TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010503-1
Date of Issue:	19-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WLRK-6 I BM/B3
Model Similarity:	N/A
Ratings:	220-240V~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
Date of Test Finished:	9-May-2025
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under test complies with the ERP Requirements.
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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

DC Inverter Heat Pump

Model:	WLRK-6 I BM/B3	
Rated Heating Capacity	kW	6.0
Rated Heating Input	kW	1.22
Rated Heating Current	A	5.30
COP	W/W	4.90
Rated Cooling Capacity	kW	6.5
Rated Cooling Input	kW	1.91
Rated Cooling Current	A	8.30
EER	W/W	3.40
Power Supply	V,Hz	220-240V~,50Hz
*Rated Power Input	kW	3.07
*Rated Current	A	14.05
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	0.60
GWP	/	3
C02 Equivalent	t	0.0018
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	53
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m^3/h	1.03
Min/Max Water Side Pressure	MPa	0.05/0.3
Net Dimensions (L×W×H)	mm	1200×470×765
Net Weight	kg	95

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/0utlet): 30℃/35℃
Cooling: Ambient Temp (DB/WB): 35℃/24℃
Water Temp. (Inlet/0utlet): 23℃/18℃
*According to safely tests
Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

CE

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

Product Details

Item	Data
Model number of Unit Under Tested	WLRK-6 Ⅰ BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	600
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Shanghai Highly Electrical Appliances Co., Ltd.	WHP07600PSKQA6 LT8	R290, DC180V
Fan motor	Guangdong Welling Motor Manufacturing Co., Ltd.	ZKSP-180-8-3	180W, DC380V, 8P, Class E
Pump	Wilo China Ltd.	Para 25/9-87/IPWM1	230V, 50/60Hz, Water-Lift 9 meters, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd.	335mm	220V, 30W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	220V/75W+55W	220V, 130W±7%

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	REQUIREMENTS FOR SEASONAL SPACE HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		Pass
	Fuel boiler space heaters with rated heat output ≤ 70 kW and fuel boiler combination heaters with rated heat output ≤ 70 kW, with the exception of type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 30 kW: The seasonal space heating energy efficiency shall not fall below 86 %.		N/A
	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
	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: The seasonal space heating energy efficiency shall not fall below 100 %.		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 110 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		N/A
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	193	138	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	5.34	4.96	kW
Seasonal coefficient of performance	*SCOP*	4.90	3.53	—
Bivalent temperature	*Tbiv*	-7	-7	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	4.72	4.39	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.25	2.30	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.97	0.98	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	3.06	2.78	kW
Declared COP for part load, Tj =+2 °C	*COPd*	4.84	3.45	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.93	0.94	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	1.95	1.58	kW
Declared COP for part load, Tj =+7 °C	*COPd*	6.68	4.77	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	1.68	1.58	kW
Declared COP for part load, Tj =+12 °C	*COPd*	6.46	5.17	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	4.45	4.01	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.95	1.98	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.97	0.98	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	4.72	4.39	kW
Declared COP for part load, Tj =Tbiv	*COPd*	3.25	2.30	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.97	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	15	15	W
Thermostat-off mode	P_{TO}	46	46	W
Standby mode	P_{SB}	15	15	W
Crankcase heater mode	P_{CK}	28	28	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	0.89	1.0	kW
Annual energy consumption	Q_{HE}	2251	2905	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	52.1	52.1	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.33	97.28	97.25	97.30	102.03	97.35	97.28
2) Electrical quantities								
— voltage	*V*	230.60	230.40	230.00	230.30	230.10	230.60	230.40
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	5.50	6.40	3.76	1.89	1.59	6.62	6.40
— total power input, P_T	*W*	1249.49	1457.49	639.18	300.55	267.43	1512.13	1457.49
— effective power input, P_E	*W*	1238.97	1450.80	631.17	291.31	260.09	1505.44	1450.80
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	29.82	30.08	27.51	25.37	23.22	31.57	30.08
— outlet temperature	*°C*	34.96	34.04	30.08	27.01	23.93	35.31	34.04
— volume flow	*m^3/h*	1.03	1.03	1.03	1.03	1.03	1.03	1.03
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	4.77	2.87	3.50	4.11	3.18	2.87	2.87
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.01	7.00	12.01	-10.01	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	5.97	-8.03	1.00	6.00	11.00	-11.14	-8.03
c) Compressor								
— compressor frequency for inverter type	*Hz*	65	77	38	21	18	79	77
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	6124.97	4725.38	3063.05	1954.73	1687.43	4453.99	4725.38
— heating capacity, P_H	*W*	6115.82	4719.51	3056.05	1946.67	1681.00	4448.12	4719.51
— COP	*W/W*	4.94	3.25	4.84	6.68	6.46	2.95	3.25

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.22	97.35	97.28	97.34	97.45	97.42	97.35
2) Electrical quantities								
— voltage	*V*	230.60	230.50	229.80	230.20	230.00	230.60	230.50
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	8.69	8.34	4.70	2.35	1.75	8.81	8.34
— total power input, P_T	*W*	1997.70	1912.20	811.63	380.17	308.04	2024.76	1912.20
— effective power input, P_E	*W*	1992.68	1910.45	806.91	376.36	305.42	2023.01	1910.45
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	47.00	46.10	38.28	33.58	28.88	49.95	46.10
— outlet temperature	*°C*	55.04	52.08	42.05	36.01	29.96	55.32	52.08
— volume flow	*m^3/h*	0.64	0.64	0.64	0.64	0.64	0.64	0.64
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	3.39	1.13	3.17	2.53	1.71	1.13	1.13
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.01	7.00	12.00	-10.00	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.05	1.00	6.00	11.00	-11.16	-8.05
c) Compressor								
— compressor frequency for inverter type	*Hz*	71	77	38	21	18	79	77
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	5906.14	4393.62	2787.73	1797.69	1580.02	4012.40	4393.62
— heating capacity, P_H	*W*	5901.72	4392.07	2783.58	1794.33	1577.71	4010.85	4392.07
— COP	*W/W*	2.96	2.30	3.45	4.77	5.17	1.98	2.30

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	40.2	39.6	36.6	39.8	41.7	39.3	35.5	34.5	37	35.5	35	37.7	37.3	37.1
Averaged Sound Pressure Level	*dB(A)*	38.2													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S0)	*dB(A)*	14.5													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	38.2													
Sound Power Level	*dB(A)*	52.1													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None

TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010503-2
Date of Issue:	19-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, YueqingwanPort District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WLRK-8 I BM/B3
Model Similarity:	N/A
Ratings:	220-240V~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
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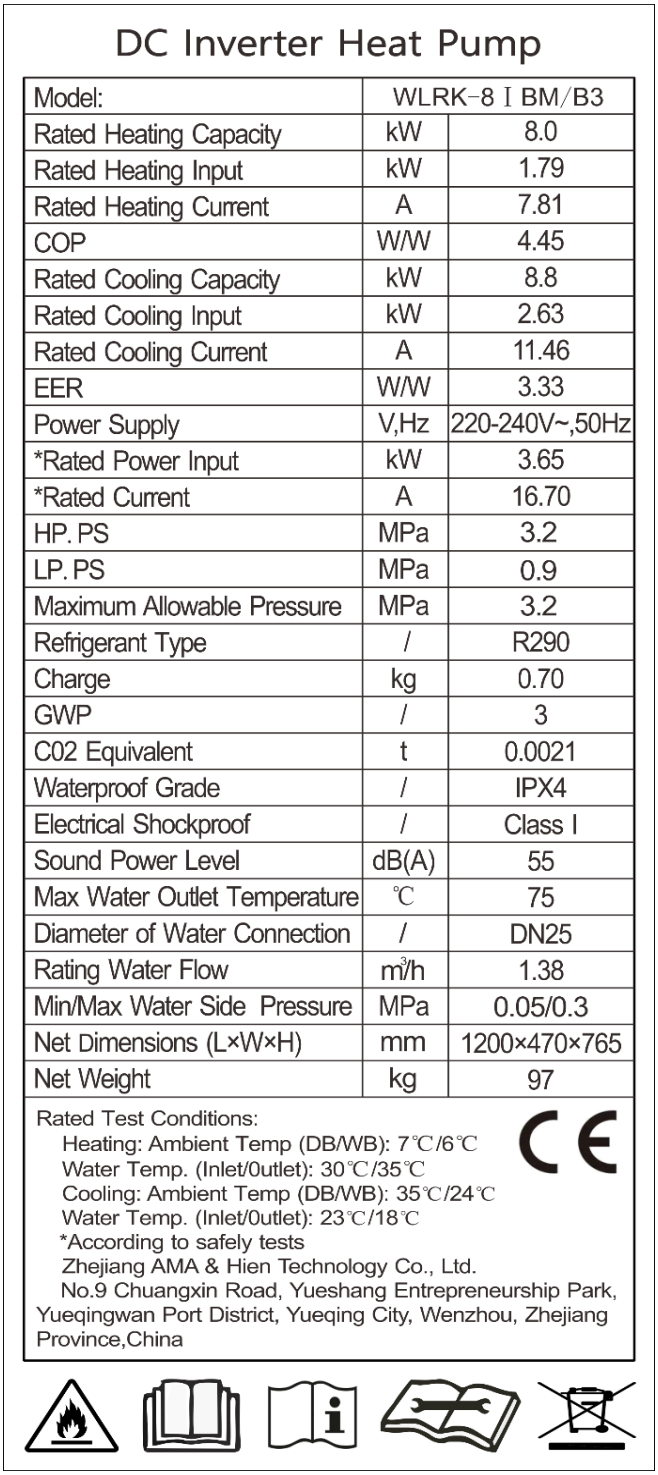
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under tested complies with the ERP Requirements
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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



DC Inverter Heat Pump

Model:	WLRK-8 I BM/B3	
Rated Heating Capacity	kW	8.0
Rated Heating Input	kW	1.79
Rated Heating Current	A	7.81
COP	W/W	4.45
Rated Cooling Capacity	kW	8.8
Rated Cooling Input	kW	2.63
Rated Cooling Current	A	11.46
EER	W/W	3.33
Power Supply	V,Hz	220-240V~,50Hz
*Rated Power Input	kW	3.65
*Rated Current	A	16.70
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	0.70
GWP	/	3
C02 Equivalent	t	0.0021
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	55
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m^3/h	1.38
Min/Max Water Side Pressure	MPa	0.05/0.3
Net Dimensions (L×W×H)	mm	1200×470×765
Net Weight	kg	97

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/0utlet): 30℃/35℃
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Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

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

Product Details

Item	Data
Model number of Unit Under Tested	WLRK-8 Ⅰ BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	700
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Shanghai Highly Electrical Appliances Co., Ltd.	WHP07600PSKQA6 LT8	R290, DC180V
Fan motor	Guangdong Welling Motor Manufacturing Co., Ltd.	ZKSP-180-8-3	180W, DC380V, 8P, Class E
Pump	Wilo China Ltd.	Para 25/9-87/IPWM1	230V, 50/60Hz, Water-Lift 9 meters, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd.	335mm	220V, 30W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	220V/75W+55W	220V,130W±7%

