

The following sample was submitted and identified on behalf of the client as:

#### TEST REPORT COMMISSION REGULATION (EU) No 811/2013 of 18 February 2013

supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device

### COMMISSION REGULATION (EU) No 813/2013 of 2 August 2013

implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters

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Address:	1/F&2/F, West Building C12, Gongtou Liheng Industrial Square, Fanhua Road, Economic & Technological Development Area, Hefei, 230601 Anhui, China
Applicant's name:	Ningbo AUX Electric Co., Ltd.
Address:	1166 Mingguang North Road, Jiangshan Yinzhou District, Ningbo, 315191 Zhejiang, China
Test specification:	
Standard:	COMMISSION REGULATION (EU) No 811/2013; (EU) No 813/2013 EN 14825: 2018
Test procedure:	STR: EU Directive 2009/125/EC
Non-standard test method	None
Test Report Form No	811/2013_01/ 813/2013_1
Test Report Form(s) Originator:	SGS-CSTC
Master TRF	2015-04-27
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Test item description:	Air to Water Heat pump
Trade Mark:	AUX
Manufacturer:	Same as applicant
Model/Type reference:	ACHP-H10/5R2HA-M
Ratings:	Refer to marking plates



Summary of testing:			
Tests performed (name of test	and test clause):	Testing location:	
COMMISSION REGULATION (EU COMMISSION REGULATION (EU	J) No 811/2013 J) No 813/2013.	Refer to p.1	
EN 14825: 2018			
Conv of marking plata			
The marking plate is only the d	roft		
The marking plate is only the u	rait.		
	Monobloc Heat I		
	Model	ACHP-H10/5R2HA-M	
	Rated Cooling Capa	acity 10.00kW	
	Rated Heating Capa	city 10.00kW	
	Rated Voltage	380-415V-3N~	
	Rated Frequency	50Hz	
	Max. Input Power	13700W	
	Refrigerant	R290(GWP:3)	
	Refrigerant Quantity	0.85kg/0.00225tCO2eq.	
	Net Weight 🛛 🖊	140kg	
	Max. Discharged Pr	essure 3.2MPa	
	Max. Suction Press	ure 1.0MPa	
	Max. Water Pressur	e 0.3MPa	
	Electric Shock Prev	ention Class I	
	Resistance Class	IP24	
	Electric Heater		
	Rated Voltage	380-415V-3N~	
	Input Power	9000W	
	Date	2023.09	
	No.	G72676002309100001	
	Contains fluorinated or	reenhouse gases	
	Manufacturer:Ningbo Postal address:1166 M Jiangshan Yinzhou Dis Zhejiang, China Importer:XXXXXXXXXX Postal address:XXXXX	AUX Electric Co., Ltd. lingguang North Road, strict, Ningbo, 315191 ( XXXXX	



Test item particulars	Air to Water Heat pump						
Classification of installation and use:	Fixed appliance						
Supply Connection	Connected to fixed wiring						
:							
Possible test case verdicts:							
- test case does not apply to the test object:	N/A						
- test object does meet the requirement:	P (Pass)						
- test object does not meet the requirement:	F (Fail)						
Testing							
Date of receipt of test item:	2023-09-28						
Date (s) of performance of tests:	2023-09-28 to 2023-10-16						
General remarks:							
The test results presented in this report relate only to the This report shall not be reproduced, except in full, witho laboratory. "(see Enclosure #)" refers to additional information app "(see appended table)" refers to a table appended to the	e object tested. ut the written approval of the Issuing testing bended to the report. e report.						
Throughout this report a comma is used as the decima	al separator.						
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General product information:							

The appliances are design for space heating used and with refrigerant R290.



0						
CI.	Requirement-Test Result-Remark	Verdict				
	Ecodesign requirements					
ANNEX I	Definitions applicable for Annexes II to V	Р				
ANNEX II	Ecodesign requirements	Р				
1. (a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:	Р				
	Fuel boiler space heaters with rated heat output $\leq$ 70 kW and fuel boiler combination heaters with rated heat output $\leq$ 70 kW, with the exception of type B1 boilers with rated heat output $\leq$ 10 kW and type B1 combination boilers with rated heat output $\leq$ 30 kW:					
	The seasonal space heating energy efficiency shall not fall below 86 %.	N/A				
	Type B1 boilers with rated heat output $\leq$ 10 kW and type B1 combination boilers with rated heat output $\leq$ 30 kW:					
	The seasonal space heating energy efficiency shall not fall below 75 %.	N/A				
	Fuel boiler space heaters with rated heat output > 70 kW and $\leq$ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and $\leq$ 400 kW:					
	The useful efficiency at 100 % of the rated heat output shall not fall below 86 %, and the useful efficiency at 30 % of the rated heat output shall not fall below 94 %.	N/A				
	Electric boiler space heaters and electric boiler combination heaters:					
	The seasonal space heating energy efficiency shall not fall below 30 %.	N/A				
	Cogeneration space heaters:					
	The seasonal space heating energy efficiency shall not fall below 86 %.	N/A				
	Heat pump space heaters and heat pump combination heaters, with the exception of low-temperature heat pumps:					
	The seasonal space heating energy efficiency shall not fall below 100 %.	Р				
	Low-temperature heat pumps:					
	The seasonal space heating energy efficiency shall not fall below 115 %.	Р				
(b)	From 26 September 2017 the seasonal space heating energy efficiency of electric boiler space heaters, electric boiler combination heaters, cogeneration space heaters, heat pump space heaters and heat pump combination heaters shall not fall below the following values:					
	Electric boiler space heaters and electric boiler combination heaters:					
	The seasonal space heating energy efficiency shall not fall below 36 %.	N/A				
	boiler space heaters, electric boiler combination heaters, cogeneration space heaters, heat pump space heaters and heat pump combination heaters shall not fall below the following values:       Electric boiler space heaters and electric boiler combination heaters:       —         The seasonal space heating energy efficiency shall not fall below 36 %.       N/A         Cogeneration space heaters:       —					



		COMN	<b>AISSIO</b>	N RE	GULAT	ION (I	EU) N	o 813/2	013			
CI.	Requiremen	it-Test					R	esult-Re	emark			Verdict
	The season not fall below	al space l w 100 %.	neating	energ	gy efficie	ncy sh	all					N/A
	Heat pump of low-temp	space hea erature he	aters ar eat pum	nd hea nps:	at pump	combir	nation	heaters	, with t	he ex	ception	
	The season not fall below	al space ł w 110 %.	neating	energ	gy efficie	ncy sh	all					Р
	Low-temper	ature hea	t pump	s:								
	The season not fall below	al space l w 125 %.	neating	energ	gy efficie	ncy sh	all					Р
2.	REQUIREM ENERGY E	IENTS FO	DR WAT	FER H	IEATING	3						N/A
(a)	From 26 Se heaters sha	ptember 2 Il not fall b	2015 th below th	e wate ne folle	er heatin owing va	ig ener alues:	gy eff	iciency o	of com	binatio	on	—
	Declared load pr	ofile 3XS	XXS	XS	S	М	L	XL	XXL	3XL	4XL	N/A
	Water heating energy efficienc	22 %	23 %	26 %	26 %	30 %	30 %	30 %	32 %	32 %	32 %	
(b)	From 26 Se heaters sha	ptember 2 Il not fall b	2017 the below th	e wate ne folle	er heatin owing va	ig ener alues:	gy eff	iciency o	of com	binatio	on	—
	Declared load pro	ofile 3XS	XXS	XS	s	М	L	XL	XXL	3XL	4XL	N/A
	Water heating energy efficienc	32 %	32 %	32 %	32 %	36 %	37 %	38 %	60 %	64 %	64 %	
3	REQUIREM	IENTS FC	R SOL	JND P	OWER	LEVEL	-					
	From 26 Se heat pump o	ptember 2 combinatio	2015 the	e soui ers sh	nd powe nall not e	r level exceed	of hea the fo	at pump	space values	heate	ers and	
	Rated heat out	tput ≤ 6 kW	Rated hea	t output ≤ 12 kW	> 6 kW and V	Rated hea	it output ≤ 30 kV	> 12 kW and W	d Rated I	heat outp and ≤ 70	ut > 30 kW kW	Р
	Sound power level (L <sub>WA</sub> ), indoors	Sound power level (L <sub>WA</sub> ), outdoors	Sound power le (L <sub>WA</sub> ) indoor	d evel p , rs	Sound ower level (L <sub>WA</sub> ), outdoors	Sour power (L <sub>WA</sub> indoc	level F ), ors	Sound oower level (L <sub>WA</sub> ), outdoors	Sour power (L <sub>W</sub> indo	nd level <sub>A</sub> ), ors	Sound power level (L <sub>WA</sub> ), outdoors	
	60 dB	65 dB	65 dE	3	70 dB	70 d	В	78 dB	80 0	₿	88 dB	
4.	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES									N/A		
5	REQUIREN	IENTS FC	R PRC	DUC	T INFOR	RMATI	ON					
	From 26 Se information	ptember 2 on heater	2015 th s shall	e follo be pro	wing pro	oduct						Р
(a)	the instruction and free accontant authorised r contain the	on manua cess webs representa following (	ils for in sites of atives a elemen	nstalle manu nd im ts:	rs and e facturers porters s	nd-use s, their shall	ers,					Р



