

AIR CONDITIONING SYSTEMS

AIR-TO-WATER HEAT PUMP - SPLIT TYPE

• PRODUCT FICHE



MODELS:

ATS04S/HU060S3
ATS06S/HU060S3
ATS08S/HU100S3
ATS10S/HU100S3
ATS12S/HU160S3
ATS14S/HU160S3
ATS16S/HU160S3
ATS12T/HU160T9
ATS14T/HU160T9
ATS16T/HU160T9

Heat pump space heating		For medium - temperature application											
Outdoor unit	Indoor unit	Energy efficiency class	Indoor unit sound power	Outdoor unit sound power	average climate			colder climate			warmer climate		
					Rated heat output	Seasonal space heating energy efficiency	For space heating,annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating,annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating,annual energy consumption
			dB	dB	kW	%	kWh	kW	%	kWh	kW	%	kWh
		-											
ATS04S	HU060S3	A++	38	56	4.4	129.5	2744	3.4	102.1	3158	5.0	163.1	1614
ATS06S	HU060S3	A++	38	58	5.7	137.9	3345	4.3	111.1	3680	5.1	165.4	1634
ATS08S	HU100S3	A++	42	59	6.6	131.5	4056	5.8	112.1	4948	8.37	176.9	2458
ATS10S	HU100S3	A++	42	60	7.7	136.6	4539	6.7	116.5	5539	8.6	180.3	2496
ATS12S	HU160S3	A++	43	64	11.6	135.1	6927	10.3	117.8	8419	12.5	174.0	3776
ATS12T	HU160T9	A++	43	64	11.6	135.1	6928	10.3	117.7	8420	12.5	173.8	3780
ATS14S	HU160S3	A++	43	65	12.1	135.6	7202	11.0	118.9	8866	14.17	174.9	4258
ATS14T	HU160T9	A++	43	65	12.1	135.6	7203	11.0	118.9	8867	14.17	174.7	4262
ATS16S	HU160S3	A++	43	68	13.0	133.3	7895	11.8	121.8	9309	14.17	176.0	4231
ATS16T	HU160T9	A++	43	68	13.0	133.2	7896	11.8	121.8	9310	14.17	175.8	4236

Heat pump space heating		For low - temperature appli cation											
Outdoor unit	Indoor unit	Energy efficiency class	Indoor unit sound power	Outdoor unit sound power	average climate			colder climate			warmer climate		
					Rated heat output	Seasonal space heating energy efficiency	For space heating,annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating,annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating,annual energy consumption
		-	dB	dB	kW	%	kWh	kW	%	kWh	kW	%	kWh
ATS04S	HU060S3	A+++	38	56	5.5	191.0	2351	4.6	159.5	2769	5.5	255.4	1146
ATS06S	HU060S3	A+++	38	58	6.8	195.0	2845	5.6	165.3	3300	6.1	259.8	1244
ATS08S	HU100S3	A+++	42	59	8.1	205.6	3218	7.0	170.0	3976	8.1	276.6	1551
ATS10S	HU100S3	A+++	42	60	9.2	204.8	3644	7.7	169.8	4423	8.6	280.5	1617
ATS12S	HU160S3	A+++	43	64	12.0	189.4	5152	11.4	160.2	6870	11.1	256.1	2292
ATS12T	HU160T9	A+++	43	64	12.0	189.3	5153	11.4	160.2	6871	11.1	255.6	2296
ATS14S	HU160S3	A+++	43	65	13.7	185.7	6012	12.6	159.6	7667	12.1	260.3	2457
ATS14T	HU160T9	A+++	43	65	13.7	185.6	6013	12.6	159.6	7667	12.1	259.8	2462
ATS16S	HU160S3	A+++	43	68	15.2	181.7	6804	13.7	157.8	8431	13.1	248.5	2781
ATS16T	HU160T9	A+++	43	68	15.2	181.6	6805	13.7	157.8	8431	13.1	248.1	2786

Product fiche 1

Heat pump space heating Matrix							Outdoor	ATS04S	ATS06S	ATS08S	ATS10S	ATS12S
Indoor unit sound power (*)							Indoor	HU060S3	HU060S3	HU100S3	HU100S3	HU160S3
Average climate low temperature application							dB	38 ^{a)} /38 ^{b)}	38 ^{a)} /38 ^{b)}	42 ^{a)} /40 ^{b)}	42 ^{a)} /40 ^{b)}	43 ^{a)} /42 ^{b)}
Outdoor unit sound power (*)							dB	56	58	59	60	64
Average climate medium temperature application							dB	56	58	59	60	64
Capacity of the back-up heater integrated in the unit							[kW]	3/6/9	3/6/9	3/6/9	3/6/9	3/6/9
Space heating							-	A+++	A+++	A+++	A+++	A+++
Space heating							-	A++	A++	A++	A++	A++
Average climate (Design temperature = -10°C)												
Space heating 35°C							[kW]	5.5	6.8	8.1	9.2	12.0
Seasonal space heating efficiency (ns)							[%]	191.0	195.0	205.6	204.8	189.4
Annual energy consumption							[kWh]	2,351	2,845	3,218	3,644	5,152
Space heating 55°C							[kW]	4.4	5.7	6.6	7.7	11.6
Seasonal space heating efficiency (ns)							[%]	129.5	137.9	131.5	136.6	135.1
Annual energy consumption							[kWh]	2,744	3,345	4,056	4,539	6,927
Part load conditions space heating average climate low temperature application												
(A) condition (-7°C)							[kW]	4.88	6.03	7.18	8.10	10.61
COPd (declared COP)							-	3.19	3.09	3.35	3.23	2.88
Cdh(degradation coefficient)							-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)							[kW]	3.05	3.88	4.65	5.18	6.69
COPd (declared COP)							-	4.78	4.85	5.09	5.01	4.65
Cdh(degradation coefficient)							-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)							[kW]	1.93	2.39	2.90	3.32	4.44
COPd (declared COP)							-	6.13	6.63	6.82	7.08	6.62
Cdh(degradation coefficient)							-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)							[kW]	1.48	1.39	1.63	1.65	3.74
COPd (declared COP)							-	8.05	7.93	8.35	8.58	8.47
Cdh(degradation coefficient)							-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)							[°C]	-10.00	-10.00	-10.00	-10.00	-10.00
Pdh (declared heating capacity)							[kW]	4.41	5.36	6.44	7.40	10.74
COPd (declared COP)							-	2.86	2.76	3.04	2.96	2.77
WTOL (Heating water Operation Limit)							[°C]	65	65	65	65	65

Note :

a) represents the hydraulic module series ;

b) represents the m-thermal tank series ;

Heat pump space heating Matrix							
		Outdoor	ATS14S	ATS16S	ATS12T	ATS14T	ATS16T
		Indoor	HU160S3	HU160S3	HU160T9	HU160T9	HU160T9
Indoor unit sound power (*)		dB	43 ^{a)} /44 ^{b)}	43 ^{a)} /44 ^{b)}	43 ^{a)} /42 ^{b)}	43 ^{a)} /44 ^{b)}	43 ^{a)} /44 ^{b)}
	Average climate low temperature application	dB	65	68	64	65	68
Outdoor unit sound power (*)	Average climate medium temperature application	dB	65	68	64	65	68
Capacity of the back-up heater integrated in the unit	Psup back-up heater (optional)	[kW]	3/6/9	3/6/9	3/6/9	3/6/9	3/6/9
Space heating	Energy efficiency class 35°C (Low temp. app.)	-	A+++	A+++	A+++	A+++	A+++
Space heating	Energy efficiency class 55°C (Medium temp. app.)	-	A++	A++	A++	A++	A++
Average climate (Design temperature = -10°C)							
Space heating 35°C	Prated (declared heating capacity) @ -10°C	[kW]	13.7	15.2	12.0	13.7	15.2
	Seasonal space heating efficiency (ηs)	[%]	185.7	181.7	189.3	185.6	181.6
	Annual energy consumption	[kWh]	6,012	6,804	5,153	6,013	6,805
Space heating 55°C	Prated (declared heating capacity) @ -10°C	[kW]	12.1	13.0	11.6	12.1	13.0
	Seasonal space heating efficiency (ηs)	[%]	135.6	133.3	135.1	135.6	133.2
	Annual energy consumption	[kWh]	7,202	7,895	6,928	7,203	7,896
Part load conditions space heating average climate low temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	12.14	13.45	10.61	12.14	13.45
	COPd (declared COP)	-	2.79	2.72	2.88	2.79	2.72
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	7.94	8.56	6.69	7.94	8.56
	COPd (declared COP)	-	4.52	4.41	4.65	4.52	4.41
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	5.20	5.70	4.44	5.20	5.70
	COPd (declared COP)	-	6.68	6.56	6.62	6.68	6.56
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.75	3.78	3.74	3.75	3.78
	COPd (declared COP)	-	8.52	8.51	8.47	8.52	8.51
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00	-10.00
	Pdh (declared heating capacity)	[kW]	11.47	12.52	10.74	11.47	12.52
	COPd (declared COP)	-	2.59	2.48	2.77	2.59	2.48
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65

Note :
a) represents the hydraulic module series ;
b) represents the m-thermal tank series ;

Product fiche 2

Heat pump space heating Matrix						
	Outdoor	ATS04S	ATS06S	ATS08S	ATS10S	ATS12S
	Indoor	HU060S3	HU060S3	HU100S3	HU100S3	HU160S3
(F) TbiValent temperature	Tbiv	-7.00	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	4.88	6.03	7.18	8.10	10.61
	COPd (declared COP)	3.19	3.09	3.35	3.23	2.88
	Psup (@Tdesignh: -10°C)	1.11	1.45	1.68	1.76	1.26
Supplementary capacity at P_design						
Part load conditions space heating average climate medium temperature application						
(A) condition (-7°C)	Pdh (declared heating capacity)	3.89	5.04	5.84	6.78	10.24
	COPd (declared COP)	2.17	2.17	2.16	2.24	2.01
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	2.38	3.12	3.75	4.28	6.52
(B) condition (2°C)	COPd (declared COP)	3.30	3.51	3.30	3.42	3.44
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	2.94	2.08	2.42	2.77	4.36
(C) condition (7°C)	COPd (declared COP)	4.41	4.54	4.34	4.52	4.59
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	1.32	1.28	1.39	1.58	3.29
(D) condition (12°C)	COPd (declared COP)	5.66	5.59	5.33	5.68	6.05
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90
	Tol (temperature operating limit)	-10.00	-10.00	-10.00	-10.00	-10.00
(E) Tol (temperature operating limit)	Pdh (declared heating capacity)	3.42	4.52	4.90	5.38	9.10
	COPd (declared COP)	1.91	1.91	1.84	1.83	1.79
	WTOL (Heating water Operation Limit)	65	65	65	65	65
	Tbiv	-7.00	-7.00	-7.00	-7.00	-7.00
(F) TbiValent temperature	Pdh (declared heating capacity)	3.89	5.04	5.84	6.78	10.24
	COPd (declared COP)	2.17	2.17	2.16	2.24	2.01
	Psup (@Tdesignh: -10°C)	0.98	1.18	1.69	2.28	2.50
Supplementary capacity at P_design						
Colder climate (Design temperature = -22°C)						
Space heating 35°C	Prated (declared heating capacity) @ -22°C	4.6	5.6	7.0	7.7	11.4
	Seasonal space heating efficiency (ηs)	159.5	165.3	170.0	169.8	160.2
	Annual energy consumption	2,769	3,300	3,976	4,423	6,870