Ecodesign Requirements

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	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
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	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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		Pass
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	188	137	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	7.04	6.63	kW
Seasonal coefficient of performance	*SCOP*	4.79	3.49	—
Bivalent temperature	*Tbiv*	-7	-7	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	6.23	5.86	kW
Declared COP for part load, Tj = -7 °C	*COPd*	2.98	2.18	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.97	0.98	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	3.87	3.56	kW
Declared COP for part load, Tj =+2 °C	*COPd*	4.65	3.44	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.94	0.95	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	2.48	1.55	kW
Declared COP for part load, Tj =+7 °C	*COPd*	7.34	4.95	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	1.69	1.55	kW
Declared COP for part load, Tj =+12 °C	*COPd*	5.49	4.37	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	5.74	5.30	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.69	1.91	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	6.23	5.86	kW
Declared COP for part load, Tj =Tbiv	*COPd*	2.98	2.18	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.97	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	14	14	W
Thermostat-off mode	P_{TO}	53	53	W
Standby mode	P_{SB}	14	14	W
Crankcase heater mode	P_{CK}	28	28	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	1.30	1.3	kW
Annual energy consumption	Q_{HE}	3037	3926	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	52.5	52.5	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.38	97.29	97.26	97.32	102.07	97.35	97.29
2) Electrical quantities								
— voltage	*V*	230.90	230.00	230.20	230.00	230.39	230.00	230.00
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	7.83	9.17	4.86	2.18	2.05	9.34	9.17
— total power input, P_T	*W*	1799.90	2103.62	845.88	351.86	334.00	2143.63	2103.62
— effective power input, P_E	*W*	1786.43	2090.60	832.86	337.97	307.90	2130.61	2090.60
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	29.98	30.11	27.57	25.47	23.32	31.70	30.11
— outlet temperature	*°C*	35.00	34.01	30.00	27.03	24.02	35.30	34.01
— volume flow	*m^3/h*	1.38	1.38	1.38	1.38	1.39	1.38	1.38
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	4.77	4.58	4.58	4.95	11.39	4.58	4.58
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.00	7.00	12.01	-10.00	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	5.97	-7.99	1.00	6.00	11.02	-11.16	-7.99
c) Compressor								
— compressor frequency for inverter type	*Hz*	82	95	46	25	18	95	95
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	8010.72	6236.85	3880.91	2492.33	1713.00	5749.42	6236.85
— heating capacity, P_H	*W*	7999.08	6225.58	3869.64	2480.34	1691.30	5738.15	6225.58
— COP	*W/W*	4.48	2.98	4.65	7.34	5.49	2.69	2.98

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.24	97.33	97.25	97.31	101.91	97.30	97.33
2) Electrical quantities								
— voltage	*V*	231.00	230.00	230.10	230.70	230.35	230.80	230.00
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	12.03	11.73	5.91	2.33	2.23	12.12	11.73
— total power input, P_T	*W*	2776.76	2695.10	1038.64	470.08	360.00	2794.33	2695.10
— effective power input, P_E	*W*	2773.11	2691.45	1035.10	465.91	354.57	2774.47	2691.45
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	46.87	46.09	38.43	33.70	29.07	49.93	46.09
— outlet temperature	*°C*	55.02	52.05	42.04	36.03	30.13	55.33	52.05
— volume flow	*m^3/h*	0.86	0.86	0.86	0.86	0.86	0.86	0.86
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	1.80	1.80	1.74	2.07	2.74	12.53	1.80
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.01	7.00	12.01	-10.01	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-7.99	1.00	6.00	11.02	-11.06	-7.99
c) Compressor								
— compressor frequency for inverter type	*Hz*	88	95	46	25	18	95	95
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	8039.54	5867.75	3565.95	2310.63	1556.00	5319.32	5867.75
— heating capacity, P_H	*W*	8036.32	5864.53	3562.83	2306.95	1551.23	5302.46	5864.53
— COP	*W/W*	2.90	2.18	3.44	4.95	4.37	1.91	2.18

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	40.4	39.7	37.7	39.8	40.7	39.8	36	35.1	38.8	36.2	35.2	38.3	38.9	39.4
10^0.1Lpi	-	10965	9333	5888	9550	11749	9550	3981	3236	7586	4169	3311	6761	7762	8710
Averaged Sound Pressure Level	*dB(A)*	38.6													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S_0)	*dB(A)*	14.5													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	38.6													
Sound Power Level	*dB(A)*	52.5													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None

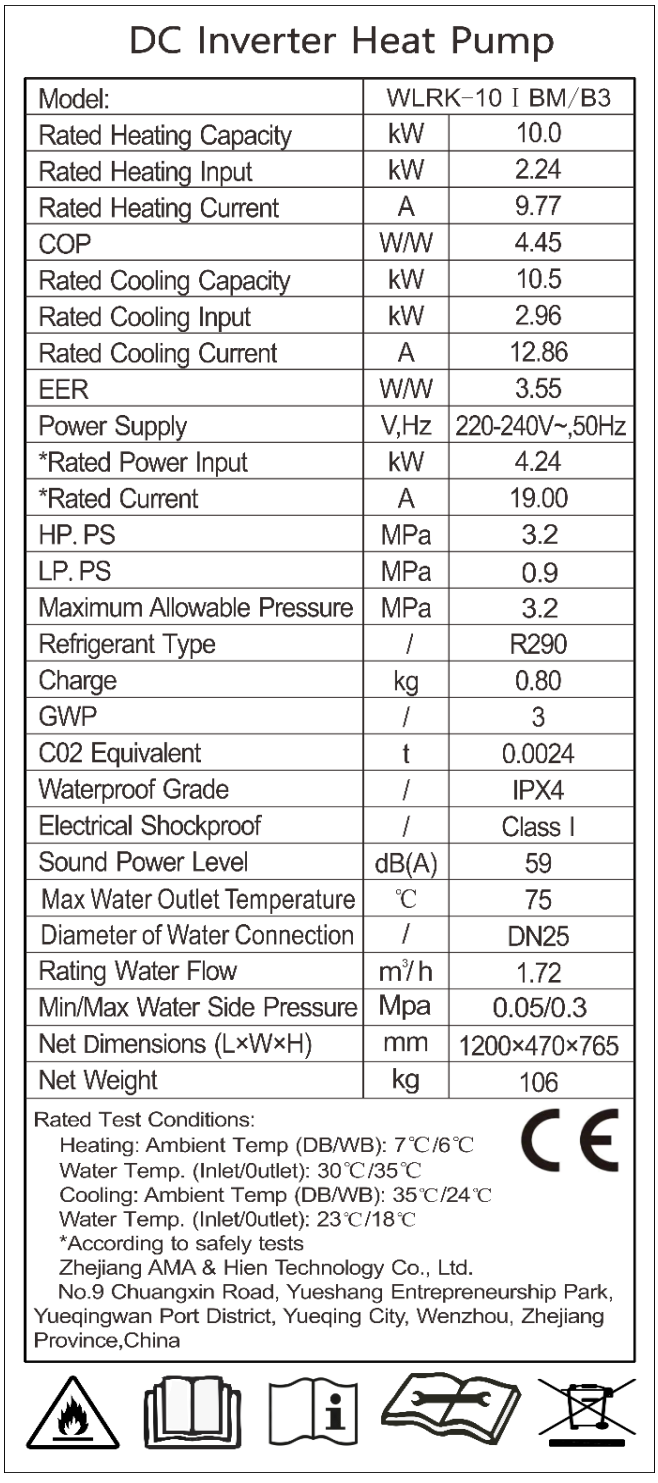
TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010503-3
Date of Issue:	19-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, YueqingwanPort District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WLRK-10 I BM/B3
Model Similarity:	N/A
Ratings:	220-240V~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
Date of Test Finished:	17-Apr-2025
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under tested complies with the ERP Requirements.
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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



DC Inverter Heat Pump

Model:	WLRK-10 I BM/B3	
Rated Heating Capacity	kW	10.0
Rated Heating Input	kW	2.24
Rated Heating Current	A	9.77
COP	W/W	4.45
Rated Cooling Capacity	kW	10.5
Rated Cooling Input	kW	2.96
Rated Cooling Current	A	12.86
EER	W/W	3.55
Power Supply	V,Hz	220-240V~,50Hz
*Rated Power Input	kW	4.24
*Rated Current	A	19.00
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	0.80
GWP	/	3
C02 Equivalent	t	0.0024
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	59
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m^3/h	1.72
Min/Max Water Side Pressure	Mpa	0.05/0.3
Net Dimensions (L×W×H)	mm	1200×470×765
Net Weight	kg	106

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/0utlet): 30℃/35℃
Cooling: Ambient Temp (DB/WB): 35℃/24℃
Water Temp. (Inlet/0utlet): 23℃/18℃
*According to safely tests
Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

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

Product Details

Item	Data
Model number of Unit Under Tested	WLRK-10 Ⅰ BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	800
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Shanghai Highly Electrical Appliances Co., Ltd.	WHP10200PSKRC9KQ	R290, DC192V
Fan motor	Guangdong Welling Motor Manufacturing Co., Ltd.	ZKSP-180-8-3	180W, DC380V, 8P, Class E
Pump	Wilo China Ltd.	Para 25/9-87/IPWM1	230V, 50/60Hz, Water-Lift 9 meters, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd.	427mm	220V, 35W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	220V/75W+55W	220V,130W±7%

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	REQUIREMENTS FOR SEASONAL SPACE HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		Pass
	Fuel boiler space heaters with rated heat output ≤ 70 kW and fuel boiler combination heaters with rated heat output ≤ 70 kW, with the exception of type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 30 kW: The seasonal space heating energy efficiency shall not fall below 86 %.		N/A
	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
	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: The seasonal space heating energy efficiency shall not fall below 100 %.		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 110 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		Pass
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	194	143	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	9.04	8.51	kW
Seasonal coefficient of performance	*SCOP*	4.91	3.66	—
Bivalent temperature	*Tbiv*	-7	-7	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	8.00	7.53	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.01	2.29	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	5.07	4.72	kW
Declared COP for part load, Tj =+2 °C	*COPd*	4.72	3.56	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.94	0.95	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	3.26	2.65	kW
Declared COP for part load, Tj =+7 °C	*COPd*	6.78	5.08	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	3.13	2.65	kW
Declared COP for part load, Tj =+12 °C	*COPd*	9.57	5.57	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	7.64	7.30	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.79	2.05	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	8.00	7.53	kW
Declared COP for part load, Tj =Tbiv	*COPd*	3.01	2.29	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.98	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	14	14	W
Thermostat-off mode	P_{TO}	61	61	W
Standby mode	P_{SB}	14	14	W
Crankcase heater mode	P_{CK}	35	35	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	1.40	1.2	kW
Annual energy consumption	Q_{HE}	3802	4803	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	58.3	58.3	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.26	97.32	97.36	97.25	97.22	97.26	97.32
2) Electrical quantities								
— voltage	*V*	231.10	230.60	229.90	230.10	230.40	230.60	230.60
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	9.69	11.65	6.19	2.98	2.12	11.97	11.65
— total power input, P_T	*W*	2233.82	2681.01	1097.47	501.22	339.35	2756.15	2681.01
— effective power input, P_E	*W*	2212.70	2659.89	1075.70	480.35	327.30	2735.12	2659.89
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	29.98	29.96	27.45	25.39	23.23	31.47	29.96
— outlet temperature	*°C*	35.06	33.98	30.00	27.04	23.95	35.33	33.98
— volume flow	*m^3/h*	1.72	1.72	1.72	1.72	1.71	1.71	1.72
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	6.81	6.81	7.10	6.70	3.37	6.81	6.81
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.01	7.00	12.00	-10.00	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	5.97	-8.02	1.00	6.00	11.00	-11.10	-8.02
c) Compressor								
— compressor frequency for inverter type	*Hz*	73	87	41	22	18	88	87
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	10099.62	8016.08	5090.31	3273.51	3142.18	7655.70	8016.08
— heating capacity, P_H	*W*	10081.76	7998.22	5071.93	3255.84	3131.73	7637.91	7998.22
— COP	*W/W*	4.56	3.01	4.72	6.78	9.57	2.79	3.01

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.36	97.26	97.36	97.26	97.36	97.34	97.26
2) Electrical quantities								
— voltage	*V*	230.70	230.60	230.00	230.50	230.40	230.60	230.60
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	14.27	14.32	7.50	3.56	2.18	15.51	14.32
— total power input, P_T	*W*	3288.34	3296.20	1334.60	603.25	485.31	3571.97	3296.20
— effective power input, P_E	*W*	3282.37	3290.07	1328.04	597.16	476.46	3566.00	3290.07
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	46.97	45.97	38.22	33.58	28.96	49.45	45.97
— outlet temperature	*°C*	55.03	52.03	42.02	36.01	30.05	55.34	52.03
— volume flow	*m^3/h*	1.08	1.08	1.08	1.08	1.07	1.08	1.08
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	2.42	2.49	2.68	2.47	3.77	2.42	2.49
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.00	7.00	12.00	-10.00	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.02	1.00	6.00	11.00	-10.86	-8.02
c) Compressor								
— compressor frequency for inverter type	*Hz*	78	87	41	22	18	90	87
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	9978.58	7533.05	4730.40	3037.31	2662.61	7301.93	7533.05
— heating capacity, P_H	*W*	9973.33	7527.66	4724.64	3031.96	2654.88	7296.68	7527.66
— COP	*W/W*	3.04	2.29	3.56	5.08	5.57	2.05	2.29