	COMMISSION REGULATION (EU)	No 813/2013	
CI.	Requirement-Test	Result-Remark	Verdict
	for boiler space heaters, boiler combination heaters and cogeneration space heaters, the technical parameters set out in Table 1, measured and calculated in accordance with Annex III;		N/A
	for heat pump space heaters and heat pump combination heaters, the technical parameters set out in Table 2, measured and calculated in accordance with Annex III;		Р
	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Р
	for type B1 boilers and type B1 combination boilers, their characteristics and the following standard text: 'This natural draught boiler is intended to be connected only to a flue shared between multiple dwellings in existing buildings that evacuates the residues of combustion to the outside of the room containing the boiler. It draws the combustion air directly from the room and incorporates a draught diverter. Due to lower efficiency, any other use of this boiler shall be avoided and would result in higher energy consumption and higher operating costs;		N/A
	for heat generators designed for heaters, and heater housings to be equipped with such heat generators, their characteristics, the requirements for assembly, to ensure compliance with the ecodesign requirements for heaters and, where appropriate, the list of combinations recommended by the manufacturer;		N/A
	information relevant for disassembly, recycling and/or disposal at end-of-life;		Р
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Р
	the elements specified in point (a);		Р
	for heat pump space heaters and heat pump combination heaters where the information relating to a specific model comprising a combination of indoor and outdoor units has been obtained by calculation on the basis of design and/or extrapolation from other combinations, the details of such calculations and/or extrapolations, and of any tests undertaken to verify the accuracy of the calculations, including details of the mathematical model for calculating the performance of such combinations and details of the measurements taken to verify this model;		Р
(c)	the following information shall be durably marked on the heater:		N/A



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CI.	Requirement-Test	Result-Remark	Verdict
	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
	for cogeneration space heaters, the electrical capacity.		N/A
ANNEX III	Measurements and calculations		
1	For the purposes of compliance and verification of compliance with the requirements of this Regulation, measurements and calculations shall be made using harmonised standards the reference numbers of which have been published in the <b>Official Journal of European Union</b> , or other reliable, accurate and reproducible method, which takes into account the generally recognised state of the art methods, and whose results are deemed to be of low uncertainty. They shall fulfil all of the following technical parameters.	EN 14825:2018, EN 14511-2:2018, EN 14511-3:2018, EN 12102-1:2017 were used.	P
2	General conditions for measurements and		Р
	(a) For the purposes of the measurements set out in points 2 to 5, the indoor ambient temperature shall be set at 20 °C $\pm$ 1 °C.		Р
	(b) For the purposes of the calculations set out in points 3 to 5, consumption of electricity shall be multiplied by a conversion coefficient CC of 2,5.		Р
	(c) Emissions of nitrogen oxides shall be measured as the sum of nitrogen monoxide and nitrogen dioxide, and expressed in nitrogen dioxide.		N/A
	(d) For heaters equipped with supplementary heaters, the measurement and calculation of rated heat output, seasonal space heating energy efficiency, water heating energy efficiency, sound power level and emissions of nitrogen oxides shall take account of the supplementary heater		N/A
	<ul> <li>(e) Declared values for rated heat output, seasonal space heating energy efficiency, water heating energy efficiency, sound power level and emissions of nitrogen oxides shall be rounded to the nearest integer.</li> </ul>		Р
	(f) Any heat generator designed for a heater, and any heater housing to be equipped with such a heat generator, shall be tested with an appropriate heater housing and heat generator, respectively.		N/A
3	Seasonal space heating energy efficiency of boiler space heaters, boiler combination heaters and cogeneration space heaters		N/A
	The seasonal space heating energy efficiency $\eta$ s shall be calculated as the seasonal space heating energy efficiency in active mode $\eta$ son, corrected by contributions accounting for temperature controls, auxiliary electricity consumption, standby heat loss, ignition burner power consumption (if applicable) and, for cogeneration space heaters, corrected by adding the electrical efficiency multiplied by a conversion coefficient CC of 2.5.		N/A



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4	Seasonal space heating energy efficiency of heat pump space heaters and heat pump combination heaters		Р
	(a)For establishing the rated coefficient of performance COP rated or rated primary energy ratio PER rated , the sound power level or emissions of nitrogen oxides, the operating conditions shall be the standard rating conditions set out in Table 3 and the same declared capacity for heating shall be used.		P
	(b)The active mode coefficient of performance SCOP on or active mode primary energy ratio SPER on shall be calculated on the basis of the part load for heating Ph(T j ), the supplementary capacity for heating sup(T j ) (if applicable) and the bin-specific coefficient of performance COPbin(T j ) or bin-specific primary energy ratio PERbin(T j ), weighted by the bin-hours for which the bin conditions apply, using the following conditions:		Ρ
	<ul> <li>the reference design conditions set out in Table</li> <li>4;</li> </ul>		Р
	<ul> <li>the European reference heating season under average climate conditions set out in Table 5;</li> </ul>		Р
	<ul> <li>if applicable, the effects of any degradation of energy efficiency caused by cycling depending on the type of control of the heating capacity.</li> </ul>		Р
	(c)The reference annual heat demand Q H shall be the design load for heating Pdesignh multiplied by the annual equivalent active mode hours H HE of 2 066.		Р
	(d)The annual energy consumption Q HE shall be calculated as the sum of:		Р
	<ul> <li>the ratio of the reference annual heating demand Q H and the active mode coefficient of performance SCOP on or active mode primary energy ratio SPER on and</li> </ul>		Р
	<ul> <li>the energy consumption for off, thermostat-off, standby, and crankcase heater mode during the heating season.</li> </ul>		Р
	(e)The seasonal coefficient of performance SCOP or seasonal primary energy ratio SPER shall be calculated as the ratio of the reference annual heat demand Q H and the annual energy consumption Q HE.		Р
-	<ul> <li>(f)The seasonal space heating energy efficiency η s shall be calculated as the seasonal coefficient of performance SCOP divided by the conversion coefficient CC or the seasonal primary energy ratio SPER, corrected by contributions accounting for temperature controls and, for water-/brine-to-water heat pump space heaters and heat pump combination heaters, the electricity consumption of one or more ground water pumps.</li> </ul>		P
5	Water heating energy efficiency of combination heat	ers	N/A