Product fiche 2

Heat pump space heating Matrix						
	Outdoor	ATS14S	ATS16S	ATS12T	ATS14T	ATS16T
	Indoor	HU160S3	HU160S3	HU160T9	HU160T9	HU160T9
(F) Tbivalent temperature	Tbiv	-7.00	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	12.14	13.45	10.61	12.14	13.45
	COPd (declared COP)	-	2.72	2.88	2.79	2.72
Supplementary capacity at P_design	[kW]	2.23	2.68	1.26	2.23	2.68
Part load conditions space heating average climate medium temperature application						
(A) condition (-7°C)	Pdh (declared heating capacity)	10.68	11.52	10.24	10.68	11.52
	COPd (declared COP)	2.01	1.99	2.01	2.01	1.99
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	6.86	7.18	6.52	6.86	7.18
	COPd (declared COP)	3.43	3.34	3.44	3.43	3.34
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	4.63	4.67	4.36	4.63	4.67
	COPd (declared COP)	4.66	4.61	4.59	4.66	4.61
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	3.31	3.31	3.29	3.31	3.31
	COPd (declared COP)	6.13	6.07	6.05	6.13	6.07
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	-10.00	-10.00	-10.00	-10.00	-10.00
	Pdh (declared heating capacity)	9.19	10.33	9.10	9.19	10.33
	COPd (declared COP)	1.76	1.80	1.79	1.76	1.80
(F) Tbivalent temperature	WTOL (Heating water Operation Limit)	65	65	65	65	65
	Tbiv	-7.00	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	10.68	11.52	10.24	10.68	11.52
Supplementary capacity at P_design	-	2.01	1.99	2.01	2.01	1.99
Supplementary capacity at P_design	[kW]	2.91	2.67	2.50	2.91	2.67
Colder climate (Design temperature = -22°C)						
Space heating 35°C	Prated (declared heating capacity) @ -22°C	12.6	13.7	11.4	12.6	13.7
	Seasonal space heating efficiency (ηs)	159.6	157.8	160.2	159.6	157.8
	Annual energy consumption	7,667	8,431	6,871	7,667	8,431

Product fiche 3

Heat pump space heating Matrix							Outdoor	ATS04S	ATS06S	ATS08S	ATS10S	ATS12S
Space heating 55°C		Indoor	HU060S3	HU060S3	HU100S3	HU100S3	HU160S3					
	Prated (declared heating capacity) @ -22°C	[kW]	3.4	4.3	5.8	6.7	10.3					
	Seasonal space heating efficiency (ηs)	[%]	102.1	111.1	112.0	116.4	117.8					
	Annual energy consumption	[kW/h]	3,159	3,681	4,950	5,540	8,419					
Part load conditions space heating colder climate low temperature application												
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	2.75	3.42	4.46	4.83	7.05					
	COPd (declared COP)	-	3.49	3.59	3.66	3.60	3.48					
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90					
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	1.77	2.06	2.69	2.94	4.67					
	COPd (declared COP)	-	4.95	5.21	5.20	5.26	4.96					
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90					
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	1.17	1.46	1.65	1.92	3.14					
	COPd (declared COP)	-	5.53	6.24	6.53	7.08	6.10					
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90					
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	1.43	1.44	1.65	1.65	3.57					
	COPd (declared COP)	-	7.67	7.66	7.96	7.96	7.87					
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90					
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-22.00	-22.00	-22.00	-22.00	-22.00					
	Pdh (declared heating capacity)	[kW]	2.80	3.48	4.06	4.62	7.01					
	COPd (declared COP)	-	1.97	1.96	1.95	1.97	1.98					
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65					
(F) Tbivalent temperature	Tbiv	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00					
	Pdh (declared heating capacity)	[kW]	3.72	4.59	5.69	6.32	9.28					
	COPd (declared COP)	-	2.57	2.53	2.83	2.64	2.59					
	Psup (@Tdesignh: -22° C)	[kW]	1.76	2.15	2.91	3.08	4.40					
Part load conditions space heating colder climate medium temperature application												
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	2.13	2.70	3.86	4.27	6.63					
	COPd (declared COP)	-	2.32	2.46	2.48	2.54	2.63					
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90					

Product fiche 3

Heat pump space heating Matrix											
Space heating 55°C	Outdoor	ATS14S	ATS16S	ATS12T	ATS14T	ATS16T					
	Indoor	HU160S3	HU160S3	HU160T9	HU160T9	HU160T9					
	[kW]	11.0	11.8	10.3	11.0	11.8					
	[%]	118.9	121.8	117.7	118.9	121.8					
Annual energy consumption	[kWh]	8,866	9,309	8,420	8,867	9,310					
Part load conditions space heating colder climate low temperature application											
(A) condition (-7°C)	Pdh (declared heating capacity)	7.96	8.31	7.05	7.96	8.31					
	COPd (declared COP)	3.44	3.37	3.48	3.44	3.37					
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90					
(B) condition (2°C)	Pdh (declared heating capacity)	5.05	5.26	4.67	5.05	5.26					
	COPd (declared COP)	4.92	4.86	4.96	4.92	4.86					
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90					
(C) condition (7°C)	Pdh (declared heating capacity)	3.15	3.62	3.14	3.15	3.62					
	COPd (declared COP)	6.11	6.49	6.10	6.11	6.49					
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90					
(D) condition (12°C)	Pdh (declared heating capacity)	3.57	3.34	3.57	3.57	3.34					
	COPd (declared COP)	7.82	7.40	7.87	7.82	7.40					
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90					
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	-22.00	-22.00	-22.00	-22.00	-22.00					
	Pdh (declared heating capacity)	7.57	8.88	7.01	7.57	8.88					
	COPd (declared COP)	1.92	1.97	1.98	1.92	1.97					
(F) Thivalent temperature	WTOL (Heating water Operation Limit)	65	65	65	65	65					
	Tbiv	-15.00	-15.00	-15.00	-15.00	-15.00					
	Pdh (declared heating capacity)	10.31	11.22	9.28	10.31	11.22					
Supplementary capacity at P_design	COPd (declared COP)	2.53	2.43	2.59	2.53	2.43					
	Psup (@Tdesign: -22°C)	5.03	4.82	4.40	5.03	4.82					
	Part load conditions space heating colder climate medium temperature application										
(A) condition (-7°C)	Pdh (declared heating capacity)	6.89	7.64	6.63	6.89	7.64					
	COPd (declared COP)	2.66	2.65	2.63	2.66	2.65					
	Cdh(degradation coefficient)	0.90	0.90	0.90	0.90	0.90					

Product fiche 4

Heat pump space heating Matrix							
		Outdoor	ATS04S	ATS06S	ATS08S	ATS10S	ATS12S
		Indoor	HU060S3	HU060S3	HU100S3	HU100S3	HU160S3
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	1.28	1.60	2.21	2.57	4.06
	COPd (declared COP)	-	2.99	3.36	3.35	3.51	3.60
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	1.01	1.02	1.44	1.65	2.78
(C) condition (7°C)	COPd (declared COP)	-	3.86	3.94	4.11	4.37	4.54
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	1.36	1.37	1.46	1.47	3.33
	COPd (declared COP)	-	6.28	6.35	5.92	5.96	6.25
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Tol (temperature operating limit)	[°C]	-22.00	-22.00	-22.00	-22.00	-22.00
(E) Tol (temperature operating limit)	Pdh (declared heating capacity)	[kW]	1.64	2.09	2.80	2.80	4.19
	COPd (declared COP)	-	1.02	1.13	1.22	1.22	1.13
	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65
	Tbiv	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
(F) Tbivalent temperature	Pdh (declared heating capacity)	[kW]	2.74	3.47	4.71	5.47	8.41
	COPd (declared COP)	-	1.74	1.86	1.90	2.00	1.84
Supplementary capacity at P_design	Psup (@Tdesign: -22°C)	[kW]	1.72	2.17	2.97	3.91	6.12
Warmer climate (Design temperature = 2°C)							
Space heating 35°C	Prated (declared heating capacity) @ 2°C	[kW]	5.5	6.1	8.1	8.6	11.1
	Seasonal space heating efficiency (ηs)	[%]	255.4	259.8	276.6	280.5	256.1
	Annual energy consumption	[kWh]	1,146	1,244	1,551	1,617	2,292
Space heating 55°C	Prated (declared heating capacity) @ 2°C	[kW]	5.0	5.1	8.37	8.6	12.5
	Seasonal space heating efficiency (ηs)	[%]	162.4	164.7	176.9	180.3	174.0
	Annual energy consumption	[kWh]	1,621	1,640	2,458	2,516	3,776
Part load conditions space heating warmer climate low temperature application							
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	5.34	5.93	7.56	8.44	11.10
	COPd (declared COP)	-	3.94	3.91	3.98	3.84	3.59
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	3.56	3.93	5.22	5.52	7.14
	COPd (declared COP)	-	5.92	5.89	6.26	6.18	5.87
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 4

Heat pump space heating Matrix							
	Outdoor	ATS14S	ATS16S	ATS12T	ATS14T	ATS16T	
	Indoor	HU160S3	HU160S3	HU160T9	HU160T9	HU160T9	
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	4.32	4.42	4.06	4.32	4.42
	COPd (declared COP)	-	3.66	3.79	3.60	3.66	3.79
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	3.06	2.97	2.78	3.06	2.97
	COPd (declared COP)	-	4.72	4.81	4.54	4.72	4.81
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.33	3.43	3.33	3.33	3.43
	COPd (declared COP)	-	6.25	6.29	6.25	6.25	6.29
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-22.00	-22.00	-22.00	-22.00	-22.00
	Pdh (declared heating capacity)	[kW]	4.20	5.21	4.19	4.20	5.21
	COPd (declared COP)	-	1.13	1.23	1.13	1.13	1.23
(F) Tbiivalent temperature	WTOL (Heating water Operation Limit)	[°C]	65	65	65	65	65
	Tbiv	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
	Pdh (declared heating capacity)	[kW]	8.94	9.61	8.41	8.94	9.61
Supplementary capacity at P_design	COPd (declared COP)	-	1.79	1.86	1.84	1.79	1.86
	Psup (@Tdesignh: -22°C)	[kW]	6.76	6.59	6.12	6.76	6.59
	Warmer climate (Design temperature = 2°C)						
Space heating 35°C	Prated (declared heating capacity) @ 2°C	[kW]	12.1	13.1	11.1	12.1	13.1
	Seasonal space heating efficiency (ns)	[%]	260.3	248.5	255.6	259.8	248.1
	Annual energy consumption	[kWh]	2,457	2,781	2,296	2,462	2,786
Space heating 55°C	Prated (declared heating capacity) @ 2°C	[kW]	14.17	14.17	12.5	14.17	14.17
	Seasonal space heating efficiency (ns)	[%]	174.9	176.0	173.8	174.7	175.8
	Annual energy consumption	[kWh]	4,258	4,231	3,780	4,262	4,236
Part load conditions space heating warmer climate low temperature application							
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	12.04	13.10	11.10	12.04	13.10
	COPd (declared COP)	-	3.44	3.35	3.59	3.44	3.35
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	7.78	8.41	7.14	7.78	8.41
	COPd (declared COP)	-	5.84	5.36	5.87	5.84	5.36
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

