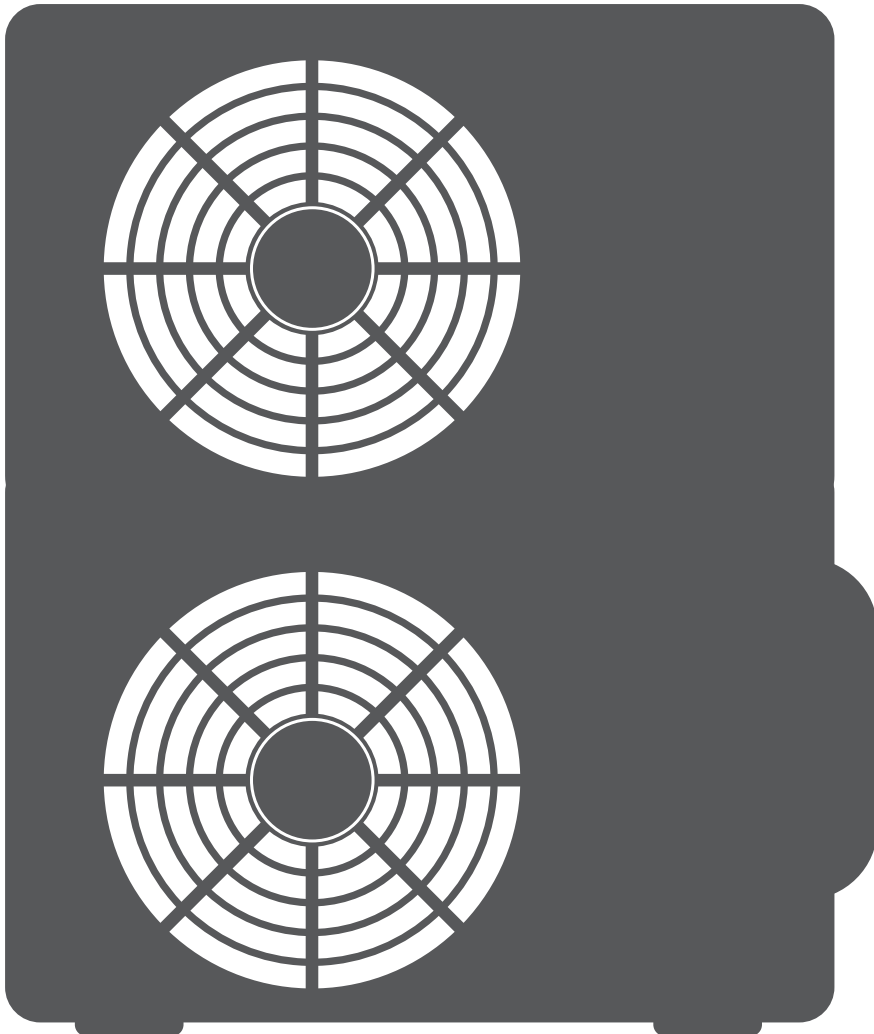


# AIR CONDITIONING SYSTEMS

## AIR-TO-WATER HEAT PUMP - MONOBLOCK

### • PRODUCT FICHE



**MODELS:**  
ATM22T  
ATM30T



### Product fiche 1

Heat pump space heater	Matrix	unit	ATM22T	ATM30T
Indoor unit sound power (*)	[dB(A)]	/	/	/
Outdoor unit sound power (*)	[dB(A)]	73	77	77
Capacity of the back-up heater integrated in the unit	[kW]	0	0	0
Heat pump	Y/N	No	No	No
Space heating	Energy efficiency class 35°C (Low temp. app.)	-	A+++	A++
Space heating	Energy efficiency class 55°C (Medium temp. app.)	-	A++	A+
Average climate (Design temperature= -10°C)				
	Prated(declared heating capacity) @-10°C	[kW]	22	29
Space heating 35°C	Seasonal space heating efficiency(ηs)	[%]	178	165
	Annual energy consumption	[kWh]	10,180	14,165
	Prated(declared heating capacity) @-10°C	[kW]	22	30
Space heating 55°C	Seasonal space heating efficiency(ηs)	[%]	126	123
	Annual energy consumption	[kWh]	14,390	19,316
Part load conditions space heating average climate low temperature application				
	Pdh(declared heating capacity)	[kW]	19.73	21.95
(A) condition (-7°C)	COPd (declared COP)	-	2.74	2.53
	Cdh(degradation coefficient)	-	0.90	0.90
(B) condition (2°C)	Pdh(declared heating capacity)	[kW]	12.04	16.22
	COPd (declared COP)	-	4.40	4.12
	Cdh(degradation coefficient)	-	0.90	0.90
(C) condition (7°C)	Pdh(declared heating capacity)	[kW]	8.02	10.69
	COPd (declared COP)	-	6.24	6.21
	Cdh(degradation coefficient)	-	0.90	0.90
(D) condition (12°C)	Pdh(declared heating capacity)	[kW]	3.81	4.59
	COPd (declared COP)	-	7.0	7.14
	Cdh(degradation coefficient)	-	0.90	0.90