		COMMISSIO	N	REGULATIC	N (EU) N	No	813/2013			
CI.	Requirement-T	est			F	Res	ult-Remark		Verdict	
	<ul> <li>The water heating energy efficiency η wh of a combination heater shall be calculated as the ratio between the reference energy Q ref of the declared load profile and the energy required for its generation under the following conditions:</li> <li>(a) measurements shall be carried out using the load profile and the started between the reference and the control out using the load profile and the started between the reference and the control out using the load profile and the started between the reference and the control out using the load profile and the started between the reference and the control out using the load profile and the started between the reference and the control out using the load profile and the started between the reference and the started between the started between the reference and the started between the reference and the started between the started</li></ul>									
	(b)measureme	(b)measurements shall be carried out using a 24-								
	hour measurement cycle as follows:									
	— 00:00 to 06:	59: no water (	dra	w-off;						
	<ul> <li>from 07:00: water draw-offs according to the declared load profile;</li> </ul>									
	— from end of water draw-off;	last water dra	w-o	off until 24:00	: no					
	(c) the declared load profile shall be the maximum load profile or the load profile one below the maximum load profile;							N/A		
	(d) for heat pur following additi	np combination	on h ns a	neaters, the apply:					N/A	
	— heat pump of under the cond	combination h litions set out	eat in <sup>-</sup>	ers shall be t Table 3;	ested					
	<ul> <li>heat pump of ventilation exhatis tested under the second se</li></ul>	combination h aust air as the ne conditions s	eat e he set	ers which use at source sha out in Table 6	e all be 6.					
Table 3				Table	3				Р	
	Standard	rating conditions	for	heat pump space	heaters and l	heat	pump combination	n heaters		
		Outdoor heat exchan	nger		Indoo	or hea	at exchanger			
	Heat source	Inlet dry bulb (wet b temperature	oulb)	Heat pump space he combination hea temperature	aters and heat p ters, except low heat pumps	pump v-	mp Low-temperature heat pumps			
				Inlet temperature	Outlet temper	rature	Inlet temperature	Outlet temperature		
	Outdoor air	+ 7 °C (+ 6 °C)								
	Exhaust air	+ 20 °C (+ 12 °C	2)							
		Inlet/outlet temperature		+ 47 °C	+ 55 °C		+ 30 °C	+ 35 °C		
	Water	+ 10 °C/+ 7 °C								
	Brine	0 °C/- 3 °C		1						
Table 4	Reference design co	onditions for heat lry bulb air tempe	pun eratu	Table 4 np space heaters a tre (wet bulb air t	nd heat pum emperature	np co indic	ombination heaters cated in brackets)	s, temperatures in	Р	
	Reference desig	n temperature		Bivalent tempe	erature		Operation limit	temperature		
	Tdesi	gnh		T <sub>biv</sub>			TO	L		
	- 10 (- 1	11) °C		maximum +	2 °C		maximun	n – 7 °C		



			KEGU			о <b>м (</b> (	813/20	13			<u></u>
CI.	Requirement-Test					Re	sult-Rer	nark			Verdict
Table 5	Table 5           European reference heating season under average climate conditions for heat pump space heaters and heat pump combination heaters										Р
	binj		<i>T<sub>i</sub></i> [°C]				H <sub>i</sub> [h/annum]				
	1 to 20		-	- 30 to -	11		0				
	21			- 10				1			
	22			- 9				2	5		
	23			- 8				2	3		
	24			- 7				24	4		
	25			- 6				22	7		
	26			- 5				68	3		
	27			- 4				91	1		
	28			- 3				89	9		
	29			- 2				16	5		
	30			- 1				17	3		
	31			0				24	0		
	32		1					280			
	33		2					320			
	34		3					357			
	35		4				356				
	36			5				30	3		
	37		6				33	0			
	38		7					326			
	39		8					348			
	40		9				335				
	41			10			315				
	42			11				21	5		
	43			12				16	9		
	44			13				15	1		
	45			14				10	5		
	46			15			74				
	Total hours: 4 910										
Table	Maximum vent	ilation e	xhaust a	Table 6 ir availab	le [m³/h]	], at hu	midity of	5,5 g/m <sup>3</sup>			N/A
	Declared load profile	XXS	XS	S	М	L	XL	XXL	3XL	4XL	
	Maximum ventilation exhaust air available	109	128	128	159	190	870	1 021	2 943	8 830	



	COMMISSION REGULA	ΓΙΟΝ (EU)	No 811/2013					
Cl.	Requirement-Test Result-Remark N							
ANNEX II	Energy efficiency classes			Р				
1	SEASONAL SPACE HEATING ENERGY	EFFICIEN	CY CLASSES	—				
	The seasonal space heating energy efficiency class of a heater, with the exception of low-temperature heat pumps and heat pump space heaters for low- temperature application, shall be determined on the basis of its seasonal space heating energy efficiency as set out in Table 1.							
	The seasonal space heating energy efficiency classes of a low-temperature heat pump and a heat pump space heater for low-temperature application shall be determined on the basis of its seasonal space heating energy efficiency as set out in Table 2. The seasonal space heating energy efficiency of a							
	The seasonal space heating energy efficiency of a heater shall be calculated in accordance with points 3 and 4 of Annex VII, for heat pump space heaters, heat pump combination heaters and low- temperature heat pumps under average climate conditions.							
Table1	Tab Seasonal space heating energy efficiency classes of pumps and heat pump space heate	le 1 heaters, with ers for low-ter	the exception of low-temperature heat nperature application	-				
	Seasonal space heating energy efficiency class	Seasonal	space heating energy efficiency $\eta_s$ in %					
			$\eta_s \ge 150$					
	A <sup>++</sup>		$125 \le \eta_s \le 150$					
	A+		$98 \le \eta_s \le 125$					
	A		$90 \leq \eta_s < 98$					
	В		$82 \leq \eta_s < 90$					
	C	$75 \leq \eta_s \leq 82$						
	D	$36 \le \eta_s < 75$						
	E		$34 \le \eta_s < 36$					
	F		$30 \le \eta_s \le 34$					
	G		$\eta_s < 30$					



	COMMISSION REGULA	ΓΙΟΝ (EU) Νο 811/2013					
CI.	Requirement-Test	Result-Remark	Verdict				
Table 2	Ta Seasonal space heating energy efficiency classes of low for low-temper	ble 2 w-temperature heat pumps and heat pump space heaters rature application	-				
	Seasonal space heating energy efficiency class	Seasonal space heating energy efficiency $\eta_{\rm s}$ in %					
	A+++	$\eta_s \ge 175$					
	A**	$150 \le \eta_s < 175$					
	A <sup>+</sup>	$123 \le \eta_s \le 150$					
	A	$115 \le \eta_s \le 123$					
	В	$107 \le \eta_s \le 115$					
	C	$100 \le \eta_{s} \le 107$					
	D	$61 \le \eta_s \le 100$					
	E $59 \le \eta_s \le 61$						
	F $55 \le \eta_s < 59$						
	G η <sub>5</sub> < 55						
2	WATER HEATING ENERGY EFFICIENC	Y CLASSES					
	The water heating energy efficiency class combination heater shall be determined o basis of its water heating energy efficience out in Table 3.	of a n the y as set	N/A				
3	ENERGY EFFICIENCY CLASSES OF SC IF (PART OF) A SOLAR DEVICE	DLAR HOT WATER STORAGE TANKS,					
	The energy efficiency class of a solar hot storage tank, if (part of) a solar device, sh determined on the basis of its standing los out in Table 4.	water all be ss as set	N/A				
ANNEX III	The labels	· · · · · ·					
	The energy label of the product should be according to Annex III of REGULATION (I 811/2013	e designed EU) No	Р				
ANNEX IV	Product fiche		—				
1	SPACE HEATER						
1.1	The information in the product fiche of the heater shall be provided in the following o shall be included in the product brochure literature provided with the product:	space rder and or other	Р				