Product fiche 5

Heat pump space heating Matrix										Outdoor	ATS04S	ATS06S	ATS08S	ATS10S	ATS12S	
										Indoor	HU060S3	HU060S3	HU100S3	HU100S3	HU160S3	
(D) condition (12°C)	Pdh (declared heating capacity)										[kW]	1.63	1.79	2.62	2.62	3.55
	COPd (declared COP)										-	7.91	8.20	9.23	9.04	7.94
	Cdh(degradation coefficient)										-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)										[°C]	2.00	2.00	2.00	2.00	2.00
	Pdh (declared heating capacity)										[kW]	5.34	5.93	7.56	8.44	11.10
	COPd (declared COP)										-	3.94	3.91	3.98	3.84	3.59
	WTOL (Heating water Operation Limit)										[°C]	65	65	65	65	65
	Tbiv										[°C]	7.00	7.00	7.00	7.00	7.00
(F) Tbivalent temperature	Pdh (declared heating capacity)										[kW]	3.56	3.93	5.22	5.52	7.14
	COPd (declared COP)										-	5.92	5.89	6.26	6.18	5.87
	Psup (@Tdesignh: 2°C)										[kW]	0.18	0.18	0.55	0.14	0.00
Part load conditions space heating warmer climate medium temperature application																
(B) condition (2°C)	Pdh (declared heating capacity)										[kW]	4.83	5.02	7.55	8.06	12.07
	COPd (declared COP)										-	2.51	2.48	2.59	2.59	2.31
	Cdh(degradation coefficient)										-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)										[kW]	3.22	3.31	5.38	5.54	8.04
	COPd (declared COP)										-	3.68	3.67	4.01	4.10	3.86
	Cdh(degradation coefficient)										-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)										[kW]	1.47	1.59	2.31	2.53	3.75
	COPd (declared COP)										-	5.15	5.29	5.55	5.82	5.70
	Cdh(degradation coefficient)										-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)										[°C]	2.00	2.00	2.00	2.00	2.00
	Pdh (declared heating capacity)										[kW]	4.83	5.02	7.55	8.06	12.07
	COPd (declared COP)										-	2.51	2.48	2.59	2.59	2.31
	WTOL (Heating water Operation Limit)										[°C]	65	65	65	65	65
	Tbiv										[°C]	7.00	7.00	7.00	7.00	7.00
(F) Tbivalent temperature	Pdh (declared heating capacity)										[kW]	3.22	3.31	5.38	5.54	8.04
	COPd (declared COP)										-	3.68	3.67	4.01	4.10	3.86
	Psup (@Tdesignh: 2°C)										[kW]	0.18	0.12	0.82	0.48	0.43

Product fiche 5

Heat pump space heating Matrix									
		Outdoor	ATS14S	ATS16S	ATS12T	ATS14T	ATS16T		
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	HU160S3	HU160S3	HU160T9	HU160T9	HU160T9		HU160T9
	COPd (declared COP)	-	3.75	3.87	3.55	3.75	3.87		3.87
	Cdh(degradation coefficient)	-	8.25	8.11	7.94	8.25	8.11		8.11
	Tol (temperature operating limit)	°C	0.90	0.90	0.90	0.90	0.90		0.90
(E) ToI (temperature operating limit)	Pdh (declared heating capacity)	[kW]	2.00	2.00	2.00	2.00	2.00		2.00
	COPd (declared COP)	-	12.04	13.10	11.10	12.04	13.10		13.10
	WTOL (Heating water Operation Limit)	°C	3.44	3.35	3.59	3.44	3.35		3.35
	Tbiv	°C	65	65	65	65	65		65
(F) TbiValent temperature	Pdh (declared heating capacity)	[kW]	7.00	7.00	7.00	7.00	7.00		7.00
	COPd (declared COP)	-	7.78	8.41	7.14	7.78	8.41		8.41
	Psup (@Tdesignh: 2°C)	[kW]	5.84	5.36	5.87	5.84	5.36		5.36
	Part load conditions space heating warmer climate medium temperature application	[kW]	0.00	0.00	0.00	0.00	0.00		0.00
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	13.04	13.38	12.07	13.04	13.38		13.38
	COPd (declared COP)	-	2.20	2.29	2.31	2.20	2.29		2.29
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90		0.90
	Pdh (declared heating capacity)	[kW]	9.11	9.11	8.04	9.11	9.11		9.11
(C) condition (7°C)	COPd (declared COP)	-	3.89	3.89	3.86	3.89	3.89		3.89
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90		0.90
	Pdh (declared heating capacity)	[kW]	4.08	4.06	3.75	4.08	4.06		4.06
	COPd (declared COP)	-	5.90	5.86	5.70	5.90	5.86		5.86
(D) condition (12°C)	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90		0.90
	Tol (temperature operating limit)	°C	2.00	2.00	2.00	2.00	2.00		2.00
	Pdh (declared heating capacity)	[kW]	13.04	13.38	12.07	13.04	13.38		13.38
	COPd (declared COP)	-	2.20	2.29	2.31	2.20	2.29		2.29
(E) ToI (temperature operating limit)	WTOL (Heating water Operation Limit)	°C	65	65	65	65	65		65
	Tbiv	°C	7.00	7.00	7.00	7.00	7.00		7.00
	Pdh (declared heating capacity)	[kW]	9.11	9.11	8.04	9.11	9.11		9.11
	COPd (declared COP)	-	3.89	3.89	3.86	3.89	3.89		3.89
(F) TbiValent temperature	Psup (@Tdesignh: 2°C)	[kW]	1.13	0.79	0.43	1.13	0.79		0.79
	Part load conditions space heating warmer climate medium temperature application	[kW]							

Product fiche 6

Heat pump space heating Matrix						
Product description	Outdoor	ATS04S	ATS06S	ATS08S	ATS10S	ATS12S
	Indoor	HU060S3	HU060S3	HU100S3	HU100S3	HU160S3
	Y/N	Yes	Yes	Yes	Yes	Yes
	Y/N	No	No	No	No	No
	Y/N	No	No	No	No	No
	Y/N	No	No	No	No	No
	Y/N	Yes	Yes	Yes	Yes	Yes
	Y/N	Yes	Yes	Yes	Yes	Yes
	[m³/h]	2770	2770	4030	4030	4060
	-	/	/	/	/	/
Other	Rated water/brine flow (outdoor H/E)	-	Inverter	Inverter	Inverter	Inverter
	Capacity control	-				
	Poff (Power consumption Off mode)	[kW]	0.014	0.014	0.014	0.014
	Pto (Power consumption Thermostat off mode)	[kW]	0.024	0.024	0.024	0.024
	Psb (Power consumption Standby mode)	[kW]	0.014	0.014	0.014	0.014
	Pck (Power crankcase heater mode)	[kW]	0.000	0.000	0.000	0.000
	Qelec (Daily electricity consumption)	[kWh]	/	/	/	/
	Qfuel (Daily fuel consumption)	[kWh]	/	/	/	/

Product fiche 6

Heat pump space heating Matrix		Outdoor	ATS14S	ATS16S	ATS12T	ATS14T	ATS16T
Product description	Air-to-water heat pump	Indoor	HU160S3	HU160S3	HU160T9	HU160T9	HU160T9
	Water-to-water heat pump	Y/N	Yes	Yes	Yes	Yes	Yes
	Brine-to-water heat pump	Y/N	No	No	No	No	No
	Low-temperature heat pump	Y/N	No	No	No	No	No
	Equipped with a supplementary heater	Y/N	No	No	No	No	No
	Heat pump combination heater	Y/N	Yes	Yes	Yes	Yes	Yes
	Rated airflow (outdoor)	Y/N	Yes	Yes	Yes	Yes	Yes
	Rated water/brine flow (outdoor H/E)	[m³/h]	4060	4650	4060	4060	4650
Air to water unit		-	/	/	/	/	/
Other	Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter
	Poff (Power consumption Off mode)	[kW]	0.014	0.014	0.020	0.020	0.020
	Pto (Power consumption Thermostat off mode)	[kW]	0.024	0.024	0.030	0.030	0.030
	Psb (Power consumption Standby mode)	[kW]	0.014	0.014	0.020	0.020	0.020
	Pck (Power crankcase heater mode)	[kW]	0.000	0.000	0.000	0.000	0.000
	Qelec (Daily electricity consumption)	[kWh]	/	/	/	/	/
	Qfuel (Daily fuel consumption)	[kWh]	/	/	/	/	/

Product fiche 7

Heat pump space cooling Matrix							
Indoor unit sound power (*)		Outdoor	ATS04S	ATS06S	ATS08S	ATS10S	ATS12S
Outdoor unit sound power (*)	Average climate low temperature application	Indoor	HU060S3	HU060S3	HU100S3	HU100S3	HU160S3
	Average climate medium temperature application	dB	38	40	42	42	43
	Average climate medium temperature application	dB	56	58	60	61	65
Space cooling 7°C	Prated (declared cooling capacity) @ 35°C	dB	55	58	60	60	64
	Seasonal space cooling efficiency (ηs)	[kW]	4.7	6.3	7.4	8.7	11.3
	Annual energy consumption	[%]	196.5	210.7	230.1	236.2	192.4
Space cooling 18°C	Prated (declared cooling capacity) @ 35°C	[kWh]	561	714	761	876	1,390
	Seasonal space cooling efficiency (ηs)	[kW]	4.5	6.5	8.4	10.0	11.8
	Annual energy consumption	[%]	307.7	325.2	355.1	348.1	280.9
Part load conditions space cooling : low temperature application@7°C							
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	4.66	6.35	7.38	8.73	11.31
	EERd (declared EER)	-	3.52	2.93	3.39	3.21	2.61
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	3.66	4.76	5.72	6.68	8.76
	EERd (declared EER)	-	4.76	4.53	4.71	4.47	3.93
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	2.21	3.02	3.62	4.26	5.81
	EERd (declared EER)	-	5.72	6.32	6.65	7.02	5.73
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	0.94	1.39	1.64	1.94	2.63
	EERd (declared EER)	-	5.72	7.20	8.55	9.54	6.75
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

(*)Sound power measured according to the EN12102 under conditions of the EN14825.

Product fiche 7

Heat pump space cooling Matrix									
	Indoor unit sound power (*)		Outdoor	ATS14S	ATS16S	ATS12T	ATS14T	ATS16T	
	Outdoor unit sound power (*)		Indoor	HU160S3	HU160S3	HU160T9	HU160T9	HU160T9	
Space cooling 7°C	Average climate low temperature application	dB	dB	44	44	43	44	44	
		dB	dB	65	68	65	65	68	
	Average climate medium temperature application	dB	dB	64	67	64	64	67	
		Prated (declared cooling capacity) @ 35°C	[kW]	[kW]	12.2	14.3	11.3	12.2	14.3
Space cooling 18°C	Seasonal space cooling efficiency (ηs)	[%]	[%]	191.4	184.4	191.2	190.3	183.6	
		Annual energy consumption	[kWh]	[kWh]	1,505	1,833	1,398	1,514	1,841
	Prated (declared cooling capacity) @ 35°C	[kW]	[kW]	13.3	15.4	11.8	13.3	15.4	
		Seasonal space cooling efficiency (ηs)	[%]	[%]	272.8	266.9	278.6	270.9	265.3
Annual energy consumption			[kWh]	[kWh]	1,157	1,369	1,165	1,378	
Part load conditions space cooling: low temperature application@7°C									
(A) condition (35°C)	Pdc (declared cooling capacity)		[kW]	12.19	14.31	11.31	12.19	14.31	
	EERd (declared EER)		-	2.46	2.47	2.61	2.46	2.47	
	Cdc(degradation coefficient)		-	0.90	0.90	0.90	0.90	0.90	
(B) condition (30°C)	Pdc (declared cooling capacity)		[kW]	9.41	10.68	8.76	9.41	10.68	
	EERd (declared EER)		-	3.85	3.63	3.93	3.85	3.63	
	Cdc(degradation coefficient)		-	0.90	0.90	0.90	0.90	0.90	
(C) condition (25°C)	Pdc (declared cooling capacity)		[kW]	6.16	6.76	5.81	6.16	6.76	
	EERd (declared EER)		-	5.80	5.27	5.73	5.80	5.27	
	Cdc(degradation coefficient)		-	0.90	0.90	0.90	0.90	0.90	
(D) condition (20°C)	Pdc (declared cooling capacity)		[kW]	2.63	3.41	2.63	2.63	3.41	
	EERd (declared EER)		-	6.74	7.29	6.75	6.74	7.29	
	Cdc(degradation coefficient)		-	0.90	0.90	0.90	0.90	0.90	

(*)Sound power measured according to the EN12102 under conditions of the EN14825.

