

OIMMERGAS

MAGIS M12-14-16 T EH9

Block heat pumps Technical Data



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Dear Customer

 $Congratulations for having chosen\ a\ top-quality\ Immergas\ product, able\ to\ assure\ well-being\ and\ safety\ for\ a\ long\ period\ of\ time.\ As\ an\ Im-period\ of\ time\ able\ to\ assure\ well-being\ and\ safety\ for\ a\ long\ period\ of\ time\ able\ to\ assure\ well-being\ and\ safety\ for\ a\ long\ period\ of\ time\ able\ to\ assure\ well-being\ and\ safety\ for\ a\ long\ period\ of\ time\ able\ to\ assure\ well-being\ and\ safety\ for\ a\ long\ period\ of\ time\ able\ to\ assure\ well-being\ and\ safety\ for\ a\ long\ period\ of\ time\ able\ to\ assure\ well-being\ and\ safety\ for\ a\ long\ period\ of\ time\ able\ to\ assure\ well-being\ and\ safety\ for\ a\ long\ period\ of\ time\ able\ to\ assure\ well-being\ able\ to\ assure\ to\ able\ to\ able\ to\ assure\ to\ able\ to\$ mergas customer you can also count on a Qualified Authorised After-Sales Technical Assistance Centre, prepared and updated to guarantee constant efficiency of your appliance. Read the following pages carefully: you will be able to draw useful tips on the proper use of the device, $compliance\ with\ which\ will\ confirm\ your\ satisfaction\ with\ the\ Immergas\ product.$

For assistance and routine maintenance, contact Authorised Technical Service Centres: they have original spare parts and are specifically trained directly by the manufacturer.

The company IMMERGAS S.p.A., with registered office in via Cisa Ligure 95 42041 Brescello (RE), declares that the design, manufac $turing and after-sales \ assistance \ processes \ comply \ with the \ requirements \ of \ standard \ UNIEN ISO 9001:2015.$

For further details on the product CE marking, request a copy of the Declaration of Conformity from the manufacturer, specifying the appliance model and the language of the country.

The manufacturer declines all liability due to printing or transcription errors, reserving the right to make any modifications to its technical and commercial documents without forewarning.

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GENERAL RECOMMENDATIONS

- The instruction booklet is an integral and essential part of the product and must be given to the new user in the case of transfer or succession of ownership.
- It must be stored with care and consulted carefully, as all of the warnings provide important safety indications for installation, use and maintenance stages.
- In compliance with the legislation in force, the systems must be designed by qualified professionals, within the dimensional limits established by the Law. Installation and maintenance must be performed in compliance with the regulations in force, according to the manufacturer's instructions and by professionally qualified staff, meaning staff with specific technical skills in the plant sector, as provided for by Law.
- Improper installation or assembly of the Immergas device and/or components, accessories, kits and devices can cause unexpected problems for people, animals and objects. Read the instructions provided with the product carefully to ensure proper
 installation.
- This instructions manual provides technical information for installing Immergas products. As for the other issues related to the installation of products (e.g. safety at the workplace, environmental protection, accident prevention), it is necessary to comply with the provisions of the standards in force and the principles of good practice.
- All Immergas products are protected with suitable transport packaging.
- The material must be stored in a dry place protected from the weather.
- Maintenance must be carried out by skilled technical staff. For example, the Authorised Service Centre that represents a guarantee of qualifications and professionalism.
- The appliance must only be destined for the use for which it has been expressly declared. Any other use will be considered improper and therefore potentially dangerous.
- If errors occur during installation, operation and maintenance, due to non-compliance with technical laws in force, standards or instructions contained in this booklet (or however supplied by the manufacturer), the manufacturer is excluded from any contractual and extra-contractual liability for any damages and the device warranty is invalidated.
- This manual provides a detailed explanation on the precautions to be taken during use.
- Read this manual carefully before using the wall-mounted control unit to guarantee its proper operation.
- After you have read this manual, keep it for future consultation.
- For further information regarding legislative and statutory provisions relative to the installation of heat pumps, consult the Immergas site at the following address: www.immergas.com

TECHNICALDATA

1.1 **MEDIUM TEMPERATURE APPLICATIONS**

	For medium temperature applications						
			M	edium zone temperatur	res		
Model	Energy efficiency class	Sound power of unit	Nominal heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption		
	-	dB	kW	%	kWh		
MAGISM12TEH9	A++	65,0	11,6	135,1	6928		
MAGISM14TEH9	A++	65,0	12,1	135,6	7203		
MAGISM16TEH9	A++	68,0	13,0	133,2	7896		

	For medium temperature applications						
	Energy efficiency class		(Cold zones temperature	s		
Model		Sound power of unit	Nominal heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption		
	-	dB	kW	%	kWh		
MAGISM12TEH9	A++	65,0	10,3	117,7	8420		
MAGISM14TEH9	A++	65,0	11,0	118,9	8867		
MAGISM16TEH9	A++	68,0	11,8	121,8	9310		

	For medium temperature applications						
			Hotzones temperatures				
Model	Energy efficiency class	Sound power of unit	Nominal heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption		
	-	dB	kW	%	kWh		
MAGISM12TEH9	A++	65,0	12,5	173,8	3780		
MAGIS M14TEH9	A++	65,0	14,17	174,9	4262		
MAGISM16TEH9	A++	68,0	14,17	175,8	4236		

1.2 LOW TEMPERATURE APPLICATIONS

	Forlowtemperatureapplications						
			M	edium zone temperatur	es		
Model	Energy efficiency class	Sound power of unit	Nominal heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption		
	-	dB	kW	%	kWh		
MAGISM12TEH9	A+++	65,0	12,0	189,0	5153		
MAGISM14TEH9	A+++	65,0	13,7	186,0	6013		
MAGISM16TEH9	A+++	68,0	15,2	182,0	6805		

	Forlowtemperatureapplications						
	Energy efficiency class	Soundpower of unit	Coldzones temperatures				
Model			Nominal heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption		
	-	dB	kW	%	kWh		
MAGISM12TEH9	A+++	65,0	11,4	160,2	6871		
MAGISM14TEH9	A+++	65,0	12,6	159,6	7667		
MAGISM16TEH9	A+++	68,0	13,7	157,8	8431		

	Forlowtemperatureapplications					
			Hotzones temperatures			
Model	Energyefficiency	Sound power of unit		Spaceheating	For space heating,	
Model	class	Sound power or unit	Nominal heat output	seasonalenergy	annualpower	
				efficiency	consumption	
	-	dB	kW	%	kWh	
MAGISM12TEH9	A+++	65,0	11,1	255,6	2296	
MAGISM14TEH9	A+++	65,0	12,1	259,8	2462	
MAGISM16TEH9	A+++	68,0	13,1	248,1	2786	

2 PRODUCT DATA SHEET

Space heating appliance with heat pu	mp	Unit	MAGISM12 TEH9	MAGISM14 TEH9	MAGISM16 TEH9
Sound power of unit	Low temperature medium weather application	dB	65,0	65,0	68,0
	Medium weather temperature application	dB	65,0	65,0	68,0
Spaceheating	Energy efficiency class 35°C (low temperature application)	-	A+++	A+++	A+++
Spaceheating	Energy efficiency class 55°C (medium temperature application)	-	A++	A++	A++

Medium weather (design temp	perature=-10°C)	Unit	MAGISM12 TEH9	MAGISM14 TEH9	MAGISM16 TEH9
	P _{rated} (declared heating capacity) @ -10°C	kW	12,0	13,7	15,2
Space heating 35°C	Space heating seasonal energy efficiency (η_s)	%	189,0	186,0	182,0
	Annual power consumption	kWh	5153	6013	6805
	P _{rated} (declared heating capacity) @ -10°C	kW	11,6	12,1	13,0
Space heating 55°C	Space heating seasonal energy efficiency (η_s)	%	135,1	135,6	133,2
	Annual power consumption	kWh	6928	7203	7896