### Product fiche 2

Heat pump space heater	Matrix	unit	ATM22T	ATM30T
(E) Tol(temperature operating limit)	Tol (temperature operating limit)	[°C]	-10	-10
	Pdh (declared heating capacity)	[kW]	20.34	20.43
	COPd (declared COP)	-	2.35	2.34
	WTOL (Heating water Operation Limit)	[°C]	60	60
	Tbiv	[°C]	-7	-5
(F) Tivalent temperature	Pdh (declared heating capacity)	[kW]	19.73	23.57
	COPd (declared COP)	-	2.74	2.70
Supplementary capacity at P_design	Psup (@Tdesign:-10°C)	[kW]	1.97	8.75
Part load conditions space heating average climate medium temperature application				
	Pdh (declared heating capacity)	[kW]	19.84	20.12
(A) condition (-7°C)	COPd (declared COP)	-	1.74	1.63
	Cdh(degradation coefficient)	-	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	11.91	16.50
	COPd (declared COP)	-	3.30	3.09
	Cdh(degradation coefficient)	-	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	7.99	10.51
	COPd (declared COP)	-	4.62	4.73
	Cdh(degradation coefficient)	-	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.62	4.65
	COPd (declared COP)	-	5.20	5.85
	Cdh(degradation coefficient)	-	0.90	0.90
(E) Tol(temperature operating limit)	Tol (temperature operating limit)	[°C]	-10	-10
	Pdh (declared heating capacity)	[kW]	13.83	13.83
	COPd (declared COP)	-	1.08	1.07
	WTOL (Heating water Operation Limit)	[°C]	60	60
	Tbiv	[°C]	-7	-5
(F) Tivalent temperature	Pdh (declared heating capacity)	[kW]	19.84	23.98
	COPd (declared COP)	-	1.74	2.02
Supplementary capacity at P_design	Psup (@Tdesign:-10°C)	[kW]	8.6	15.86

**Product fiche 3**

Heat pump space heater		<b>Matrix</b>		unit	ATM22T	ATM30T
Colder climate (Design temperature = -22°C)						
Space heating 35°C	Prated (declared heating capacity) @ -22°C	[kW]	21			29
	Seasonal space heating efficiency (ηs)	[%]	146			138
	Annual energy consumption	[kWh]	14,179			20,390
Space heating 55°C	Prated (declared heating capacity) @ -22°C	[kW]	22			30
	Seasonal space heating efficiency (ηs)	[%]	102			100
	Annual energy consumption	[kWh]	21,067			29,238
Part load conditions space heating colder climate low temperature application						
condition (-15°C)	Pdh (declared heating capacity)	[kW]	17.46			18.61
	COPd (declared COP)	-	2.36			2.24
	Cdh(degradation coefficient)	-	0.90			0.90
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	13.30			18.49
	COPd (declared COP)	-	3.12			3.07
	Cdh(degradation coefficient)	-	0.90			0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	8.25			11.88
	COPd (declared COP)	-	4.42			4.42
	Cdh(degradation coefficient)	-	0.90			0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	5.45			7.53
	COPd (declared COP)	-	5.87			6.15
	Cdh(degradation coefficient)	-	0.90			0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.98			4.11
	COPd (declared COP)	-	7.19			6.87
	Cdh(degradation coefficient)	-	0.90			0.90
(E) Tol(temperature operating limit)	Tol (temperature operating limit)	[°C]	-22			-22
	Pdh (declared heating capacity)	[kW]	13.27			13.17
	COPd (declared COP)	-	1.69			1.67
(F) Tivalent temperature	WTOL (Heating water Operation Limit)	[°C]	37			37
	Tbiv	[°C]	-15			-10
	Pdh (declared heating capacity)	[kW]	17.46			19.93
Supplementary capacity at P_design	Psup (@Tdesign:-22°C)	[kW]	2.36			2.44
Warmer climate (Design temperature =2°C)						
Supplementary capacity at P_design						
Warmer climate (Design temperature =2°C)						
Space heating 35°C	Prated (declared heating capacity) @ 2°C	[kW]	22			30
	Seasonal space heating efficiency (ηs)	[%]	234			213
	Annual energy consumption	[kWh]	4,945			7,540
Space heating 55°C	Prated (declared heating capacity) @ 2°C	[kW]	22			30
	Seasonal space heating efficiency (ηs)	[%]	161			163
	Annual energy consumption	[kWh]	7,180			9,580