Product fiche 8

Heat pump space cooling Matrix								
		Part load conditions space cooling: medium temperature application@18°C						
		Outdoor	ATS04S	ATS06S	ATS08S	ATS10S	ATS12S	
(A) condition (35°C)		Indoor	HU060S3	HU060S3	HU100S3	HU100S3	HU160S3	
	Pdc (declared cooling capacity)	[kW]	4.51	6.55	8.37	10.01	11.77	
	EERd (declared EER)	-	5.54	4.69	5.09	4.64	3.87	
(B) condition (30°C)	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90	
	Pdc (declared cooling capacity)	[kW]	3.44	4.84	6.47	7.71	9.21	
	EERd (declared EER)	-	7.23	7.16	7.02	6.45	5.50	
(C) condition (25°C)	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90	
	Pdc (declared cooling capacity)	[kW]	2.19	3.26	4.31	5.03	5.74	
	EERd (declared EER)	-	8.94	9.64	10.67	10.36	8.66	
(D) condition (20°C)	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90	
	Pdc (declared cooling capacity)	[kW]	1.13	1.41	1.80	2.32	3.33	
	EERd (declared EER)	-	10.48	11.48	13.61	14.98	10.07	
Air to water unit	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90	
	Rated airflow (outdoor)	[m³/h]	2770	2770	4030	4030	4060	
Brine/water to water unit	Rated water/brine flow (outdoor H/E)	-	/	/	/	/	/	
Other	Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter	
	Poff (Power consumption Off mode)	[kW]	0.014	0.014	0.014	0.014	0.014	
	Pto (Power consumption Thermostat off mode)	[kW]	0.010	0.010	0.010	0.010	0.010	
	Psb (Power consumption Standby mode)	[kW]	0.014	0.014	0.014	0.014	0.014	
	Pck (Power crankcase heater mode)	[kW]	0.000	0.000	0.000	0.000	0.000	
	Qelec (Daily electricity consumption)	[kWh]	/	/	/	/	/	
	Qfuel (Daily fuel consumption)	[kWh]	/	/	/	/	/	

Product fiche 8

Heat pump space cooling Matrix		Outdoor	ATS14S	ATS16S	ATS12T	ATS14T	ATS16T
		Indoor	HU160S3	HU160S3	HU160T9	HU160T9	HU160T9
Part load conditions space cooling: medium temperature application@18°C							
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	13.30	15.40	11.77	13.30	15.40
	EERd (declared EER)	-	3.47	3.50	3.87	3.47	3.50
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	10.20	11.42	9.21	10.20	11.42
	EERd (declared EER)	-	5.26	5.14	5.50	5.26	5.14
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	6.57	7.27	5.74	6.57	7.27
	EERd (declared EER)	-	8.45	7.83	8.66	8.45	7.83
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	3.33	3.40	3.33	3.33	3.40
	EERd (declared EER)	-	10.07	10.35	10.07	10.07	10.35
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
Air to water unit	Rated airflow (outdoor)	[m³/h]	4060	4650	4060	4060	4650
Brine/water to water unit	Rated water/brine flow (outdoor H/E)	-	/	/	/	/	/
Other	Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter
	Poff (Power consumption Off mode)	[kW]	0.014	0.020	0.020	0.020	0.020
	Pto (Power consumption Thermostat off mode)	[kW]	0.010	0.010	0.010	0.010	0.010
	Psb (Power consumption Standby mode)	[kW]	0.014	0.020	0.020	0.020	0.020
	Pck (Power crankcase heater mode)	[kW]	0.000	0.000	0.000	0.000	0.000
	Qelec (Daily electricity consumption)	[kWh]	/	/	/	/	/
	Qfuel (Daily fuel consumption)	[kWh]	/	/	/	/	/

Outdoor unit	Indoor unit	Ambient Temperature : 35/34 Water temperature : 23/18			Ambient Temperature : 35/34 Water temperature : 12/7			Ambient Temperature : 7/6 Water temperature : 30/35			Ambient Temperature : 2/1 Water temperature : 30/35		
		Capacity kW	Power input kW	EER	Capacity kW	Power input kW	EER	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP
ATS04S	HU060S3	4.50	0.81	5.55	4.70	1.36	3.45	4.25	0.82	5.20	4.45	1.10	4.05
ATS06S	HU060S3	6.55	1.34	4.90	7.00	2.33	3.00	6.20	1.24	5.00	5.50	1.39	3.95
ATS08S	HU100S3	8.40	1.66	5.05	7.40	2.19	3.38	8.30	1.60	5.20	7.10	1.73	4.10
ATS10S	HU100S3	10.00	2.08	4.80	8.20	2.48	3.30	10.00	2.00	5.00	8.20	2.02	4.05
ATS12S	HU160S3	12.00	3.00	4.00	11.60	4.22	2.75	12.10	2.44	4.95	9.30	2.35	3.95
ATS12T	HU160T9	12.00	3.00	4.00	11.60	4.22	2.75	12.10	2.44	4.95	9.30	2.35	3.95
ATS14S	HU160S3	13.50	3.74	3.61	12.70	4.98	2.55	14.50	3.09	4.70	11.40	3.12	3.65
ATS14T	HU160T9	13.50	3.74	3.61	12.70	4.98	2.55	14.50	3.09	4.70	11.40	3.12	3.65
ATS16S	HU160S3	14.2	3.94	3.61	14.00	5.71	2.45	16.00	3.56	4.50	13.00	3.71	3.50
ATS16T	HU160T9	14.2	3.94	3.61	14.00	5.71	2.45	16.00	3.56	4.50	13.00	3.71	3.50

Outdoor unit	Indoor unit	Ambient Temperature : -7/-8 Water temperature : 30/35			Ambient Temperature : 7/6 Water temperature : 40/45			Ambient Temperature : 21 Water temperature : 40/45			Ambient Temperature : -7/-8 Water temperature : 40/45		
		Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP
ATS04S	HU060S3	4.80	1.52	3.15	4.35	1.14	3.80	5.10	1.70	3.00	4.30	1.83	2.35
ATS06S	HU060S3	6.10	2.00	3.05	6.35	1.69	3.75	5.80	1.93	3.00	5.40	2.25	2.40
ATS08S	HU100S3	7.10	2.18	3.25	8.20	2.08	3.95	7.40	2.28	3.25	6.60	2.59	2.55
ATS10S	HU100S3	8.25	2.62	3.15	10.00	2.63	3.80	7.85	2.45	3.20	7.35	2.88	2.55
ATS12S	HU160S3	10.00	3.33	3.00	12.30	3.24	3.80	10.70	3.57	3.00	10.20	4.25	2.40
ATS12T	HU160T9	10.00	3.33	3.00	12.30	3.24	3.80	10.70	3.57	3.00	10.20	4.25	2.40
ATS14S	HU160S3	12.00	4.29	2.80	14.20	3.89	3.65	11.70	4.09	2.86	11.80	5.02	2.35
ATS14T	HU160T9	12.00	4.29	2.80	14.20	3.89	3.65	11.70	4.09	2.86	11.80	5.02	2.35
ATS16S	HU160S3	13.30	4.93	2.70	16.00	4.44	3.60	12.80	4.49	2.85	12.90	5.78	2.23
ATS16T	HU160T9	13.30	4.93	2.70	16.00	4.44	3.60	12.80	4.49	2.85	12.90	5.78	2.23

Outdoor unit	Indoor unit	Ambient Temperature : 7/6 Water temperature : 47/55			Ambient Temperature : 2/1 Water temperature : 47/55			Ambient Temperature : -7/-8 Water temperature : 47/55		
		Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP
ATS04S	HU060S3	4.40	1.49	2.95	5.10	2.08	2.45	4.00	2.05	1.95
ATS06S	HU060S3	6.00	2.00	3.00	5.65	2.31	2.45	5.15	2.58	2.00
ATS08S	HU100S3	7.50	2.36	3.18	7.10	2.73	2.60	6.15	3.00	2.05
ATS10S	HU100S3	9.50	3.06	3.10	8.10	3.16	2.56	6.85	3.43	2.00
ATS12S	HU160S3	12.00	3.87	3.10	11.40	4.47	2.55	10.00	4.88	2.05
ATS12T	HU160T9	12.00	3.87	3.10	11.40	4.47	2.55	10.00	4.88	2.05
ATS14S	HU160S3	13.80	4.60	3.00	12.40	5.06	2.45	11.00	5.37	2.05
ATS14T	HU160T9	13.80	4.60	3.00	12.40	5.06	2.45	11.00	5.37	2.05
ATS16S	HU160S3	16.00	5.52	2.90	13.40	5.58	2.40	12.50	6.19	2.02
ATS16T	HU160T9	16.00	5.52	2.90	13.40	5.58	2.40	12.50	6.19	2.02

ErP Information

Fan Types	Axial fan		
Directive (or Standard) for Regulation		ErP Directive 2009/125/EC COMMISSION REGULATION (EU) No 327/2011	
Model Name	WZDK170-38G-1	Rev.	
Prepare by			

Specified Information of Fan:

No.	Information Item	Comment
1	$\eta_{\text{target}} =$	29.1%
2	Overall efficiency (η_e) =	33.1%
3	Pass or not (Criteria: $\eta_e \geq \eta_{\text{target}}$)	Pass
4	Measurement category (A-D)	A
5	Efficiency category (static or total)	Static
6	Efficiency grade at optimum energy efficiency point	N =43.9
7	VSD is integrated within the fan	YES
8	Year of Manufacture	Ref. to the Unit Nameplate
9	Manufacturer's name and place of manufacture	Ref. to the Unit Nameplate
10.1	Rated motor power input(s) (kW), at optimum energy efficiency	0.190kw
10.2	Rated motor flow rate(s) at optimum energy efficiency	1.368m ³ /s
10.3	Rated motor pressure(s) at optimum energy efficiency	40Pa
11	Rotations per minute (R.P.M)at the optimum energy efficiency point	800r/min
12	Specific ratio	1.001
13	Information relevant for facilitating disassembly, recycling or disposal at end-of-life	all materials can be recycled
14	Information relevant to minimize impact on the environment and ensure optimal life expectancy as regards installation, use and maintenance of the fan	For installation, the clearance of 500 mm shall be kept from inlet
15	Description of additional items used when determining the fan energy efficiency,such as ducts, that are not described in the measurement category and not supplied with the fan.	Measure ment category A, fan is free inlet and outlet conditions
16	Motor manufacturer	NIDEC SHIBAURA (ZHEJIANG) CORP.

Technical parameters

Model(s):	Outdoor unit: ATS04S Indoor unit: HU060S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	4.4	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	3.89	kW
Tj = 2°C	Pdh	2.38	kW
Tj = 7°C	Pdh	2.94	kW
Tj = 12°C	Pdh	1.32	kW
Tj = bivalent temperature	Pdh	3.89	kW
Tj = operating limit	Pdh	3.42	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.014	kW
Standby mode	Psb	0.014	kW
Thermostat-off mode	Pto	0.024	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η s	129.5	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	2.17	-
Tj = 2°C	COPd	3.30	-
Tj = 7°C	COPd	4.41	-
Tj = 12°C	COPd	5.66	-
Tj = bivalent temperature	COPd	2.17	-
Tj = operating limit	COPd	1.91	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	60	°C
Supplementary heater			
Rated heat output (**)	Psup	0.98	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	LWA	38/56	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	2744	kWh				

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

Contact details **INVENTOR A.G. S.A.**
24th km National Road Athens - Lamia & 2 Thoukididou Str., Ag.Stefanos, 14565
el.: +30 211 300 3300, Fax: +30 211 300 3333 - www.inventor.ac

(*) 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):	Outdoor unit: ATS04S Indoor unit: HU060S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	COLDER
Parameters are declared for medium-temperature application.	