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	47	47.1	42.2	45.1	46.7	44.8	43.9	41.1	42.7	41.6	42.1	45.3	42.6	43
10^0.1Lpi	-	50119	51286	16596	32359	46774	30200	24547	12882	18621	14454	16218	33884	18197	19953
Averaged Sound Pressure Level	*dB(A)*	44.4													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S_0)	*dB(A)*	14.5													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	44.4													
Sound Power Level	*dB(A)*	58.3													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None

TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010503-4
Date of Issue:	19-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, YueqingwanPort District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WLRK-12 I BM/B3
Model Similarity:	N/A
Ratings:	220-240V~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
Date of Test Finished:	9-May-2025
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under tested complies with the ERP Requirements.
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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

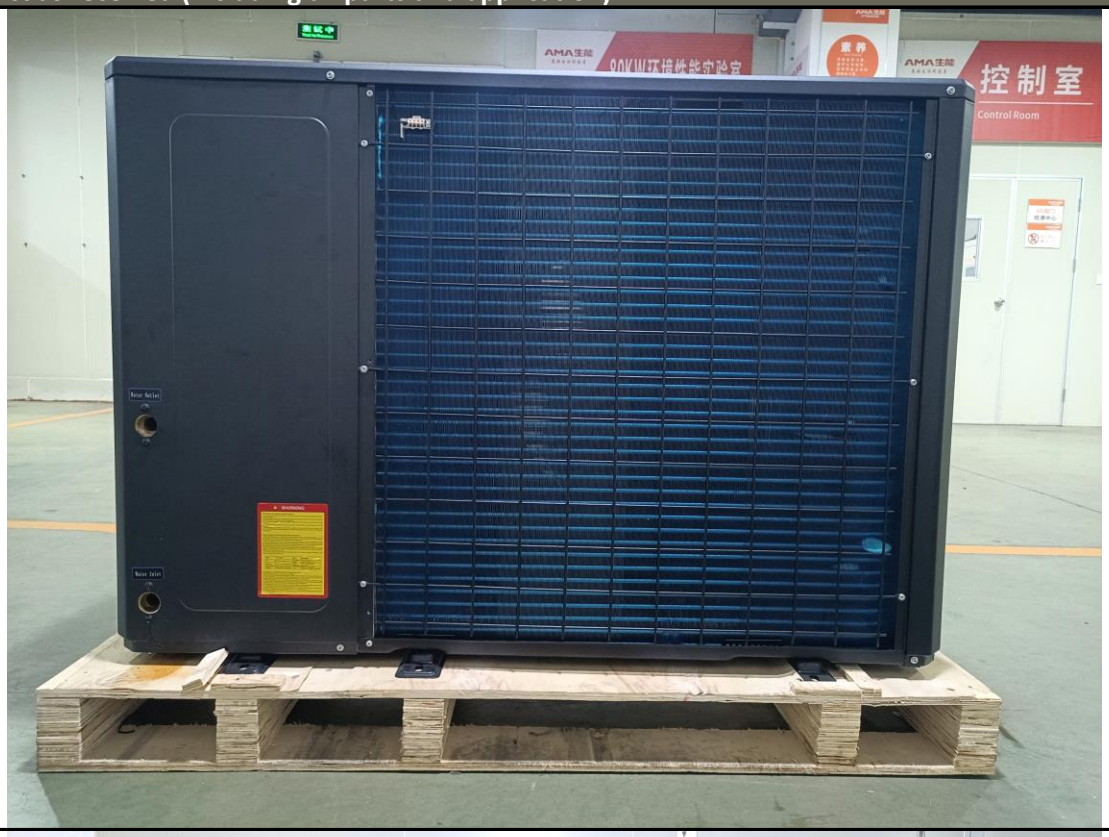
DC Inverter Heat Pump

Model:	WLRK-12 I BM/B3	
Rated Heating Capacity	kW	12.0
Rated Heating Input	kW	2.65
Rated Heating Current	A	11.51
COP	W/W	4.53
Rated Cooling Capacity	kW	12.8
Rated Cooling Input	kW	3.79
Rated Cooling Current	A	16.51
EER	W/W	3.37
Power Supply	V,Hz	220-240V~,50Hz
*Rated Power Input	kW	5.04
*Rated Current	A	23.04
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	0.95
GWP	/	3
C02 Equivalent	t	0.0028
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	56
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m^3/h	2.06
Min/Max Water Side Pressure	MPa	0.05/0.3
Net Dimensions (L×W×H)	mm	1370×500×935
Net Weight	kg	129

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/0utlet): 30℃/35℃
Cooling: Ambient Temp (DB/WB): 35℃/24℃
Water Temp. (Inlet/0utlet): 23℃/18℃
*According to safely tests
Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

CE

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



Product Details

Item	Data
Model number of Unit Under Tested	WLRK-12 Ⅰ BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	950
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Shanghai Highly Electrical Appliances Co., Ltd.	WHP13300PSKTC8FQ	R290, DC211V
Fan motor	Zhuhai Kaibang Motor Manufacturer Co. Ltd.	ZWR200-N52	200W, DC310V, 10P, Class B
Pump	Wilo China Ltd.	Para 25/9-87/IPWM1	230V, 50/60Hz, Water-Lift 9 meters, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd.	427mm	220V, 35W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	220V/80W+60W	220V, 140W±7%

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	REQUIREMENTS FOR SEASONAL SPACE HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		Pass
	Fuel boiler space heaters with rated heat output ≤ 70 kW and fuel boiler combination heaters with rated heat output ≤ 70 kW, with the exception of type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 30 kW: The seasonal space heating energy efficiency shall not fall below 86 %.		N/A
	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
	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: The seasonal space heating energy efficiency shall not fall below 100 %.		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 110 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		Pass
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	195	145	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	11.32	10.30	kW
Seasonal coefficient of performance	*SCOP*	4.94	3.70	—
Bivalent temperature	*Tbiv*	-7	-7	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	10.01	9.11	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.11	2.32	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	6.17	5.74	kW
Declared COP for part load, Tj =+2 °C	*COPd*	4.90	3.69	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.94	0.96	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	3.94	3.44	kW
Declared COP for part load, Tj =+7 °C	*COPd*	6.68	4.79	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.91	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	3.62	3.44	kW
Declared COP for part load, Tj =+12 °C	*COPd*	7.46	5.88	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	9.30	8.76	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.89	2.17	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	10.01	9.11	kW
Declared COP for part load, Tj =Tbiv	*COPd*	3.11	2.32	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.98	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	14	14	W
Thermostat-off mode	P_{TO}	70	70	W
Standby mode	P_{SB}	14	14	W
Crankcase heater mode	P_{CK}	35	35	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	2.02	1.5	kW
Annual energy consumption	Q_{HE}	4729	5753	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	54.4	54.4	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.85	97.85	97.99	97.66	97.83	97.88	97.85
2) Electrical quantities								
— voltage	*V*	230.40	230.40	230.50	230.60	230.23	230.50	230.40
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	11.40	14.08	5.63	2.79	2.42	14.23	14.08
— total power input, P_T	*W*	2622.56	3241.88	1288.77	620.52	526.00	3277.11	3241.88
— effective power input, P_E	*W*	2593.48	3213.92	1258.26	590.17	485.07	3221.44	3213.92
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	30.03	29.84	27.43	25.40	23.34	31.44	29.84
— outlet temperature	*°C*	35.02	34.05	30.03	27.06	24.10	35.35	34.05
— volume flow	*m^3/h*	2.06	2.06	2.06	2.06	2.05	2.06	2.06
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	9.05	8.52	9.75	9.67	15.89	26.41	8.52
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.01	2.01	7.00	12.02	-10.02	-7.01
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.01	1.00	6.00	11.11	-10.91	-8.01
c) Compressor								
— compressor frequency for inverter type	*Hz*	68	83	38	20	18	84	83
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	11901.67	10033.64	6192.91	3969.31	3649.00	9336.81	10033.64
— heating capacity, P_H	*W*	11877.77	10010.56	6167.98	3944.50	3617.12	9296.26	10010.56
— COP	*W/W*	4.58	3.11	4.90	6.68	7.46	2.89	3.11

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.89	97.88	97.84	97.78	97.88	97.88	97.76
2) Electrical quantities								
— voltage	*V*	230.40	230.40	230.50	230.90	230.14	230.40	230.40
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	17.12	17.12	6.81	3.76	2.70	17.69	17.12
— total power input, P_T	*W*	3944.21	3943.04	1564.93	779.33	602.00	4074.29	3943.04
— effective power input, P_E	*W*	3935.38	3930.71	1555.70	770.05	584.31	4037.31	3930.71
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	47.13	45.82	38.20	33.57	28.95	49.36	45.82
— outlet temperature	*°C*	54.98	51.97	42.05	36.05	30.04	55.32	51.97
— volume flow	*m^3/h*	1.29	1.29	1.29	1.29	1.30	1.28	1.29
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	3.12	4.59	3.28	3.30	7.12	21.45	4.59
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.01	7.00	12.01	-10.01	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-7.96	1.00	6.00	11.00	-11.04	-7.96
c) Compressor								
— compressor frequency for inverter type	*Hz*	75	83	38	20	18	86	83
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	11632.89	9124.37	5750.04	3700.47	3452.00	8787.34	9124.37
— heating capacity, P_H	*W*	11625.18	9113.68	5741.98	3692.37	3436.88	8757.99	9113.68
— COP	*W/W*	2.95	2.32	3.69	4.79	5.88	2.17	2.32

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	42.6	41.9	40.3	41.3	40.9	42.8	38.5	37.3	37.2	36.1	37.2	40	38.9	38.9
10^0.1Lpi	-	18197	15488	10715	13490	12303	19055	7079	5370	5248	4074	5248	10000	7762	7762
Averaged Sound Pressure Level	*dB(A)*	40.0													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S_0)	*dB(A)*	15.0													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	40.0													
Sound Power Level	*dB(A)*	54.4													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None

TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010503-5
Date of Issue:	19-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WLRK-12Ⅱ BM/B3
Model Similarity:	N/A
Ratings:	380-415V, 3N~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
Date of Test Finished:	9-May-2025
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under tested complies with the ERP Requirements.
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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

DC Inverter Heat Pump

Model:	WLRK-12 II BM/B3	
Rated Heating Capacity	kW	12.0
Rated Heating Input	kW	2.60
Rated Heating Current	A	3.95
COP	W/W	4.61
Rated Cooling Capacity	kW	12.8
Rated Cooling Input	kW	3.88
Rated Cooling Current	A	5.89
EER	W/W	3.30
Power Supply	V,Hz	380-415V,3N~,50Hz
*Rated Power Input	kW	5.20
*Rated Current	A	8.31
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	0.95
GWP	/	3
C02 Equivalent	t	0.0028
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	56
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m^3/h	2.06
Min/Max Water Side Pressure	MPa	0.05/0.3
Net Dimensions (L×W×H)	mm	1370×500×935
Net Weight	kg	143

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/Outlet): 30℃/35℃
Cooling: Ambient Temp (DB/WB): 35℃/24℃
Water Temp. (Inlet/Outlet): 23℃/18℃
*According to safely tests
Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

CE

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

Product Details

Item	Data
Model number of Unit Under Tested	WLRK-12Ⅱ BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	950
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Shanghai Highly Electrical Appliances Co., Ltd.	WHP13300PSKTC8FQ	R290 DC211V
Fan motor	Zhuhai Kaibang Motor Manufacturer Co. Ltd.	ZWR200-N52	200W, DC310V, 10P, Class B
Pump	Wilo China Ltd.	Para 25/9-87/IPWM1	230V, 50/60Hz, Water-Lift 9 meters, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd.	427mm	220V, 35W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	220V/80W+60W	220V,140W±7%