Low temperature application m conditions	edium weather space heating partial load	Unit	MAGISM12 TEH9	MAGISM14 TEH9	MAGISM16 TEH9
	P _{dh} (Declared heating capacity)	kW	10,61	12,14	13,45
(A) Condition (-7°C)	COP _d (Declared COP)	-	2,88	2,79	2,72
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	6,69	7,94	8,56
(B) Condition (2°C)	COP _d (Declared COP)	-	4,65	4,52	4,41
(b) Condition (2 C)	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	4,44	5,2	5,7
(C) Condition (7°C)	COP _d (Declared COP)	-	6,62	6,68	6,56
	COP _d (Declared COP) C _{dh} (Degradation coefficient) P _{dh} (Declared heating capacity) COP _d (Declared COP) C _{dh} (Degradation coefficient) P _{dh} (Declared heating capacity)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	3,74	3,75	3,78
(D) Condition (12°C)	COP _d (Declared COP)		8,47	8,52	8,51
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9

Low temperature application medium conditions	weather space heating partial load	Unit	MAGISM12 TEH9	MAGIS M14 TEH9	MAGISM16 TEH9
	Tol (operation limit temperature)	°C	-10	-10	-10
(F) T-1(P _{dh} (Declared heating capacity)	kW	10,74	11,47	12,52
(E) Tol (operation limit temperature)	COP _d (Declared COP)	-	2,77	2,59	2,48
	W _{TOL} (Water heating limit operation)	°C	65	65	65
	T_{blv}	°C	-7	-7	-7
(F) T _{bivalente} temperature	P _{dh} (Declared heating capacity)	kW	10,61	12,14	13,45
	COP _d (Declared COP)	-	2,88	2,79	2,72
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : -10°C)	kW	1,26	2,23	2,68

Medium temperature application avera partial load conditions	geweather temperature space heating	Unit	MAGISM12 TEH9	MAGIS M14 TEH9	MAGISM16 TEH9
	P _{dh} (Declared heating capacity)	kW	10,24	10,68	11,52
(A) Condition (-7°C)	COP _d (Declared COP)	-	2,01	2,01	1,99
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	6,52	6,86	7,18
(B) Condition (2°C)	COP _d (Declared COP)	-	3,44	3,43	3,34
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	4,36	4,63	4,67
(C) Condition (7°C)	COP _d (Declared COP)	-	4,59	4,66	4,61
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	3,29	3,31	3,31
(D) Condition (12°C)	COP _d (Declared COP)	-	6,05	6,13	6,07
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	Tol (operation limit temperature)	°C	-10	-10	-10
(E) Tol (on anotion limit tomporature)	P _{dh} (Declared heating capacity)	kW	9,1	9,19	10,33
(E) Tol (operation limit temperature)	COP _d (Declared COP)	-	1,79	1,76	1,8
	W_{TOL} (Water heating limit operation)	°C	65	65	65
	$T_{\rm blv}$	°C	-7	-7	-7
(F) T _{bivalente} temperature	P _{dh} (Declared heating capacity)	kW	10,24	10,68	11,52
Divarence	COP _d (Declared COP)	-	2,01	2,01	1,99
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : -10°C)	kW	2,5	2,91	2,67

Cold weather (Design temperature = -22°C)		Unit	MAGISM12 TEH9	MAGISM14 TEH9	MAGISM16 TEH9
	P_{rated} (declared heating capacity) @ -22°C	kW	11,4	12,6	13,7
Spaceheating 35°C	$Space \ heating \ seasonal \ energy$ $efficiency \ (\eta_s)$	%	160,2	159,6	157,8
	Annual power consumption	kWh	6871	7667	8431
	P _{rated} (declared heating capacity) @ -22°C	kW	10,3	11,0	11,8
Spaceheating 55°C	$Space \ heating \ seasonal \ energy$ $efficiency \ (\eta_s)$	%	117,7	118,9	121,8
	Annual power consumption	kWh	8420	8867	9310

Low temperature application cold weat	her space heating partial load conditions	Unit	MAGISM12 TEH9	MAGISM14 TEH9	MAGISM16 TEH9
	P _{dh} (Declared heating capacity)	kW	7,05	7,96	8,31
(A) Condition (-7°C)	COP _d (Declared COP)	-	3,48	3,44	3,37
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	4,67	5,05	5,26
(B) Condition (2°C)	COP _d (Declared COP)	-	4,96	4,92	4,86
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	3,14	3,15	3,62
(C) Condition (7°C)	COP _d (Declared COP)	-	6,10	6,11	6,49
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	3,57	3,57	3,34
(D) Condition (12°C)	COP _d (Declared COP)	-	7,87	7,82	7,40
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	Tol (operation limit temperature)	°C	-22	-22	-22
(E) Tol (on quotion limit tomm quotumo)	P _{dh} (Declared heating capacity)	kW	7,01	7,57	8,88
(E) Tol (operation limit temperature)	COP _d (Declared COP)	-	1,98	1,92	1,97
	W _{TOL} (Water heating limit operation)	°C	65	65	65
	$T_{\rm blv}$	°C	-15	-15	-15
(F) T _{bivalente} temperature	P _{dh} (Declared heating capacity)	kW	9,28	10,31	11,22
	COP _d (Declared COP)	-	2,59	2,53	2,43
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : -22°C)	kW	4,40	5,03	4,82

Medium temperature application cold conditions	weather space heating partial load	Unit	MAGISM12 TEH9	MAGISM14 TEH9	MAGISM16 TEH9
P _{dh} (Declared heating capacity)			6,63	6,89	7,64
(A) Condition (-7°C)	COP _d (Declared COP)	-	2,63	2,66	2,65
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	4,06	4,32	4,42
(B) Condition (2°C)	COP _d (Declared COP)	-	3,60	3,66	3,79
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	2,78	3,06	2,97
(C) Condition (7°C)	COP _d (Declared COP)	-	4,54	4,72	4,81
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	3,33	3,33	3,43
(D) Condition (12°C)	COP _d (Declared COP)	-	6,25	6,25	6,29
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	Tol (operation limit temperature)	°C	-22	-22	-22
(F) T 1/ 1:	P _{dh} (Declared heating capacity)	kW	4,19	4,2	5,21
(E) Tol (operation limit temperature)	COP _d (Declared COP)	-	1,13	1,13	1,23
	W _{TOL} (Water heating limit operation)	°C	65	65	65
	T _{blv}	°C	-15	-15	-15
(F) T _{bivalente} temperature	P _{dh} (Declared heating capacity)	kW	8,41	8,94	9,61
	COP _d (Declared COP)	-	1,84	1,79	1,86
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : -22°C)	kW	6,12	6,80	6,59

Warm weather (Design temperature = 2	Warm weather (Design temperature = 2°C)		MAGISM12 TEH9	MAGISM14 TEH9	MAGISM16 TEH9
	P _{rated} (declared heating capacity) @ -2°C	kW	11,1	12,1	13,1
Space heating 35°C	Space heating seasonal energy efficiency (η_s)	%	255,6	259,8	248,1
	Annual power consumption	kWh	2296	2462	2786
	P _{rated} (declared heating capacity) @ -2°C	kW	12,5	14,17	14,17
Space heating 55°C	Space heating seasonal energy efficiency (η_s)	%	173,8	174,9	175,8
	Annual power consumption	kWh	3780	4262	4236

Low temperature application warm weather space heating partial load conditions			MAGISM12 TEH9	MAGISM14 TEH9	MAGISM16 TEH9
	P _{dh} (Declared heating capacity)	kW	11,1	12,04	13,1
(B) Condition (2°C)	COP _d (Declared COP)	-	3,59	3,44	3,35
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	7,14	7,78	8,41
(C) Condition (7°C)	COP _d (Declared COP)	-	5,87	5,84	5,36
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	3,55	3,75	3,87
(D) Condition (12°C)	COP _d (Declared COP)	-	7,94	8,25	8,11
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	Tol (operation limit temperature)	°C	2	2	2
(F) T-1(P _{dh} (Declared heating capacity)	kW	11,1	12,04	13,1
(E) Tol (operation limit temperature)	COP _d (Declared COP)	-	3,59	3,44	3,35
	W _{TOL} (Water heating limit operation)	°C	65	65	65
	T _{blv}	°C	7	7	7
(F) T _{bivalente} temperature	P _{dh} (Declared heating capacity)	kW	7,14	7,78	8,41
	COP _d (Declared COP)	-	5,87	5,84	5,36
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : 2°C)	kW	0,00	0,06	0,00