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

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

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

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

Contact details	INVENTOR A.G. S.A. 24th km National Road Athens - Lamia & 2 Thoukididou Str., Ag.Stefanos, 14565 el.: +30 211 300 3300, Fax: +30 211 300 3333 - www.inventor.ac						
-----------------	--	--	--	--	--	--	--

(*) 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):	Outdoor unit: ATS04S Indoor unit: HU060S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	WARMER
Parameters are declared for medium-temperature application.	

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	5.0	kW	Seasonal space heating energy efficiency	η_s	162.4	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	-	kW	Tj = -7°C	COPd	-	-
Tj = 2°C	Pdh	4.83	kW	Tj = 2°C	COPd	2.51	-
Tj = 7°C	Pdh	3.22	kW	Tj = 7°C	COPd	3.68	-
Tj = 12°C	Pdh	1.47	kW	Tj = 12°C	COPd	5.15	-
Tj = bivalent temperature	Pdh	3.22	kW	Tj = bivalent temperature	COPd	3.68	-
Tj = operating limit	Pdh	4.83	kW	Tj = operating limit	COPd	2.51	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	62	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	0.18	kW
Standby mode	Psb	0.014	kW	Type of energy input			
Thermostat-off mode	Pto	0.024	kW				
Crankcase heater mode	Pck	0.000	kW	Electrical			

Other items			
Capacity control	variable		
Sound power level, indoors/outdoors	LWA	-	dB
Annual energy consumption	QHE	1621	kWh
For air-to-water heat pumps: Rated air flow rate, outdoors	-	2770	m³/h
For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h

For heat pump combination heater:			
Declared load profile	-		
Daily electricity consumption	Qelec	-	kWh
Annual electricity consumption	AEC	-	kWh
Water heating energy efficiency			
Daily fu5.1el consumption	Qfuel	-	kWh
Annual fuel consumption	AFC	-	GJ

Contact details	INVENTOR A.G. S.A. 24th km National Road Athens - Lamia & 2 Thoukididou Str., Ag.Stefanos, 14565 el.: +30 211 300 3300, Fax: +30 211 300 3333 - www.inventor.ac
-----------------	---

(*) 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):		Outdoor unit: ATS04S Indoor unit: HU060S3					
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:		YES					
Heat pump combination heater:		NO					
Declared climate condition:		AVERAGE					
Parameters are declared for medium-temperature application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	5.7	kW	Seasonal space heating energy efficiency	ηs	137.9	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	5.04	kW	Tj = -7°C	COPd	2.17	-
Tj = 2°C	Pdh	3.12	kW	Tj = 2°C	COPd	3.51	-
Tj = 7°C	Pdh	2.08	kW	Tj = 7°C	COPd	4.54	-
Tj = 12°C	Pdh	1.28	kW	Tj = 12°C	COPd	5.59	-
Tj = bivalent temperature	Pdh	5.04	kW	Tj = bivalent temperature	COPd	2.17	-
Tj = operating limit	Pdh	4.52	kW	Tj = operating limit	COPd	1.91	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	1.18	kW
Standby mode	Psb	0.014	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.024	kW				
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	LWA	38/58	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	3345	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	ηwh	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	INVENTOR A.G. S.A. 24th km National Road Athens - Lamia & 2 Thoukididou Str., Ag.Stefanos, 14565 el.: +30 211 300 3300, Fax: +30 211 300 3333 - www.inventor.ac						
(*) 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):	Outdoor unit: ATS06S Indoor unit: HU060S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	4.3	kW	Seasonal space heating energy efficiency	η_s	111.1	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	2.70	kW	Tj = -7°C	COPd	2.46	-
Tj = 2°C	Pdh	1.60	kW	Tj = 2°C	COPd	3.36	-
Tj = 7°C	Pdh	1.02	kW	Tj = 7°C	COPd	3.94	-
Tj = 12°C	Pdh	1.37	kW	Tj = 12°C	COPd	6.35	-
Tj = bivalent temperature	Pdh	3.47	kW	Tj = bivalent temperature	COPd	1.86	-
Tj = operating limit	Pdh	2.09	kW	Tj = operating limit	COPd	1.13	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-15	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	51	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	5.10	kW
Standby mode	Psb	0.014	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.024	kW				
Crankcase heater mode	Pck	0.000	kW				

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

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

Contact details	INVENTOR A.G. S.A. 24th km National Road Athens - Lamia & 2 Thoukididou Str., Ag.Stefanos, 14565 el.: +30 211 300 3300, Fax: +30 211 300 3333 - www.inventor.ac						
-----------------	--	--	--	--	--	--	--

(*) 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):	Outdoor unit: ATS06S Indoor unit: HU060S3						
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:	YES						
Heat pump combination heater:	NO						
Declared climate condition:	WARMER						
Parameters are declared for medium-temperature application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	5.1	kW	Seasonal space heating energy efficiency	η_s	164.7	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	-	kW	Tj = -7°C	COPd	-	-
Tj = 2°C	Pdh	5.02	kW	Tj = 2°C	COPd	2.48	-
Tj = 7°C	Pdh	3.31	kW	Tj = 7°C	COPd	3.67	-
Tj = 12°C	Pdh	1.60	kW	Tj = 12°C	COPd	5.29	-
Tj = bivalent temperature	Pdh	3.31	kW	Tj = bivalent temperature	COPd	3.67	-
Tj = operating limit	Pdh	5.02	kW	Tj = operating limit	COPd	2.48	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	P _{cyh}	-	kW	Cycling interval efficiency	COP _{cyh}	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	62	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P _{off}	0.014	kW	Rated heat output (**)	P _{sup}	0	kW
Standby mode	P _{sb}	0.014	kW				
Thermostat-off mode	P _{to}	0.024	kW	Type of energy input	Electrical		
Crankcase heater mode	P _{ck}	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	2770	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	Q _{HE}	1640	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	INVENTOR A.G. S.A. 24th km National Road Athens - Lamia & 2 Thoukididou Str., Ag.Stefanos, 14565 el.: +30 211 300 3300, Fax: +30 211 300 3333 - www.inventor.ac						
(*) 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):				Outdoor unit: ATS08S - Indoor unit: HU100S3					
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:				YES					
Heat pump combination heater:				NO					
Declared climate condition:				AVERAGE					
Parameters are declared for medium-temperature application.									
Item		Symbol	Value	Unit	Item		Symbol	Value	Unit
Rated heat output (*)		Prated	6.6	kW	Seasonal space heating energy efficiency		ηs	131.5	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj					
Tj = -7°C		Pdh	5.84	kW	Tj = -7°C		COPd	2.16	-
Tj = 2°C		Pdh	3.75	kW	Tj = 2°C		COPd	3.30	-
Tj = 7°C		Pdh	2.42	kW	Tj = 7°C		COPd	4.34	-
Tj = 12°C		Pdh	1.39	kW	Tj = 12°C		COPd	5.33	-
Tj = bivalent temperature		Pdh	5.84	kW	Tj = bivalent temperature		COPd	2.16	-
Tj = operating limit		Pdh	4.90	kW	Tj = operating limit		COPd	1.84	-
For air-to-water heat pumps: Tj = -15°C		Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C		COPd	-	-
Bivalent temperature		Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature		TOL	-10	°C
Cycling interval capacity for heating		Pcyc	-	kW	Cycling interval efficiency		COPcyc	-	-
Degradation co-efficient (**)		Cdh	0.9	--	Heating water operating limit temperature		WTOL	60	°C
Power consumption in modes other than active mode				Supplementary heater					
Off mode		Poff	0.014	kW	Rated heat output (**)		Psup	1.69	kW
Standby mode		Psb	0.014	kW	Type of energy input		Electrical		
Thermostat-off mode		Pto	0.024	kW					
Crankcase heater mode		Pck	0.000	kW					
Other items									
Capacity control		variable		For air-to-water heat pumps: Rated air flow rate, outdoors		-	4030	m³/h	
Sound power level, indoors/outdoors		LWA	42/59	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		-	-	m³/h
Annual energy consumption		QHE	4056	kWh					
For heat pump combination heater:									
Declared load profile		-		Water heating energy efficiency		ηlwh	-	%	
Daily electricity consumption		Qelec	-	kWh	Daily fuel consumption		Qfuel	-	kWh
Annual electricity consumption		AEC	-	kWh	Annual fuel consumption		AFC	-	GJ
Contact details		INVENTOR A.G. S.A. 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							
(*) 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):	Outdoor unit: ATS08S Indoor unit: HU100S3						
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:	YES						
Heat pump combination heater:	NO						
Declared climate condition:	COLDER						
Parameters are declared for medium-temperature application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	5.8	kW	Seasonal space heating energy efficiency	ηs	112.0	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	3.86	kW	Tj = -7°C	COPd	2.48	-
Tj = 2°C	Pdh	2.21	kW	Tj = 2°C	COPd	3.35	-
Tj = 7°C	Pdh	1.44	kW	Tj = 7°C	COPd	4.11	-
Tj = 12°C	Pdh	1.46	kW	Tj = 12°C	COPd	5.92	-
Tj = bivalent temperature	Pdh	4.71	kW	Tj = bivalent temperature	COPd	1.90	-
Tj = operating limit	Pdh	2.80	kW	Tj = operating limit	COPd	1.22	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-15	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	51	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	2.97	kW
Standby mode	Psb	0.014	kW				
Thermostat-off mode	Pto	0.024	kW	Type of energy input Electrical			
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4030	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	4950	kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	ηwh	-	%
Daily electricity consumption	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Annual electricity consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact details	INVENTOR A.G. S.A. 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						
(*) 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):				Outdoor unit: ATS08S Indoor unit: HU100S3					
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:				YES					
Heat pump combination heater:				NO					
Declared climate condition:				WARMER					
Parameters are declared for medium-temperature application.									
Item		Symbol	Value	Unit	Item		Symbol	Value	Unit
Rated heat output (*)		Prated	8.37	kW	Seasonal space heating energy efficiency		ηs	176.9	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj					Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj				
Tj = -7°C		Pdh	-	kW	Tj = -7°C		COPd	-	-
Tj = 2°C		Pdh	7.55	kW	Tj = 2°C		COPd	2.59	-
Tj = 7°C		Pdh	5.38	kW	Tj = 7°C		COPd	4.01	-
Tj = 12°C		Pdh	2.31	kW	Tj = 12°C		COPd	5.55	-
Tj = bivalent temperature		Pdh	5.38	kW	Tj = bivalent temperature		COPd	4.01	-
Tj = operating limit		Pdh	7.55	kW	Tj = operating limit		COPd	2.59	-
For air-to-water heat pumps: Tj = -15°C		Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C		COPd	-	-
Bivalent temperature		Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature		TOL	2	°C
Cycling interval capacity for heating		Pcych	-	kW	Cycling interval efficiency		COPcyc	-	-
Degradation co-efficient (**)		Cdh	0.9	--	Heating water operating limit temperature		WTOL	62	°C
Power consumption in modes other than active mode					Supplementary heater				
Off mode		Poff	0.014	kW	Rated heat output (**)		Psup	0.82	kW
Standby mode		Psb	0.014	kW	Type of energy input		Electrical		
Thermostat-off mode		Pto	0.024	kW					
Crankcase heater mode		Pck	0.000	kW					
Other items									
Capacity control		variable			For air-to-water heat pumps: Rated air flow rate, outdoors		-	4030	m³/h
Sound power level, indoors/outdoors		LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		-	-	m³/h
Annual energy consumption		QHE	2458	kWh					
For heat pump combination heater:									
Declared load profile		-			Water heating energy efficiency		ηlwh	-	%
Daily electricity consumption		Qclec	-	kWh	Daily fuel consumption		Qfuel	-	kWh
Annual electricity consumption		AEC	-	kWh	Annual fuel consumption		AFC	-	GJ
Contact details		INVENTOR A.G. S.A. 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							
(*) 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):	Outdoor unit: ATS10S Indoor unit: HU100S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE

Parameters are declared for medium-temperature application.