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CI.	Requirement-Test	Result-Remark	Verdict
	(a) supplier's name or trademark;		Р
	(b) supplier's model identifier;		
	(c) the seasonal space heating energy efficiency class of the model, determined in accordance with point 1 of Annex II;		
	(d) the rated heat output, including the rated heat output of any supplementary heater, in kW, rounded to the nearest integer (for heat pump space heaters under average climate conditions);		
	(e) the seasonal space heating energy efficiency in %, rounded to the nearest integer and calculated in accordance with points 3 and 4 of Annex VII (for heat pump space heaters under average climate conditions);		
	(f) the annual energy consumption in kWh in terms of final energy and/or in GJ in terms of GCV, rounded to the nearest integer and calculated in accordance with points 3 and 4 of Annex VII (for heat pump space heaters under average climate conditions);		
	(g) the sound power level L WA , indoors, in dB, rounded to the nearest integer (for heat pump space heaters if applicable);		
	(h) any specific precautions that shall be taken when the space heater is assembled, installed or maintained;		
	in addition, for cogeneration space heaters:		
	(i) the electrical efficiency in %, rounded to the nearest integer;		
	in addition, for heat pump space heaters:		
	(j) the rated heat output, including the rated heat output of any supplementary heater, in kW, under colder and warmer climate conditions, rounded to the nearest integer;		
	(k) the seasonal space heating energy efficiency in %, under colder and warmer climate conditions, rounded to the nearest integer and calculated in accordance with point 4 of Annex VII;		
	(I) the annual energy consumption in kWh in terms of final energy and/or in GJ in terms of GCV, under colder and warmer climate conditions, rounded to the nearest integer and calculated in accordance with point 4 of Annex VII;		
	(m) the sound power level L WA , outdoors, in dB, rounded to the nearest integer.		
1.2	One fiche may cover a number of space heater models supplied by the same supplier.		P



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1.3	The information contained in the fiche may be given in the form of a copy of the label, either in colour or in black and white. Where this is the case, the information listed in point 1.1 not already displayed on the label shall also be provided.		Р
2	COMBINATION HEATERS		N/A
3	TEMPERATURE CONTROLS		N/A
4	SOLAR DEVICES		N/A
5	PACKAGES OF SPACE HEATER, TEMPERATURE CONTROL AND SOLAR DEVICE		N/A
6	PACKAGES OF COMBINATION HEATER, TEMPERATURE CONTROL AND SOLAR DEVICE		N/A
ANNEX V	Technical documentation		
1	SPACE HEATERS		
	For space heaters, the technical documentation referred to in Article 3(1)(c) shall include:		Р
2	<ul> <li>(a) the name and address of the supplier,</li> <li>(b) a description of the space heater model sufficient for its unambiguous identification;</li> <li>(c) where appropriate, the references of the harmonised standards applied;</li> <li>(d) where appropriate, the other technical standards and specifications used;</li> <li>(e) the identification and signature of the person empowered to bind the supplier;</li> <li>(f) technical parameters: <ul> <li>for boiler space heaters and cogeneration space heaters, the technical parameters set out in Table 7, measured and calculated in accordance with Annex VII;</li> <li>for heat pump space heaters where the information relating to a specific model comprising a combination of indoor and outdoor units has been obtained by calculations and/or extrapolation from other combinations, the details of such calculations and/or extrapolations, and of any tests undertaken to verify the accuracy of the calculations, including details of the measurements taken to verify this model;</li> <li>(g) any specific precautions that shall be taken when the space heater is assembled, installed or maintained.</li> </ul> </li> </ul>		Ν/A
2			N/A
3			N/A
4	SOLAR DEVICES		N/A



	COMMISSION REGULATION (EU) No 811/2013									
CI.	Requirement-Test	Result-Remark	Verdict							
5	PACKAGES OF SPACE HEATER, TEMPERATURE CONTROL AND SOLAR DEVICE		N/A							
6	PACKAGES OF COMBINATION HEATER, TEMPERATURE CONTROL AND SOLAR DEVICE		N/A							



Table 1: Technical parame heat pump combi	eters/Informa nation heate	tion require rs	ements	for heat pump space h	eaters and	P	
Models: refer to p.	1						
Air-to-water heat p	ump: [yes/no]			Yes			
Water-to-water hea	at pump: [yes/	no]		No			
Brine-to-water hea	t pump: [yes/r	10]		No			
Low-temperature h	eat pump: [ye	es/no]		No			
Equipped with a su	pplementary	heater: [yes	/no]	No			
Heat pump combin	nation heater:	[yes/no]		No			
Declared climate c	ondition			Average			
Declared temperat	ure applicatio	n		Medium			
Parameters shall be declared for medium- temperature application, except for low- temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low- temperature application.		Parameters shall be d conditions (the param climate conditions sho fiche and technical do	eclared for aver eters of colder a ould be shown in cumentation)	age clima Ind warme I final proc	ite er duct		
Item	symbol	value	unit	item	symbol	value	unit
Rated heat output (*)	Prated	7.7	KW	Seasonal space heating energy efficiency	ηs	154	%
Declared capacity indoor temperature T j	for heating for 20 °C and ou	part load at utdoor temp	erature	Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = - 7 °C	Pdh	6.81	kW	T j = - 7 °C	COPd	2.43	-
T j = + 2 °C	Pdh	4.15	kW	T j = + 2 °C	COPd	3.82	-
T j = + 7 °C	Pdh	2.67	kW	T j = + 7 °C	COPd	5.00	-
T j = + 12 °C	Pdh	3.39	kW	T j = + 12 °C	COPd	7.60	-
T j = bivalent temperature	Pdh	6.94	kW	T j = bivalent temperature	COPd	2.43	-
T j = operation limit temperature	Pdh	5.23	kW	T j = operation limit temperature	COPd	2.43	-
For air-to-water heat pumps: T j = - 15°C (if TOL < - 20°C)	Pdh	N/A	kW	For air-to-water heat pumps: T j = $-15^{\circ}$ C (if TOL < $-20^{\circ}$ C)	COPd	N/A	-
Bivalent temperature	T biv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcych	N/A	kW	Cycling interval efficiency	COPcyc	N/A	kW
Degradation co- efficient (**)	Cdh	0,9		Heating water operating limit temperature	WTOL	75	°C
Power consumptio	n in modes ot	her than act	ive	Supplementary heater		_	



mode									
Off mode	P OFF	0.002	kW	Rated heat output (*)	Psup	2.47	kW		
Thermostat-off mode	Рто	0.030	kW	Type of energy input	Ele	ectric			
Standby mode	P sb	0.002	kW						
Crankcase heater mode	Рск	0.000	kW						
Other items					·				
Capacity control	Variable			For air-to-water heat pumps: Rated air flow rate, outdoors	—	4000	m 3 /h		
Sound power level	L wa	57	dB	For water-/brine-to- water heat pumps:	_	N/A	m 3 /h		
Emissions of nitrogen oxides	NO x	N/A	mg/ kWh	Rated brine or water flow rate, outdoor heat exchanger					
Annual energy consumption	Q he	4055	KWh						
For heat pump com	bination heat	er:							
Declared load profile		N/A		Water heating energy efficiency	η wh	N/A	%		
Daily electricity consumption	Q elec	N/A	kWh	Daily fuel consumption	Q fuel	N/A	kW h		
Contact details	Contact details Ningbo AUX Electric Co., Ltd. 1166 Mingguang North Road, Jiangshan Yinzhou District, Ningbo, 315191 Zhejiang, China								
(*) For heat pump space heating Pdesignh, and the sup(Tj).	(*) 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 determi	ned by measuren	nent then the o	default deg	radation coefficient is Cdh = 0	,9.				

