TEST REPORT - PERFORMANCE

WATER HEATER

Report Number:	ADSF-EGZ-P23110366-4
Date of Issue:	13-Dec-2023
Date of Revise:	5-Jan-2024
Testing Laboratory/Address:	Bureau Veritas Consumer Products Services (Guangzhou) Co., Ltd, Science City Branch Rm.101, G5 Building, South China Advanced Materials Innovation Park, No.31 Kefeng Rd, Guangzhou Science City, Guangzhou, 510663 China
Applicant/Address:	Qingdao Economic & Technology Development Zone Haier Water Heater Co., Ltd. Haier Industry Park, Qingdao Economic & Technology Development District, Shandong, P. R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory
Product:	Heat Pump Water Heater
Trade Mark:	Haier
Model(s):	HP200M7-F9, HP200M7-F9(GN)
Model Similarity:	The two models are exactly identical except for model name.
Ratings:	220-240V~, 50Hz
Date of Sample(s) Received:	31-Oct-2023
Date of Test Started:	31-Oct-2023
Date of Test Finished:	20-Nov-2023
Standard(s)/Regulation(s):	(EU) No 814/2013 + (EU) 2016/2282 (EU) No 812/2013 + (EU) No 518/2014 EN 16147:2017+A1:2022
Conclusion:	The product tested complies with the ErP energy efficiency requirements and the Energy Efficiency Class of the tested product is A+ @colder climate, A+ @average climate, A+ @warmer climate.
Prepared by (name, function, signature):	Henry DENG Engineer Henry Deng
Approved by (name, function, signature):	Jeff ZHANG Performance Manager Jeff Zhang

Photos:

1. Nameplate showing model number and serial number (if applicable)

Haier

Heat Pump Water Heater

Model	HP200M7-F9
Volume	192L
Protection class	IPX4
Assigned water pressure	0.7MPa
Electrical connection (voltage / frequence)	220V-240V/50Hz
Maximum total power by DWH	2035W
Average power input by HP	320W
Maximum power input by HP	535W
Power input by electric backup	1500W
Refrigerant	R290 / 0.15kg
Maximum pressure of refrigerant	3.3MPa
Global Warming Potential (GWP)	3
Equivalent CO2	0.45kg
Number of manufacturer	2025ED
Serial number	
MADE IN P.R.C. Manufactured By Haier	

Haier

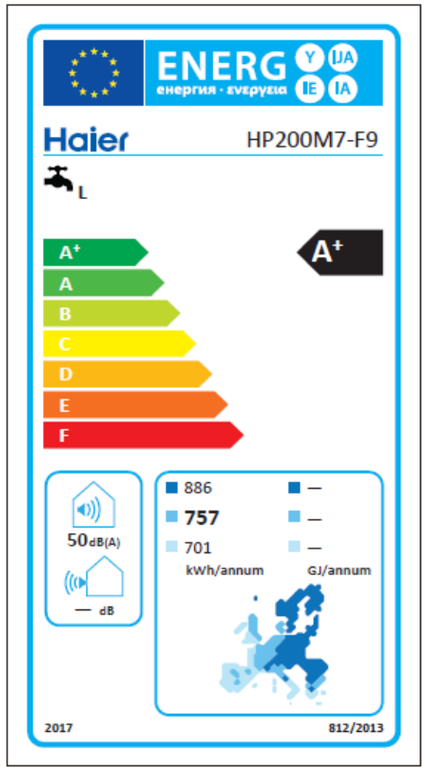
Chauffe-eau à pompe à chaleur

Modèle	HP200M7-F9
Volume	192L
Classe de protection	IPX4
Pression d'eau assignée	0.7MPa
Connexion électrique (tension/fréquence)	220V-240V/50Hz
Puissance totale maximale par ECS	2035W
Puissance absorbée moyenne par HP	320W
Puissance absorbée maximale par HP	535W
Alimentation électrique par secours électrique	1500W
Réfrigérant	R290 / 0.15kg
Pression maximale du réfrigérant	3.3MPa
Potentiel de réchauffement climatique (PRG)	3
Équivalent CO2	0.45kg
Numéro de fabricant	2025ED
Numéro de série	
FABRIQUÉ EN CHINE Fabriqué par Haier	