Medium temperature application warm weather space heating partial load conditions			MAGISM12 TEH9	MAGISM14 TEH9	MAGISM16 TEH9
	P _{dh} (Declared heating capacity)	kW	12,07	13,04	13,38
(B) Condition (2°C)	COP _d (Declared COP)	-	2,31	2,20	2,29
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	8,04	9,11	9,11
(C) Condition (7°C)	COP _d (Declared COP)	-	3,86	3,89	3,89
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9
	P _{dh} (Declared heating capacity)	kW	3,75	4,08	4,06
(D) Condition (12°C)	COP _d (Declared COP)	-	5,70	5,90	5,86
	C _{dh} (Degradation coefficient)	-	0,9	0,9	0,9

Medium temperature application warn conditions	n weather space heating partial load	Unit	MAGISM12 TEH9	MAGIS M14 TEH9	MAGISM16 TEH9
	Tol (operation limit temperature)	°C	2	2	2
(F) Tal (an austion limit tomor austuma)	P _{dh} (Declared heating capacity)	kW	12,07	13,04	13,38
(E) Tol (operation limit temperature)	COP _d (Declared COP)	-	2,31	2,2	2,29
	W_{TOL} (Water heating limit operation)	°C	65	65	65
	$T_{ m blv}$	°C	7	7	7
(F) T _{bivalente} temperature	P _{dh} (Declared heating capacity)	kW	8,04	9,11	9,11
	COP _d (Declared COP)	-	3,86	3,89	3,89
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : 2°C)	kW	0,43	1,13	0,79

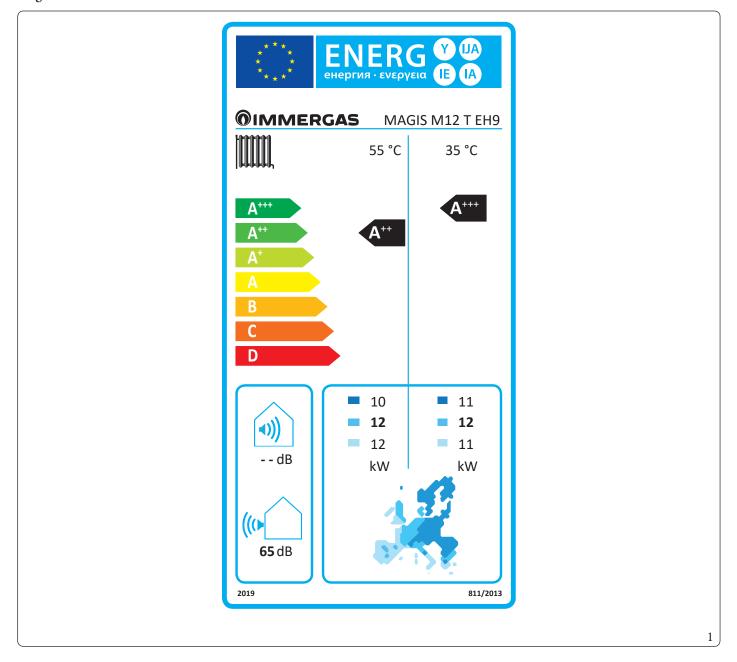
		Unit	MAGISM12 TEH9	MAGIS M14 TEH9	MAGISM16 TEH9
	Air-water heat pump	Y/N	SI	SI	SI
	Water-water heat pump	Y/N	NO	NO	NO
	Brine to water heat pump	Y/N	NO	NO	NO
Description of the product	Low temperature heat pump	Y/N	NO	NO	NO
	Equipped with additional heater	Y/N	SI	SI	SI
	Mixed central heating device with heat pump:	Y/N	NO	NO	NO
Air-water unit	Nominal air flow	m³/h	4060	4060	4650
Brine/water to water unit	Water/brine at nominal flow rate (H/E outdoor)		/	/	/

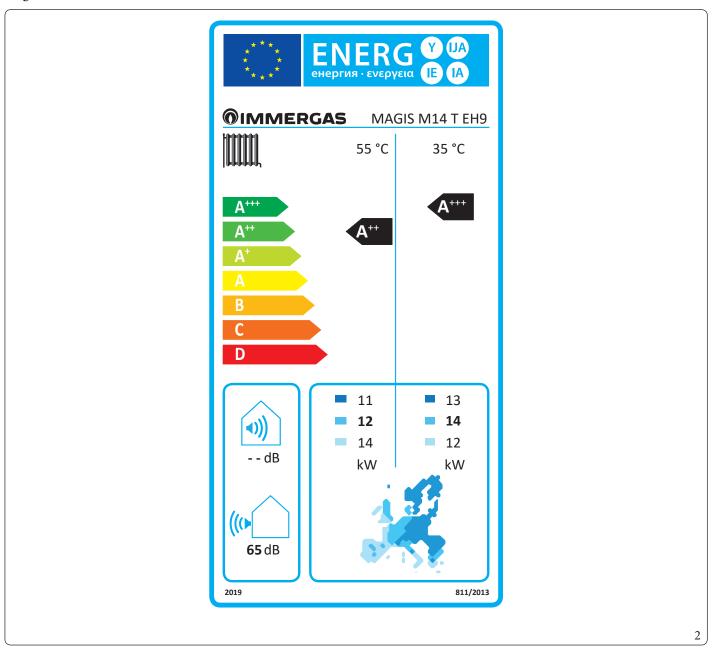
Space heating appliance with heat pump		Unit	MAGISM12 TEH9	MAGISM14 TEH9	MAGISM16 TEH9
	Capacity control	-	VARIABLE	VARIABLE	VARIABLE
	$P_{off}(Power consumption OFF Mode)$	kW	0,020	0,020	0,020
	$\begin{aligned} &P_{to}(Power consumption with thermostat at OFF Mode) \end{aligned}$	kW	0,030	0,030	0,030
Other	$\begin{array}{c} P_{sb} \mbox{(Power consumption in Standby} \\ \mbox{Mode)} \end{array}$	kW	0,020	0,020	0,020
	P_{CK} (Electric crankcase heater model)	kW	0,000	0,000	0,000
	Q_{elec} (Daily electricity consumption)	kWh	/	1	/
	Q_{fuel} (Daily fuel consumption)	kWh	/	1	/

 $Details and precautions \, on \, in stallation, maintenance \, and \, assembly \, can \, be \, found \, in \, the \, use \, and \, in stallation \, manual.$ Data of the product data sheets according to the directive on energy labelling 2010/30/EC (EU) 811/2013.

