60	dB		For water / brine-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of refrigerant	-	675	kg CO _{2eq}					
Standard rating conditions used	Medium temperature application							
Contact information	Immergas S.p.A. via Cisa Ligure n.95							
(*) If C _{dh} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.								
(**) Since September 26, 2018								

5 TECHNICAL DATA TABLE ON ENVIRONMENTAL CONDITIONS

MODELS 4 - 6 - 8 KW.

Conditions (°C)	Model	Capacity (kW)	Absorbed power (kW)	EER/COP (/)
Room Temperature: 35/24 Water Temperature: 12/7	MAGIS M4	4.70	1.36	3.45
	MAGIS M6	7.00	2.33	3.00
	MAGIS M8	7.45	2.22	3.35
Room Temperature: 35/24 Water Temperature: 23/18	MAGIS M4	4.50	0.82	5.50
	MAGIS M6	6.50	1.35	4.80
	MAGIS M8	8.30	1.64	5.05
Room Temperature: 7/6 Water Temperature: 30/35	MAGIS M4	4.20	0.82	5.10
	MAGIS M6	6.35	1.28	4.95
	MAGIS M8	8.40	1.63	5.15
Room Temperature: 2/1 Water Temperature: 30/35	MAGIS M4	4.40	1.10	4.00
	MAGIS M6	5.50	1.41	3.90
	MAGIS M8	7.10	1.73	4.10
Room Temperature: -7/-8 Water Temperature: 30/35	MAGIS M4	4.70	1.52	3.10
	MAGIS M6	6.00	2.00	3.00
	MAGIS M8	7.00	2.19	3.20
Room Temperature: 7/6 Water Temperature: 40/45	MAGIS M4	4.30	1.13	3.80
	MAGIS M6	6.30	1.70	3.70
	MAGIS M8	8.10	2.10	3.85
Room Temperature: 2/1 Water Temperature: 40/45	MAGIS M4	5.10	1.70	3.00
	MAGIS M6	5.80	1.93	3.00
	MAGIS M8	7.40	2.28	3.25
Room Temperature: -7/-8 Water Temperature: 40/45	MAGIS M4	4.30	1.83	2.35
	MAGIS M6	5.40	2.25	2.40
	MAGIS M8	6.60	2.59	2.55
Room Temperature: 7/6 Water Temperature: 47/55	MAGIS M4	4.40	1.49	2.95
	MAGIS M6	6.00	2.03	2.95
	MAGIS M8	7.50	2.36	3.18
Room Temperature: 2/1 Water Temperature: 47/55	MAGIS M4	5.10	2.08	2.45
	MAGIS M6	5.65	2.31	2.45
	MAGIS M8	7.10	2.73	2.60
Room Temperature: -7/-8 Water Temperature: 47/55	MAGIS M4	4.00	2.05	1.95
	MAGIS M6	5.15	2.58	2.00
	MAGIS M8	6.15	3.00	2.05