**Product fiche 4**

Heat pump space heater		<b>Matrix</b>		unit	ATM22T	ATM30T
Part load conditions space heating colder climate medium temperature application						
condition (-15°C)	Pdh (declared heating capacity)	[kW]	13.78			13.06
	COPd (declared COP)	-	1.24			1.18
	Cdh(degradation coefficient)	-	0.90			0.90
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	13.53			18.40
	COPd (declared COP)	-	2.07			2.10
	Cdh(degradation coefficient)	-	0.90			0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	8.61			11.23
	COPd (declared COP)	-	3.70			3.51
	Cdh(degradation coefficient)	-	0.90			0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	5.21			7.42
	COPd (declared COP)	-	4.49			5.18
	Cdh(degradation coefficient)	-	0.90			0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.74			3.64
	COPd (declared COP)	-	5.76			5.73
	Cdh(degradation coefficient)	-	0.90			0.90
(E) Tol(temperature operating limit)	Tol (temperature operating limit)	[°C]	-15			-15
	Pdh (declared heating capacity)	[kW]	13.78			13.06
	COPd (declared COP)	-	1.24			1.18
(F) Tivalent temperature	WTOL (Heating water Operation Limit)	[°C]	50			50
	Tbiv	[°C]	-7			-7
	Pdh (declared heating capacity)	[kW]	13.53			18.40
Supplementary capacity at P_design	Psup (@Tdesign:-22°C)	[kW]	2.07			2.10
Warmer climate (Design temperature =2°C)						
Supplementary capacity at P_design						
Warmer climate (Design temperature =2°C)						
Space heating 35°C	Prated (declared heating capacity) @ 2°C	[kW]	22			30
	Seasonal space heating efficiency (ηs)	[%]	234			213
	Annual energy consumption	[kWh]	4,945			7,540
Space heating 55°C	Prated (declared heating capacity) @ 2°C	[kW]	22			30
	Seasonal space heating efficiency (ηs)	[%]	161			163
	Annual energy consumption	[kWh]	7,180			9,580

**Product fiche 5**

Heat pump space heater		<b>Matrix</b>		unit	ATM22T	ATM30T
Part load conditions space heating warmer climate low temperature application						
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	21.81			26.29
	COPd (declared COP)	-	3.31			2.94
(C) condition (7°C)	Cdh(degradation coefficient)	-	0.90			0.90
	Pdh (declared heating capacity)	[kW]	14.08			19.57
	COPd (declared COP)	-	5.20			4.75
	Cdh(degradation coefficient)	-	0.90			0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	6.44			8.90
	COPd (declared COP)	-	7.50			7.53
(E) ToI(temperature operating limit)	Cdh(degradation coefficient)	-	0.90			0.90
	ToI (temperature operating limit)	[°C]	2			2
	Pdh (declared heating capacity)	[kW]	21.81			26.29
	COPd (declared COP)	-	3.31			2.94
(F) TbiValent temperature	WTOL (Heating water Operation Limit)	[°C]	60			60
	Tbiv	[°C]	7			7
Supplementary capacity at P_design	Pdh (declared heating capacity)	[kW]	14.08			19.57
	COPd (declared COP)	-	5.20			4.75
	Psup (@Tdesignh:2°C)	[kW]	0.09			4.15
Part load conditions space heating warmer climate medium temperature application						
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	22.12			26.41
	COPd (declared COP)	-	2.12			1.99
(C) condition (7°C)	Cdh(degradation coefficient)	-	0.90			0.90
	Pdh (declared heating capacity)	[kW]	14.15			19.11
	COPd (declared COP)	-	3.50			3.37
	Cdh(degradation coefficient)	-	0.90			0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	6.38			8.92
	COPd (declared COP)	-	5.34			6.09
(E) ToI(temperature operating limit)	Cdh(degradation coefficient)	-	0.90			0.90
	ToI (temperature operating limit)	[°C]	2			2
	Pdh (declared heating capacity)	[kW]	22.12			26.41
	COPd (declared COP)	-	2.12			1.99
	WTOL (Heating water Operation Limit)	[°C]	60			60

**Product fiche 6**

Heat pump space heater		<b>Matrix</b>		unit	ATM22T	ATM30T
(F) TbiValent temperature	Tbiv (declared heating capacity)	[°C]	7			7
	Pdh (declared heating capacity)	[kW]	14.15			19.11
Supplementary capacity at P_design	COPd (declared COP)	-	3.50			3.37
	Psup (@Tdesignh:2°C)	[kW]	0.00			3.32
Ecodesign technical data						
Product description	Air-to-water heat pump	Y/N	Yes			Yes
	Water-to-water heat pump	Y/N	No			No
	Brine-to-water heat pump	Y/N	No			No
	Low-temperature heat pump	Y/N	No			No
	Equipped with a supplementary heater	Y/N	No			No
	Heat pump combination heater	Y/N	No			No
Air to water unit	Rated airflow (outdoor)	[m³/h]	10650			11200
Brine/water to water unit	Rated water/brine flow (outdoor H/E)	[m³/h]	/			/
Other	Capacity control	-	Inverter			Inverter
	Poff (Power consumption Off mode)	[kW]	0.018			0.018
	Pto (Power consumption Thermostat off mode)	[kW]	0.096			0.096
	Psb (Power consumption Standby mode)	[kW]	0.018			0.018
	PCK (Power crankcase heater model)	[kW]	0.000			0.000
	Qelec (Daily electricity consumption)	[kWh]	/			/
	Qfuel (Daily fuel consumption)	[kWh]	/			/