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	REQUIREMENTS FOR SEASONAL SPACE HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		Pass
	Fuel boiler space heaters with rated heat output ≤ 70 kW and fuel boiler combination heaters with rated heat output ≤ 70 kW, with the exception of type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 30 kW: The seasonal space heating energy efficiency shall not fall below 86 %.		N/A
	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
	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: The seasonal space heating energy efficiency shall not fall below 100 %.		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 110 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		Pass
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	202	147	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	11.16	10.13	kW
Seasonal coefficient of performance	*SCOP*	5.12	3.75	—
Bivalent temperature	*Tbiv*	-7	-7	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	9.88	8.96	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.22	2.39	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	6.08	5.83	kW
Declared COP for part load, Tj =+2 °C	*COPd*	4.85	3.52	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.95	0.96	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	3.80	3.80	kW
Declared COP for part load, Tj =+7 °C	*COPd*	7.15	5.17	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.91	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	4.06	3.80	kW
Declared COP for part load, Tj =+12 °C	*COPd*	9.75	7.19	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	9.43	8.97	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	3.01	2.25	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	9.88	8.96	kW
Declared COP for part load, Tj =Tbiv	*COPd*	3.22	2.39	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.98	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	13	13	W
Thermostat-off mode	P_{TO}	64	64	W
Standby mode	P_{SB}	13	13	W
Crankcase heater mode	P_{CK}	35	35	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	1.73	1.2	kW
Annual energy consumption	Q_{HE}	4509	5590	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	53.9	53.9	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	98.32	98.26	98.44	98.26	98.35	98.34	98.26
2) Electrical quantities								
— voltage	*V*	401.10	401.20	399.30	400.90	400.02	401.30	401.20
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	4.07	4.87	2.09	1.05	0.87	4.93	4.87
— total power input, P_T	*W*	2636.95	3167.29	1323.10	599.04	460.00	3236.42	3167.29
— effective power input, P_E	*W*	2569.59	3062.63	1254.72	531.76	416.08	3132.26	3062.63
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	29.91	29.90	27.44	25.39	23.37	31.34	29.90
— outlet temperature	*°C*	35.04	34.07	30.00	27.01	24.11	35.32	34.07
— volume flow	*m^3/h*	2.06	2.06	2.07	2.06	2.07	2.06	2.06
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	35.44	64.68	36.06	35.38	17.74	64.29	64.68
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.01	7.00	12.01	-10.02	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.04	1.00	6.00	10.96	-11.19	-8.04
c) Compressor								
— compressor frequency for inverter type	*Hz*	68	79	38	20	18	84	79
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	12224.39	9943.94	6128.79	3847.17	4089.00	9497.52	9943.94
— heating capacity, P_H	*W*	12177.31	9876.30	6081.15	3800.13	4055.28	9430.15	9876.30
— COP	*W/W*	4.74	3.22	4.85	7.15	9.75	3.01	3.22

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	98.36	98.23	98.28	98.32	98.34	98.27	98.23
2) Electrical quantities								
— voltage	*V*	401.90	401.80	399.90	400.00	399.97	401.70	401.80
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	6.04	5.80	2.60	1.19	0.96	6.14	5.80
— total power input, P_T	*W*	4004.04	3821.46	1683.99	713.18	545.00	4062.69	3821.46
— effective power input, P_E	*W*	3973.97	3745.88	1655.49	683.89	528.11	3989.42	3745.88
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	46.86	45.90	38.15	33.62	29.01	49.21	45.90
— outlet temperature	*°C*	55.03	51.95	42.08	36.01	30.08	55.29	51.95
— volume flow	*m^3/h*	1.29	1.30	1.29	1.29	1.30	1.29	1.30
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	15.22	66.35	14.01	14.61	6.71	63.97	66.35
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.02	7.00	12.01	-10.00	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.05	1.12	6.00	10.99	-11.12	-8.05
c) Compressor								
— compressor frequency for inverter type	*Hz*	75	79	38	20	18	86	79
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	12097.87	9015.93	5851.25	3559.85	3812.00	9024.68	9015.93
— heating capacity, P_H	*W*	12073.26	8964.31	5827.77	3535.80	3797.53	8974.33	8964.31
— COP	*W/W*	3.04	2.39	3.52	5.17	7.19	2.25	2.39

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	41.3	40.4	39.8	39.8	40.3	40.6	36.9	35	37.2	41.8	37.3	39.1	37.8	39.6
10^0.1Lpi	-	13490	10965	9550	9550	10715	11482	4898	3162	5248	15136	5370	8128	6026	9120
Averaged Sound Pressure Level	*dB(A)*	39.5													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S_0)	*dB(A)*	15.0													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	39.5													
Sound Power Level	*dB(A)*	53.9													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None

TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010503-6
Date of Issue:	19-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, YueqingwanPort District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WLRK-14Ⅰ BM/B3
Model Similarity:	N/A
Ratings:	220-240V~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
Date of Test Finished:	9-Jun-2025
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under tested complies with the ERP Requirements.
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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

DC Inverter Heat Pump

Model:	WLRK-14 I BM/B3	
Rated Heating Capacity	kW	14.0
Rated Heating Input	kW	3.19
Rated Heating Current	A	13.86
COP	W/W	4.39
Rated Cooling Capacity	kW	15.0
Rated Cooling Input	kW	4.73
Rated Cooling Current	A	20.57
EER	W/W	3.17
Power Supply	V,Hz	220-240V~,50Hz
*Rated Power Input	kW	5.56
*Rated Current	A	25.44
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	1.00
GWP	/	3
C02 Equivalent	t	0.0030
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	61
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m^3/h	2.41
Min/Max Water Side Pressure	Mpa	0.05/0.3
Net Dimensions (L×W×H)	mm	1370×500×935
Net Weight	kg	134

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/0utlet): 30℃/35℃
Cooling: Ambient Temp (DB/WB): 35℃/24℃
Water Temp. (Inlet/0utlet): 23℃/18℃
*According to safely tests
Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

CE

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

Product Details

Item	Data
Model number of Unit Under Tested	WLRK-14Ⅰ BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	1000
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Shanghai Highly Electrical Appliances Co., Ltd.	WHP13300PSKTC8FQ	R290, DC211V
Fan motor	Zhuhai Kaibang Motor Manufacturer Co. Ltd.	ZWR200-N52	200W, DC310V, 10P, Class B
Pump	Wilo China Ltd.	Para 25/9-87/IPWM1	230V, 50/60Hz, Water-Lift 9 meters, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd	427mm	220V, 35W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	220V/80W+60W	220V,140W±7%

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	REQUIREMENTS FOR SEASONAL SPACE HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		Pass
	Fuel boiler space heaters with rated heat output ≤ 70 kW and fuel boiler combination heaters with rated heat output ≤ 70 kW, with the exception of type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 30 kW: The seasonal space heating energy efficiency shall not fall below 86 %.		N/A
	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
	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: The seasonal space heating energy efficiency shall not fall below 100 %.		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 110 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		Pass
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	200	146	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	13.08	12.07	kW
Seasonal coefficient of performance	*SCOP*	5.08	3.73	—
Bivalent temperature	*Tbiv*	-7	-7	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	11.56	10.68	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.03	2.28	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	7.06	6.57	kW
Declared COP for part load, Tj =+2 °C	*COPd*	5.02	3.54	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.94	0.96	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	4.68	3.47	kW
Declared COP for part load, Tj =+7 °C	*COPd*	7.08	5.37	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	3.64	3.47	kW
Declared COP for part load, Tj =+12 °C	*COPd*	8.11	6.25	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	10.60	9.99	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.87	2.11	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	11.57	10.68	kW
Declared COP for part load, Tj =Tbiv	*COPd*	3.03	2.28	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.98	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	14	14	W
Thermostat-off mode	P_{TO}	82	82	W
Standby mode	P_{SB}	14	14	W
Crankcase heater mode	P_{CK}	35	35	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	2.47	2.1	kW
Annual energy consumption	Q_{HE}	5315	6695	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	61	61	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.89	97.80	97.86	97.82	97.84	97.92	97.80
2) Electrical quantities								
— voltage	*V*	230.50	230.50	230.60	230.70	230.61	230.60	230.50
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	13.94	16.96	6.58	3.44	2.55	16.41	16.96
— total power input, P_T	*W*	3192.43	3888.07	1487.19	741.40	511.00	3762.11	3888.17
— effective power input, P_E	*W*	3116.47	3812.65	1406.93	661.85	448.75	3694.92	3812.75
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	29.97	29.87	27.48	25.31	23.28	31.54	29.87
— outlet temperature	*°C*	35.00	34.04	30.03	27.01	24.02	35.35	34.04
— volume flow	*m^3/h*	2.41	2.41	2.41	2.41	2.43	2.41	2.41
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	36.04	35.68	38.92	38.45	26.68	30.18	35.68
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.01	7.00	12.01	-10.03	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.02	1.00	6.00	11.06	-10.91	-8.02
c) Compressor								
— compressor frequency for inverter type	*Hz*	77	93	43	24	18	91	93
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	14036.66	11616.00	7114.70	4738.44	3683.00	10650.42	11618.60
— heating capacity, P_H	*W*	13984.83	11564.47	7060.50	4684.63	3638.76	10603.44	11567.07
— COP	*W/W*	4.49	3.03	5.02	7.08	8.11	2.87	3.03

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.85	97.87	97.84	97.87	97.87	97.82	97.87
2) Electrical quantities								
— voltage	*V*	230.60	230.50	230.60	230.70	231.28	230.50	230.50
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	20.95	20.55	8.25	3.82	2.79	20.71	20.55
— total power input, P_T	*W*	4815.11	4722.00	1883.88	853.90	576.00	4759.39	4722.00
— effective power input, P_E	*W*	4783.89	4691.55	1852.71	821.89	555.40	4728.37	4691.55
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	46.90	45.82	38.24	33.47	28.99	49.62	45.82
— outlet temperature	*°C*	55.08	52.03	42.06	36.03	30.08	55.40	52.03
— volume flow	*m^3/h*	1.50	1.50	1.50	1.50	1.51	1.49	1.50
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	13.89	13.35	13.85	14.45	7.50	13.84	13.35
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	6.99	-7.00	2.00	7.00	12.01	-10.01	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-7.97	1.00	6.00	11.00	-11.03	-7.97
c) Compressor								
— compressor frequency for inverter type	*Hz*	85	93	43	24	18	93	93
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	14074.15	10704.92	6591.76	4436.15	3488.00	10015.99	10704.92
— heating capacity, P_H	*W*	14048.71	10680.03	6566.36	4410.16	3470.54	9990.70	10680.03
— COP	*W/W*	2.94	2.28	3.54	5.37	6.25	2.11	2.28

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	50.2	48.6	45	47.1	48.3	47.3	44.2	42	44.5	45.1	44.9	47.2	44.5	46.7
10^0.1Lpi	-	1E+05	72444	31623	51286	67608	53703	26303	15849	28184	32359	30903	52481	28184	46774
Averaged Sound Pressure Level	*dB(A)*	46.6													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S0)	*dB(A)*	15.0													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	46.6													
Sound Power Level	*dB(A)*	61.0													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None

TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010503-7
Date of Issue:	23-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, YueqingwanPort District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WLRK-14Ⅱ BM/B3
Model Similarity:	N/A
Ratings:	380-415V, 3N~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
Date of Test Finished:	9-Jun-2025
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under tested complies with the ERP Requirements.
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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

DC Inverter Heat Pump

Model:	WLRK-14 II BM/B3	
Rated Heating Capacity	kW	14.0
Rated Heating Input	kW	3.16
Rated Heating Current	A	4.80
COP	W/W	4.43
Rated Cooling Capacity	kW	15.0
Rated Cooling Input	kW	4.91
Rated Cooling Current	A	7.47
EER	W/W	3.05
Power Supply	V,Hz	380-415V,3N～,50Hz
*Rated Power Input	kW	5.78
*Rated Current	A	9.25
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	1.00
GWP	/	3
C02 Equivalent	t	0.0030
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	61
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m^3/h	2.41
Min/Max Water Side Pressure	MPa	0.05/0.3
Net Dimensions (L×W×H)	mm	1370×500×935
Net Weight	kg	147

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/0utlet): 30℃/35℃
Cooling: Ambient Temp (DB/WB): 35℃/24℃
Water Temp. (Inlet/0utlet): 23℃/18℃
*According to safely tests
Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

CE

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

Product Details

Item	Data
Model number of Unit Under Tested	WLRK-14Ⅱ BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	1000
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Shanghai Highly Electrical Appliances Co., Ltd.	WHP13300PSKTC8FQ	R290 DC211V
Fan motor	Zhuhai Kaibang Motor Manufacturer Co. Ltd.	ZWR200-N52	200W, DC310V, 10P, Class B
Pump	Wilo China Ltd	Para 25/9-87/IPWM1	230V, 50/60Hz, Water-Lift 9 meters, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd.	427mm	220V, 35W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	220V/80W+60W	220V,140W±7%

