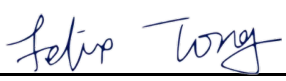
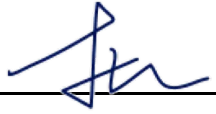


Prüfbericht-Nr.: <i>Test report no.:</i>	CN23GFWD 001	Auftrags-Nr.: <i>Order no.:</i>	170354201	Seite 1 von 10 Page 1 of 10
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	-	Auftragsdatum: <i>Order date:</i>	2023.10.12	
Auftraggeber: <i>Client:</i>	Guangzhou Green Power Technology Co., Ltd Building B2, No. 79, Jingquan 3rd Road, Huangpu District, 511356, Guangzhou, China			
Prüfgegenstand: <i>Test item:</i>	Heat pump water heater			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	Alpha 300L			
Auftrags-Inhalt: <i>Order content:</i>	EU energy performance test			
Prüfgrundlage: <i>Test specification:</i>	COMMISSION REGULATION (EU) No 814/2013 COMMISSION DELEGATED REGULATION (EU) No 812/2013			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2023.10.12			
Prüfmuster-Nr.: <i>Test sample no.:</i>	GP Alpha 300L230512013			
Prüfzeitraum: <i>Testing period:</i>	2023.10.12 – 2023.11.07			
Ort der Prüfung: <i>Place of testing:</i>	See page 2			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Guangdong) Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	 Signed by: Felix Tong		genehmigt von: <i>authorized by:</i>	 Signed by: Stone Shi
Datum: <i>Date:</i>	2023.11.07	Ausstellungsdatum: <i>Issue date:</i>	2023.11.07	
Stellung / Position:	Project Engineer	Stellung / Position:	Reviewer	
Sonstiges / <i>Other:</i>	This report is only for performance test.			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet * Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

Prüfbericht-Nr.: CN23GFWD 001
Test report no.:

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Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfbedingungen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>
2	Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben. <i>As contractually agreed, this document has been signed digitally only. TÜV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TÜV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.</i>
3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

Testing results summary

Model designation	Alpha 300L
Climate conditions	Average
Tested COP _{DHW}	3.79
Calculated η_{wh} %	157
Water heating energy efficiency class	A+
Thermostat setting (°C)	55
Declared load profile	XL
Heat source	Indoor air
Off-peak product	☐ Yes ☒ No
Smart control	☐ Yes ☒ No

Summary of testing

1. The appliance was tested according to EN 16147:2011 and EN 16147:2017.
2. The capacity test method is air enthalpy method.
3. All tests were performed on the model ALPHA 300L.
4. The test location is below.
For performance test
Guangzhou Green Power Technology Co., Ltd
Building B2, No. 79, Jingquan 3rd Road, Huangpu District, 511356, Guangzhou, China

Test sample particulars

Classification of installation and use: Stationary appliance
 Type of the appliance: Air to water heat pump
 Function of the appliance: Water heating
 Heating season (heating function applicable).....: Average

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.....: See cover page
 Date (s) of performance of tests.....: See cover page

General product information

The appliance is air to water heat pump water heater with electrically driven compressor including a domestic hot water storage tank which installed indoor and the heat source air enters from the indoor air side through air ducts.

Rating labels and marking:

AIR SURCE HEAT PUMP HOT WATER HEATER		
Model		Alpha 300L
Power supply	V/Hz/ph	220-240~/50/1
Heating capacity	kW	2.06*
COP	W/W	4,10
Rate input (+El. Heater)	W	500 (+1500**)
Rate current (+El. Heater)	A	2,2 (6,5)
Air flow	m ³ /h	450
Energy efficiency calss	/	A+***
Rrefrigerant / qty / GWP	/	R134a / 0.95 kg /1430
Tons of CO ₂ equivalent	t	1,36
Design high pressure	Mpa	2,5
Design Low pressure	Mpa	1,0
Water tank MAX pressure	Mpa	1,0
Water tank rate pressure	Mpa	0,6
Valve safety pressure	Mpa	0,7
Max water temprature	°C	60
Water tank volume	L	300
Rate hot water capacity	L/h	45
Sound pressure level	dB(A)	58
Net weight	kg	75
Pack size	mm	600*600*2020
O.U. Resistance Class	/	IPX1
*Capacity and power input base on the follow conditions: Ambient temprature 20°C/15°C , Water tempratrue 15°C/55°C **Related to the supplementary heater ***Water Heating energy efficiency base on standard erp, XL cycle: Ambient temprature 20°C/15°C , Water tempratrue 10°C/55°C		
   		

COMMISSION REGULATION (EU) No 814/2013 COMMISSION DELEGATED REGULATION (EU) No 812/2013			
Clause	Requirement - Test	Result - Remark	Verdict