2. Product as received (including all parts and application)

3. Additional photos (if necessary)

4. Energy label



5. Nameplate- HP200M7-F9(GN)

Haier

Heat Pump Water Heater

Model	HP200M7-F9(GN)
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Protection class	IPX4
Assigned water pressure	0.7MPa
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MADE IN P.R.C.
Manufactured By Haier

Haier

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Puissance absorbée moyenne par HP	320W
Puissance absorbée maximale par HP	535W
Alimentation électrique par secours électrique	1500W
Réfrigérant	R290 / 0.15kg
Pression maximale du réfrigérant	3.3MPa
Potentiel de réchauffement climatique (PRG)	3
Équivalent CO2	0.45kg
Numéro de fabricant	2025ED
Numéro de série	

FABRIQUÉ EN CHINE
Fabriqué par Haier

Product Details

Water Heater Information	
Model Number of Unit Under Tested	HP200M7-F9
Serial Number	N/A
Condition of Sample(s)	Production
Type of Product	Heat Pump Water Heater
Type of Heat Source	Outdoor air heat pump
Smart Control Function	No
Load Profile	L
Off-peak	No
Type of Temperature Control	Electronic
Rated Storage Volume (If applicable) [L]	192
Rated hot water temperature [°C]	55

Compressor Information	
Manufacturer / Trademark	Shanghai Highly Electrical Appliances Co., Ltd.
Manufacturer Model Number	WHP02000PCKQF3BU6B
Technical data	220-240V~, 50/60Hz, R290

Fan Motor Information	
Manufacturer / Trademark	Wolong Electric (Jinan) Motor Co., Ltd
Manufacturer Model Number	WZD-A05025D-02A
Technical data	DC 310V, 25W, ClassB, protection Class IP44

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	Ecodesign Requirements for Water Heaters		-
1.1	Requirements for water heating energy efficiency		-
(a)	From 26 September 2015 the water heating energy efficiency of water heaters shall not fall below the following values:	(see test results)	Pass
(b)	From 26 September 2017 the water heating energy efficiency of water heaters shall not fall below the following values:	(see test results)	Pass
(c)	From 26 September 2018 the water heating energy efficiency of water heaters shall not fall below the following values:		N/A
1.2	Requirements for storage volume of storage water heaters with declared load profiles 3XS, XXS, XS and S from 26 September 2015:		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		Pass
	From 26 September 2015 the amount of mixed water at 40 °C shall not fall below the following values	(see test results)	Pass
1.4	Requirements for sound power level		Not Check
	From 26 September 2015 the sound power level of heat pump water heaters shall not exceed the following values	(see test results)	Not Check
1.5	Requirements for emissions of nitrogen oxides		N/A
(a)	From 26 September 2018 emissions of nitrogen oxides, expressed in nitrogen dioxide, of water heaters shall not exceed the following values		N/A
	— conventional water heaters using gaseous fuels: 56 mg/kWh fuel input in terms of GCV		N/A
	— conventional water heaters using liquid fuels: 120 mg/kWh fuel input in terms of GCV		N/A
	— heat pump water heaters equipped with external combustion using gaseous fuels and solar water heaters using gaseous fuels: 70 mg/kWh fuel input in terms of GCV		N/A
	— heat pump water heaters equipped with external combustion using liquid fuels and solar water heaters using liquid fuels: 120 mg/kWh fuel input in terms of GCV		N/A

Clause	Ecodesign requirements	Result - Remark	Verdict
	— heat pump water heaters equipped with an internal combustion engine using gaseous fuels: 240 mg/kWh fuel input in terms of GCV		N/A
	— heat pump water heaters equipped with an internal combustion engine using liquid fuels: 420 mg/kWh fuel input in terms of GCV		N/A
1.6	Requirements for product information related to water heaters		Pass
	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:		Pass
(a)	information identifying the model(s), including equivalent models, to which the information relates		Pass
(b)	the results of the measurements for the technical parameters specified in point 6 of Annex III		Pass
(c)	the results of the calculations for the technical parameters specified in point 2 of Annex IV		Pass
(d)	any specific precautions that shall be taken when the water heater is assembled, installed or maintained		Pass
(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		Pass