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	REQUIREMENTS FOR SEASONAL SPACE HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		Pass
	Fuel boiler space heaters with rated heat output ≤ 70 kW and fuel boiler combination heaters with rated heat output ≤ 70 kW, with the exception of type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 30 kW: The seasonal space heating energy efficiency shall not fall below 86 %.		N/A
	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
	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: The seasonal space heating energy efficiency shall not fall below 100 %.		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 110 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		Pass
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	193	146	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	12.76	12.04	kW
Seasonal coefficient of performance	*SCOP*	4.91	3.73	—
Bivalent temperature	*Tbiv*	-7	-7	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	11.29	10.65	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.02	2.26	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	7.16	6.67	kW
Declared COP for part load, Tj =+2 °C	*COPd*	4.69	3.60	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.95	0.96	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	4.73	3.47	kW
Declared COP for part load, Tj =+7 °C	*COPd*	7.11	5.19	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	3.66	3.47	kW
Declared COP for part load, Tj =+12 °C	*COPd*	7.96	6.25	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	10.58	10.02	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.95	2.20	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	11.29	10.65	kW
Declared COP for part load, Tj =Tbiv	*COPd*	3.02	2.26	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.98	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	14	14	W
Thermostat-off mode	P_{TO}	80	80	W
Standby mode	P_{SB}	14	14	W
Crankcase heater mode	P_{CK}	35	35	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	2.18	2.0	kW
Annual energy consumption	Q_{HE}	5368	6677	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	58.6	58.6	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.25	97.36	97.35	97.25	97.33	97.34	97.36
2) Electrical quantities								
— voltage	*V*	400.90	401.00	399.20	400.80	399.92	401.10	401.00
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	4.79	5.84	2.45	1.22	0.95	5.52	5.84
— total power input, P_T	*W*	3149.23	3783.61	1572.34	708.55	515.00	3628.84	3783.61
— effective power input, P_E	*W*	3105.96	3740.34	1527.01	665.89	460.25	3585.57	3740.34
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	29.90	29.93	27.42	25.37	23.24	31.49	29.93
— outlet temperature	*°C*	34.97	33.99	30.00	27.07	23.96	35.30	33.99
— volume flow	*m^3/h*	2.41	2.41	2.40	2.41	2.42	2.41	2.41
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	14.85	14.85	16.14	14.50	21.89	14.85	14.85
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.01	7.00	12.01	-10.00	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.03	1.00	6.00	11.01	-11.19	-8.03
c) Compressor								
— compressor frequency for inverter type	*Hz*	77	90	43	24	18	91	90
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	14147.89	11323.37	7193.00	4766.40	3705.00	10614.27	11323.37
— heating capacity, P_H	*W*	14114.57	11290.05	7158.43	4733.45	3664.97	10580.95	11290.05
— COP	*W/W*	4.54	3.02	4.69	7.11	7.96	2.95	3.02

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.26	97.36	97.27	97.27	97.27	97.26	97.36
2) Electrical quantities								
— voltage	*V*	401.60	401.60	399.00	399.90	399.90	401.40	401.60
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	7.17	7.25	2.91	1.42	1.01	6.94	7.25
— total power input, P_T	*W*	4744.75	4738.24	1872.89	862.61	576.00	4577.03	4738.24
— effective power input, P_E	*W*	4725.51	4716.58	1851.34	841.14	555.40	4555.48	4716.58
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	46.97	45.84	38.12	33.48	28.99	49.46	45.84
— outlet temperature	*°C*	55.05	51.98	41.99	36.00	30.08	55.29	51.98
— volume flow	*m^3/h*	1.50	1.51	1.50	1.50	1.51	1.50	1.51
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	6.89	8.03	8.03	7.99	7.50	8.03	8.03
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.01	7.00	12.01	-10.00	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.06	1.00	6.00	11.00	-11.12	-8.06
c) Compressor								
— compressor frequency for inverter type	*Hz*	85	93	43	24	18	93	93
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	13916.67	10671.13	6690.13	4381.82	3488.00	10037.34	10671.13
— heating capacity, P_H	*W*	13900.30	10652.84	6671.92	4363.68	3470.55	10019.13	10652.84
— COP	*W/W*	2.94	2.26	3.60	5.19	6.25	2.20	2.26

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	48	46.2	41	44.2	45.5	44.7	42.5	42.3	41.7	41.1	42.4	45.6	42.2	43.6
10^0.1Lpi	-	6E+04	41687	12589	26303	35481	29512	17783	16982	14791	12882	17378	36308	16596	22909
Averaged Sound Pressure Level	*dB(A)*	44.2													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S0)	*dB(A)*	15.0													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	44.2													
Sound Power Level	*dB(A)*	58.6													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None

TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010504-1
Date of Issue:	19-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, YueqingwanPort District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WDLRK-8 I BM/B3
Model Similarity:	N/A
Ratings:	220-240V~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
Date of Test Finished:	9-May-2025
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under tested complies with the ERP Requirements.
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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

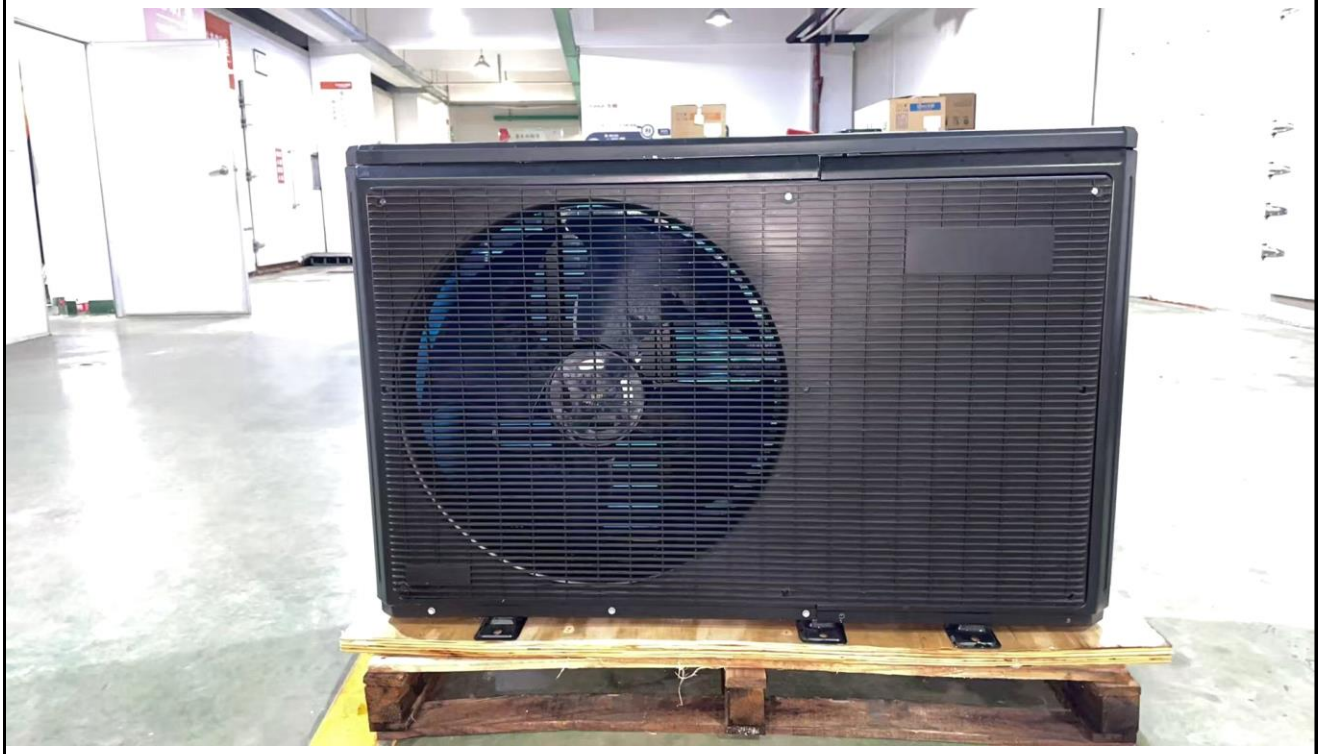
DC Inverter Heat Pump

Model:	WDLRK-8 I BM/B3	
Rated Heating Capacity	kW	8.0
Rated Heating Input	kW	1.80
Rated Heating Current	A	7.82
COP	W/W	4.45
Rated Cooling Capacity	kW	9.2
Rated Cooling Input	kW	2.49
Rated Cooling Current	A	10.81
EER	W/W	3.70
Power Supply	V,Hz	220-240V~,50Hz
*Rated Power Input	kW	3.50
*Rated Current	A	16.01
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	0.8
GWP	/	3
C02 Equivalent	t	0.0024
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	55
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m^3/h	1.38
Min/Max Water Side Pressure	MPa	0.5/0.3
Net Dimensions (L×W×H)	mm	1200×470×765
Net Weight	kg	106

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/0utlet): 30℃/35℃
Cooling: Ambient Temp (DB/WB): 35℃/24℃
Water Temp. (Inlet/0utlet): 23℃/18℃
*According to safely tests
Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

CE

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



Product Details

Item	Data
Model number of Unit Under Tested	WDLRK-8 Ⅰ BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	800
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Panasonic Wanbao Appliances Compressor (Guangzhou) Co., Ltd.	H330D7KZBAJ6	R290, DC280V
Fan motor	Guangdong Welling Motor Manufacturing Co., Ltd.	ZKSP-180-8-3	180W, DC380V, 8P, Class E
Pump	Wilo China Ltd.	Para 25/9-87/IPWM1	230V, 50/60Hz, Water-Lift 9 meters, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd.	335mm	220V, 30W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	ZKSP-180-8-3	220V,130W±7%

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	REQUIREMENTS FOR SEASONAL SPACE HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		Pass
	Fuel boiler space heaters with rated heat output ≤ 70 kW and fuel boiler combination heaters with rated heat output ≤ 70 kW, with the exception of type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 30 kW: The seasonal space heating energy efficiency shall not fall below 86 %.		N/A
	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
	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: The seasonal space heating energy efficiency shall not fall below 100 %.		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 110 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		Pass
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	188	144	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	7.08	7.08	kW
Seasonal coefficient of performance	*SCOP*	4.77	3.67	—
Bivalent temperature	*Tbiv*	-7	-7	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	6.26	6.26	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.12	2.37	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.97	0.98	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	3.87	3.96	kW
Declared COP for part load, Tj =+2 °C	*COPd*	4.43	3.50	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.94	0.95	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	2.46	2.35	kW
Declared COP for part load, Tj =+7 °C	*COPd*	6.70	4.87	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	2.46	2.35	kW
Declared COP for part load, Tj =+12 °C	*COPd*	9.15	7.00	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	6.12	6.08	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.82	2.19	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.97	0.98	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	6.26	6.26	kW
Declared COP for part load, Tj =Tbiv	*COPd*	3.12	2.37	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.97	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	14	14	W
Thermostat-off mode	P_{TO}	55	55	W
Standby mode	P_{SB}	14	14	W
Crankcase heater mode	P_{CK}	28	28	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	0.96	1.0	kW
Annual energy consumption	Q_{HE}	3069	3984	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	53.8	53.8	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.24	97.34	97.25	97.33	97.88	97.22	97.34
2) Electrical quantities								
— voltage	*V*	230.50	230.60	229.90	230.40	230.10	230.70	230.60
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	7.88	8.82	5.12	2.38	1.78	9.53	8.82
— total power input, P_T	*W*	1810.16	2027.92	894.67	389.99	282.29	2193.76	2027.92
— effective power input, P_E	*W*	1790.99	2007.92	875.35	367.05	268.62	2173.76	2007.92
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	29.93	30.06	27.55	25.47	23.29	31.44	30.06
— outlet temperature	*°C*	35.01	33.99	29.99	27.02	23.97	35.28	33.99
— volume flow	*m^3/h*	1.38	1.38	1.38	1.38	1.38	1.38	1.38
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	7.45	7.91	7.55	9.55	4.87	7.91	7.91
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.01	7.00	12.00	-10.00	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.06	1.00	6.00	11.00	-11.00	-8.06
c) Compressor								
— compressor frequency for inverter type	*Hz*	68	74	36	22	18	77	74
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	8106.24	6280.17	3890.73	2476.95	2469.11	6140.43	6280.17
— heating capacity, P_H	*W*	8089.93	6263.19	3874.30	2457.66	2457.30	6123.45	6263.19
— COP	*W/W*	4.52	3.12	4.43	6.70	9.15	2.82	3.12