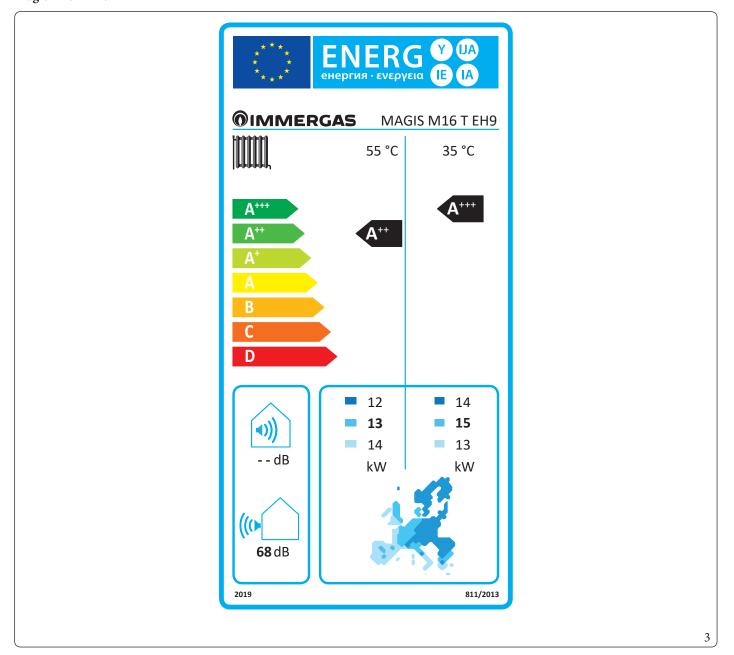
2.1 **PRODUCT LABELS**

$Mag is\,M12\,T\,EH9$





Magis M16 TEH9



TECHNICAL PARAMETERS

Model	MAGISM	112TEH9	H9					
Air/water heat pump		SI Low temperature heat pump					NO	
Water/water heat pump			NO	With Supplementary heater			SI	
Brine/water heat pump			NO	Mixed central heating device with heat pump	p:		NO	
Declared weather condition: MEDIUM								
The parameters are declared for the mediu	ım temperatu	re applica	ation.					
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit	
Rated heat output (*)	P _{rated}	11,6	kW	Room central heating seasonal energy efficiency	η_s	135,1	%	
Central heating capacity declared for a parture of 20°C and outdoor temperature Tj	rtialload at in	door tem _j	pera-	Central heating capacity declared for a partial ture of 20°C and outdoor temperature Tj	alloadatin	doortem	pera-	
T _i =-7 °C	Pdh	10,24	kW	T _i =-7°C	COPd	2,01	-	
T _i =+ 2 °C	Pdh	6,52	kW	T _i =+2 °C	COPd	3,44	-	
T _i =+7 °C	Pdh	4,36	kW	T _i =+7 °C	COPd	4,59	-	
T _i =+12 °C	Pdh	3,29	kW	T _i =+12 °C	COPd	6,05	-	
T_i = bivalent temperature	Pdh	10,24	kW	T_i = bivalent temperature	COPd	2,01	-	
T_i = operating limit temperature	Pdh	9,1	kW	T_i = operating limit temperature	COPd	1,79	-	
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-	
Bivalent temperature	$T_{\rm biv}$	-7	°C	For air/water heat pumps: Operating limit temperature	TOL	-10	°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 _{TOLp}	65	°C	
Power consumption in modes other than a	active mode			Additional heater				
OFF mode	P _{OFF}	0,020	kW	Rated heat output (*)	Psup	2,5	kW	
StandbyMode	P _{TO}	0,020	kW					
Thermostat OFF mode	P_{SB}	0,030	kW	Type of energy supplied	e	lectrical		
Crankcase heater mode electrical	P _{CK}	0,000	kW					
Otheritems								
Capacity control	V	ARIABLE	2	For air-water heat pumps: Rated air flow rate outdoors	-	4060	m³\ł	
Indoor/outdoor sound level	L_{wA}	-/65,0	dB	For water or brine-water heat pumps: Rated				
Annual energy consumption	Q _{HE}	6928	kWh	water or brine flow rate, heat exchanger outdoors	-	-	m³\ł	
For mixed central heating appliances with	a heat pump							
Stated load profile		-		Water central heating energy efficiency	$\eta_{ m wh}$	-	%	
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWł	
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ	
Contactinformation	Immerga	s S.p.A. vi	a Cisa Li	gure n.95				

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 $C_{\text{dh}} = 0.9$.

emperatu Symbol	reapplica	SI NO NO	Low temperature heat pump With Supplementary heater Mixed central heating device with heat pump			NO SI
	reapplica					SI
	re applica	NO	Mixed central heating device with heat pump			
	re applica		O Mixed central heating device with neat pump:			NO
	re applica					
Symbol		ation.				
	Value	Unit	Element	Symbol	Value	Unit
$\boldsymbol{P}_{\text{rated}}$	10,3	kW	Room central heating seasonal energy efficiency	η_{s}	117,7	%
loadatin	door temp	era-	Central heating capacity declared for a partia	lloadatin	door temp	oera-
,		1	ture of 20°C and outdoor temperature Tj			
Pdh	6,63	kW	$T_j = -7 ^{\circ}C$	COPd	2,63	-
Pdh	4,06	kW	$T_j = +2 ^{\circ}C$	COPd	3,60	-
Pdh	2,78	kW	$T_i = +7 ^{\circ}C$	COPd	4,54	-
Pdh	3,33	kW	$T_i = + 12 ^{\circ}\text{C}$	COPd	6,25	-
Pdh	8,41	kW	T _i =bivalent temperature	COPd	1,84	-
Pdh	4,19	kW	T_i = operating limit temperature	COPd	1,13	-
Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
T_{biv}	-15	°C	For air/water heat pumps: Operating limit temperature	TOL	-22	°C
P_{cych}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
C _{dh}	0,9	-	Heating water operation limit temperature	W _{TOLp}	65	°C
ve mode			Additionalheater			
P _{OFF}	0,020	kW	Rated heat output (*)	Psup	6,12	kW
	0,020	kW				
	0,030	kW	Type of energy supplied	e	lectrical	
	0,000	kW				
CK						
VA	ARIABLE	E.	For air-water heat pumps: Rated air flow rate outdoors	-	4060	m³\h
$L_{w_{\Delta}}$	-/-	dB	For water or brine-water heat pumps: Rated			
Q _{HE}	8420	kWh	water or brine flow rate, heat exchanger outdoors	-	-	m³\h
eat pump						
	-		Water central heating energy efficiency	$\eta_{ m wh}$	-	%
Q _{elec}	-	kWh	Daily fuel consumption		-	kWh
AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Immergas	S.p.A. vi	a Cisa Li	·			
	Pdh	Pdh 6,63 Pdh 4,06 Pdh 2,78 Pdh 2,78 Pdh 3,33 Pdh 8,41 Pdh 4,19 Pdh - C _{dh} 0,9 re mode P _{Cych} - P _{Cych} 0,020 P _{TO} 0,020 P _{SB} 0,030 P _{CK} 0,000 VARIABLE L _{WA} -/- Q _{HE} 8420 eat pump - Q _{elec} - AEC - Immergas S.p.A. via gand heating applia	Pdh 4,06 kW Pdh 2,78 kW Pdh 3,33 kW Pdh 8,41 kW Pdh 4,19 kW Pdh - kW Tbiv -15 °C Pcych - kW Cdh 0,99 - remode remode remode remode Poff 0,020 kW PsB 0,030 kW PCK 0,000 kW VARIABLE LWA -/- dB QHE 8420 kWh eat pump - c Qelec - kWh Immergas S.p.A. via Cisa Ligand heating appliances mix	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Central heating capacity declared for a partial load at indoor tempture of 20°C and outdoor temperature Tj

for heating. P_{designh} and the rated heat output of an additional heater P_{sup} is equal to the supple (**) If C_{dh} is not determined by measuring, the default degradation coefficient is $C_{\text{dh}} = 0.9$.

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Model	MAGISM	112TEH	9				
Air/water heat pump			SI	Low temperature heat pump			NO
Water/water heat pump			NO	With Supplementary heater			SI
Brine/water heat pump			NO	Mixed central heating device with heat pum	p:		NO
Declared weather condition: WARM							
The parameters are declared for the mediu	ım temperatu	re applica	ation.				
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	12,5	kW	Room central heating seasonal energy efficiency	η_s	173,8	%
Central heating capacity declared for a parture of 20°C and outdoor temperature Tj	tialload at in	doortem	pera-	Central heating capacity declared for a partial ture of 20°C and outdoor temperature Tj	alloadatin	doortemp	oera-
$T_i = -7 ^{\circ}C$	Pdh	-	kW	$T_i = -7 ^{\circ}C$	COPd	-	-
$T_i = +2 ^{\circ}C$	Pdh	12,07	kW	$T_i = +2 ^{\circ}C$	COPd	2,31	-
$T_i = +7 ^{\circ}C$	Pdh	8,04	kW	$T_i = +7 ^{\circ}C$	COPd	3,86	-
$T_i = + 12 ^{\circ}\text{C}$	Pdh	3,75	kW	$T_i = + 12 ^{\circ}C$	COPd	5,70	-
T _i =bivalent temperature	Pdh	8,04	kW	$T_i = bivalent temperature$	COPd	3,86	-
T _i = operating limit temperature	Pdh	12,07	kW	T _i = operating limit temperature	COPd	2,31	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T_{biv}	7	°C	For air/water heat pumps: Operating 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 _{TOLp}	65	°C
Power consumption in modes other than a	active mode			Additional heater	-		
OFF mode	P _{OFF}	0,020	kW	Rated heat output (*)	Psup	0,43	kW
Standby Mode	P _{TO}	0,020	kW				
Thermostat OFF mode	P_{SB}	0,030	kW	Type of energy supplied	e	lectrical	
Crankcase heater mode electrical	P _{CK}	0,000	kW				
Otheritems							
Capacity control	V	ARIABLE	3	For air-water heat pumps: Rated air flow rate outdoors	-	4060	m³\h
Indoor/outdoor sound level	L _{wa}	-/-	dB	For water or brine-water heat pumps: Rated			
Annual energy consumption	Q _{HE}	3780	kWh	water or brine flow rate, heat exchanger outdoors	-	-	m³\h
For mixed central heating appliances with	a heat pump						
Stated load profile		-		Water central heating energy efficiency	$\eta_{ m wh}$	-	%
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contactinformation	Immerga	s S.p.A. vi	a Cisa Li	gure n.95			
				xed with heat pump, the rated heat output P _{rated} equal to the supplementary heating capacity su		the design	ıload