COMMISSION REGULATION (EU) No 814/2013

Article 1	Subject matter and scope		P
1	This Regulation establishes ecodesign requirements for the placing on the market and/or putting into service of water heaters with a rated heat output $\leq$ 400 kW and hot water storage tanks with a storage volume $\leq$ 2 000 litres, including those integrated in packages of water heater and solar device as defined in Article 2 of Delegated Regulation (EU) No 812/2013.		P
2	This Regulation shall not apply to: (a) water heaters specifically designed for using gaseous or liquid fuels predominantly produced from biomass; (b) water heaters using solid fuels; (c) water heaters within the scope of Directive 2010/75/EU of the European Parliament and of the Council (1); (d) combination heaters as defined in Article 2 of Commission Regulation (EU) No 813/2013 (2); (e) water heaters which do not meet at least the load profile with the smallest reference energy, as specified in Annex III, Table 1; (f) water heaters designed for making hot drinks and/or food only; (g) heat generators designed for water heaters and water heater housings to be equipped with such heat generators placed on the market before 1 January 2018 to replace identical heat generators and identical water heater housings. The replacement product or its packaging shall clearly indicate the water heater for which it is intended.		N/A
Article 3	Ecodesign requirements and timetable		P
1	The ecodesign requirements for water heaters and hot water storage tanks are set out in Annex II.		P
2	Each ecodesign requirement shall apply in accordance with the following timetable:		P
	(a) from 26 September 2015: (i) water heaters shall meet the requirements set out in Annex II, points 1.1(a), 1.2, 1.3, 1.4 and 1.6; (ii) hot water storage tanks shall meet the requirements set out in Annex II, point 2.2;		N/A
	(b) from 26 September 2017: (i) water heaters shall meet the requirements set out in Annex II, point 1.1(b); (ii) hot water storage tanks shall meet the requirements set out in Annex II, point 2.1;		N/A

COMMISSION REGULATION (EU) No 814/2013													
COMMISSION DELEGATED REGULATION (EU) No 812/2013													
Clause	Requirement - Test							Result - Remark				Verdict	
	(c) from 26 September 2018: (i) water heaters shall meet the requirements set out in Annex II, point 1.1(c); (ii) water heaters shall meet the requirements set out in Annex II, point 1.5(a)											P	
3	Compliance with ecodesign requirements shall be measured and calculated in accordance with the requirements set out in Annexes III and IV.											P	
Annex II	Ecodesign requirements										P		
1	ECODESIGN REQUIREMENTS FOR WATER HEATERS											P	
1.1	Requirements for water heating energy efficiency											N/A	
	(a) From 26 September 2015 the water heating energy efficiency of water heaters shall not fall below the following values:											N/A	
	Declared load profile	3XS	XXS	XS	S	M	L	XL	XXL	3XL	4XL	-	
	Water heating energy efficiency	22%	23%	26%	26%	30%	30%	30%	32%	32%	32%		
	In addition, for water heaters with smart being declared as '1': water heating energy efficiency calculated for smart = 0, tested under the declared load profil											N/A	
	Declared load profile	3XS	XXS	XS	S	M	L	XL	XXL	3XL	4XL	-	
	Water heating energy efficiency	19%	20%	23%	23%	27%	27%	27%	28%	28%	28%		
	(b) From 26 September 2017 the water heating energy efficiency of water heaters shall not fall below the following values:											P	
	Declared load profile	3XS	XXS	XS	S	M	L	XL	XXL	3XL	4XL	-	
	Water heating energy efficiency	32%	32%	32%	32%	36%	37%	37%	37%	37%	38%		
	In addition, for water heaters with smart being declared as '1': water heating energy efficiency calculated for smart = 0, tested under the declared load profil											N/A	

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Report No.: CN2001 WD 001

COMMISSION REGULATION (EU) No 814/2013													
COMMISSION DELEGATED REGULATION (EU) No 812/2013													
Clause	Requirement - Test							Result - Remark				Verdict	
	Declared load profile	3XS	XXS	XS	S	M	L	XL	XXL	3XL	4XL	-	
	Water heating energy efficiency	29%	29%	29%	29%	33%	34%	35%	36%	36%	36%		
	(c) From 26 September 2018 the water heating energy efficiency of water heaters shall not fall below the following values:											N/A	
	Declared load profile	XXL	3XL	4XL								-	
	Water heating energy efficiency	60%	64%	64%									
1.2	Requirements for storage volume of storage water heaters with declared load profiles 3XS, XXS, XS and S											N/A	
	(a) for storage water heaters with declared load profile 3XS the storage volume shall not exceed 7 litres;											N/A	
	(b) for storage water heaters with declared load profiles XXS and XS, the storage volume shall not exceed 15 litres;											N/A	
	(c) for storage water heaters with declared load profile S the storage volume shall not exceed 36 litres.											N/A	
1.3	Requirements for mixed water at 40 °C of storage water heaters with declared load profiles M, L, XL, XXL, 3XL and 4XL											P	
	From 26 September 2015 the amount of mixed water at 40 °C shall not fall below the following values:											P	
	Declared load profile	M	L	XL	XXL	3XL	4XL						-
	Mixed water at 40 °C	65 litres	130 litres	210 litres	300 litres	520 litres	1040 litres						
1.4	Requirements for sound power level											N/A	
	From 26 September 2015 the sound power level of heat pump water heaters shall not exceed the following values:											N/A	