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.34	97.28	97.26	97.24	97.81	97.32	97.28
2) Electrical quantities								
— voltage	*V*	230.60	230.70	229.70	230.20	230.00	230.70	230.70
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	10.62	11.51	6.47	3.20	2.21	12.12	11.51
— total power input, P_T	*W*	2446.75	2651.80	1143.96	535.16	339.53	2792.65	2651.80
— effective power input, P_E	*W*	2437.73	2642.78	1132.26	523.21	335.53	2783.63	2642.78
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	46.99	45.67	38.03	33.42	28.94	49.15	45.67
— outlet temperature	*°C*	54.94	52.02	42.03	36.00	30.06	55.32	52.02
— volume flow	*m^3/h*	0.86	0.86	0.86	0.86	0.86	0.86	0.86
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	4.79	4.79	6.47	6.63	1.98	4.79	4.79
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.01	7.00	12.00	-10.00	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.02	1.00	6.00	11.00	-11.01	-8.02
c) Compressor								
— compressor frequency for inverter type	*Hz*	69	76	38	24	18	79	76
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	7854.50	6271.69	3969.14	2559.54	2352.13	6092.09	6271.69
— heating capacity, P_H	*W*	7846.63	6263.82	3958.98	2549.18	2348.60	6084.22	6263.82
— COP	*W/W*	3.22	2.37	3.50	4.87	7.00	2.19	2.37

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	42	42.2	40.3	40.8	41.8	41.2	37.7	36.4	37.6	36.5	38	39.7	38.2	40.1
10^0.1Lpi	-	15849	16596	10715	12023	15136	13183	5888	4365	5754	4467	6310	9333	6607	10233
Averaged Sound Pressure Level	*dB(A)*	39.9													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S_0)	*dB(A)*	14.5													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	39.9													
Sound Power Level	*dB(A)*	53.8													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None

TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010504-2
Date of Issue:	19-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, YueqingwanPort District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WDLRK-10 I BM/B3
Model Similarity:	N/A
Ratings:	220-240V~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
Date of Test Finished:	9-May-2025
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under tested complies with the ERP Requirements.
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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

DC Inverter Heat Pump

Model:	WDLRK-10 I BM/B3	
Rated Heating Capacity	kW	10.0
Rated Heating Input	kW	2.22
Rated Heating Current	A	9.65
COP	W/W	4.51
Rated Cooling Capacity	kW	11.0
Rated Cooling Input	kW	3.13
Rated Cooling Current	A	13.61
EER	W/W	3.51
Power Supply	V,Hz	220-240V~,50Hz
*Rated Power Input	kW	4.35
*Rated Current	A	19.00
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	0.85
GWP	/	3
C02 Equivalent	t	0.0026
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	59
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m^3/h	1.72
Min/Max Water Side Pressure	MPa	0.05/0.3
Net Dimensions (L×W×H)	mm	1200×470×765
Net Weight	kg	114

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/0utlet): 30℃/35℃
Cooling: Ambient Temp (DB/WB): 35℃/24℃
Water Temp. (Inlet/0utlet): 23℃/18℃
*According to safely tests
Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

CE

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

Product Details

Item	Data
Model number of Unit Under Tested	WDLRK-10 I BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	850
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Panasonic Wanbao Appliances Compressor (Guangzhou) Co., Ltd.	H420D7KZBAJ6	R290 DC280V
Fan motor	Guangdong Welling Motor Manufacturing Co., Ltd.	ZKSP-180-8-3	180W, DC380V, 8P, Class E
Pump	Wilo China Ltd.	Para 25/9-87/IPWM1	230V, 50/60Hz, Water-Lift 9 meters, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd.	427mm	220V, 35W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	220V/75W+55W	220V,130W±7%

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	REQUIREMENTS FOR SEASONAL SPACE HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		Pass
	Fuel boiler space heaters with rated heat output ≤ 70 kW and fuel boiler combination heaters with rated heat output ≤ 70 kW, with the exception of type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 30 kW: The seasonal space heating energy efficiency shall not fall below 86 %.		N/A
	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
	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: The seasonal space heating energy efficiency shall not fall below 100 %.		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 110 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		Pass
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	189	147	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	8.89	9.00	kW
Seasonal coefficient of performance	*SCOP*	4.80	3.74	—
Bivalent temperature	*Tbiv*	-7	-7	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	7.87	7.96	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.22	2.51	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.97	0.98	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	5.03	5.01	kW
Declared COP for part load, Tj =+2 °C	*COPd*	4.51	3.54	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.94	0.96	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	3.40	2.85	kW
Declared COP for part load, Tj =+7 °C	*COPd*	6.58	4.98	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	2.96	2.85	kW
Declared COP for part load, Tj =+12 °C	*COPd*	8.49	6.54	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	7.58	7.60	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	3.01	2.31	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	7.87	7.96	kW
Declared COP for part load, Tj =Tbiv	*COPd*	3.22	2.51	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.97	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	14	14	W
Thermostat-off mode	P_{TO}	62	62	W
Standby mode	P_{SB}	14	14	W
Crankcase heater mode	P_{CK}	35	35	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	1.32	1.4	kW
Annual energy consumption	Q_{HE}	3828	4971	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	58	58	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.36	97.26	97.27	97.26	102.46	97.28	97.26
2) Electrical quantities								
— voltage	*V*	230.70	230.30	229.40	230.10	230.00	230.70	230.30
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	9.85	10.83	6.53	3.30	2.28	11.36	10.83
— total power input, P_T	*W*	2262.81	2489.03	1164.25	564.72	370.81	2612.22	2489.03
— effective power input, P_E	*W*	2216.01	2441.37	1116.08	517.10	348.38	2515.28	2441.37
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	29.91	30.06	27.53	25.30	23.34	31.45	30.06
— outlet temperature	*°C*	35.04	34.03	30.07	26.86	24.06	35.29	34.03
— volume flow	*m^3/h*	1.72	1.72	1.72	1.72	1.72	1.72	1.72
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	23.76	24.50	24.94	24.47	7.40	70.21	24.50
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	6.99	-7.00	2.01	7.00	12.00	-10.00	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.03	1.12	6.00	11.00	-11.13	-8.03
c) Compressor								
— compressor frequency for inverter type	*Hz*	68	73	37	23	18	76	73
4) Data collection period	*min*	70.00	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	10211.35	7904.47	5069.73	3437.35	2977.73	7643.19	7904.47
— heating capacity, P_H	*W*	10175.91	7868.52	5033.48	3401.42	2958.84	7579.80	7868.52
— COP	*W/W*	4.59	3.22	4.51	6.58	8.49	3.01	3.22

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.26	97.32	97.23	97.29	102.35	97.34	97.32
2) Electrical quantities								
— voltage	*V*	230.80	230.30	229.20	230.20	230.00	230.80	230.30
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	13.28	13.87	8.02	3.91	2.71	14.39	13.87
— total power input, P_T	*W*	3061.11	3190.90	1435.47	665.63	444.59	3315.11	3190.90
— effective power input, P_E	*W*	3041.49	3171.46	1414.86	646.29	435.65	3295.67	3171.46
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	46.88	45.62	37.93	33.45	28.86	49.13	45.62
— outlet temperature	*°C*	55.00	52.04	41.96	36.04	29.99	55.28	52.04
— volume flow	*m^3/h*	1.08	1.08	1.08	1.08	1.08	1.08	1.08
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	9.82	9.70	10.49	9.63	3.78	9.70	9.70
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	6.96	-7.00	2.00	1.08	12.01	-10.00	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.05	1.00	6.00	11.00	-11.15	-8.05
c) Compressor								
— compressor frequency for inverter type	*Hz*	68	74	37	23	18	76	74
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	10069.60	7973.80	5029.76	3236.76	2855.73	7616.72	7973.80
— heating capacity, P_H	*W*	10052.92	7957.27	5012.30	3220.31	2847.92	7600.19	7957.27
— COP	*W/W*	3.31	2.51	3.54	4.98	6.54	2.31	2.51

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	47.2	46.9	42.1	44	45.9	45	42.6	39.8	42.1	40.6	41.9	45.4	42.7	43.3
10^0.1Lpi	-	52481	48978	16218	25119	38905	31623	18197	9550	16218	11482	15488	34674	18621	21380
Averaged Sound Pressure Level	*dB(A)*	44.1													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S_0)	*dB(A)*	14.5													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	44.1													
Sound Power Level	*dB(A)*	58.0													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None

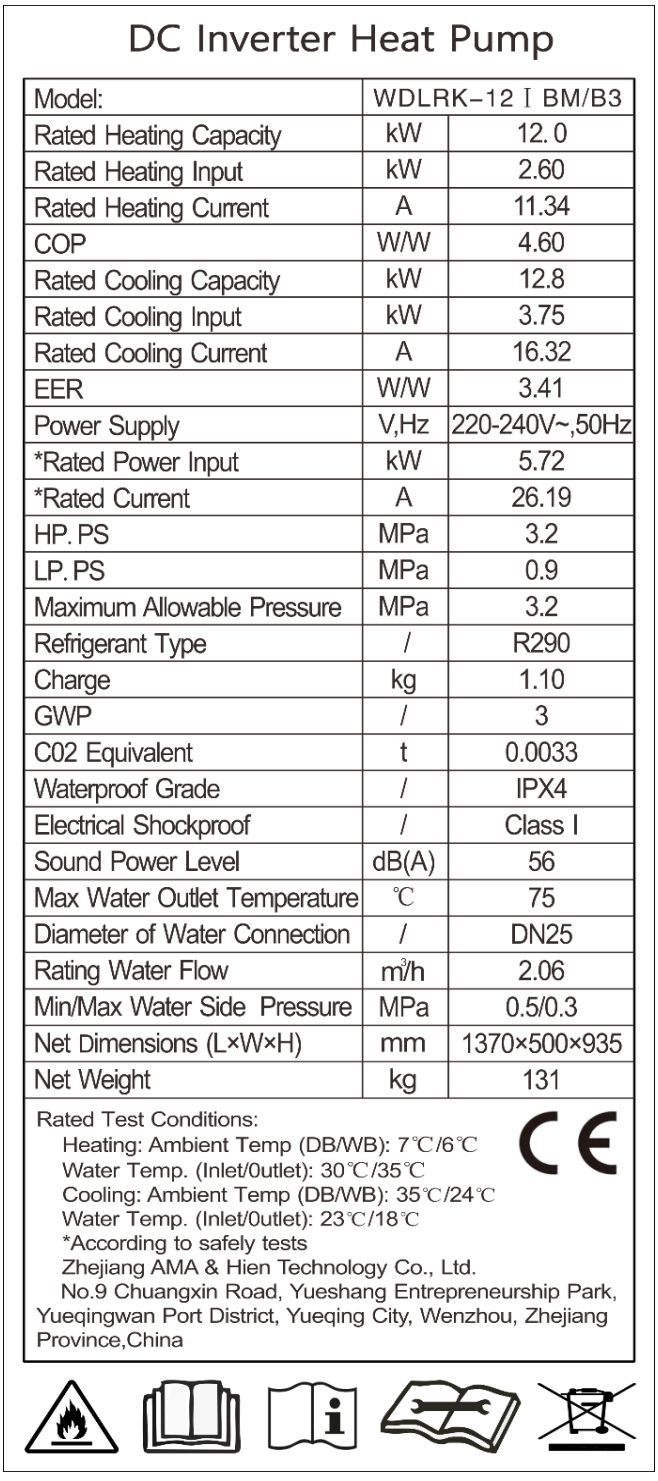
TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010504-3
Date of Issue:	19-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WDLRK-12 I BM/B3
Model Similarity:	N/A
Ratings:	220-240V~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
Date of Test Finished:	9-May-2025
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under tested complies with the ERP Requirements.
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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