Table 2:         Technical parameters/Information requirements for heat pump space heaters and heat pump combination heaters						
Models: refer to p.1						
Air-to-water heat pump: [yes/no]	Yes					
Water-to-water heat pump: [yes/no]	No					
Brine-to-water heat pump: [yes/no]	No					
Low-temperature heat pump: [yes/no]	Yes					
Equipped with a supplementary heater: [yes/no]	No					
Heat pump combination heater: [yes/no]	No					
Declared climate condition	Average					
Declared temperature application	Low					
Parameters shall be declared for medium- temperature application, except for low- temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-	Parameters shall be declared for average climate conditions (the parameters of colder and warmer climate conditions should be shown in final product					



temperature application.			fiche and technical documentation)						
Item	symbol	value	unit	item	symbol	value	unit		
Rated heat output (*)	Prated	9.2	KW	Seasonal space heating energy efficiency	ηs	203	%		
Declared capacity f indoor temperature T j	for heating for 20 °C and ou	part load at utdoor tempe	erature	Declared coefficient of energy ratio for part lo °C and outdoor tempe	Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j				
T j = - 7 °C	Pdh	8.14	kW	T j = – 7 °C	COPd	3.10	-		
T j = + 2 °C	Pdh	4.95	kW	T j = + 2 °C	COPd	5.10	-		
T j = + 7 °C	Pdh	3.18	kW	T j = + 7 °C	COPd	6.50	-		
T j = + 12 °C	Pdh	2.76	kW	T j = + 12 °C	COPd	10.55	-		
T j = bivalent temperature	Pdh	8.14	kW	T j = bivalent temperature	COPd	3.10	-		
T j = operation limit temperature	Pdh	7.40	kW	T j = operation limit temperature	COPd	3.10	-		
For air-to-water heat pumps: T j = - 15°C (if TOL < - 20°C)	Pdh	N/A	kW	For air-to-water heat pumps: T j = – 15°C (if TOL < – 20°C)	COPd	N/A	-		
Bivalent temperature	T biv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C		
Cycling interval capacity for heating	Pcych	N/A	kW	Cycling interval efficiency	СОРсус	N/A	kW		
Degradation co- efficient (**)	Cdh	0,9	_	Heating water operating limit temperature	W <sub>TOL</sub>	75	°C		
Power consumptio mode	n in modes ot	her than acti	ive	Supplementary heater					
Off mode	P OFF	0.002	kW	Rated heat output (*)	Psup	1.8	kW		
Thermostat-off mode	Рто	0.030	kW	Type of energy input	Ele	ectric			
Standby mode	P <sub>SB</sub>	0.002	kW						
Crankcase heater mode	Рск	0.000	kW						
Other items									
Capacity control	Variable			For air-to-water heat pumps: Rated air flow rate, outdoors	_	4000	m 3 /h		
Sound power level	L wa	_	dB	For water-/brine-to- water heat pumps:	_	N/A	m 3 /h		
Emissions of nitrogen oxides	NO x	N/A	mg/ kWh	Rated brine or water flow rate, outdoor heat exchanger					
Annual energy consumption	Q he	3690	KWh						



For heat pump com	bination heat	er:								
Declared load profile	N/A		Water heating energy efficiency	η wh	N/A	%				
Daily electricity consumption	Q elec	N/A	kWh	Daily fuel consumption	Q fuel	N/A	kW h			
Contact details	Contact details Ningbo AUX Electric Co., Ltd. 1166 Mingguang North Road, Jiangshan Yinzhou District, Ningbo, 315191 Zhejiang, China									
(*) For heat pump space heating Pdesignh, and t sup(Tj).	(*) 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.

Table 3:         Technical parameters/Information requirements for heat pump space heaters and heat pump combination heaters							
Models: refer to p.1							
Air-to-water heat p	ump: [yes/no]			Yes			
Water-to-water hea	at pump: [yes/	no]		No			
Brine-to-water heat	t pump: [yes/r	0]		No			
Low-temperature h	eat pump: [ye	s/no]		No			
Equipped with a su	pplementary	heater: [yes/	'no]	No			
Heat pump combin	ation heater:	[yes/no]		No			
Declared climate c	ondition			Warmer			
Declared temperate	ure applicatio	า		Medium			
Parameters shall be declared for medium- temperature application, except for low- temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low- temperature application.		Parameters shall be declared for average climate conditions (the parameters of colder and warmer climate conditions should be shown in final product fiche and technical documentation)					
Item	symbol	value	unit	item	symbol	value	unit
Rated heat output (*)	Prated	14.1	KW	Seasonal space heating energy efficiency	ηs	161	%
Declared capacity f indoor temperature T j	for heating for 20 °C and ou	part load at utdoor tempe	erature	Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			20 °C
T j = – 7 °C	Pdh	—	kW	T j = – 7 °C	COPd	—	-
T j = + 2 °C	Pdh	8.01	kW	T j = + 2 °C	COPd	2.40	-
T j = + 7 °C	Pdh	9.11	kW	T j = + 7 °C	COPd	3.62	-
T j = + 12 °C	Pdh	4.15	kW	T j = + 12 °C	COPd	6.41	-
T j = bivalent temperature	Pdh	8.01	kW	T j = bivalent temperature	COPd	2.40	-
T j = operation limit temperature	Pdh	9.11	kW	T j = operation limit temperature	COPd	3.62	-



For air-to-water heat pumps: T j = - 15°C (if TOL < - 20°C)	Pdh	N/A	kW	For air-to-water heat pumps: T j = $-15^{\circ}$ C (if TOL < $-20^{\circ}$ C)	COPd	N/A	-			
Bivalent temperature	T biv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C			
Cycling interval capacity for heating	Pcych	N/A	kW	Cycling interval efficiency	COPcyc	N/A	kW			
Degradation co- efficient (**)	Cdh	0.9	_	Heating water operating limit temperature	W <sub>TOL</sub>	75	°C			
Power consumption mode	n in modes ot	her than act	ive	Supplementary heater						
Off mode	P OFF	0.002	kW	Rated heat output (*)	Psup	0.4	kW			
Thermostat-off mode	Рто	0.030	kW	Type of energy input	Ele	ectric				
Standby mode	P sb	0.002	kW							
Crankcase heater mode	Рск	0.000	kW							
Other items										
Capacity control	Variable			For air-to-water heat pumps: Rated air flow rate, outdoors	_	4000	m 3 /h			
Sound power level	L wa	_	dB	For water-/brine-to- water heat pumps:		N/A	m 3 /h			
Emissions of nitrogen oxides	NO x	N/A	mg/ kWh	Rated brine or water flow rate, outdoor heat exchanger						
Annual energy consumption	Q HE	4583	KWh							
For heat pump con	nbination heat	er:								
Declared load profile		N/A		Water heating energy efficiency	η wh	N/A	%			
Daily electricity consumption	Q elec	N/A	kWh	Daily fuel consumption	Q fuel	N/A	kW h			
Contact details	Ningbo AUX 1166 Mingg China	CElectric Council Coun	o., Ltd. Road, J	iangshan Yinzhou Distri	ct, Ningbo, 3151	91 Zhejia	ang,			
(*) For heat pump space heating Pdesignh, and t sup(Tj).	(*) 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).									
( ) IT Can IS NOT determ	mea by measurei	ment then the d	Jerault dec	aradation coefficient is Udh = 0	.9.					