 $[\]label{eq:continuous} 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.$

Model	MAGISN	114TEH9	9				,
Air/water heat pump			SI	Low temperature heat pump			NO
Water/water heat pump			NO	With Supplementary heater			SI
Brine/water heat pump			NO	Mixed central heating device with heat pump	p:		NO
Declared weather condition: MEDIUM							
The parameters are declared for the mediu:	m temperatu	re applica	ation.				
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	12,1	kW	Room central heating seasonal energy efficiency	η_s	135,6	%
Central heating capacity declared for a part	ialload at in	door temp	pera-	Central heating capacity declared for a partia	ılloadatin	door temp	oera-
ture of 20°C and outdoor temperature Tj			,	ture of 20°C and outdoor temperature Tj			r
T _j = - 7 °C	Pdh	10,68	kW	$T_j = -7 ^{\circ}C$	COPd	2,01	-
$T_j = + 2 ^{\circ}C$	Pdh	6,86	kW	$T_j = + 2 \degree C$	COPd	3,43	-
$T_i = +7 ^{\circ}C$	Pdh	4,63	kW	$T_i = +7 ^{\circ}C$	COPd	4,66	-
$T_i = + 12 ^{\circ}C$	Pdh	3,31	kW	$T_{i} = + 12 ^{\circ}C$	COPd	6,13	-
T _i = bivalent temperature	Pdh	10,68	kW	$T_i = bivalent temperature$	COPd	2,01	-
T_i = operating limit temperature	Pdh	9,19	kW	T_i = operating limit temperature	COPd	1,76	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T_{biv}	-7	°C	For air/water heat pumps: Operating limit temperature	TOL	-10	°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 _{TOLp}	65	°C
Power consumption in modes other than a	tive mode			Additional heater			`
OFFmode	P _{OFF}	0,020	kW	Rated heat output (*)	Psup	2,91	kW
Standby Mode Standby Mode	P _{TO}	0,020	kW				
Thermostat OFF mode	P _{SB}	0,030	kW	Type of energy supplied	e	electrical	
Crankcase heater mode electrical	P _{CK}	0,000	kW				
Otheritems	CR		J				
Capacity control	V	ARIABLE	E	For air-water heat pumps: Rated air flow rate outdoors	-	4060	m³\h
Indoor/outdoor sound level	L_{WA}	-/65,0	dB	For water or brine-water heat pumps: Rated			
Annual energy consumption	Q _{HE}	7203	kWh	water or brine flow rate, heat exchanger outdoors	-	-	m³∖h
For mixed central heating appliances with	a heat pump						
Stated load profile		-		Water central heating energy efficiency	$\eta_{ m wh}$	-	%
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contactinformation	Immerga	sS.p.A. vi	a Cisa Li	·			

for heating. P_{designh} and the rated heat output of an additional heater P_{sup} is equal to the supple (**) If C_{dh} is not determined by measuring, the default degradation coefficient is $C_{\text{dh}} = 0.9$.

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	114 T EH9					
		SI	Low temperature heat pump			NO
		NO	With Supplementary heater			SI
		NO	Mixed central heating device with heat pump):		NO
um temperatu	re applica	ation.				
Symbol	Value	Unit	Element	Element Symbol Value central heating device with heat pumps: η _s 118,9 al heating capacity declared for a partial load at indoor tempted for a	Unit	
P _{rated}	11,0	kW	Room central heating seasonal energy efficiency	η_s	118,9	%
rtial load at in	door tem _l	pera-		lloadatin	doortemp	era-
			<u> </u>			
Pdh	6,89	kW	$T_j = -7 ^{\circ}\text{C}$	COPd	2,66	-
Pdh	4,32	kW	$T_j = +2 ^{\circ}C$	COPd	3,66	-
Pdh	3,06	kW	$T_j = +7 ^{\circ}C$	COPd	4,72	-
Pdh	3,33	kW	$T_j = + 12 ^{\circ}C$	COPd	6,25	-
Pdh	8,94	kW	$T_i = bivalent temperature$	COPd	1,79	-
Pdh	4,2	kW	$T_i = operating limit temperature$	COPd	1,13	-
Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
$T_{\rm biv}$	-15	°C	For air/water heat pumps: Operating limit temperature	TOL	-22	°C
P _{cych}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
C _{dh}	0,9	-	Heating water operation limit temperature	W _{TOLp}	65	°C
active mode			Additional heater			
P _{OFF}	0,020	kW	Rated heat output (*)	Psup	6,80	kW
	0,020	kW				
	0,030	kW	Type of energy supplied	e	lectrical	
	0,000	kW				
VA	ARIABLE	3	For air-water heat pumps: Rated air flow rate outdoors	-	4060	m³\h
L _{wA}	-/-	dB	For water or brine-water heat pumps: Rated			
Q _{HE}	8867	kWh	water or brine flow rate, heat exchanger outdoors	-	-	m³∖h
1 a heat pump						
	-		Water central heating energy efficiency	$\eta_{ m wh}$	-	%
Q _{elec}	-	kWh	Daily fuel consumption	Q_{fuel}	-	kWh
AEC	-	kWh	Annualfuelconsumption		-	GJ
Immergas	s S.p.A. vi	a Cisa Li	gure n.95			
ting and heati	ing applia	nces miz	xed with heat pump, the rated heat output P	is equal to t	the design	ıload
	Symbol Prated rtialload at in Pdh Pdh Pdh Pdh Pdh Pdh Pdh Pdh Pdh Pd	Symbol Value Prated 11,0 Plant	NO NO NO NO NO NO NO NO	um temperature application. Symbol Value Unit Element	NO With Supplementary heater	NO With Supplementary heater

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 $C_{\text{dh}} = 0.9$.