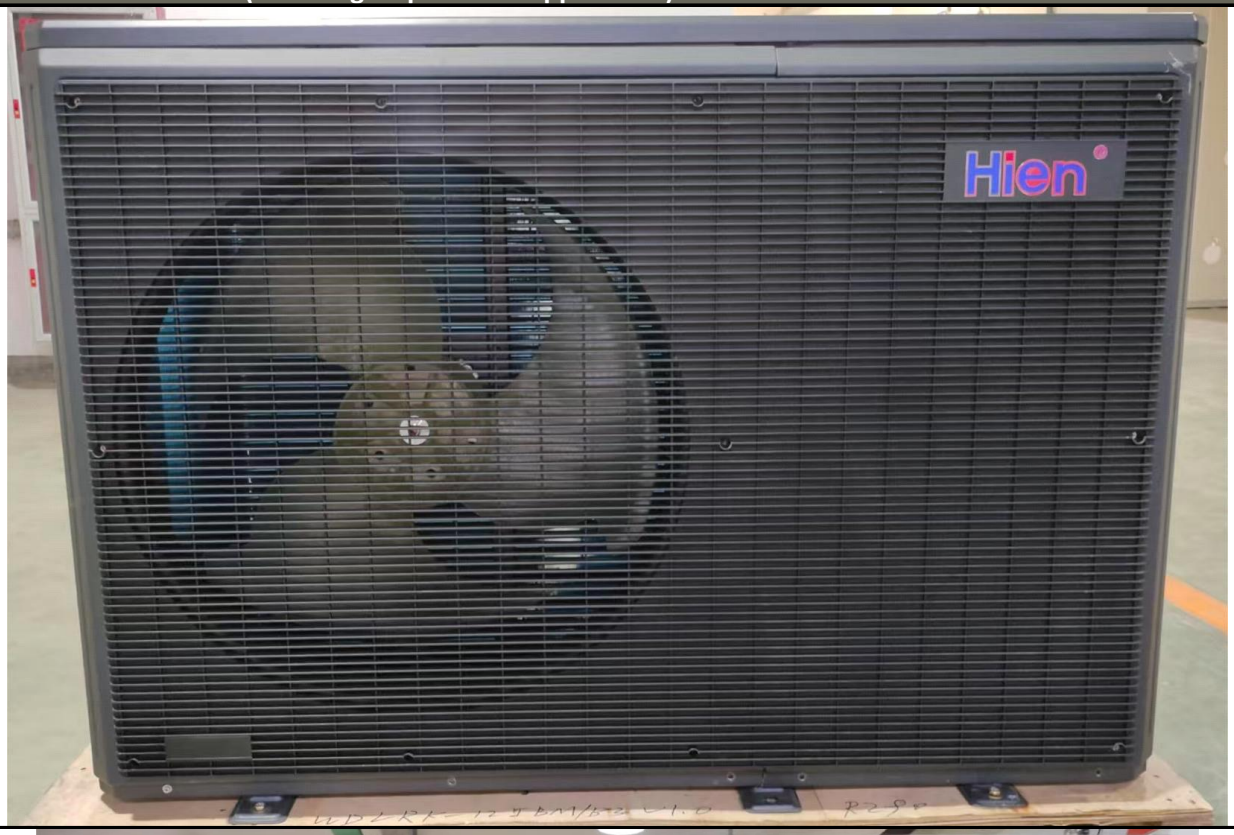
DC Inverter Heat Pump

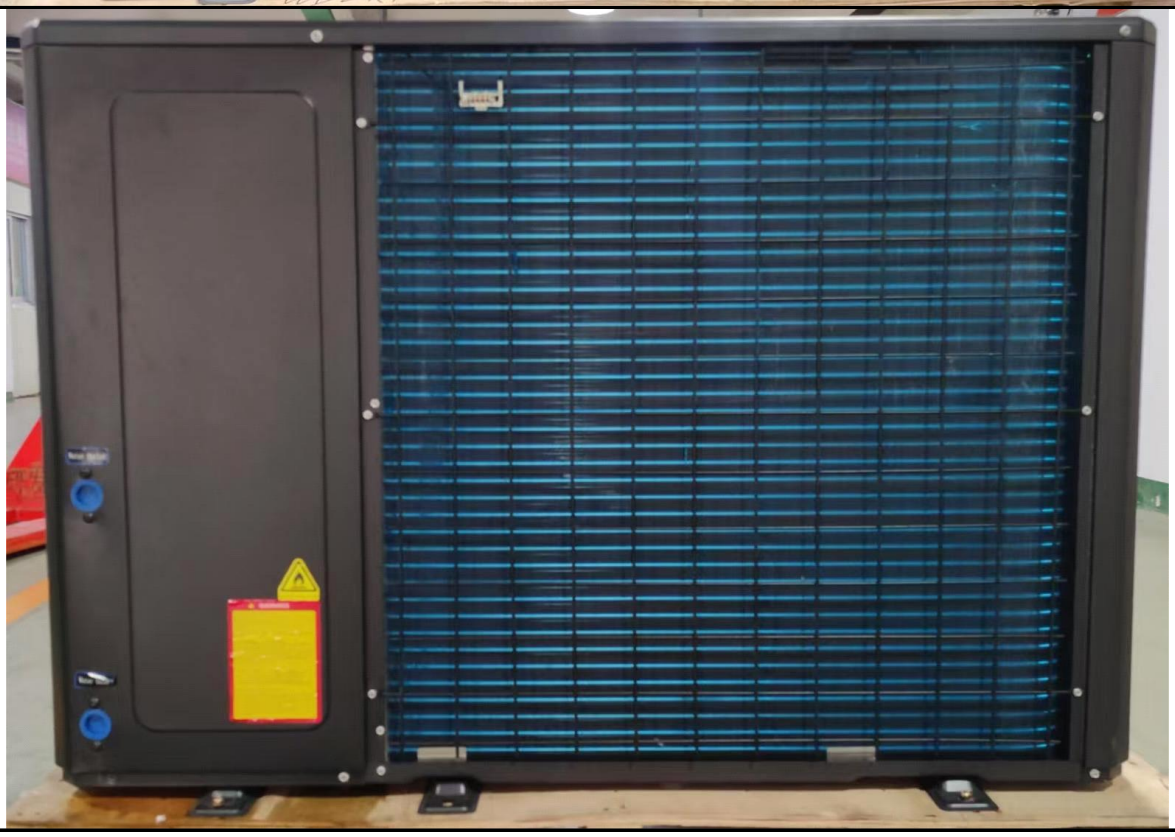
Model:	WDLRK-12 I BM/B3	
Rated Heating Capacity	kW	12. 0
Rated Heating Input	kW	2.60
Rated Heating Current	A	11.34
COP	W/W	4.60
Rated Cooling Capacity	kW	12.8
Rated Cooling Input	kW	3.75
Rated Cooling Current	A	16.32
EER	W/W	3.41
Power Supply	V,Hz	220-240V~,50Hz
*Rated Power Input	kW	5.72
*Rated Current	A	26.19
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	1.10
GWP	/	3
C02 Equivalent	t	0.0033
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	56
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m^3/h	2.06
Min/Max Water Side Pressure	MPa	0.5/0.3
Net Dimensions (L×W×H)	mm	1370×500×935
Net Weight	kg	131

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/0utlet): 30℃/35℃
Cooling: Ambient Temp (DB/WB): 35℃/24℃
Water Temp. (Inlet/0utlet): 23℃/18℃
*According to safely tests
Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

CE

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





Product Details

Item	Data
Model number of Unit Under Tested	WDLRK-12 I BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	1100
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Panasonic Wanbao Appliances Compressor (Guangzhou) Co., Ltd.	H550D7VZBAJ6	R290, DC520V
Fan motor	Zhuhai Kaibang Motor Manufacturer Co. Ltd.	ZWR200-N52	200W, DC310V, 10P, Class B
Pump	Wilo China Ltd.	Para 25/9-87/IPWM1	230V, 50/60Hz, Water-Lift 9 meters, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd.	427mm	220V, 35W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	220V/80W+60W	220V,140W±7%

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	REQUIREMENTS FOR SEASONAL SPACE HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		Pass
	Fuel boiler space heaters with rated heat output ≤ 70 kW and fuel boiler combination heaters with rated heat output ≤ 70 kW, with the exception of type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 30 kW: The seasonal space heating energy efficiency shall not fall below 86 %.		N/A
	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
	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: The seasonal space heating energy efficiency shall not fall below 100 %.		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 110 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		Pass
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	196	149	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	10.96	11.10	kW
Seasonal coefficient of performance	*SCOP*	4.98	3.80	—
Bivalent temperature	*Tbiv*	-7	-7	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	9.69	9.81	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.08	2.36	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	6.13	6.14	kW
Declared COP for part load, Tj =+2 °C	*COPd*	4.70	3.63	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.94	0.96	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	3.84	3.70	kW
Declared COP for part load, Tj =+7 °C	*COPd*	7.04	5.14	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	3.95	3.70	kW
Declared COP for part load, Tj =+12 °C	*COPd*	10.28	7.52	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	9.01	9.16	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.88	2.16	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	9.69	9.81	kW
Declared COP for part load, Tj =Tbiv	*COPd*	3.08	2.36	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.98	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	13	13	W
Thermostat-off mode	P_{TO}	73	73	W
Standby mode	P_{SB}	13	13	W
Crankcase heater mode	P_{CK}	35	35	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	1.95	1.9	kW
Annual energy consumption	Q_{HE}	4544	6035	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	55.1	55.1	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.29	97.39	97.33	97.26	98.31	97.36	97.39
2) Electrical quantities								
— voltage	*V*	230.60	230.50	229.50	230.00	229.90	230.50	230.50
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	11.59	14.02	8.04	3.78	2.74	13.90	14.02
— total power input, P_T	*W*	2652.65	3217.77	1368.13	608.41	417.76	3189.22	3217.77
— effective power input, P_E	*W*	2587.45	3152.57	1303.62	544.70	384.05	3124.02	3152.57
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	30.03	29.92	27.41	25.37	23.27	31.51	29.92
— outlet temperature	*°C*	35.03	34.00	30.00	27.00	24.00	35.31	34.00
— volume flow	*m^3/h*	2.06	2.06	2.06	2.06	2.06	2.06	2.06
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	33.76	33.76	33.22	32.60	11.44	33.76	33.76
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	6.99	-7.00	2.01	7.00	12.00	-10.01	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.02	1.00	6.00	11.00	-11.09	-8.02
c) Compressor								
— compressor frequency for inverter type	*Hz*	59	66	33	20	18	66	66
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	11908.45	9740.46	6175.54	3880.34	3974.10	9056.15	9740.46
— heating capacity, P_H	*W*	11862.57	9694.58	6130.04	3835.29	3946.93	9010.27	9694.58
— COP	*W/W*	4.58	3.08	4.70	7.04	10.28	2.88	3.08

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	97.32	97.25	97.29	97.34	98.11	97.23	97.25
2) Electrical quantities								
— voltage	*V*	230.50	230.60	229.20	229.80	229.80	230.60	230.60
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	16.90	18.22	10.06	4.95	3.31	18.54	18.22
— total power input, P_T	*W*	3887.36	4193.95	1720.43	793.53	507.06	4267.45	4193.95
— effective power input, P_E	*W*	3859.14	4165.73	1693.13	766.06	491.53	4239.23	4165.73
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	47.01	45.38	37.87	33.34	28.98	49.15	45.38
— outlet temperature	*°C*	55.02	52.01	42.01	35.99	30.15	55.36	52.01
— volume flow	*m^3/h*	1.29	1.29	1.29	1.29	1.29	1.29	1.29
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	13.80	13.80	13.12	13.25	6.08	13.80	13.80
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.01	-7.00	2.01	7.00	12.00	-10.00	-7.00
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.01	1.00	6.00	11.00	-11.00	-8.01
c) Compressor								
— compressor frequency for inverter type	*Hz*	59	66	33	22	18	66	66
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	11877.18	9838.24	6162.48	3959.57	3711.27	9185.12	9838.24
— heating capacity, P_H	*W*	11853.90	9814.96	6139.89	3936.84	3697.92	9161.84	9814.96
— COP	*W/W*	3.07	2.36	3.63	5.14	7.52	2.16	2.36

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	42.5	42.8	41.6	42.3	41.9	42.6	39.8	36.9	39.2	37.5	37.2	40.7	38.5	39.3
10^0.1Lpi	-	17783	19055	14454	16982	15488	18197	9550	4898	8318	5623	5248	11749	7079	8511
Averaged Sound Pressure Level	*dB(A)*	40.7													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S_0)	*dB(A)*	15.0													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	40.7													
Sound Power Level	*dB(A)*	55.1													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None