Table 4: Technical parame heat pump combi	eters/Informa nation heate	tion require rs	ements	for heat pump space h	neaters and	P	
Models: refer to p.	1						
Air-to-water heat p	ump: [yes/no]			Yes			
Water-to-water hea	at pump: [yes/	'no]		No			
Brine-to-water hea	t pump: [yes/r	סו]		No			
Low-temperature h	eat pump: [ye	es/no]		Yes			
Equipped with a su	pplementary	heater: [yes	/no]	No			
Heat pump combin	ation heater:	[yes/no]		No			
Declared climate c	ondition			Warmer			
Declared temperat	ure applicatio	n		Low			
Parameters shall be declared for medium- temperature application, except for low- temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low- temperature application.		Parameters shall be d conditions (the param climate conditions sho fiche and technical do	eclared for aver eters of colder a ould be shown ir cumentation)	age clima Ind warme I final proc	te er duct		
Item	symbol	value	unit	item	symbol	value	unit
Rated heat output (*)	Prated	8.6	KW	Seasonal space heating energy efficiency	ηs	267	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T i		Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j					
T j = - 7 °C	Pdh	_	kW	T j = - 7 °C	COPd	_	-
T j = + 2 °C	Pdh	8.20	kW	T j = + 2 °C	COPd	3.84	-
T j = + 7 °C	Pdh	5.53	kW	T j = + 7 °C	COPd	5.85	-
T j = + 12 °C	Pdh	2.76	kW	T j = + 12 °C	COPd	9.14	-
T j = bivalent temperature	Pdh	5.53	kW	T j = bivalent temperature	COPd	5.85	-
T j = operation limit temperature	Pdh	8.20	kW	T j = operation limit temperature	COPd	3.84	-
For air-to-water heat pumps: T j = - 15°C (if TOL < - 20°C)	Pdh	N/A	kW	For air-to-water heat pumps: T j = $-15^{\circ}$ C (if TOL < $-20^{\circ}$ C)	COPd	N/A	-
Bivalent temperature	T biv	7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pcych	N/A	kW	Cycling interval efficiency	COPcyc	N/A	kW
Degradation co- efficient (**)	Cdh	0.9		Heating water operating limit temperature	WTOL	75	°C
Power consumptio	n in modes ot	her than act	ive	Supplementary heater			



mode									
Off mode	P OFF	0.002	kW	Rated heat output (*)	Psup	0.4	kW		
Thermostat-off mode	Рто	0.030	kW	Type of energy input	Ele	ectric			
Standby mode	P <sub>SB</sub>	0.002	kW						
Crankcase heater mode	Рск	0.000	kW						
Other items									
Capacity control	Variable			For air-to-water heat pumps: Rated air flow rate, outdoors	_	4000	m 3 /h		
Sound power level	L wa		dB	For water-/brine-to- water heat pumps:		N/A	m 3 /h		
Emissions of nitrogen oxides	NO x	N/A	mg/ kWh	Rated brine or water flow rate, outdoor heat exchanger					
Annual energy consumption	Q he	1701	KWh	Ŭ					
For heat pump com	bination heat	er:							
Declared load profile		N/A		Water heating energy efficiency	η wh	N/A	%		
Daily electricity consumption	Q elec	N/A	kWh	Daily fuel consumption	Q fuel	N/A	kW h		
Contact details	Contact details Ningbo AUX Electric Co., Ltd. 1166 Mingguang North Road, Jiangshan Yinzhou District, Ningbo, 315191 Zhejiang, China								
(*) 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 determi	ned by measurer	nent then the c	default deg	radation coefficient is Cdh = 0	,9.				



## Test condition (Heating function / Average heating season in medium temperature application):

Voltage: <u>400 V</u> / frequency: <u>50</u> Hz

Indoor heat exchanger: variable outlet ;

Tj (bivalent temperature): <u>-7 °C;</u> operating limit (TOL): <u>-10 °C;</u>

# Table 10 — Part load conditions for air-to-water(brine) units in medium temperature application for the reference heating seasons "A" = average, "W" = warmer and "C" = colder

	Part Load Ratio				Outdo excha	or heat anger	Inde	oor heat o	exchange	r
Condition	in %			Inlet dry (wet) bulb temperature °C		Fixed outlet °C	Va	Variable outlet <sup>d</sup> °C		
	Formula	А	W	С	Outdoor air	Exhaust air	All climates	А	W	С
А	(-7 - 16) / (T <sub>designh</sub> -16)	88	n/a	61	-7(-8)	20(12)	ª / 55	ª / 52	n/a	ª / 44
В	(+2 - 16) / (T <sub>designh</sub> -16)	54	100	37	2(1)	20(12)	ª / 55	ª / 42	ª / 55	ª / 37
С	(+7 - 16) / (T <sub>designh</sub> -16)	35	64	24	7(6)	20(12)	ª / 55	ª / 36	<sup>a</sup> / 46	ª / 32
D	(+12 - 16) / (T <sub>designh</sub> -16)	15	29	11	12(11)	20(12)	ª / 55	<sup>a</sup> / 30	ª / 34	<sup>a</sup> / 28
Е	( <i>TOL</i> - 16) / ( <i>T</i> <sub>designh</sub> -16)		TOL	20(12)	ª / 55	a / b	a / b	a / b		
F	(T <sub>biv</sub> - 16) / (T <sub>designh</sub> - 16)		$T_{ m biv}$	20(12)	ª / 55	a / c	a / c	a / c		
G	(-15 - 16) / (T <sub>designh</sub> -16)	n/a	n/a	82	-15	20(12)	ª / 55	n/a	n/a	ª / 49

<sup>a</sup> With the flow rate as determined at the standard rating conditions given in EN 14511-2 at 47/55 conditions for units with a fixed flow rate, and with a fixed delta *T* of 8 K for units with a variable flow rate. If for any of the test conditions the resulting flow rate is below the minimum flow rate then this minimum flow rate is used as a fixed flow rate with the outlet temperature for this test condition.

<sup>b</sup> Variable outlet shall be calculated by interpolation from  $T_{\text{designh}}$  and the temperature which is closest to the *TOL*.

 $^{\rm c}$  Variable outlet shall be calculated by interpolation between the upper and lower temperatures which are closest to the bivalent temperature.

<sup>d</sup> If the variable outlet temperature is below the minimum of the operation range of the unit, this minimum should be considered.

Remark: With the flow rate as determined at the standard rating conditions given in EN 14511-2 at 47/55 conditions.

### Test data (Average):

General test conditions		Heating capacity (kW)	Power input (kW)	COP
А	A(-7)/W34 (88%)	6.940	2.856	2.43
В	A2/W30 (54%)	4.328	1.131	3.83
С	A7/W27 (35%)	2.734	0.541	5.05
D	A12/W24 (15%)	3.394	0.432	7.86
E	A(-10)/W35(100%)	7.70	3.615	2.13
F	A(-7)/W34 (88%)	6.940	2.856	2.43



Summary result of tested value:								
	Unit	Value						
SCOPon:	kWh/kWh	3.94						
SCOP:	kWh/kWh	3.93						
Q <sub>H</sub> :	kWh	15908						
Q <sub>HE</sub> :	kWh	4047						
η <sub>s,h</sub>	%	154.2						



# Test condition (Heating function / Average heating season in low temperature application):

Voltage: 400 V / frequency: 50 Hz ;

Indoor heat exchanger: variable outlet

Tj (bivalent temperature): <u>-7 °C</u>; operating limit (TOL): <u>-10 °C</u>;

# Table 8 — Part load conditions for air-to-water(brine) units in low temperature application forthe reference heating seasons "A" = average, "W" = warmer and "C" = colder