mperatu ymbol P _{rated}	re applica Value	SI NO NO	Low temperature heat pump With Supplementary heater Mixed central heating device with heat pump	D;		NO SI NO
ymbol		NO);		
ymbol		ation.	Mixed central heating device with heat pump):		NO
ymbol		i				
ymbol		i				
	Value	Unit				
P _{rated}		Onne	Element	Symbol	Value	Unit
	14,17	kW	Room central heating seasonal energy efficiency	η_{s}	174,9	%
oadatino	door temp	era-	Central heating capacity declared for a partia	lloadatin	door temp	era-
			ture of 20°C and outdoor temperature Tj			
Pdh	-	kW	$T_j = -7 ^{\circ}C$	COPd	-	-
Pdh	13,04	kW	$T_j = +2 ^{\circ}C$	COPd	2,20	_
Pdh	9,11	kW	$T_j = +7 ^{\circ}C$	COPd	3,89	-
Pdh	4,08	kW	$T_i = + 12 ^{\circ}C$	COPd	5,90	-
Pdh	9,11	kW	T _i =bivalent temperature	COPd	3,89	-
Pdh	13,04	kW	T_i = operating limit temperature	COPd	2,2	-
Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
T_{biv}	7	°C	For air/water heat pumps: Operating limit temperature	TOL	2	°C
P _{cych}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
C _{dh}	0,9	-	Heating water operation limit temperature	W _{TOLp}	65	°C
mode			Additionalheater			
P _{OFF}	0,020	kW	Rated heat output (*)	Psup	1,13	kW
	0,020	kW				
	0,030	kW	Type of energy supplied	e	lectrical	
	0,000	kW				
CR [
VA	RIABLE	ļ.	For air-water heat pumps: Rated air flow rate outdoors	-	4060	m³\h
L _{wA}	-/-	dB	For water or brine-water heat pumps: Rated			
Q _{HE}	4262	kWh	water or brine flow rate, heat exchanger outdoors	-	-	m³∖h
tpump						
	-		Water central heating energy efficiency	$\eta_{ m wh}$	-	%
Q _{elec}	-	kWh	Daily fuel consumption		-	kWh
AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
nmergas	S.p.A. via	a Cisa Li	·			
	Pdh Pdh Pdh Pdh Pdh Pdh Pdh Pdh Pdh Pcych Pcych Pcych Poff PTO PsB PCK VA Lwa QHE tpump Qelec AEC mmergas nd heati	Pdh 13,04 Pdh 9,11 Pdh 4,08 Pdh 9,11 Pdh 13,04 Pdh - T _{biv} 7 P _{cych} - C _{dh} 0,9 mode P _{Cych} P _{TO} 0,020 P _{SB} 0,030 P _{CK} 0,000 VARIABLE L _{WA} -/- Q _{HE} 4262 tpump - Q _{elec} - AEC - mergas S.p.A. via nd heating applia	Pdh 13,04 kW Pdh 9,11 kW Pdh 4,08 kW Pdh 9,11 kW Pdh 13,04 kW Pdh - kW Tbiv 7 °C Pcych - kW Cdh 0,99 - mode Poff 0,020 kW PTO 0,020 kW PCK 0,000 kW VARIABLE LWA -/- dB QHE 4262 kWh tpump - - kWh AEC - kWh nmergas S.p.A. via Cisa Ligada deating appliances mix - -	Pdh 13,04 kW T _i =+2°C Pdh 9,11 kW T _j =+7°C Pdh 4,08 kW T _j =+12°C Pdh 9,11 kW T _j =+12°C Pdh 9,11 kW T _j =bivalent temperature Pdh 13,04 kW T _j =operating limit temperature Pdh 13,04 kW T _j =operating limit temperature Pdh - kW For air-water heat pumps: Tj=-15°C T _{biv} 7 °C For air/water heat pumps: Operating limit temperature P _{cych} - kW Efficiency of cycle range C _{dh} 0,9 - Heating water operation limit temperature Mode Additional heater P _{OFF} 0,020 kW Rated heat output (*) P _{TO} 0,020 kW P _{SB} 0,030 kW Type of energy supplied VARIABLE For air-water heat pumps: Rated air flow rate outdoors L _{WA} -/- dB For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors tpump - Water central heating energy efficiency Q _{elec} - kWh Daily fuel consumption nmergas S.p.A. via Cisa Ligure n.95 Ind heating appliances mixed with heat pump, the rated heat output P _{rated}	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$

for heating. P_{designh} and the rated heat output of an additional heater P_{sup} is equal to the supple (**) If C_{dh} is not determined by measuring, the default degradation coefficient is $C_{\text{dh}} = 0.9$.

Model	MAGISM	116TEH9	9				
Air/water heat pump			SI	Low temperature heat pump			NO
Water/water heat pump			NO	With Supplementary heater			SI
Brine/water heat pump			NO	Mixed central heating device with heat pump	p:		NO
Declared weather condition: MEDIUM							
The parameters are declared for the mediu	ım temperatu	re applica	ation.				
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	13,0	kW	Room central heating seasonal energy efficiency	η_{s}	133,2	%
Central heating capacity declared for a par	tialload at in	door tem _l	pera-	Central heating capacity declared for a partia	alloadatin	doortemp	pera-
ture of 20°C and outdoor temperature Tj	D 11	11.50	1 747	ture of 20°C and outdoor temperature Tj	CODI	1.00	1
$T_j = -7 ^{\circ}\text{C}$	Pdh	11,52	kW	$T_{j} = -7 ^{\circ}C$	COPd	1,99	-
$T_j = +2 ^{\circ}\text{C}$	Pdh	7,18	kW	$T_j = +2 ^{\circ}C$	COPd	3,34	-
$T_{j} = +7 ^{\circ}\text{C}$	Pdh	4,67	kW	$T_j = +7 ^{\circ}\text{C}$	COPd	4,61	-
$T_j = +12 ^{\circ}\text{C}$	Pdh	3,31	kW	$T_j = + 12 ^{\circ}\text{C}$	COPd	6,07	-
T _j = bivalent temperature	Pdh	11,52	kW	T _i = bivalent temperature	COPd	1,99	-
T_j = operating limit temperature	Pdh	10,33	kW	T_j = operating limit temperature	COPd	1,8	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	$T_{\rm biv}$	-7	°C	For air/water heat pumps: Operating limit temperature	TOL	-10	°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 _{TOLp}	65	°C
Power consumption in modes other than a	active mode			Additional heater			
OFF mode	P _{OFF}	0,020	kW	Rated heat output (*)	Psup	2,67	kW
Standby Mode	P _{TO}	0,020	kW				
Thermostat OFF mode	P_{SB}	0,030	kW	Type of energy supplied	e	lectrical	
Crankcase heater mode electrical	P _{CK}	0,000	kW				
Otheritems	,				,		
Capacity control	V	ARIABLE	3	For air-water heat pumps: Rated air flow rate outdoors	-	4650	m³\h
Indoor/outdoor sound level	L_{WA}	-/68,0	dB	For water or brine-water heat pumps: Rated			
Annual energy consumption	Q _{HE}	7896	kWh	water or brine flow rate, heat exchanger outdoors	-	-	m³\h
For mixed central heating appliances with	a heat pump						
Stated load profile		-		Water central heating energy efficiency	$\eta_{ m wh}$	-	%
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	_	kWh	Annual fuel consumption	AFC	-	GJ
Contactinformation	Immerga	s S.p.A. vi	a Cisa Li	gure n.95			
				xed with heat pump, the rated heat output P _{rated} equal to the supplementary heating capacity su		the design	nload

 $[\]label{eq:continuous} 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.$

Model	MAGISM	116 T EH9					,
Air/water heat pump			SI	Low temperature heat pump			NO
Water/water heat pump			NO	With Supplementary heater			SI
Brine/water heat pump			NO	Mixed central heating device with heat pump	p:		NO
Declared weather condition: COLD							
The parameters are declared for the mediu:	m temperatu	re applica	ation.				
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	11,8	kW	Room central heating seasonal energy efficiency	η_s	121,8	%
Central heating capacity declared for a part	ialload at in	door tem _j	pera-	Central heating capacity declared for a partia	lload at in	door tem _l	era-
ture of 20°C and outdoor temperature Tj			,	ture of 20°C and outdoor temperature Tj			r
T _j = - 7 °C	Pdh	7,64	kW	$T_j = -7 ^{\circ}C$	COPd	2,65	-
$T_j = + 2 ^{\circ}C$	Pdh	4,42	kW	$T_j = + 2 \degree C$	COPd	3,79	-
$T_i = +7 ^{\circ}C$	Pdh	2,97	kW	$T_i = +7 ^{\circ}C$	COPd	4,81	-
$T_i = + 12 ^{\circ}C$	Pdh	3,43	kW	$T_{i} = + 12 ^{\circ}C$	COPd	6,29	-
T _i = bivalent temperature	Pdh	9,61	kW	$T_i = bivalent temperature$	COPd	1,86	-
T_i = operating limit temperature	Pdh	5,21	kW	T_i = operating limit temperature	COPd	1,23	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T_{biv}	-15	°C	For air/water heat pumps: Operating limit temperature	TOL	-22	°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 _{TOLp}	65	°C
Power consumption in modes other than a	tive mode			Additional heater			`
OFFmode	P _{OFF}	0,020	kW	Rated heat output (*)	Psup	6,59	kW
Standby Mode Standby Mode	P _{TO}	0,020	kW				
Thermostat OFF mode	P _{SB}	0,030	kW	Type of energy supplied	e	electrical	
Crankcase heater mode electrical	P _{CK}	0,000	kW				
Otheritems	CR		J				
Capacity control	V	ARIABLE	E	For air-water heat pumps: Rated air flow rate outdoors	-	4650	m³\h
Indoor/outdoor sound level	L_{WA}	-/-	dB	For water or brine-water heat pumps: Rated			
Annual energy consumption	Q _{HE}	9310	kWh	water or brine flow rate, heat exchanger outdoors	-	-	m³∖h
For mixed central heating appliances with	a heat pump						
Stated load profile		-		Water central heating energy efficiency	$\eta_{ m wh}$	-	%
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
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for heating. P_{designh} and the rated heat output of an additional heater P_{sup} is equal to the supple (**) If C_{dh} is not determined by measuring, the default degradation coefficient is $C_{\text{dh}} = 0.9$.