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

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

For heat pump combination heater:

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

Contact details

INVENTOR A.G. S.A.
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

(*) 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):	Outdoor unit: ATS10S Indoor unit: HU100S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	6.7	kW	Seasonal space heating energy efficiency	η_s	116.4	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	4.27	kW	Tj = -7°C	COPd	2.54	-
Tj = 2°C	Pdh	2.57	kW	Tj = 2°C	COPd	3.51	-
Tj = 7°C	Pdh	1.65	kW	Tj = 7°C	COPd	4.37	-
Tj = 12°C	Pdh	1.47	kW	Tj = 12°C	COPd	5.96	-
Tj = bivalent temperature	Pdh	5.47	kW	Tj = bivalent temperature	COPd	2.00	-
Tj = operating limit	Pdh	2.80	kW	Tj = operating limit	COPd	1.22	-
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	Tbiv	-15	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	51	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	3.91	kW
Standby mode	Psb	0.014	kW	Type of energy input	Electrical		
Thermostat-off mode	Pto	0.024	kW				
Crankcase heater mode	Pck	0.000	kW				

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4030	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	5540	kWh				

For heat pump combination heater:

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

Contact details	INVENTOR A.G. S.A. 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						
-----------------	---	--	--	--	--	--	--

(*) 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):	Outdoor unit: ATS10S Indoor unit: HU100S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	WARMER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	8.6	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	8.06	kW
Tj = 7°C	Pdh	5.54	kW
Tj = 12°C	Pdh	2.53	kW
Tj = bivalent temperature	Pdh	5.54	kW
Tj = operating limit	Pdh	8.15	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.014	kW
Standby mode	Psb	0.014	kW
Thermostat-off mode	Pto	0.024	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	ηs	180.3	%
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	2.59	-
Tj = 7°C	COPd	4.10	-
Tj = 12°C	COPd	5.82	-
Tj = bivalent temperature	COPd	4.10	-
Tj = operating limit	COPd	2.61	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	62	°C
Supplementary heater			
Rated heat output (**)	Psup	0.48	kW
Type of energy input	Electrical		

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

For heat pump combination heater:

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

Contact details

INVENTOR A.G. S.A.
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

(*) 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):	Outdoor unit: ATS12S Indoor unit: HU160S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit			
Rated heat output (*)	Prated	11.6	kW	Seasonal space heating energy efficiency	ηs	135.1	%			
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj						
Tj = -7°C	Pdh	10.24	kW	Tj = -7°C	COPd	2.01	-			
Tj = 2°C	Pdh	6.52	kW	Tj = 2°C	COPd	3.44	-			
Tj = 7°C	Pdh	4.36	kW	Tj = 7°C	COPd	4.59	-			
Tj = 12°C	Pdh	3.29	kW	Tj = 12°C	COPd	6.05	-			
Tj = bivalent temperature	Pdh	10.24	kW	Tj = bivalent temperature	COPd	2.01	-			
Tj = operating limit	Pdh	9.10	kW	Tj = operating limit	COPd	1.79	-			
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-			
Bivalent temperature	Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C			
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-			
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	60	°C			
Power consumption in modes other than active mode				Supplementary heater						
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	1.23	kW			
Standby mode	Psb	0.014	kW							
Thermostat-off mode	Pto	0.024	kW	Type of energy input						
Crankcase heater mode	Pck	0.000	kW					Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	43/64	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	Q _{HE}	6927	kWh				

For heat pump combination heater:

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

Contact details

INVENTOR A.G. S.A.
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

(*) 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):	Outdoor unit: ATS12S Indoor unit: HU160S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	10.3	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	6.63	kW
Tj = 2°C	Pdh	4.06	kW
Tj = 7°C	Pdh	2.78	kW
Tj = 12°C	Pdh	3.33	kW
Tj = bivalent temperature	Pdh	8.41	kW
Tj = operating limit	Pdh	4.19	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-15	°C
Cycling interval capacity for heating	Pcyc	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.014	kW
Standby mode	Psb	0.014	kW
Thermostat-off mode	Pto	0.024	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	ηs	117.8	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	2.63	-
Tj = 2°C	COPd	3.60	-
Tj = 7°C	COPd	4.54	-
Tj = 12°C	COPd	6.25	-
Tj = bivalent temperature	COPd	1.84	-
Tj = operating limit	COPd	1.13	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	51	°C
Supplementary heater			
Rated heat output (**)	Psup	6.11	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	8419	kWh				

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

Contact details **INVENTOR A.G. S.A.**
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

(*) 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):	Outdoor unit: ATS12S Indoor unit: HU160S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	WARMER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	12.5	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	12.07	kW
Tj = 7°C	Pdh	8.04	kW
Tj = 12°C	Pdh	3.75	kW
Tj = bivalent temperature	Pdh	8.04	kW
Tj = operating limit	Pdh	12.07	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.014	kW
Standby mode	Psb	0.014	kW
Thermostat-off mode	Pto	0.024	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	ηs	174.0	%
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	2.31	-
Tj = 7°C	COPd	3.86	-
Tj = 12°C	COPd	5.70	-
Tj = bivalent temperature	COPd	3.86	-
Tj = operating limit	COPd	2.31	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	62	°C
Supplementary heater			
Rated heat output (**)	Psup	0.43	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	3776	kWh				

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

Contact details	INVENTOR A.G. S.A. 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						
-----------------	---	--	--	--	--	--	--

(*) 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):	Outdoor unit: ATS12T Indoor HU160T9
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE
Parameters are declared for medium-temperature application.	

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	11.6	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	10.24	kW
Tj = 2°C	Pdh	6.52	kW
Tj = 7°C	Pdh	4.36	kW
Tj = 12°C	Pdh	3.29	kW
Tj = bivalent temperature	Pdh	10.24	kW
Tj = operating limit	Pdh	9.10	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.020	kW
Standby mode	Psb	0.020	kW
Thermostat-off mode	Pto	0.030	kW
Crankcase heater mode	Pck	0.000	kW

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

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-65	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	6928	kWh				

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

Contact details	INVENTOR A.G. S.A., 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
-----------------	--

(*) 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):	Outdoor unit: ATS12T Indoor HU160T9
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature application.

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

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

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

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

Contact details **INVENTOR A.G. S.A.**, 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

(*) 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):	Outdoor unit: ATS12T Indoor HU160T9
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	WARMER
Parameters are declared for medium-temperature application.	

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

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

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

Contact details	INVENTOR A.G. S.A., 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
-----------------	--

(*) 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):	Outdoor unit: ATS14T Indoor unit: HU160T9
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	12.08	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	10.68	kW
Tj = 2°C	Pdh	6.86	kW
Tj = 7°C	Pdh	4.63	kW
Tj = 12°C	Pdh	3.31	kW
Tj = bivalent temperature	Pdh	10.68	kW
Tj = operating limit	Pdh	9.19	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.020	kW
Standby mode	Psb	0.020	kW
Thermostat-off mode	Pto	0.030	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	ηs	135.6	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	2.01	-
Tj = 2°C	COPd	3.43	-
Tj = 7°C	COPd	4.66	-
Tj = 12°C	COPd	6.13	-
Tj = bivalent temperature	COPd	2.01	-
Tj = operating limit	COPd	1.76	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	60	°C
Supplementary heater			
Rated heat output (**)	Psup	1.40	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	43/65	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	7203	kWh				

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

Contact details **INVENTOR A.G. S.A.**
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

(*) 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):	Outdoor unit: ATS14T Indoor unit: HU160T9
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	11.0	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	6.89	kW
Tj = 2°C	Pdh	4.32	kW
Tj = 7°C	Pdh	3.06	kW
Tj = 12°C	Pdh	3.33	kW
Tj = bivalent temperature	Pdh	8.94	kW
Tj = operating limit	Pdh	4.20	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-15	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.020	kW
Standby mode	Psb	0.020	kW
Thermostat-off mode	Pto	0.030	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	ηs	118.9	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	2.66	-
Tj = 2°C	COPd	3.66	-
Tj = 7°C	COPd	4.72	-
Tj = 12°C	COPd	6.25	-
Tj = bivalent temperature	COPd	1.79	-
Tj = operating limit	COPd	1.13	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	51	°C
Supplementary heater			
Rated heat output (**)	Psup	6.80	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	8867	kWh				

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

Contact details	INVENTOR A.G. S.A. 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						
-----------------	---	--	--	--	--	--	--

(*) 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):	Outdoor unit: ATS14T Indoor unit: HU160T9
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	WARMER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	14.17	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	13.04	kW
Tj = 7°C	Pdh	9.11	kW
Tj = 12°C	Pdh	4.08	kW
Tj = bivalent temperature	Pdh	9.11	kW
Tj = operating limit	Pdh	13.04	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.020	kW
Standby mode	Psb	0.020	kW
Thermostat-off mode	Pto	0.030	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	ηs	174.7	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	-	-
Tj = 2°C	COPd	2.20	-
Tj = 7°C	COPd	3.89	-
Tj = 12°C	COPd	5.90	-
Tj = bivalent temperature	COPd	3.89	-
Tj = operating limit	COPd	2.20	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	62	°C
Supplementary heater			
Rated heat output (**)	Psup	1.13	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	4262	kWh				

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

Contact details	INVENTOR A.G. S.A. 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						
-----------------	---	--	--	--	--	--	--

(*) 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):	Outdoor unit: ATS14S Indoor unit: HU160S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit			
Rated heat output (*)	Prated	12.08	kW	Seasonal space heating energy efficiency	η_s	135.6	%			
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj						
Tj = -7°C	Pdh	10.68	kW	Tj = -7°C	COPd	2.01	-			
Tj = 2°C	Pdh	6.86	kW	Tj = 2°C	COPd	3.43	-			
Tj = 7°C	Pdh	4.63	kW	Tj = 7°C	COPd	4.66	-			
Tj = 12°C	Pdh	3.31	kW	Tj = 12°C	COPd	6.13	-			
Tj = bivalent temperature	Pdh	10.68	kW	Tj = bivalent temperature	COPd	2.01	-			
Tj = operating limit	Pdh	9.19	kW	Tj = operating limit	COPd	1.76	-			
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-			
Bivalent temperature	Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C			
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-			
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	60	°C			
Power consumption in modes other than active mode				Supplementary heater						
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	1.40	kW			
Standby mode	Psb	0.014	kW							
Thermostat-off mode	Pto	0.024	kW	Type of energy input						
Crankcase heater mode	Pck	0.000	kW							

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-65	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	7202	kWh				

For heat pump combination heater:

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

Contact details **INVENTOR A.G. S.A.**, 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

(*) 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):	Outdoor unit: ATS14S Indoor unit: HU160S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit			
Rated heat output (*)	Prated	11.0	kW	Seasonal space heating energy efficiency	η_s	118.9	%			
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj						
Tj = -7°C	Pdh	6.89	kW	Tj = -7°C	COPd	2.66	-			
Tj = 2°C	Pdh	4.32	kW	Tj = 2°C	COPd	3.66	-			
Tj = 7°C	Pdh	3.06	kW	Tj = 7°C	COPd	4.72	-			
Tj = 12°C	Pdh	3.33	kW	Tj = 12°C	COPd	6.25	-			
Tj = bivalent temperature	Pdh	8.94	kW	Tj = bivalent temperature	COPd	1.79	-			
Tj = operating limit	Pdh	4.20	kW	Tj = operating limit	COPd	1.13	-			
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C	COPd	-	-			
Bivalent temperature	Tbiv	-15	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C			
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-			
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	51	°C			
Power consumption in modes other than active mode				Supplementary heater						
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	6.80	kW			
Standby mode	Psb	0.014	kW							
Thermostat-off mode	Pto	0.024	kW	Type of energy input						
Crankcase heater mode	Pck	0.000	kW							

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m ³ /h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m ³ /h
Annual energy consumption	QHE	8866	kWh				