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

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

## Technical parameters

Model(s):	ATM22T
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	22.4	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	19.8	kW
Tj = 2 °C	Pdh	11.9	kW
Tj = 7 °C	Pdh	8.0	kW
Tj = 12 °C	Pdh	3.6	kW
Tj = bivalent temperature	Pdh	19.8	kW
Tj = operating limit	Pdh	13.8	kW
For air-to-water heat pumps: Tj = -15 °C	Pdh	-	kW
Bivalent temperature	Tbiv	-7	°C
Cycling interval capacity for heating	P <sub>cyh</sub>	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	P <sub>off</sub>	0.018	kW
Standby mode	P <sub>sb</sub>	0.018	kW
Thermostat-off mode	P <sub>to</sub>	0.096	kW
Crankcase heater mode	P <sub>ck</sub>	0.000	kW

Other items			
Capacity control	variable		
Sound power level, indoors/outdoors	L <sub>WA</sub>	-73	dB
Annual energy consumption	Q <sub>HE</sub>	14390	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η <sub>s</sub>	126	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	COP <sub>d</sub>	1.74	-
Tj = 2 °C	COP <sub>d</sub>	3.30	-
Tj = 7 °C	COP <sub>d</sub>	4.62	-
Tj = 12 °C	COP <sub>d</sub>	5.20	-
Tj = bivalent temperature	COP <sub>d</sub>	1.74	-
Tj = operating limit	COP <sub>d</sub>	1.08	-
For air-to-water heat pumps: Tj = -15 °C	COP <sub>d</sub>	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval efficiency	COP <sub>cyh</sub>	-	-
Heating water operating limit temperature	W <sub>TOL</sub>	60	°C
Supplementary heater			
Rated heat output (**)	P <sub>sup</sub>	8.6	kW
Type of energy input	Electrical		

For air-to-water heat pumps: Rated air flow rate, outdoors	-	10650	m <sup>3</sup> /h
For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m <sup>3</sup> /h

For heat pump combination heater:

Declared load profile	-			Water heating energy efficiency	η <sub>wh</sub>	-	%
Daily electricity consumption	Q <sub>elec</sub>	-	kWh	Daily fuel consumption	Q <sub>fuel</sub>	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

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

## Technical parameters

Model(s):	ATM22T
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	22.4	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	13.5	kW
Tj = 2 °C	Pdh	8.6	kW
Tj = 7 °C	Pdh	5.2	kW
Tj = 12 °C	Pdh	3.7	kW
Tj = bivalent temperature	Pdh	13.5	kW
Tj = operating limit	Pdh	13.8	kW
For air-to-water heat pumps: Tj = -15 °C	Pdh	13.8	kW
Bivalent temperature	Tbiv	-7	°C
Cycling interval capacity for heating	P <sub>cyh</sub>	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	P <sub>off</sub>	0.018	kW
Standby mode	P <sub>sb</sub>	0.018	kW
Thermostat-off mode	P <sub>to</sub>	0.096	kW
Crankcase heater mode	P <sub>ck</sub>	0.000	kW

Other items			
Capacity control	variable		
Sound power level, indoors/outdoors	L <sub>WA</sub>	-73	dB
Annual energy consumption	Q <sub>HE</sub>	21067	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η <sub>s</sub>	102	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	COP <sub>d</sub>	2.07	-
Tj = 2 °C	COP <sub>d</sub>	3.70	-
Tj = 7 °C	COP <sub>d</sub>	4.49	-
Tj = 12 °C	COP <sub>d</sub>	5.76	-
Tj = bivalent temperature	COP <sub>d</sub>	2.07	-
Tj = operating limit	COP <sub>d</sub>	1.24	-
For air-to-water heat pumps: Tj = -15 °C	COP <sub>d</sub>	1.24	-
For air-to-water heat pumps: Operation limit temperature	TOL	-15	°C
Cycling interval efficiency	COP <sub>cyh</sub>	-	-
Heating water operating limit temperature	W <sub>TOL</sub>	50	°C
Supplementary heater			
Rated heat output (**)	P <sub>sup</sub>	22.4	kW
Type of energy input	-		

For air-to-water heat pumps: Rated air flow rate, outdoors	-	10650	m <sup>3</sup> /h
For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m <sup>3</sup> /h

For heat pump combination heater:

Declared load profile	-			Water heating energy efficiency	η <sub>wh</sub>	-	%
Daily electricity consumption	Q <sub>elec</sub>	-	kWh	Daily fuel consumption	Q <sub>fuel</sub>	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

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

## Technical parameters

Model(s):	ATM22T
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	WARMER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	22.0	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	-	kW
Tj = 2 °C	Pdh	22.1	kW
Tj = 7 °C	Pdh	14.1	kW
Tj = 12 °C	Pdh	6.4	kW
Tj = bivalent temperature	Pdh	14.1	kW
Tj = operating limit	Pdh	22.1	kW
For air-to-water heat pumps: Tj = -15 °C	Pdh	-	kW
Bivalent temperature	Tbiv	7	°C
Cycling interval capacity for heating	P <sub>cyh</sub>	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	P <sub>off</sub>	0.018	kW
Standby mode	P <sub>sb</sub>	0.018	kW
Thermostat-off mode	P <sub>to</sub>	0.096	kW
Crankcase heater mode	P <sub>ck</sub>	0.000	kW

Other items			
Capacity control	variable		
Sound power level, indoors/outdoors	L <sub>WA</sub>	-73	dB
Annual energy consumption	Q <sub>HE</sub>	7180	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η <sub>s</sub>	161	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	COPd	-	-
Tj = 2 °C	COPd	2.12	-
Tj = 7 °C	COPd	3.50	-
Tj = 12 °C	COPd	5.34	-
Tj = bivalent temperature	COPd	3.50	-
Tj = operating limit	COPd	2.12	-
For air-to-water heat pumps: Tj = -15 °C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval efficiency	COP <sub>cy</sub>	-	-
Heating water operating limit temperature	W <sub>TOL</sub>	60	°C
Supplementary heater			
Rated heat output (**)	P <sub>sup</sub>	0.0	kW
Type of energy input	-		

For air-to-water heat pumps: Rated air flow rate, outdoors	-	10650	m <sup>3</sup> /h
For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m <sup>3</sup> /h

For heat pump combination heater:			
Declared load profile	-		
Daily electricity consumption	Q <sub>elec</sub>	-	kWh
Annual electricity consumption	AEC	-	kWh
Water heating energy efficiency	η <sub>wh</sub>	-	%
Daily fuel consumption	Q <sub>fuel</sub>	-	kWh
Annual fuel consumption	AFC	-	GJ

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



## Technical parameters

Model(s):	ATM30T
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE
Parameters are declared for medium-temperature application.	

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	29.7	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	20.1	kW
Tj = 2 °C	Pdh	16.5	kW
Tj = 7 °C	Pdh	10.5	kW
Tj = 12 °C	Pdh	4.7	kW
Tj = bivalent temperature	Pdh	24.0	kW
Tj = operating limit	Pdh	13.8	kW
For air-to-water heat pumps: Tj = -15 °C	Pdh	-	kW
Bivalent temperature	Tbiv	-5	°C
Cycling interval capacity for heating	P <sub>cyh</sub>	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	P <sub>off</sub>	0.018	kW
Standby mode	P <sub>sb</sub>	0.018	kW
Thermostat-off mode	P <sub>to</sub>	0.096	kW
Crankcase heater mode	P <sub>ck</sub>	0.000	kW

Other items			
Capacity control	variable		
Sound power level, indoors/outdoors	L <sub>WA</sub>	-77	dB
Annual energy consumption	Q <sub>HE</sub>	19316	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η <sub>s</sub>	123	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	COP <sub>d</sub>	1.63	-
Tj = 2 °C	COP <sub>d</sub>	3.09	-
Tj = 7 °C	COP <sub>d</sub>	4.73	-
Tj = 12 °C	COP <sub>d</sub>	5.85	-
Tj = bivalent temperature	COP <sub>d</sub>	2.02	-
Tj = operating limit	COP <sub>d</sub>	1.07	-
For air-to-water heat pumps: Tj = -15 °C	COP <sub>d</sub>	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval efficiency	COP <sub>cy</sub>	-	-
Heating water operating limit temperature	W <sub>TOL</sub>	60	°C
Supplementary heater			
Rated heat output (**)	P <sub>sup</sub>	15.9	kW
Type of energy input	Electrical Heating		

For air-to-water heat pumps: Rated air flow rate, outdoors	-	11200	m <sup>3</sup> /h
For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m <sup>3</sup> /h

For heat pump combination heater:							
Declared load profile	-						
Daily electricity consumption	Q <sub>elec</sub>	-	kWh	Water heating energy efficiency	η <sub>wh</sub>	-	%
Annual electricity consumption	AEC	-	kWh	Daily fuel consumption	Q <sub>fuel</sub>	-	kWh
				Annual fuel consumption	AFC	-	GJ