For Colder Climate

Storage volume

Item	Symbol	Unit	Value
Tare Weight	-	Kg	89
Filled Weight	-	Kg	283.2
Average Water Inlet Temperature	-	℃	10
Actual weight of water contained inside the tank	m_{act}	Kg	194.2
Measured Storage Volume	C_{act}	L	194.3

Heating up

Item	Symbol	Unit	Value
Ambient temperature of heat pump	-	℃	20.1
Heat source air dry bulb temperature	-	℃	1.99
Heat source air wet bulb temperature	-	℃	1.00
Heating up time	t_h	h	9.68
Electrical energy consumption	$W_{eh\text{-}HP}$	kWh	2.870

Standby power input

Item	Symbol	Unit	Value
Ambient temperature of heat pump	-	℃	20
Heat source air dry bulb temperature	-	℃	2.01
Heat source air wet bulb temperature	-	℃	1.02
Test Voltage	-	V	230
Test Frequency	-	Hz	50
Measured electrical energy consumption during the last on-off cycle	$W_{es\text{-}M}$	kWh	1.081
Correction due to electrical energy consumption of fan/liquid pump	$W_{EL\text{-}Corr}$	kWh	0
Total electrical energy consumption during the last on-off cycle	$W_{es\text{-}HP}$	kWh	1.1
Duration of the last on-off-cycle	t_{es}	s	162960
Standby power input	P_{es}	kW	0.024

Water draw-offs

Item	Symbol	Unit	Value
Ambient temperature of heat pump	-	℃	20.2
Heat source air dry bulb temperature	-	℃	2.1
Heat source air wet bulb temperature	-	℃	1
Test Voltage	-	V	230
Test Frequency	-	Hz	50
Load profile	Load profile	--	L
Total useful heat during the whole tapping cycle	-	kWh	11.611
Calculated heat energy produced by electrical resistance heater	$Q_{EL\text{-}LP}$	kWh	0.085
The total useful energy content during the whole load profile	Q_{LP}	kWh	11.696
The total measured electrical energy consumption	$W_{EL\text{-}M\text{-}LP}$	kWh	4.209
Time period of test cycle in hours	t_{TTC}	h	28.69

Total electrical energy consumption during the whole load profile	W_{EL-LP}	*kWh*	4.181
Coefficient of performance	COP_{DHW}	-	2.797

Mixed water at 40 °C and reference hot water temperature

Item	*Symbol*	*Unit*	Value
Ambient temperature of heat pump	-	*°C*	20
Heat source air dry bulb temperature	-	*°C*	2.1
Heat source air wet bulb temperature	-	*°C*	1
Test Voltage	-	*V*	230
Test Frequency	-	*Hz*	50
Time from starting the tapping until less than 40 °C	t_{40}	*s*	831
Reference hot water temperature	ϑ'_{WH}	*°C*	54.11
Maximum volume of mixed water at 40 °C	V_{40}	*L*	221

Smart Control

Item	*Symbol*	*Unit*	Value
Sequence of load profiles	-	-	N/A
Electricity consumption of reference period	$Q_{elec;week}$	*kWh*	N/A
Electricity consumption of smart period	$Q_{elec;week;smart}$	*kWh*	N/A
Smart control factor	*SCF*	*%*	N/A
Smart control	*smart*	-	0

Conclusion

Item	*Symbol*	*Unit*	Value
Primary standby heat loss	P_{stby}	*kW*	0.060
k-value	*k*	-	0.23
Ambient correction term	Q_{cor}	*kWh*	-0.331
Reference energy	Q_{ref}	*kWh*	11.655
Daily electricity consumption	Q_{elec}	*kWh*	4.167
Annual electricity consumption	*AEC*	*kWh*	886
Water heating energy efficiency	η_{wh}	*%*	116
Ecodesign requirements from 26 Sep 2017	-	*%*	37
Ecodesign requirements from 26 Sep 2018 (XXL, 3XL, 4XL)	-	*%*	N/A
Comply with water heating energy efficiency requirement?	-	-	Pass
Water heating energy efficiency class	-	-	A+