	Part Load Ratio			Outdoo excha	or heat anger	Indo	or heat	exchang	er	
Condition	in %		Inlet dry (wet) bulb temperature °C		Fixed outlet °C	Var	Variable outlet <sup>d</sup> °C			
	Formula	А	W	С	Outdoor air	Exhaust air	All climates	A	W	С
А	(-7 - 16) / ( <i>T</i> <sub>designh</sub> -16)	88	n/a	61	-7(-8)	20(12)	ª / 35	<sup>a</sup> / 34	n/a	<sup>a</sup> / 30
В	(+2 - 16) / ( <i>T</i> <sub>designh</sub> -16)	54	100	37	2(1)	20(12)	ª / 35	<sup>a</sup> / 30	ª / 35	<sup>a</sup> / 27
С	(+7 - 16) / ( <i>T</i> <sub>designh</sub> -16)	35	64	24	7(6)	20(12)	ª / 35	<sup>a</sup> / 27	<sup>a</sup> / 31	ª / 25
D	(+12 - 16) / ( <i>T</i> <sub>designh</sub> -16)	15	29	11	12(11)	20(12)	ª / 35	<sup>a</sup> / 24	<sup>a</sup> / 26	<sup>a</sup> / 24
Е	(TOL - 16) / (T <sub>designh</sub> - 16)		TOL	20(12)	ª / 35	a / b	a / b	a / b		
F	(T <sub>biv</sub> - 16) / (T <sub>designh</sub> - 16)		$T_{ m biv}$	20(12)	ª / 35	a / c	a / c	a / c		
G	(-15 - 16) / (T <sub>designh</sub> -16)	n/a	n/a	82	-15	20(12)	ª / 35	n/a	n/a	<sup>a</sup> / 32

<sup>a</sup> With the flow rate as determined at the standard rating conditions given in EN 14511-2 at 30/35 conditions for units with a fixed flow rate, and with a fixed delta *T* of 5 K for units with a variable flow rate. If for any of the test conditions the resulting flow rate is below the minimum flow rate then this minimum flow rate is used as a fixed flow rate with the outlet temperature for this test condition.

<sup>b</sup> Variable outlet shall be calculated by interpolation from  $T_{\text{designh}}$  and the temperature which is closest to the *TOL*.

<sup>c</sup> Variable outlet shall be calculated by interpolation between the upper and lower temperatures which are closest to the bivalent temperature.

<sup>d</sup> If the variable outlet temperature is below the minimum of the operation range of the unit, this minimum should be considered.

Remark: With the flow rate as determined at the standard rating conditions given in EN 14511-2 at 30/35 conditions.

### Test data (Average):

General tes	st conditions	Heating capacity (kW)	Power input (kW)	COP
А	A(-7)/W34 (88%)	8.243	2.658	3.10
В	A2/W30 (54%)	5.082	1.018	5.00
С	A7/W27 (35%)	3.338	0.488	6.84
D	A12/W24 (15%)	3.140	0.314	10.00
E	A(-10)/W35(100%)	9.119	3.286	2.74
F	A(-7)/W34 (88%)	8.243	2.658	3.10



Summary result of tested value:								
	Unit	Value						
SCOPon:	kWh/kWh	5.17						
SCOP:	kWh/kWh	5.16						
Q <sub>H</sub> :	kWh	19007						
Q <sub>HE</sub> :	kWh	3684						
η <sub>s,h</sub>	%	203.4						



## Test condition (Heating function / warmer heating season in medium temperature application):

Voltage: 400 V / frequency: 50 Hz;

Indoor heat exchanger: variable outlet ;

Tj (bivalent temperature): <u>7 °C;</u> operating limit (TOL): <u>2 °C;</u>

#### Table 10 — Part load conditions for air-to-water(brine) units in medium temperature application for the reference heating seasons "A" = average, "W" = warmer and "C" = colder

	Part	Part Load Ratio				or heat anger	Indoor heat exchanger			
Condition	in %			Inlet dry (wet) bulb temperature °C		Fixed outlet °C	Va	Variable outlet <sup>d</sup> °C		
	Formula	A	W	С	Outdoor air	Exhaust air	All climates	А	W	С
А	(-7 - 16) / (T <sub>designh</sub> -16)	88	n/a	61	-7(-8)	20(12)	<sup>a</sup> / 55	ª / 52	n/a	<sup>a</sup> / 44
В	(+2 - 16) / (T <sub>designh</sub> -16)	54	100	37	2(1)	20(12)	ª / 55	<sup>a</sup> / 42	ª / 55	<sup>a</sup> / 37
С	(+7 - 16) / (T <sub>designh</sub> -16)	35	64	24	7(6)	20(12)	ª / 55	ª / 36	<sup>a</sup> / 46	<sup>a</sup> / 32
D	(+12 - 16) / (T <sub>designh</sub> -16)	15	29	11	12(11)	20(12)	<sup>a</sup> / 55	<sup>a</sup> / 30	ª / 34	<sup>a</sup> / 28
Е	( <i>TOL</i> - 16) / ( <i>T</i> <sub>designh</sub> -16)		TOL	20(12)	<sup>a</sup> / 55	a / b	a / b	a / b		
F	(T <sub>biv</sub> - 16) / (T <sub>designh</sub> - 16)		$T_{ m biv}$	20(12)	ª / 55	a / c	a / c	a / c		
G	(-15 - 16) / (T <sub>designh</sub> -16)	n/a	n/a	82	-15	20(12)	ª / 55	n/a	n/a	ª / 49

<sup>a</sup> With the flow rate as determined at the standard rating conditions given in EN 14511-2 at 47/55 conditions for units with a fixed flow rate, and with a fixed delta T of 8 K for units with a variable flow rate. If for any of the test conditions the resulting flow rate is below the minimum flow rate then this minimum flow rate is used as a fixed flow rate with the outlet temperature for this test condition.

<sup>b</sup> Variable outlet shall be calculated by interpolation from  $T_{\text{designh}}$  and the temperature which is closest to the TOL.

<sup>c</sup> Variable outlet shall be calculated by interpolation between the upper and lower temperatures which are closest to the bivalent temperature.

<sup>d</sup> If the variable outlet temperature is below the minimum of the operation range of the unit, this minimum should be considered.

Remark: With the flow rate as determined at the standard rating conditions given in EN 14511-2 at 47/55 conditions.

Test data (Warmer):										
General test conditions		Heating capacity (kW)	Power input (kW)	COP						
А	W(-7)	—	—	—						
В	W2 (100%)	8.015	3.339	2.400						
С	W7 (64%)	9.115	2.515	3.624						
D	W12 (29%)	4.153	0.647	6.419						
E	W(2)(100%)	8.015	3.339	2.400						

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F	W(7)(64%)		) 9.115 2.515			3.624	
Summary result of tested value:							
Unit				Value			
SCOPon:		kWh/kWh		4.13			
SCOP:		kWh/kWh		4.11			
QH:		kWh	18838				
Q <sub>HE</sub> :		kWh		4583			
η <sub>s,h</sub> %			161.4				



# Test condition (Heating function / warmer heating season in Low temperature application):

Voltage: <u>400 V</u> / frequency: <u>50</u> Hz ;

Indoor heat exchanger: variable outlet ;

Tj (bivalent temperature): <u>7 °C;</u> operating limit (TOL): <u>2 °C;</u>

# Table 8 — Part load conditions for air-to-water(brine) units in low temperature application forthe reference heating seasons "A" = average, "W" = warmer and "C" = colder