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

## Technical parameters

Model(s):	ATM30T
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	30.4	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	18.4	kW
Tj = 2 °C	Pdh	11.2	kW
Tj = 7 °C	Pdh	7.4	kW
Tj = 12 °C	Pdh	3.6	kW
Tj = bivalent temperature	Pdh	18.4	kW
Tj = operating limit	Pdh	13.1	kW
For air-to-water heat pumps: Tj = -15 °C	Pdh	13.1	kW
Bivalent temperature	Tbiv	-7	°C
Cycling interval capacity for heating	P <sub>cyh</sub>	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	P <sub>off</sub>	0.018	kW
Standby mode	P <sub>sb</sub>	0.018	kW
Thermostat-off mode	P <sub>to</sub>	0.096	kW
Crankcase heater mode	P <sub>ck</sub>	0.000	kW

Other items			
Capacity control	variable		
Sound power level, indoors/outdoors	L <sub>WA</sub>	-77	dB
Annual energy consumption	Q <sub>HE</sub>	29238	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η <sub>s</sub>	100	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	COP <sub>d</sub>	2.10	-
Tj = 2 °C	COP <sub>d</sub>	3.51	-
Tj = 7 °C	COP <sub>d</sub>	5.18	-
Tj = 12 °C	COP <sub>d</sub>	5.73	-
Tj = bivalent temperature	COP <sub>d</sub>	2.10	-
Tj = operating limit	COP <sub>d</sub>	1.18	-
For air-to-water heat pumps: Tj = -15 °C	COP <sub>d</sub>	1.18	-
For air-to-water heat pumps: Operation limit temperature	TOL	-15	°C
Cycling interval efficiency	COP <sub>cyh</sub>	-	-
Heating water operating limit temperature	W <sub>TOL</sub>	50	°C
Supplementary heater			
Rated heat output (**)	P <sub>sup</sub>	30.4	kW
Type of energy input	Electrical Heating		

For air-to-water heat pumps: Rated air flow rate, outdoors	-	11200	m <sup>3</sup> /h
For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m <sup>3</sup> /h

For heat pump combination heater:

Declared load profile	-			Water heating energy efficiency	η <sub>wh</sub>	-	%
Daily electricity consumption	Q <sub>elec</sub>	-	kWh	Daily fuel consumption	Q <sub>fuel</sub>	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ

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

## Technical parameters

Model(s):	ATM30T
Air-to-water heat pump:	YES
Water-to-water heat pump:	NO
Brine-to-water heat pump:	NO
Low-temperature heat pump:	NO
Equipped with a supplementary heater:	NO
Heat pump combination heater:	NO
Declared climate condition:	WARMER
Parameters are declared for medium-temperature application.	

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	29.7	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	-	kW
Tj = 2 °C	Pdh	26.4	kW
Tj = 7 °C	Pdh	19.1	kW
Tj = 12 °C	Pdh	8.9	kW
Tj = bivalent temperature	Pdh	19.1	kW
Tj = operating limit	Pdh	26.4	kW
For air-to-water heat pumps: Tj = -15 °C	Pdh	-	kW
Bivalent temperature	Tbiv	7	°C
Cycling interval capacity for heating	P <sub>cyh</sub>	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	P <sub>off</sub>	0.018	kW
Standby mode	P <sub>sb</sub>	0.018	kW
Thermostat-off mode	P <sub>to</sub>	0.096	kW
Crankcase heater mode	P <sub>ck</sub>	0.000	kW

Other items			
Capacity control	variable		
Sound power level, indoors/outdoors	L <sub>WA</sub>	-77	dB
Annual energy consumption	Q <sub>HE</sub>	9580	kWh

For heat pump combination heater:			
Declared load profile	-		
Daily electricity consumption	Q <sub>elec</sub>	-	kWh
Annual electricity consumption	AEC	-	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η <sub>s</sub>	163	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	COP <sub>d</sub>	-	-
Tj = 2 °C	COP <sub>d</sub>	1.99	-
Tj = 7 °C	COP <sub>d</sub>	3.37	-
Tj = 12 °C	COP <sub>d</sub>	6.09	-
Tj = bivalent temperature	COP <sub>d</sub>	3.37	-
Tj = operating limit	COP <sub>d</sub>	1.99	-
For air-to-water heat pumps: Tj = -15 °C	COP <sub>d</sub>	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval efficiency	COP <sub>cyh</sub>	-	-
Heating water operating limit temperature	W <sub>TOL</sub>	60	°C
Supplementary heater			
Rated heat output (**)	P <sub>sup</sub>	3.3	kW
Type of energy input	Electrical Heating		

For air-to-water heat pumps: Rated air flow rate, outdoors	-	11200	m <sup>3</sup> /h
For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m <sup>3</sup> /h

Water heating energy efficiency	η <sub>wh</sub>	-	%
Daily fuel consumption	Q <sub>fuel</sub>	-	kWh
Annual fuel consumption	AFC	-	GJ