For Average Climate

Storage volume

Item	Symbol	Unit	Value
Tare Weight	-	Kg	89
Filled Weight	-	Kg	283.2
Average Water Inlet Temperature	-	℃	10
Actual weight of water contained inside the tank	m_{act}	Kg	194.2
Measured Storage Volume	C_{act}	L	194.3

Heating up

Item	Symbol	Unit	Value
Ambient temperature of heat pump	-	℃	20.1
Heat source air dry bulb temperature	-	℃	7.01
Heat source air wet bulb temperature	-	℃	6.02
Heating up time	t_h	h	8.33
Electrical energy consumption	$W_{eh\text{-}HP}$	kWh	2.549

Standby power input

Item	Symbol	Unit	Value
Ambient temperature of heat pump	-	℃	20.6
Heat source air dry bulb temperature	-	℃	7.03
Heat source air wet bulb temperature	-	℃	6.1
Test Voltage	-	V	230
Test Frequency	-	Hz	50
Measured electrical energy consumption during the last on-off cycle	$W_{es\text{-}M}$	kWh	0.996
Correction due to electrical energy consumption of fan/liquid pump	$W_{EL\text{-}Corr}$	kWh	0
Total electrical energy consumption during the last on-off cycle	$W_{es\text{-}HP}$	kWh	1.0
Duration of the last on-off-cycle	t_{es}	s	161962
Standby power input	P_{es}	kW	0.022

Water draw-offs

Item	Symbol	Unit	Value
Ambient temperature of heat pump	-	℃	20.01
Heat source air dry bulb temperature	-	℃	7.04
Heat source air wet bulb temperature	-	℃	6.04
Test Voltage	-	V	230.1
Test Frequency	-	Hz	50
Load profile	Load profile	--	L
Total useful heat during the whole tapping cycle	-	kWh	11.61
Calculated heat energy produced by electrical resistance heater	$Q_{EL\text{-}LP}$	kWh	0.086
The total useful energy content during the whole load profile	Q_{LP}	kWh	11.696
The total measured electrical energy consumption	$W_{EL\text{-}M\text{-}LP}$	kWh	3.538
Time period of test cycle in hours	t_{TTC}	h	26.05

Total electrical energy consumption during the whole load profile	W_{EL-LP}	*kWh*	3.579
Coefficient of performance	COP_{DHW}	-	3.268

Mixed water at 40 °C and reference hot water temperature

Item	*Symbol*	*Unit*	Value
Ambient temperature of heat pump	-	*°C*	20.3
Heat source air dry bulb temperature	-	*°C*	6.92
Heat source air wet bulb temperature	-	*°C*	6.01
Test Voltage	-	*V*	230
Test Frequency	-	*Hz*	50
Time from starting the tapping until less than 40 °C	t_{40}	*s*	837
Reference hot water temperature	ϑ'_{WH}	*°C*	54.11
Maximum volume of mixed water at 40 °C	V_{40}	*L*	221

Smart Control

Item	*Symbol*	*Unit*	Value
Sequence of load profiles	-	-	N/A
Electricity consumption of reference period	$Q_{elec;week}$	*kWh*	N/A
Electricity consumption of smart period	$Q_{elec;week;smart}$	*kWh*	N/A
Smart control factor	*SCF*	*%*	N/A
Smart control	*smart*	-	0

Conclusion

Item	*Symbol*	*Unit*	Value
Primary standby heat loss	P_{stby}	*kW*	0.055
k-value	*k*	-	0.23
Ambient correction term	Q_{cor}	*kWh*	-0.304
Reference energy	Q_{ref}	*kWh*	11.655
Daily electricity consumption	Q_{elec}	*kWh*	3.566
Annual electricity consumption	*AEC*	*kWh*	757
Water heating energy efficiency	η_{wh}	*%*	135
Ecodesign requirements from 26 Sep 2017	-	*%*	37
Ecodesign requirements from 26 Sep 2018 (XXL, 3XL, 4XL)	-	*%*	N/A
Comply with water heating energy efficiency requirement?	-	-	Pass
Water heating energy efficiency class	-	-	A+