	Part Load Ratio				Outdoo excha	or heat anger	Indo	or heat o	exchang	er
Condition	in %			Inlet dry (wet) bulb temperature °C		Fixed outlet °C	Var	Variable outlet <sup>d</sup> °C		
	Formula	А	W	С	Outdoor air	Exhaust air	All climates	А	W	С
А	(-7 - 16) / (T <sub>designh</sub> -16)	88	n/a	61	-7(-8)	20(12)	ª / 35	<sup>a</sup> / 34	n/a	<sup>a</sup> / 30
В	(+2 - 16) / (T <sub>designh</sub> -16)	54	100	37	2(1)	20(12)	ª / 35	<sup>a</sup> / 30	ª / 35	<sup>a</sup> / 27
С	(+7 - 16) / (T <sub>designh</sub> -16)	35	64	24	7(6)	20(12)	ª / 35	<sup>a</sup> / 27	<sup>a</sup> / 31	ª / 25
D	(+12 - 16) / ( <i>T</i> <sub>designh</sub> -16)	15	29	11	12(11)	20(12)	<sup>a</sup> / 35	<sup>a</sup> / 24	ª / 26	<sup>a</sup> / 24
Е	( <i>TOL</i> - 16) / ( <i>T</i> <sub>designh</sub> - 16)		TOL	20(12)	ª / 35	a / b	a / b	a / b		
F	(T <sub>biv</sub> - 16) / (T <sub>designh</sub> - 16)		$T_{ m biv}$	20(12)	ª / 35	a / c	a / c	a / c		
G	(-15 - 16) / ( <i>T</i> <sub>designh</sub> -16)	n/a	n/a	82	-15	20(12)	ª / 35	n/a	n/a	a / 32

<sup>a</sup> With the flow rate as determined at the standard rating conditions given in EN 14511-2 at 30/35 conditions for units with a fixed flow rate, and with a fixed delta *T* of 5 K for units with a variable flow rate. If for any of the test conditions the resulting flow rate is below the minimum flow rate then this minimum flow rate is used as a fixed flow rate with the outlet temperature for this test condition.

<sup>b</sup> Variable outlet shall be calculated by interpolation from  $T_{\text{designh}}$  and the temperature which is closest to the *TOL*.

 $^{\rm c}$   $\,$  Variable outlet shall be calculated by interpolation between the upper and lower temperatures which are closest to the bivalent temperature.

 $^{\rm d}$   $\,$  If the variable outlet temperature is below the minimum of the operation range of the unit, this minimum should be considered.

Remark: With the flow rate as determined at the standard rating conditions given in EN 14511-2 at 47/55 conditions.

### Test data (Warmer):

General test conditions		Heating capacity (kW)	Power input (kW)	COP
А	W(-7)	—	—	—
В	W2 (100%)	8.415	2.147	3.92
С	W7 (64%)	5.596	0.941	5.95
D	W12 (29%)	2.762	0.305	9.04
E	W(2)(100%)	8.415	2.147	3.92
F	W(7)(64%)	5.596	0.941	5.95



Summary result of tested value:			
	Unit	Value	
SCOPon:	kWh/kWh	6.96	
SCOP:	kWh/kWh	6.86	
Q <sub>H</sub> :	kWh	11490	
Q <sub>HE</sub> :	kWh	1674	
η <sub>s,h</sub>	%	271.5	



Information of efficiency class according to (EU) No 811/2013						
Climate conditions		Average (mandatory)				
Declared temperature application	M	edium-temperature	Low-temperature			
Rated heat output (kW)		7.7	9.2			
seasonal space heating energy efficiency ηs; %		154	203			
Energy efficiency class		A+++	A+++			
Annual energy consumption $Q_{HE}$ ;(KWh):		4055	3690			
Sound power level (L <sub>WA</sub> ), indoor/outdoor:		57	57			
Climate conditions:		Warmer				
Declared temperature application:		edium-temperature	Low-temperature			
Rated heat output (kW):		14.1	8.6			
seasonal space heating energy efficiency ηs; %		161	267			
Energy efficiency class	A+++		A+++			
Table 1         Seasonal space heating energy efficiency classes of heaters, with the exception of low-temperature heat         pumps and heat pump space heaters for low-temperature application						
Seasonal space heating energy efficiency class		Seasonal space heating energy efficiency $\eta_z$ in %				
A****		$\eta_{s} \ge 150$				
A**		$125 \le \eta_s < 150$				
A		$98 \le \eta_5 \le 125$				
B	R		< 90			
C	C		< 82			
D		$36 \le \eta_5 < 75$				
E		$34 \le \eta_5 < 36$				
F		$30 \le \eta_5 < 34$				
G		$\eta_{5} < 30$				



# Information of efficiency class according to (EU) No 811/2013

Seasonal space heating energy efficiency classes of lo for low-tempe	w-temperature heat pumps and heat pump space heaters rature application
Seasonal space heating energy efficiency class	Seasonal space heating energy efficiency $\eta_z$ in %
A****	η <sub>5</sub> ≥ 175
A**	$150 \le \eta_{\rm s} \le 175$
A <sup>+</sup>	$123 \le \eta_z \le 150$
A	$115 \le \eta_{\rm s} \le 123$
В	$107 \le \eta_{\rm s} \le 115$
c	$100 \le \eta_{5} \le 107$
D	$61 \leq \eta_{\rm s} \leq 100$
E	$59 \le \eta_5 \le 61$
F	$55 \le \eta_s < 59$
G	$\eta_{s} < 55$



Ecodesign requirements according to (EU) No 813/2013					
Average (mandatory)					
Declared temperature application		Exception of low-temperature			
Items	Value	Stage 1	Stage 2	Verdict	
seasonal space heating energy efficiency ηs,	154	⊠ ≥100 % (from 2015.09.26)	⊠ ≥110 % (from 2017.09.26)	Р	
Sound power level (L <sub>WA</sub> ), indoor/outdoor	57	⊠ ≤ 70 dBA / 78 dBA (from 2015.09.26)		Ρ	
Declared temperature application		Low-temperature			
Items	Value	Stage 1	Stage 2	Verdict	
seasonal space heating energy efficiency ηs	203	⊠ ≥115 % (from 2015.09.26)	⊠ ≥125 % (from 2017.09.26)	Ρ	
Sound power level (L <sub>WA</sub> ), indoor/outdoor	57	⊠ ≤ 70 dBA / 78 dBA (from 2015.09.26)		Ρ	
(a) From 26 September 2015 the		ace beating operav officien	ev and us of ul officioncia	c of	

(a) From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:

Heat pump space heaters and heat pump combination heaters, with the exception of low-temperature heat pumps:

The seasonal space heating energy efficiency shall not fall below 100 %.

Low-temperature heat pumps:

The seasonal space heating energy efficiency shall not fall below 115 %.

(b) From 26 September 2017 the seasonal space heating energy efficiency of electric boiler space heaters, electric boiler combination heaters, cogeneration space heaters, heat pump space heaters and heat pump combination heaters shall not fall below the following values:

Heat pump space heaters and heat pump combination heaters, with the exception of low-temperature heat pumps:

The seasonal space heating energy efficiency shall not fall below 110 %.

Low-temperature heat pumps:

The seasonal space heating energy efficiency shall not fall below 125 %.

From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:

Rated heat output $\leq 6 \text{ kW}$		Rated heat output > 6 kW and $\leq 12$ kW		Rated heat output > 12 kW and $\leq$ 30 kW		Rated heat output > 30 kW and $\leq$ 70 kW	
Sound power level (L <sub>WA</sub> ), indoors	Sound power level (L <sub>WA</sub> ), outdoors	Sound power level (L <sub>WA</sub> ), indoors	Sound power level (L <sub>WA</sub> ), outdoors	Sound power level (L <sub>WA</sub> ), indoors	Sound power level (L <sub>WA</sub> ), outdoors	Sound power level (L <sub>WA</sub> ), indoors	Sound power level (L <sub>WA</sub> ), outdoors
60 dB	65 dB	65 dB	70 dB	70 dB	78 dB	80 dB	88 dB



# Photo documents:



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