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Report No.: CN2007 WD 001

COMMISSION REGULATION (EU) No 814/2013										
COMMISSION DELEGATED REGULATION (EU) No 812/2013										
Clause	Requirement - Test						Result - Remark		Verdict	
	Rated heat output ≤ 6 kW		6 kW < Rated heat output ≤ 12 kW		12 kW < Rated heat output ≤ 30 kW		30 kW < Rated heat output ≤ 70 kW		-	
	indoor	outdoor	indoor	outdoor	indoor	outdoor	indoor	outdoor		
	60 dB	65 dB	65 dB	70 dB	70 dB	78 dB	80 dB	88 dB		
1.5	Requirements for emissions nitrogen oxides								N/A	
1.6	Requirements for product information related to water heaters								N/A	
	From 26 September 2015 the instruction manuals for installers and end-users, free access websites of manufacturers, their authorised representatives and importers and technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:								N/A	
	(a) information identifying the model(s), including equivalent models, to which the information relates;								N/A	
	(b) the results of the measurements for the technical parameters specified in point 6 of Annex III;								N/A	
	(c) the results of the calculations for the technical parameters specified in point 2 of Annex IV;								N/A	
	(d) any specific precautions that shall be taken when the water heater is assembled, installed or maintained;								N/A	
	(e) for heat generators designed for water heaters and water heater housings to be equipped with such heat generators, their characteristics, the requirements for assembly, to ensure compliance with the ecodesign requirements for water heaters and, where appropriate, the list of combinations recommended by the manufacturer;								N/A	
	(f) information relevant for disassembly, recycling and/or disposal at end-of-life.								N/A	
2	ECODESIGN REQUIREMENTS FOR HOT WATER STORAGE TANKS								N/A	
2.1	Requirement for standing loss								N/A	
	From 26 September 2017 the standing loss S of hot water storage tanks with storage volume V, expressed in litres, shall not exceed the following limit:								N/A	
	16,66+8,33×V ^{0.4} Watts								-	
2.2	Requirements for product information related to hot water storage tanks								N/A	

COMMISSION REGULATION (EU) No 814/2013 COMMISSION DELEGATED REGULATION (EU) No 812/2013			
Clause	Requirement - Test	Result - Remark	Verdict
	From 26 September 2015 the instruction manuals for installers and end-users, the free access websites of manufacturers, their authorised representatives and importers and technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		N/A
	(a) information identifying the model(s), including equivalent models, to which the information relates;		N/A
	(b) the results of the measurements for the technical parameters specified in point 7 of Annex III;		N/A
	(c) any specific precautions that shall be taken when the hot water storage tank is assembled, installed or maintained;		N/A
	(d) information relevant for disassembly, recycling and/or disposal at end-of-life.		N/A
Annex III	Measurements		P
Annex IV	Calculations		P

COMMISSION DELEGATED REGULATION (EU) No 812/2013			
Annex II	Energy efficiency classes		P
1	WATER HEATING ENERGY EFFICIENCY CLASSES OF WATER HEATERS		P
	The water heating energy efficiency class of a water heater shall be determined on the basis of its water heating energy efficiency as set out in Table 1.		P
	The water heating energy efficiency of a water heater shall be calculated in accordance with point 3 of Annex VIII, for solar water heaters and heat pump water heaters under average climate conditions.		P
2	ENERGY EFFICIENCY CLASSES OF HOT WATER STORAGE TANKS		N/A
	The energy efficiency class of a hot water storage tank shall be determined on the basis of its standing loss as set out in Table 2.		N/A

Measurements and calculations

Climate condition	Average
Thermostat setting (°C)	55
Tested voltage V	230.2
Tested frequency Hz	49.9
Heat source air dry bulb temperature °C	19.97
Heat source air wet bulb temperature °C	15.02
Ambient temperature of storage tank °C	20.02
Heating up time h	7.08
Heating up electrical energy consumption kWh	3.232
Stand-by power input kW	0.030
Total useful energy content during the load profile kWh	19.075
Total electrical energy consumption during load profile kWh	5.035
Daily electrical energy consumption kWh	5.034
Coefficient of Performance	3.79
Water heating energy efficiency %	157
Annual electrical energy consumption kWh/a	1069
Reference hot water temperature °C	54.46
Maximum volume of mixed water at 40°C l	427

End of report