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

Contact details **INVENTOR A.G. S.A.**, 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

(*) 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):	Outdoor unit: ATS14S Indoor unit: HU160S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	WARMER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	14.17	kW	Seasonal space heating energy efficiency	η_s	174.9	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	-	kW	Tj = -7 °C	COPd	-	-
Tj = 2 °C	Pdh	13.04	kW	Tj = 2 °C	COPd	2.20	-
Tj = 7 °C	Pdh	9.11	kW	Tj = 7 °C	COPd	3.89	-
Tj = 12 °C	Pdh	4.08	kW	Tj = 12 °C	COPd	5.90	-
Tj = bivalent temperature	Pdh	9.11	kW	Tj = bivalent temperature	COPd	3.89	-
Tj = operating limit	Pdh	13.04	kW	Tj = operating limit	COPd	2.20	-
For air-to-water heat pumps: Tj = -15 °C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15 °C	COPd	-	-
Bivalent temperature	Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	62	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	1.13	kW
Standby mode	Psb	0.014	kW				
Thermostat-off mode	Pto	0.024	kW	Type of energy input		Electrical	
Crankcase heater mode	Pck	0.000	kW				

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	4258	kWh				

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

Contact details **INVENTOR A.G. S.A.**, 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

(*) 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):	Outdoor unit: ATS16T Indoor unit: HU160T9
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13.0	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	11.52	kW
Tj = 2°C	Pdh	7.18	kW
Tj = 7°C	Pdh	4.67	kW
Tj = 12°C	Pdh	3.31	kW
Tj = bivalent temperature	Pdh	11.52	kW
Tj = operating limit	Pdh	10.33	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.020	kW
Standby mode	Psb	0.020	kW
Thermostat-off mode	Pto	0.030	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	ηs	133.2	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	1.99	-
Tj = 2°C	COPd	3.34	-
Tj = 7°C	COPd	4.61	-
Tj = 12°C	COPd	6.07	-
Tj = bivalent temperature	COPd	1.99	-
Tj = operating limit	COPd	1.80	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	60	°C
Supplementary heater			
Rated heat output (**)	Psup	2.67	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4650	m³/h
Sound power level, indoors/outdoors	LWA	43/68	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	7896	kWh				

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

Contact details	INVENTOR A.G. S.A. 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						
-----------------	---	--	--	--	--	--	--

(*) 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):	Outdoor unit: ATS16T Indoor unit: HU160T9
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	COLDER
Parameters are declared for medium-temperature application.	

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

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

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

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

Contact details	INVENTOR A.G. S.A. 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						
-----------------	---	--	--	--	--	--	--

(*) 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):	Outdoor unit: ATS16T Indoor unit: HU160T9
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	WARMER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	14.17	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	13.38	kW
Tj = 7°C	Pdh	9.11	kW
Tj = 12°C	Pdh	4.06	kW
Tj = bivalent temperature	Pdh	9.11	kW
Tj = operating limit	Pdh	13.38	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.014	kW
Standby mode	Psb	0.014	kW
Thermostat-off mode	Pto	0.029	kW
Crankcase heater mode	Pck	0.000	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	ηs	175.8	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	COPd	-	-
Tj = 2°C	COPd	2.29	-
Tj = 7°C	COPd	3.89	-
Tj = 12°C	COPd	5.86	-
Tj = bivalent temperature	COPd	3.89	-
Tj = operating limit	COPd	2.29	-
For air-to-water heat pumps: Tj = -15°C	COPd	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	62	°C
Supplementary heater			
Rated heat output (**)	Psup	0.79	kW
Type of energy input	Electrical		

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4650	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	4236	kWh				

For heat pump combination heater:

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

Contact details

INVENTOR A.G. S.A.

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

(*) 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):	Outdoor unit: ATS16S Indoor unit: HU160S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	AVERAGE

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit			
Rated heat output (*)	Prated	13.0	kW	Seasonal space heating energy efficiency	η_s	133.3	%			
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj						
Tj = -7 °C	Pdh	11.52	kW	Tj = -7 °C	COPd	1.99	-			
Tj = 2 °C	Pdh	7.18	kW	Tj = 2 °C	COPd	3.34	-			
Tj = 7 °C	Pdh	4.67	kW	Tj = 7 °C	COPd	4.61	-			
Tj = 12 °C	Pdh	3.31	kW	Tj = 12 °C	COPd	6.07	-			
Tj = bivalent temperature	Pdh	11.52	kW	Tj = bivalent temperature	COPd	1.99	-			
Tj = operating limit	Pdh	10.33	kW	Tj = operating limit	COPd	1.80	-			
For air-to-water heat pumps: Tj = -15 °C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15 °C	COPd	-	-			
Bivalent temperature	Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C			
Cycling interval capacity for heating	Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-			
Degradation co-efficient (**)	Cdh	0.9	--	Heating water operating limit temperature	WTOL	60	°C			
Power consumption in modes other than active mode				Supplementary heater						
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	2.68	kW			
Standby mode	Psb	0.014	kW							
Thermostat-off mode	Pto	0.024	kW	Type of energy input						
Crankcase heater mode	Pck	0.000	kW							

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4650	m ³ /h
Sound power level, indoors/outdoors	LWA	-68	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m ³ /h
Annual energy consumption	QHE	7895	kWh				

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

Contact details	INVENTOR A.G. S.A., 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						
-----------------	--	--	--	--	--	--	--

(*) 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):	Outdoor unit: ATS16S Indoor unit: HU160S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	COLDER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit
Rated heat output (*)	Prated	11.8	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7°C	Pdh	7.64	kW
Tj = 2°C	Pdh	4.42	kW
Tj = 7°C	Pdh	2.97	kW
Tj = 12°C	Pdh	3.43	kW
Tj = bivalent temperature	Pdh	9.61	kW
Tj = operating limit	Pdh	5.21	kW
For air-to-water heat pumps: Tj = -15°C	Pdh	-	kW
Bivalent temperature	Tbiv	-15	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (**)	Cdh	0.9	--
Power consumption in modes other than active mode			
Off mode	Poff	0.014	kW
Standby mode	Psb	0.014	kW
Thermostat-off mode	Pto	0.024	kW
Crankcase heater mode	Pck	0.000	kW

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

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4650	m ³ /h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m ³ /h
Annual energy consumption	QHE	9309	kWh				

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

Contact details **INVENTOR A.G. S.A.**, 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

(*) 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):	Outdoor unit: ATS16S Indoor unit: HU160S3
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:	YES
Heat pump combination heater:	NO
Declared climate condition:	WARMER

Parameters are declared for medium-temperature application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	14.17	kW	Seasonal space heating energy efficiency	η_s	176	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	-	kW	Tj = -7 °C	COPd	-	-
Tj = 2 °C	Pdh	13.38	kW	Tj = 2 °C	COPd	2.29	-
Tj = 7 °C	Pdh	9.11	kW	Tj = 7 °C	COPd	3.89	-
Tj = 12 °C	Pdh	4.06	kW	Tj = 12 °C	COPd	5.86	-
Tj = bivalent temperature	Pdh	9.11	kW	Tj = bivalent temperature	COPd	3.89	-
Tj = operating limit	Pdh	13.38	kW	Tj = operating limit	COPd	2.29	-
For air-to-water heat pumps: Tj = -15 °C	Pdh	-	kW	For air-to-water heat pumps: Tj = -15 °C	COPd	-	-
Bivalent temperature	Tbiv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	-	Heating water operating limit temperature	WTOL	62	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	Poff	0.014	kW	Rated heat output (**)	Psup	0.79	kW
Standby mode	Psb	0.014	kW				
Thermostat-off mode	Pto	0.024	kW	Type of energy input		Electrical	
Crankcase heater mode	Pck	0.000	kW				

Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4650	m³/h
Sound power level, indoors/outdoors	LWA	-	dB	For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m³/h
Annual energy consumption	QHE	4231	kWh				

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

Contact details **INVENTOR A.G. S.A.**, 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

(*) 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):				Outdoor unit: ATS04S Indoor unit: HU060S3				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	4.7	kW		Seasonal space cooling energy efficiency	η _{s,c}	196.5	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	4.66	kW		T _j =+35°C	EER _d	3.52	-
T _j =+30°C	P _{dc}	3.66	kW		T _j =+30°C	EER _d	4.76	-
T _j =+25°C	P _{dc}	2.21	kW		T _j =+25°C	EER _d	5.72	-
T _j =+20°C	P _{dc}	0.94	kW		T _j =+20°C	EER _d	5.72	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	2770	m³/h
Sound power level, indoors / outdoors	L _{WA}	38/56	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		INVENTOR A.G. S.A. 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):				Outdoor unit: ATS04S Indoor unit: HU060S3				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	4.5	kW		Seasonal space cooling energy efficiency	η _{s,c}	307.7	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	4.51	kW		T _j =+35°C	EER _d	5.54	-
T _j =+30°C	P _{dc}	3.44	kW		T _j =+30°C	EER _d	7.23	-
T _j =+25°C	P _{dc}	2.19	kW		T _j =+25°C	EER _d	8.94	-
T _j =+20°C	P _{dc}	1.13	kW		T _j =+20°C	EER _d	10.48	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	2770	m³/h
Sound power level, indoors / outdoors	L _{WA}	38/55	dB		For water /brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		INVENTOR A.G. S.A. 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):	Outdoor unit: ATS06S Indoor unit: HU060S3						
Outdoor side heat exchanger of chiller:	Air to water						
Indoor side heat exchanger chiller:	Water						
Type:	Compressor driven vapour compression						
Driver of compressor:	Electric motor						