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Model	MAGISM	116TEH9	9				
Air/water heat pump			SI	Low temperature heat pump			NO
Water/water heat pump			NO	With Supplementary heater			SI
Brine/water heat pump			NO	Mixed central heating device with heat pump	p:		NO
Declared weather condition: WARM							
The parameters are declared for the mediur	n temperatu	re applica	ation.				
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
Rated heat output (*)	P _{rated}	14,17	kW	Room central heating seasonal energy efficiency	η_s	175,8	%
Central heating capacity declared for a part	ial load at in	doortemj	pera-	Central heating capacity declared for a partia	alloadatin	doortemp	oera-
ture of 20°C and outdoor temperature Tj		1		ture of 20°C and outdoor temperature Tj	1		
$T_j = -7$ °C	Pdh	-	kW	$T_j = -7$ °C	COPd	-	-
$T_j = + 2 ^{\circ}C$	Pdh	13,38	kW	$T_j = + 2 ^{\circ}C$	COPd	2,29	-
$T_j = +7 ^{\circ}C$	Pdh	9,11	kW	$T_j = +7 ^{\circ}C$	COPd	3,89	-
$T_j = + 12 ^{\circ}\text{C}$	Pdh	4,06	kW	$T_j = + 12 ^{\circ}\text{C}$	COPd	5,86	-
T_i = bivalent temperature	Pdh	9,11	kW	$T_i = bivalent temperature$	COPd	3,89	-
T_i = operating limit temperature	Pdh	13,38	kW	T _i = operating limit temperature	COPd	2,29	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalenttemperature	T _{biv}	7	°C	For air/water heat pumps: Operating 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 _{TOLp}	65	°C
Power consumption in modes other than ac				Additional heater			
OFF mode	P _{OFF}	0,020	kW	Rated heat output (*)	Psup	0,79	kW
Standby Mode	P _{TO}	0,020	kW				
Thermostat OFF mode	P _{SB}	0,030	kW	Type of energy supplied	e	lectrical	
Crankcase heater mode electrical	P _{CK}	0,000	kW	1			
Otheritems							
Capacity control	V	ARIABLE	<u> </u>	For air-water heat pumps: Rated air flow rate outdoors	-	4650	m³\h
Indoor/outdoor sound level	L_{WA}	-/-	dB	For water or brine-water heat pumps: Rated			
Annual energy consumption	Q _{HE}	4236	kWh	water or brine flow rate, heat exchanger outdoors	-	-	m³\h
For mixed central heating appliances with a							
Stated load profile				Water central heating energy efficiency	$\eta_{ m wh}$	_	%
Daily electrical power consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annualfuelconsumption	AFC	-	GJ
Contactinformation	Immergas	s S.p.A. vi	a Cisa Li	gure n.95			
				xed with heat pump, the rated heat output P _{rated}	•	he 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 $C_{\text{dh}} = 0.9$.

4 INFORMATION REQUIREMENTS FOR SPACE CHILLERS

In formation requirements for space chillers										
Model			MAGISM12TEH9							
Heat exchanger:			Air-Water							
Type:				Steam compression cycl	e					
Compressor start-up:				Electric motor						
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit			
Rated cooling capacity	P _{rated,c}	11,5	kW	Space heating seasonal energy efficiency	$\eta_{s,c}$	193,0	%			
Cooling capacity declared for partial load at Tj	a given outo	loor temp	erature	Cooling capacity declared for partial load at Tj	a given outo	loor temp	eratur			
Tj=+35°C	P_{dc}	11,50	kW	Tj=+35°C	EER,	2,75	-			
Tj=+30°C	P _{dc}	8,76	kW	Tj=+30°C	EER,	3,93	-			
Tj=+25°C	P _{dc}	5,81	kW	Tj=+25°C	EER,	5,73	-			
Tj=+20°C	P _{dc}	2,63	kW	Tj=+20°C	EER,	6,75	-			
	uc uc		1	, ,	, u					
Degradation coefficient for chillers (*)	C _{dc}	0,9	-							
Power consumption in modes other than "a	active mod	e"								
OFFmode	P _{OFF}	0,020	kW	Crankcase heater mode electrical	P_{CK}	0,000	kW			
Thermostat OFF mode	P _{TO}	0,010	kW	Standby Mode	P_{SB}	0,020	kW			
Otheritems										
Capacity control	VA	ARIABLE	3	For air-water emergency chillers: air flow		4060	m³∖h			
Sound power level, indoors/outdoors	L_{WA}	-\65	dB	rate, measured outdoors	-	4000	111-/11			
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}	neaccenanger						
Standard rating conditions used	Lowtemp	erature a _l	pplicatio	n						
Contactinformation	Immergas	S.p. A. vi	a Cisa Lig	guren.95						

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In formation requirements for space chillers											
Model				MAGISM12TEH9							
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}	12,0	kW	Space heating seasonal energy efficiency	$\eta_{s,c}$	279,7	%				
Cooling capacity declared for partial load at: Tj	a given outo	loor temp	erature	Cooling capacity declared for partial load at Tj	a given outo	loor temp	eratur				
Tj=+35°C	P _{dc}	12,00	kW	Tj=+35°C	EER _d	3,95	-				
Tj=+30°C	P _{dc}	9,21	kW	Tj=+30°C	EER,	5,50	-				
Tj=+25°C	P _{dc}	5,74	kW	Tj=+25°C	EER _d	8,66	-				
Tj=+20°C	P _{dc}	3,33	kW	Tj=+20°C	EER _d	10,07	-				
Degradation coefficient for chillers (*)	C _{dc}	0,9	-								
Power consumption in modes other than ``a	active mod	e"									
OFF mode	P _{OFF}	0,020	kW	Crankcase heater mode electrical	P_{CK}	0,000	kW				
Thermostat OFF mode	P _{TO}	0,010	kW	Standby Mode	P_{SB}	0,020	kW				
Otheritems											
Capacity control	V	ARIABLE	E	For air-water emergency chillers: air flow		4060	m³∖h				
Sound power level, indoors/outdoors	L_{WA}	-\64	dB	rate, measured outdoors	-	4060	m ^s \n				
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}	neat exchanger							
Standard rating conditions used	Mediumt	emperatu	ıre applio	cation							
Contactinformation	Immergas	S.p.A. vi	a Cisa Li	gure n.95							

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Information requirements for space chillers			1								
Model	-		MAGISM14TEH9								
Heat exchanger:			Air-Water								
Type:				Steam compression cycle							
Compressor start-up:			ļ	Electric motor							
			,		,		,				
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit				
Rated cooling capacity	P _{rated,c}	12,4	kW	Space heating seasonal energy efficiency	$\eta_{s,c}$	190,8	%				
Cooling capacity declared for partial load at	a given outo	doortemp	erature								
Tj				Tj	T		1				
Tj=+35°C	P _{dc}	12,40	kW	Tj=+35°C	EER _d	2,50	-				
Tj = +30°C	P _{dc}	9,41	kW	Tj=+30°C	EER _d	3,85	-				
Tj=+25°C	P_{dc}	6,16	kW	Tj=+25°C	EER _d	5,80	-				
Tj=+20°C	P_{dc}	2,63	kW	Tj=+20°C	EER _d	6,74	-				
Degradation coefficient for chillers (*)	C_{dc}	0,9	-								
Power consumption in modes other than ``a	active mod	e"									
OFFmode	P _{OFF}	0,020	kW	Crankcase heater mode electrical	P_{CK}	0,000	kW				
Thermostat OFF mode	P _{TO}	0,010	kW	Standby Mode	P_{SB}	0,020	kW				
Otheritems											
Capacity control	VA	ARIABLE	E	For air-water emergency chillers: air flow		4060	m³\h				
Sound power level, indoors/outdoors	L_{WA}	-\65	dB	rate, measured outdoors	-	4000	III \II				
Emissions of nitrogen oxides (if applicable)	NO _x (**)	1	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}	neatexchanger							
Standard rating conditions used	Lowtemp	erature aj	pplicatio	n							
Contactinformation	Immergas	sS n A vi	a Cisa Lio	guren 95							