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

# Information requirements

Model(s):	ATM22T						
Outdoor side heat exchanger of chiller:	Air to water						
Indoor side heat exchanger chiller:	Water						
Type:	Compressor driven vapour compression						
Driver of compressor:	Electric motor						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	$P_{rated,c}$	20.6	kW	Seasonal space cooling energy efficiency	$\eta_{s,c}$	185	%
Declared cooling capacity for part load at given outdoor temperature $T_j$				Declared energy efficiency ratio for part load at given outdoor temperature $T_j$			
$T_j=+35^\circ\text{C}$	$P_{dc}$	20.6	kW	$T_j=+35^\circ\text{C}$	$EER_d$	2.89	-
$T_j=+30^\circ\text{C}$	$P_{dc}$	14.9	kW	$T_j=+30^\circ\text{C}$	$EER_d$	3.95	-
$T_j=+25^\circ\text{C}$	$P_{dc}$	9.3	kW	$T_j=+25^\circ\text{C}$	$EER_d$	5.37	-
$T_j=+20^\circ\text{C}$	$P_{dc}$	4.3	kW	$T_j=+20^\circ\text{C}$	$EER_d$	6.19	-
Degradation co-efficient for chillers (*)	$C_{dc}$	0.9	-				
Power consumption in modes other than "active mode"							
Off mode	$P_{OFF}$	0.017	kW	Crankcase heater mode	$P_{CK}$	0.000	kW
Thermosat-off mode	$P_{TO}$	0.084	kW	Standby mode	$P_{SB}$	0.017	kW
Other items							
Capacity control	variable			For air-to-water comfort chillers: air flow rate, outdoor measured	-	8950	$\text{m}^3/\text{h}$
Sound power level, indoors / outdoors	LWA	-/73	dB				
Emissions of nitrogen oxides (if applicable)	$\text{NO}_x$ (**)	-	mg/kWh input GCV	For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	$\text{m}^3/\text{h}$
GWP of the refrigerant	-	675	kg $\text{CO}_2$ eq (100years)				
Standard rating conditions used	Low temperature application						
Contact details	<b>INVENTOR A.G. S.A.</b> , 24th km National Road Athens - Lamia & 2 Thoukididou Str., Ag.Stefanos, 14565 Tel.: +30 211 300 3300, Fax: +30 211 300 3333 - www.inventor.ac						
(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.							

# Information requirements

Model(s):	ATM22T
Outdoor side heat exchanger of chiller:	Air to water
Indoor side heat exchanger chiller:	Water
Type:	Compressor driven vapour compression
Driver of compressor:	Electric motor

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	$P_{rated,c}$	22.8	kW	Seasonal space cooling energy efficiency	$\eta_{s,c}$	224	%
Declared cooling capacity for part load at given outdoor temperature $T_j$				Declared energy efficiency ratio for part load at given outdoor temperature $T_j$			
$T_j=+35^\circ\text{C}$	$P_{dc}$	22.8	kW	$T_j=+35^\circ\text{C}$	$EER_d$	4.25	-
$T_j=+30^\circ\text{C}$	$P_{dc}$	16.3	kW	$T_j=+30^\circ\text{C}$	$EER_d$	5.16	-
$T_j=+25^\circ\text{C}$	$P_{dc}$	10.2	kW	$T_j=+25^\circ\text{C}$	$EER_d$	6.45	-
$T_j=+20^\circ\text{C}$	$P_{dc}$	4.6	kW	$T_j=+20^\circ\text{C}$	$EER_d$	6.38	-

Degradation co-efficient for chillers (*)	$C_{dc}$	0.9	-				
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### Power consumption in modes other than "active mode"

Off mode	$P_{OFF}$	0.017	kW	Crankcase heater mode	$P_{CK}$	0.000	kW
Thermosat-off mode	$P_{TO}$	0.084	kW	Standby mode	$P_{SB}$	0.017	kW

### Other items

Capacity control	variable			For air-to-water comfort chillers: air flow rate, outdoor measured	-	8950	$\text{m}^3/\text{h}$
Sound power level, indoors / outdoors	$L_{WA}$	-/73	dB				
Emissions of nitrogen oxides (if applicable)	$\text{NO}_x$ (**)	-	mg/kWh input GCV	For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	$\text{m}^3/\text{h}$
GWP of the refrigerant	-	675	kg $\text{CO}_2$ eq (100years)				

Standard rating conditions used	Medium temperature application
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(\*) If  $C_{dc}$  is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.  
(\*\*) From 26 September 2018.