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	$P_{rated,c}$	6.3	kW	Seasonal space cooling energy efficiency	$\eta_{s,c}$	210.7	%
Declared cooling capacity for part load at given outdoor temperature T_j				Declared energy efficiency ratio for part load at given outdoor temperature T_j			
$T_j=+35^{\circ}\text{C}$	P_{dc}	6.35	kW	$T_j=+35^{\circ}\text{C}$	EER_d	2.93	-
$T_j=+30^{\circ}\text{C}$	P_{dc}	4.76	kW	$T_j=+30^{\circ}\text{C}$	EER_d	4.53	-
$T_j=+25^{\circ}\text{C}$	P_{dc}	3.02	kW	$T_j=+25^{\circ}\text{C}$	EER_d	6.32	-
$T_j=+20^{\circ}\text{C}$	P_{dc}	1.39	kW	$T_j=+20^{\circ}\text{C}$	EER_d	7.20	-
Degradation co-efficient for chillers (*)	C_{dc}	0.9	-				
Power consumption in modes other than "active mode"							
Off mode	P_{OFF}	0.014	kW	Crankcase heater mode	P_{CK}	0.000	kW
Thermosat-off mode	P_{TO}	0.010	kW	Standby mode	P_{SB}	0.014	kW
Other items							
Capacity control	variable			For air-to-water comfort chillers: air flow rate, outdoor measured	-	2770	m^3/h
Sound power level, indoors / outdoors	L_{WA}	38/58	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	-	-	m^3/h
GWP of the refrigerant	-	675	kg CO_2 eq (100years)				
Standard rating conditions used	Low temperature application						
Contact details	INVENTOR A.G. S.A. 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):				Outdoor unit: ATS06S Indoor unit: HU060S3				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	6.5	kW		Seasonal space cooling energy efficiency	η _{s,c}	325.2	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	6.55	kW		T _j =+35°C	EER _d	4.69	-
T _j =+30°C	P _{dc}	4.84	kW		T _j =+30°C	EER _d	7.16	-
T _j =+25°C	P _{dc}	3.26	kW		T _j =+25°C	EER _d	9.64	-
T _j =+20°C	P _{dc}	1.41	kW		T _j =+20°C	EER _d	11.48	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	2770	m³/h
Sound power level, indoors / outdoors	L _{WA}	38/58	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		INVENTOR A.G. S.A. 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):				Outdoor unit: ATS08S Indoor unit: HU100S3				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	7.4	kW		Seasonal space cooling energy efficiency	η _{s,c}	230.1	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	7.38	kW		T _j =+35°C	EER _d	3.39	-
T _j =+30°C	P _{dc}	5.72	kW		T _j =+30°C	EER _d	4.71	-
T _j =+25°C	P _{dc}	3.62	kW		T _j =+25°C	EER _d	6.65	-
T _j =+20°C	P _{dc}	1.64	kW		T _j =+20°C	EER _d	8.55	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4030	m³/h
Sound power level, indoors / outdoors	L _{WA}	42/60	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		INVENTOR A.G. S.A. 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):				Outdoor unit: ATS08S Indoor unit: HU100S3				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	8.4	kW		Seasonal space cooling energy efficiency	η _{s,c}	355.1	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	8.37	kW		T _j =+35°C	EER _d	5.09	-
T _j =+30°C	P _{dc}	6.47	kW		T _j =+30°C	EER _d	7.02	-
T _j =+25°C	P _{dc}	4.31	kW		T _j =+25°C	EER _d	10.67	-
T _j =+20°C	P _{dc}	1.80	kW		T _j =+20°C	EER _d	13.61	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4030	m³/h
Sound power level, indoors / outdoors	L _{WA}	42/60	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		INVENTOR A.G. S.A. 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):				Outdoor unit: ATS10S Indoor unit: HU100S3				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	8.7	kW		Seasonal space cooling energy efficiency	η _{s,c}	236.2	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	8.73	kW		T _j =+35°C	EER _d	3.21	-
T _j =+30°C	P _{dc}	6.68	kW		T _j =+30°C	EER _d	4.47	-
T _j =+25°C	P _{dc}	4.26	kW		T _j =+25°C	EER _d	7.02	-
T _j =+20°C	P _{dc}	1.94	kW		T _j =+20°C	EER _d	9.54	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4030	m³/h
Sound power level, indoors / outdoors	L _{WA}	42/61	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		INVENTOR A.G. S.A. 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):				Outdoor unit: ATS10S Indoor unit: HU160S3				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	10.0	kW		Seasonal space cooling energy efficiency	η _{s,c}	348.1	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	10.01	kW		T _j =+35°C	EER _d	4.64	-
T _j =+30°C	P _{dc}	7.71	kW		T _j =+30°C	EER _d	6.45	-
T _j =+25°C	P _{dc}	5.03	kW		T _j =+25°C	EER _d	10.36	-
T _j =+20°C	P _{dc}	2.32	kW		T _j =+20°C	EER _d	14.98	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4030	m³/h
Sound power level, indoors / outdoors	L _{WA}	42/60	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		INVENTOR A.G. S.A. 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):				Outdoor unit: ATS12S Indoor unit: HU160S3				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	11.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	192.4	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	11.31	kW		T _j =+35°C	EER _d	2.61	-
T _j =+30°C	P _{dc}	8.76	kW		T _j =+30°C	EER _d	3.93	-
T _j =+25°C	P _{dc}	5.81	kW		T _j =+25°C	EER _d	5.73	-
T _j =+20°C	P _{dc}	2.63	kW		T _j =+20°C	EER _d	6.75	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m³/h
Sound power level, indoors / outdoors	L _{WA}	43/65	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		INVENTOR A.G. S.A. 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):				Outdoor unit: ATS12S Indoor unit: HU160T9				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	11.8	kW		Seasonal space cooling energy efficiency	η _{s,c}	280.9	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	11.77	kW		T _j =+35°C	EER _d	3.87	-
T _j =+30°C	P _{dc}	9.21	kW		T _j =+30°C	EER _d	5.50	-
T _j =+25°C	P _{dc}	5.74	kW		T _j =+25°C	EER _d	8.66	-
T _j =+20°C	P _{dc}	3.33	kW		T _j =+20°C	EER _d	10.07	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m³/h
Sound power level, indoors / outdoors	L _{WA}	43/64	dB		For water /brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		INVENTOR A.G. S.A. 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):				Outdoor unit: ATS14T Indoor unit: HU160T9				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	12.2	kW		Seasonal space cooling energy efficiency	η _{s,c}	190.3	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	12.19	kW		T _j =+35°C	EER _d	2.46	-
T _j =+30°C	P _{dc}	9.41	kW		T _j =+30°C	EER _d	3.85	-
T _j =+25°C	P _{dc}	6.16	kW		T _j =+25°C	EER _d	5.80	-
T _j =+20°C	P _{dc}	2.63	kW		T _j =+20°C	EER _d	6.74	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.020	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.020	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m³/h
Sound power level, indoors / outdoors	L _{WA}	44/65	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		INVENTOR A.G. S.A. 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):				Outdoor unit: ATS14T Indoor unit: HU160T9				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	13.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	270.9	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	13.30	kW		T _j =+35°C	EER _d	3.47	-
T _j =+30°C	P _{dc}	10.20	kW		T _j =+30°C	EER _d	5.26	-
T _j =+25°C	P _{dc}	6.57	kW		T _j =+25°C	EER _d	8.45	-
T _j =+20°C	P _{dc}	3.33	kW		T _j =+20°C	EER _d	10.07	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.020	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.020	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m³/h
Sound power level, indoors / outdoors	L _{WA}	44/64	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		INVENTOR A.G. S.A. 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):				Outdoor unit: ATS16T Indoor unit: HU160T9				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	14.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	183.6	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	14.31	kW		T _j =+35°C	EER _d	2.47	-
T _j =+30°C	P _{dc}	10.68	kW		T _j =+30°C	EER _d	3.63	-
T _j =+25°C	P _{dc}	6.76	kW		T _j =+25°C	EER _d	5.27	-
T _j =+20°C	P _{dc}	3.41	kW		T _j =+20°C	EER _d	7.29	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.020	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.020	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4650	m³/h
Sound power level, indoors / outdoors	L _{WA}	44/68	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	2088	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		INVENTOR A.G. S.A. 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):				Outdoor unit: ATS16T Indoor unit:HU160T9				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	15.4	kW		Seasonal space cooling energy efficiency	η _{s,c}	265.3	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	15.40	kW		T _j =+35°C	EER _d	3.50	-
T _j =+30°C	P _{dc}	11.42	kW		T _j =+30°C	EER _d	5.14	-
T _j =+25°C	P _{dc}	7.27	kW		T _j =+25°C	EER _d	7.83	-
T _j =+20°C	P _{dc}	3.40	kW		T _j =+20°C	EER _d	10.35	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.020	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.020	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4650	m³/h
Sound power level, indoors / outdoors	L _{WA}	44/67	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		INVENTOR A.G. S.A. 24th km National Road Athens - Lamia & 2 Thoukididou Str., Ag.Stefanos, 14565 el.: +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):				Outdoor unit: ATS12T Indoor HU160T9				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	11.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	191.2	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	11.31	kW		T _j =+35°C	EER _d	2.61	-
T _j =+30°C	P _{dc}	8.76	kW		T _j =+30°C	EER _d	3.93	-
T _j =+25°C	P _{dc}	5.81	kW		T _j =+25°C	EER _d	5.73	-
T _j =+20°C	P _{dc}	2.63	kW		T _j =+20°C	EER _d	6.75	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.020	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.020	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m³/h
Sound power level, indoors / outdoors	L _{WA}	-65	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		INVENTOR A.G. S.A., 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):				Outdoor unit: ATS12T Indoor HU160T9				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	11.8	kW		Seasonal space cooling energy efficiency	η _{s,c}	278.6	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	11.77	kW		T _j =+35°C	EER _d	3.87	-
T _j =+30°C	P _{dc}	9.21	kW		T _j =+30°C	EER _d	5.50	-
T _j =+25°C	P _{dc}	5.74	kW		T _j =+25°C	EER _d	8.66	-
T _j =+20°C	P _{dc}	3.33	kW		T _j =+20°C	EER _d	10.07	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.020	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.020	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m ³ /h
Sound power level, indoors / outdoors	L _{WA}	-/64	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m ³ /h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		INVENTOR A.G. S.A., 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):				Outdoor unit: ATS14S Indoor HU160S3				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	12.2	kW		Seasonal space cooling energy efficiency	η _{s,c}	191.4	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	12.19	kW		T _j =+35°C	EER _d	2.46	-
T _j =+30°C	P _{dc}	9.41	kW		T _j =+30°C	EER _d	3.85	-
T _j =+25°C	P _{dc}	6.16	kW		T _j =+25°C	EER _d	5.80	-
T _j =+20°C	P _{dc}	2.63	kW		T _j =+20°C	EER _d	6.74	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m³/h
Sound power level, indoors / outdoors	L _{WA}	-65	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		INVENTOR A.G. S.A., 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):				Outdoor unit: ATS14S Indoor HU160S3				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	13.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	272.8	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	13.30	kW		T _j =+35°C	EER _d	3.47	-
T _j =+30°C	P _{dc}	10.20	kW		T _j =+30°C	EER _d	5.26	-
T _j =+25°C	P _{dc}	6.57	kW		T _j =+25°C	EER _d	8.45	-
T _j =+20°C	P _{dc}	3.33	kW		T _j =+20°C	EER _d	10.07	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4060	m³/h
Sound power level, indoors / outdoors	L _{WA}	-/64	dB		For water /brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		INVENTOR A.G. S.A., 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):				Outdoor unit: ATS16S Indoor HU160S3				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	14.3	kW		Seasonal space cooling energy efficiency	η _{s,c}	184.4	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	14.31	kW		T _j =+35°C	EER _d	2.47	-
T _j =+30°C	P _{dc}	10.68	kW		T _j =+30°C	EER _d	3.63	-
T _j =+25°C	P _{dc}	6.76	kW		T _j =+25°C	EER _d	5.27	-
T _j =+20°C	P _{dc}	3.41	kW		T _j =+20°C	EER _d	7.29	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4650	m ³ /h
Sound power level, indoors / outdoors	L _{WA}	-69	dB		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m ³ /h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV					
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Low temperature application						
Contact details		INVENTOR A.G. S.A., 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):				Outdoor unit: ATS16S Indoor HU160S3				
Outdoor side heat exchanger of chiller:				Air to water				
Indoor side heat exchanger chiller:				Water				
Type:				Compressor driven vapour compression				
Driver of compressor:				Electric motor				
Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity	P _{rated,c}	15.4	kW		Seasonal space cooling energy efficiency	η _{s,c}	266.9	%
Declared cooling capacity for part load at given outdoor temperature T _j					Declared energy efficiency ratio for part load at given outdoor temperature T _j			
T _j =+35°C	P _{dc}	15.40	kW		T _j =+35°C	EER _d	3.50	-
T _j =+30°C	P _{dc}	11.42	kW		T _j =+30°C	EER _d	5.14	-
T _j =+25°C	P _{dc}	7.27	kW		T _j =+25°C	EER _d	7.83	-
T _j =+20°C	P _{dc}	3.40	kW		T _j =+20°C	EER _d	10.35	-
Degradation co-efficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than "active mode"								
Off mode	P _{OFF}	0.014	kW		Crankcase heater mode	P _{CK}	0.000	kW
Thermosat-off mode	P _{TO}	0.010	kW		Standby mode	P _{SB}	0.014	kW
Other items								
Capacity control	variable				For air-to-water comfort chillers: air flow rate, outdoor measured	-	4650	m ³ /h
Sound power level, indoors / outdoors	L _{WA}	-69	dB					
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/kWh input GCV		For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger	-	-	m ³ /h
GWP of the refrigerant	-	675	kg CO ₂ eq (100years)					
Standard rating conditions used		Medium temperature application						
Contact details		INVENTOR A.G. S.A., 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.								



AIR CONDITIONING SYSTEMS

AIR-TO-WATER HEAT PUMP - SPLIT TYPE



V:1.4.112022

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.**

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