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In formation requirements for space chillers											
Model				MAGIS M14 T EH9							
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}	13,5	kW	Space heating seasonal energy efficiency	$\eta_{s,c}$	272,5	%				
Cooling capacity declared for partial load at a Tj	a given outo	loor temp	erature	Cooling capacity declared for partial load at Tj	a given outo	loor temp	eratur				
Tj=+35°C	P _{dc}	13,50	kW	Tj=+35°C	EER,	3,61	-				
Tj = +30°C	P _{dc}	10,20	kW	Tj=+30°C	EER,	5,26	-				
Tj=+25°C	P _{dc}	6,57	kW	Tj=+25°C	EER,	8,45	-				
Tj=+20°C	P _{dc}	3,33	kW	Tj = +20°C	EER _d	10,07	-				
	, de				,						
Degradation coefficient for chillers (*)	C _{dc}	0,9	-								
Power consumption in modes other than ``a	active mod	e"									
OFF mode	P _{OFF}	0,020	kW	Crankcase heater mode electrical	P_{CK}	0,000	kW				
Thermostat OFF mode	P _{TO}	0,010	kW	Standby Mode	P_{SB}	0,020	kW				
Otheritems											
Capacity control	VA	ARIABLE		For air-water emergency chillers: air flow		4060	3) 1				
Sound power level, indoors/outdoors	L_{WA}	-\64	dB	rate, measured outdoors	-	4060	m³\h				
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	-	-	m³\h				
GWP of refrigerant	-	675	kg CO _{2eq}	heat exchanger							
Standard rating conditions used	Medium t	emperatu	ıreapplio	cation							
Contactinformation	Immergas	S.p.A. vi	a Cisa Li	gure n.95							

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Information requirements for space chillers										
Model			MAGISM16TEH9							
Heat exchanger:			Air-Water							
Туре:			Steam compression cycle							
Compressor start-up:				Electric motor						
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit			
Rated cooling capacity	P _{rated,c}	14,0	kW	Space heating seasonal energy efficiency	$\eta_{s,c}$	183,7	%			
Cooling capacity declared for partial load at a Tj	a given outo	doortemp	erature							
Tj=+35°C	P _{dc}	14,00	kW	Tj=+35°C	EER,	2,50	-			
Tj=+30°C	P _{dc}	10,68	kW	Tj=+30°C	EER,	3,63	-			
Tj=+25°C	P _{dc}	6,76	kW	Tj=+25°C	EER,	5,27	-			
Tj=+20°C	P _{dc}	3,41	kW	Tj=+20°C	EER,	7,29	-			
	<u> </u>	ı			1 4					
Degradation coefficient for chillers (*)	C_{dc}	0,9	-							
Power consumption in modes other than ``a	active mod	e"								
OFF mode	P _{OFF}	0,020	kW	Crankcase heater mode electrical	P _{CK}	0,000	kW			
Thermostat OFF mode	P _{TO}	0,010	kW	Standby Mode	P_{SB}	0,020	kW			
Otheritems										
Capacity control	VA	ARIABLE	3	For air-water emergency chillers: air flow		4650	m³\h			
Sound power level, indoors/outdoors	L _{wa}	-\69	dB	rate, measured outdoors	-	4030	III \II			
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}	incareactioninger						
Standard rating conditions used	Lowtemp	erature a _l	pplicatio	on						
Contactinformation	Immergas	s S.p.A. vi	a Cisa Li	gure n.95						

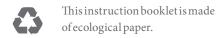
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In formation requirements for space chillers											
Model				MAGISM16TEH9							
Heat exchanger:			Air-Water								
Type:				Steam compression cycle							
Compressor start-up:				Electric motor							
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit				
Rated cooling capacity	P _{rated,c}	14,2	kW	Space heating seasonal energy efficiency	$\eta_{s,c}$	265,0	%				
Cooling capacity declared for partial load at a	a given outo	loor temp	erature	Cooling capacity declared for partial load at Tj	a given outo	loor temp	eratur				
Tj=+35°C	P _{dc}	14,20	kW	Tj=+35°C	EER _d	3,61	-				
Tj = +30°C	P _{dc}	11,42	kW	Tj=+30°C	EER,	5,14	-				
Tj=+25°C	P _{dc}	7,27	kW	Tj=+25°C	EER _d	7,83	-				
Tj = +20°C	P _{dc}	3,40	kW	Tj = +20°C	EER _d	10,35	-				
$Degradation coefficient for chillers (^*)$	C_{dc}	0,9	-								
Power consumption in modes other than ``a	active mod	e"									
OFF mode	P _{OFF}	0,020	kW	Crankcase heater mode electrical	P_{CK}	0,000	kW				
Thermostat OFF mode	P _{TO}	0,010	kW	Standby Mode	P_{SB}	0,020	kW				
Otheritems											
Capacity control	V	ARIABLE	E	For air-water emergency chillers: air flow		4650	m³∖h				
Sound power level, indoors/outdoors	L_{WA}	-\69	dB	rate, measured outdoors	-	4650	111-/11				
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	-	-	m³\h				
GWP of refrigerant	-	675	kg CO _{2eq}	heat exchanger							
Standard rating conditions used	Mediumt	emperatı	ıreappli	cation							
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${\bf TECHNICAL\, DATA\, TABLE\, ON\, ENVIRONMENTAL\, CONDITIONS}$

Conditions (°C)		MAGISM12T EH9	MAGISM14T EH9	MAGISM16T EH9
Room Temperature: 35/24 Water Temperature: 12/7	Capacity (kW)	11,5	12,4	14,0
	Absorbed power (kW)	4,18	4,96	5,6
	EER/COP(/)	2,75	2,5	2,5
Room Temperature: 35/24 Water Temperature: 23/18	Capacity (kW)	12,0	13,5	14,2
	Absorbed power (kW)	3,04	3,74	3,94
	EER/COP(/)	3,95	3,61	3,61
Room Temperature: 7/6 Water Temperature: 30/35	Capacity (kW)	11,7	14,5	15,9
	Absorbed power (kW)	2,36	3,15	3,53
	EER/COP(/)	4,95	4,6	4,5
Room Temperature: 2/1 Water Temperature: 30/35	Capacity (kW)	9,20	11,00	13,00
	Absorbed power (kW)	2,36	3,06	3,77
	EER/COP(/)	3,90	3,60	3,45
Room Temperature: -7/-8 Water Temperature: 30/35	Capacity (kW)	10,00	12,00	13,10
	Absorbed power (kW)	3,33	4,21	4,85
	EER/COP(/)	3,00	2,85	2,70
Room Temperature: 7/6 Water Temperature: 40/45	Capacity(kW)	12,3	14,1	16,0
	Absorbed power (kW)	3,32	3,92	4,57
	EER/COP(/)	3,7	3,6	3,5
Room Temperature: 2/1 Water Temperature: 40/45	Capacity(kW)	10,60	11,50	12,70
	Absorbed power (kW)	3,53	4,04	4,46
	EER/COP(/)	3,00	2,85	2,85
Room Temperature: -7/-8 Water Temperature: 40/45	Capacity(kW)	10,20	11,70	12,80
	Absorbed power (kW)	4,25	4,98	5,69
	EER/COP(/)	2,40	2,35	2,25
Room Temperature: 7/6 Water Temperature: 47/55	Capacity(kW)	11,9	13,8	16,0
	Absorbed power (kW)	3,9	4,68	5,61
	EER/COP(/)	3,05	2,95	2,85
Room Temperature: 2/1 Water Temperature: 47/55	Capacity(kW)	11,30	12,40	13,30
	Absorbed power (kW)	4,52	5,06	5,54
	EER/COP(/)	2,50	2,45	2,40
Room Temperature: -7/-8 Water Temperature: 47/55	Capacity(kW)	9,80	11,00	12,50
	Absorbed power (kW)	4,78	5,37	6,25
	EER/COP(/)	2,05	2,05	2,00



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