For Warmer climate

Storage volume

Item	Symbol	Unit	Value
Tare Weight	-	Kg	89
Filled Weight	-	Kg	283.2
Average Water Inlet Temperature	-	℃	10
Actual weight of water contained inside the tank	m_{act}	Kg	194.2
Measured Storage Volume	C_{act}	L	194.3

Heating up

Item	Symbol	Unit	Value
Ambient temperature of heat pump	-	℃	20.1
Heat source air dry bulb temperature	-	℃	14.1
Heat source air wet bulb temperature	-	℃	13.02
Heating up time	t_h	h	6.91
Electrical energy consumption	$W_{eh\text{-}HP}$	kWh	2.142

Standby power input

Item	Symbol	Unit	Value
Ambient temperature of heat pump	-	℃	20.05
Heat source air dry bulb temperature	-	℃	14.01
Heat source air wet bulb temperature	-	℃	13.02
Test Voltage	-	V	230
Test Frequency	-	Hz	50
Measured electrical energy consumption during the last on-off cycle	$W_{es\text{-}M}$	kWh	0.948
Correction due to electrical energy consumption of fan/liquid pump	$W_{EL\text{-}Corr}$	kWh	0
Total electrical energy consumption during the last on-off cycle	$W_{es\text{-}HP}$	kWh	0.9
Duration of the last on-off-cycle	t_{es}	s	166160
Standby power input	P_{es}	kW	0.021

Water draw-offs

Item	Symbol	Unit	Value
Ambient temperature of heat pump	-	℃	20.01
Heat source air dry bulb temperature	-	℃	14.03
Heat source air wet bulb temperature	-	℃	13
Test Voltage	-	V	230
Test Frequency	-	Hz	50
Load profile	Load profile	--	L
Total useful heat during the whole tapping cycle	-	kWh	11.591
Calculated heat energy produced by electrical resistance heater	$Q_{EL\text{-}LP}$	kWh	0.099
The total useful energy content during the whole load profile	Q_{LP}	kWh	11.69
The total measured electrical energy consumption	$W_{EL\text{-}M\text{-}LP}$	kWh	3.23
Time period of test cycle in hours	t_{TTC}	h	24.58

Total electrical energy consumption during the whole load profile	W_{EL-LP}	*kWh*	3.317
Coefficient of performance	COP_{DHW}	-	3.524

Mixed water at 40 °C and reference hot water temperature

Item	*Symbol*	*Unit*	Value
Ambient temperature of heat pump	-	*°C*	20.1
Heat source air dry bulb temperature	-	*°C*	14.01
Heat source air wet bulb temperature	-	*°C*	13.1
Test Voltage	-	*V*	230
Test Frequency	-	*Hz*	50
Time from starting the tapping until less than 40 °C	t_{40}	*s*	831
Reference hot water temperature	ϑ'_{WH}	*°C*	54.25
Maximum volume of mixed water at 40 °C	V_{40}	*L*	223

Smart Control

Item	*Symbol*	*Unit*	Value
Sequence of load profiles	-	-	N/A
Electricity consumption of reference period	$Q_{elec;week}$	*kWh*	N/A
Electricity consumption of smart period	$Q_{elec;week;smart}$	*kWh*	N/A
Smart control factor	*SCF*	*%*	N/A
Smart control	*smart*	-	0

Conclusion

Item	*Symbol*	*Unit*	Value
Primary standby heat loss	P_{stby}	*kW*	0.053
k-value	*k*	-	0.23
Ambient correction term	Q_{cor}	*kWh*	-0.290
Reference energy	Q_{ref}	*kWh*	11.655
Daily electricity consumption	Q_{elec}	*kWh*	3.307
Annual electricity consumption	*AEC*	*kWh*	701
Water heating energy efficiency	η_{wh}	*%*	146
Ecodesign requirements from 26 Sep 2017	-	*%*	37
Ecodesign requirements from 26 Sep 2018 (XXL, 3XL, 4XL)	-	*%*	N/A
Comply with water heating energy efficiency requirement?	-	-	Pass
Water heating energy efficiency class	-	-	A+

Revision Summary

Date	Project Handler/ Reviewer	Item	Description of Change
5-Jan-2024	Henry DENG/ Jeff ZHANG	Photos & Details	The rated volume was updated from "194L" to "192L".
	Henry Deng		
	Jeff Zhang		