# Information requirements

Model(s):	ATM30T
Outdoor side heat exchanger of chiller:	Air to water
Indoor side heat exchanger chiller:	Water
Type:	Compressor driven vapour compression
Driver of compressor:	Electric motor

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	$P_{rated,c}$	29.5	kW	Seasonal space cooling energy efficiency	$\eta_{s,c}$	177	%
Declared cooling capacity for part load at given outdoor temperature $T_j$				Declared energy efficiency ratio for part load at given outdoor temperature $T_j$			
$T_j=+35^\circ\text{C}$	$P_{dc}$	29.5	kW	$T_j=+35^\circ\text{C}$	$EER_d$	2.29	-
$T_j=+30^\circ\text{C}$	$P_{dc}$	21.2	kW	$T_j=+30^\circ\text{C}$	$EER_d$	3.62	-
$T_j=+25^\circ\text{C}$	$P_{dc}$	13.5	kW	$T_j=+25^\circ\text{C}$	$EER_d$	5.06	-
$T_j=+20^\circ\text{C}$	$P_{dc}$	6.0	kW	$T_j=+20^\circ\text{C}$	$EER_d$	6.75	-

Degradation co-efficient for chillers (*)	$C_{dc}$	0.9	-				
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### Power consumption in modes other than "active mode"

Off mode	$P_{OFF}$	0.017	kW	Crankcase heater mode	$P_{CK}$	0.000	kW
Thermosat-off mode	$P_{TO}$	0.084	kW	Standby mode	$P_{SB}$	0.017	kW

### Other items

Capacity control	variable			For air-to-water comfort chillers: air flow rate, outdoor measured	-	10650	$\text{m}^3/\text{h}$
Sound power level, indoors / outdoors	LWA	-177	dB				
Emissions of nitrogen oxides (if applicable)	$\text{NO}_x$ (**)	-	mg/kWh input GCV	For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	$\text{m}^3/\text{h}$
GWP of the refrigerant	-	675	kg $\text{CO}_2$ eq (100years)				

Standard rating conditions used	Low temperature application
Contact details	<b>INVENTOR A.G. S.A.</b> , 24th km National Road Athens - Lamia & 2 Thoukididou Str., Ag.Stefanos, 14565 Tel.: +30 211 300 3300, Fax: +30 211 300 3333 - www.inventor.ac

(\*) If  $C_{dc}$  is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.  
(\*\*) From 26 September 2018.

# Information requirements

Model(s):	ATM30T						
Outdoor side heat exchanger of chiller:	Air to water						
Indoor side heat exchanger chiller:	Water						
Type:	Compressor driven vapour compression						
Driver of compressor:	Electric motor						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	$P_{rated,c}$	30.8	kW	Seasonal space cooling energy efficiency	$\eta_{s,c}$	225	%
Declared cooling capacity for part load at given outdoor temperature $T_j$				Declared energy efficiency ratio for part load at given outdoor temperature $T_j$			
$T_j=+35^\circ\text{C}$	$P_{dc}$	30.8	kW	$T_j=+35^\circ\text{C}$	$EER_d$	3.79	-
$T_j=+30^\circ\text{C}$	$P_{dc}$	22.1	kW	$T_j=+30^\circ\text{C}$	$EER_d$	5.06	-
$T_j=+25^\circ\text{C}$	$P_{dc}$	13.9	kW	$T_j=+25^\circ\text{C}$	$EER_d$	6.33	-
$T_j=+20^\circ\text{C}$	$P_{dc}$	6.3	kW	$T_j=+20^\circ\text{C}$	$EER_d$	7.01	-
Degradation co-efficient for chillers (*)	$C_{dc}$	0.9	-				
Power consumption in modes other than "active mode"							
Off mode	$P_{OFF}$	0.017	kW	Crankcase heater mode	$P_{CK}$	0.000	kW
Thermosat-off mode	$P_{TO}$	0.084	kW	Standby mode	$P_{SB}$	0.017	kW
Other items							
Capacity control	variable			For air-to-water comfort chillers: air flow rate, outdoor measured	-	10650	m <sup>3</sup> /h
Sound power level, indoors / outdoors	LWA	-177	dB				
Emissions of nitrogen oxides (if applicable)	NO <sub>x</sub> (**)	-	mg/kWh input GCV	For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m <sup>3</sup> /h
GWP of the refrigerant	-	675	kg CO <sub>2</sub> eq (100years)				
Standard rating conditions used	Medium temperature application						
Contact details	<b>INVENTOR A.G. S.A.</b> , 24th km National Road Athens - Lamia & 2 Thoukididou Str., Ag.Stefanos, 14565 Tel.: +30 211 300 3300, Fax: +30 211 300 3333 - www.inventor.ac						
(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9. (**) From 26 September 2018.							





NOTE

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# AIR CONDITIONING SYSTEMS

## AIR-TO-WATER HEAT PUMP - MONOBLOCK



V:1.0.112020

Please check the applicable models, F-GAS and manufacturer information from the "Owner's Manual - Product Fiche" in the packaging of the outdoor unit. (European Union products only).

Manufacturer: **INVENTOR A.G. S.A.**

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