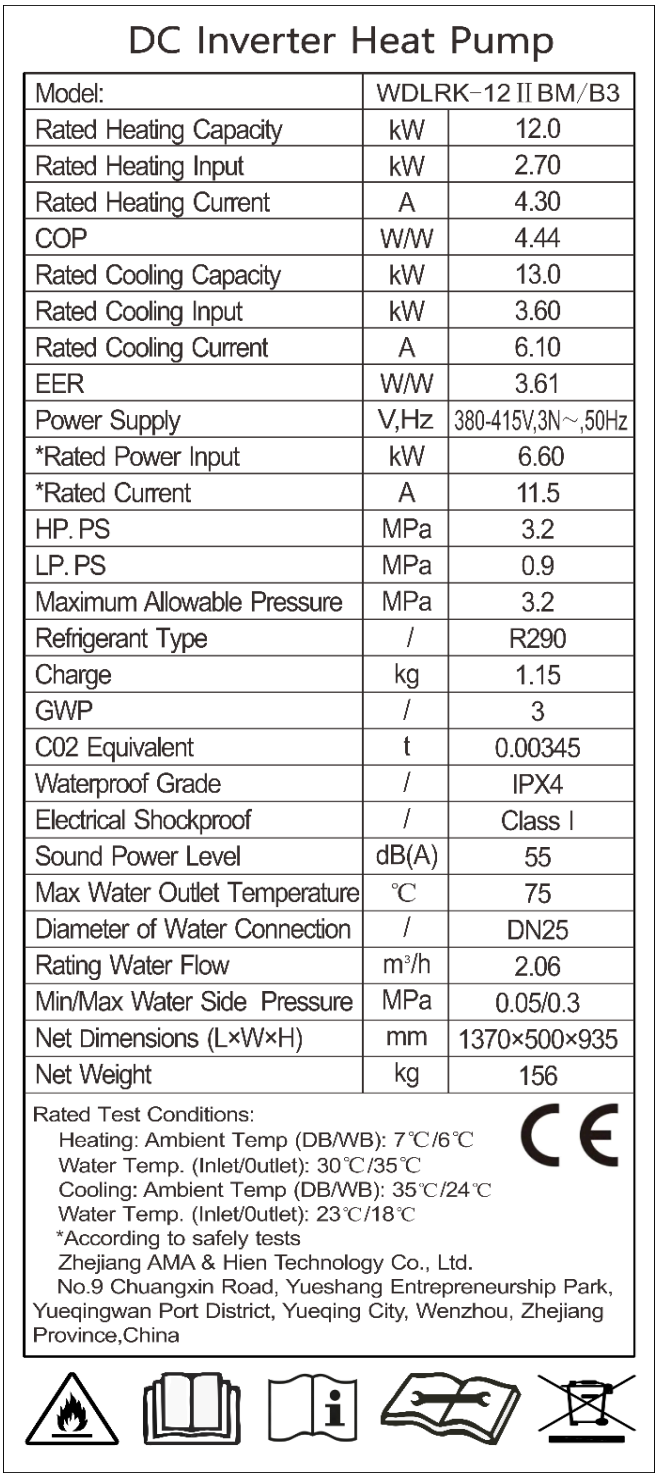
TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010504-4
Date of Issue:	26-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WDLRK-12Ⅱ BM/B3
Model Similarity:	N/A
Ratings:	380-415V, 3N~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
Date of Test Finished:	9-May-2025
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under tested complies with the ERP Requirements.
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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



DC Inverter Heat Pump

Model:	WDLRK-12 II BM/B3	
Rated Heating Capacity	kW	12.0
Rated Heating Input	kW	2.70
Rated Heating Current	A	4.30
COP	W/W	4.44
Rated Cooling Capacity	kW	13.0
Rated Cooling Input	kW	3.60
Rated Cooling Current	A	6.10
EER	W/W	3.61
Power Supply	V,Hz	380-415V,3N~,50Hz
*Rated Power Input	kW	6.60
*Rated Current	A	11.5
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	1.15
GWP	/	3
C02 Equivalent	t	0.00345
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	55
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m³/h	2.06
Min/Max Water Side Pressure	MPa	0.05/0.3
Net Dimensions (L×W×H)	mm	1370×500×935
Net Weight	kg	156

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/0utlet): 30℃/35℃
Cooling: Ambient Temp (DB/WB): 35℃/24℃
Water Temp. (Inlet/0utlet): 23℃/18℃
*According to safely tests
Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

CE

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

Product Details

Item	Data
Model number of Unit Under Tested	WDLRK-12Ⅱ BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	1150
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Panasonic Wanbao Appliances Compressor (Guangzhou) Co., Ltd.	H550D7VZBAJ6	R290, DC520V
Fan motor	Zhuhai Kaibang Motor Manufacturer Co. Ltd.	ZWR200-N52	200W, DC380V, 8P, Class B
Pump	Wilo China Ltd.	PARA 25/9-87/IPWM1	230V, 50/60Hz, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd.	220V/35W	220V, 35W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	220V/80W+60W	220V,140W±7%

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	REQUIREMENTS FOR SEASONAL SPACE HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		Pass
	Fuel boiler space heaters with rated heat output ≤ 70 kW and fuel boiler combination heaters with rated heat output ≤ 70 kW, with the exception of type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 30 kW: The seasonal space heating energy efficiency shall not fall below 86 %.		N/A
	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
	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: The seasonal space heating energy efficiency shall not fall below 100 %.		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 110 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		Pass
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	195	143	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	9.39	9.48	kW
Seasonal coefficient of performance	*SCOP*	4.95	3.65	—
Bivalent temperature	*Tbiv*	-10	-10	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	8.41	8.45	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.19	2.40	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.98	0.99	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	5.20	5.17	kW
Declared COP for part load, Tj =+2 °C	*COPd*	4.70	3.36	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.96	0.97	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	3.45	3.63	kW
Declared COP for part load, Tj =+7 °C	*COPd*	6.83	5.08	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.93	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	3.81	3.63	kW
Declared COP for part load, Tj =+12 °C	*COPd*	8.62	6.89	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.91	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	9.39	9.48	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.86	2.12	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.99	0.99	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	9.39	9.48	kW
Declared COP for part load, Tj =Tbiv	*COPd*	2.86	2.12	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.99	0.99	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	16	16	W
Thermostat-off mode	P_{TO}	49	49	W
Standby mode	P_{SB}	16	16	W
Crankcase heater mode	P_{CK}	36	36	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	0.00	0.0	kW
Annual energy consumption	Q_{HE}	3915	5373	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	54.3	54.3	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Technical parameters - Colder

Item	Symbol	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	178	131	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	6.96	7.01	kW
Seasonal coefficient of performance	*SCOP*	4.53	3.34	—
Bivalent temperature	*Tbiv*	-22	-22	°C
Operating limit temperature	*TOL*	-22	-22	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	4.18	4.60	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.85	2.85	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.95	0.97	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	3.00	2.78	kW
Declared COP for part load, Tj =+2 °C	*COPd*	5.72	4.04	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.91	0.93	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	3.13	3.56	kW
Declared COP for part load, Tj =+7 °C	*COPd*	5.50	4.10	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.91	0.93	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	3.82	3.56	kW
Declared COP for part load, Tj =+12 °C	*COPd*	8.81	5.90	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.92	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	6.96	7.01	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.26	1.75	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.98	0.99	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	6.96	7.01	kW
Declared COP for part load, Tj =Tbiv	*COPd*	2.26	1.75	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.98	0.99	—
Declared capacity for part load, Tj = -15°C (if TOL<-20°C)	*Pdh*	5.67	5.69	kW
Declared COP for part load, Tj =-15°C (if TOL<-20°C)	*COPd*	2.88	2.22	—
Degradation co-efficient, Tj = -15°C (if TOL<-20°C)	*Cdh*	0.98	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	16	16	W
Thermostat-off mode	P_{TO}	49	49	W
Standby mode	P_{SB}	16	16	W
Crankcase heater mode	P_{CK}	36	36	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	0.00	0.0	kW
Annual energy consumption	Q_{HE}	3791	5175	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	54.3	54.3	dB(A)

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	100.61	101.22	101.18	101.25	102.03	100.88	100.88
2) Electrical quantities								
— voltage	*V*	399.47	399.35	399.24	398.67	398.60	399.31	399.31
— Frequency	*Hz*	50.00	50.03	50.03	50.03	50.00	50.00	50.00
— total current	*A*	4.21	4.15	1.78	0.91	0.86	5.21	5.21
— total power input, P_T	*W*	2715.00	2679.00	1150.00	550.00	501.63	3324.00	3324.00
— effective power input, P_E	*W*	2670.12	2633.86	1104.99	505.54	442.01	3278.86	3278.86
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	29.98	30.49	27.78	25.56	23.52	31.08	31.08
— outlet temperature	*°C*	35.00	33.99	29.97	27.01	24.15	35.00	35.00
— volume flow	*m^3/h*	2.06	2.08	2.07	2.08	2.05	2.08	2.08
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	18.487	18.487	18.487	18.022	29.580	18.487	18.487
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.01	-6.99	2.01	7.01	12.00	-9.99	-9.99
— inlet temperature, wet bulb, if applicable	*°C*	6.01	-8.01	0.99	5.99	11.00	-10.84	-10.84
c) Compressor								
— compressor frequency for inverter type	*Hz*	60	57	28	18	18	69	69
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	11998.00	8444.00	5233.00	3486.00	3851.64	9424.00	9424.00
— heating capacity, P_H	*W*	11963.70	8409.54	5198.62	3451.95	3808.87	9389.54	9389.54
— COP	*W/W*	4.48	3.19	4.70	6.83	8.62	2.86	2.86

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	100.68	100.09	100.22	100.02	101.86	100.54	100.54
2) Electrical quantities								
— voltage	*V*	399.42	397.42	400.13	400.50	399.60	397.18	397.18
— Frequency	*Hz*	50.00	50.03	50.03	50.00	50.00	50.00	50.00
— total current	*A*	6.35	5.62	2.51	0.98	0.89	7.32	7.32
— total power input, P_T	*W*	3973.00	3542.00	1562.00	679.92	553.19	4499.00	4499.00
— effective power input, P_E	*W*	3951.49	3520.61	1540.36	667.28	526.55	4477.49	4477.49
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	46.81	46.20	38.53	33.74	29.12	48.59	48.59
— outlet temperature	*°C*	55.02	51.96	42.00	36.00	30.08	55.01	55.01
— volume flow	*m^3/h*	1.29	1.28	1.30	1.30	1.29	1.29	1.29
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	9.315	9.315	9.315	4.690	12.650	9.315	9.315
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.01	-6.99	2.01	7.00	12.00	-9.99	-9.99
— inlet temperature, wet bulb, if applicable	*°C*	6.00	-8.01	0.94	6.01	11.00	-11.03	-11.03
c) Compressor								
— compressor frequency for inverter type	*Hz*	61	57	28	19	18	68	68
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	12039.00	8470.00	5188.00	3401.44	3648.07	9500.00	9500.00
— heating capacity, P_H	*W*	12020.82	8451.92	5169.73	3390.50	3625.96	9481.82	9481.82
— COP	*W/W*	3.04	2.40	3.36	5.08	6.89	2.12	2.12

Heating/Colder - Low temp.

Item	*Unit*	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})	Test G
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	100.63	100.62	100.68	100.78	100.15	100.15	100.09
2) Electrical quantities								
— voltage	*V*	400.18	399.35	400.50	400.60	398.20	398.20	398.13
— Frequency	*Hz*	50.03	50.03	50.03	50.00	50.03	50.03	50.03
— total current	*A*	1.71	0.90	0.97	0.79	4.87	4.87	3.07
— total power input, P_T	*W*	1119.00	557.00	601.30	467.51	3111.00	3111.00	2004.00
— effective power input, P_E	*W*	1085.86	523.86	568.16	433.41	3074.68	3074.68	1968.00
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	28.28	25.78	24.33	23.73	32.09	32.09	29.56
— outlet temperature	*°C*	30.06	26.86	25.03	24.05	35.02	35.02	31.98
— volume flow	*m^3/h*	2.05	2.05	2.05	2.07	2.07	2.07	2.04
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	11.18	11.18	11.18	11.60	12.87	12.87	12.87
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	-6.99	2.01	7.00	12.00	-21.99	-21.99	-14.99
— inlet temperature, wet bulb, if applicable	*°C*	-8.03	0.98	6.00	11.00	-15.05	-15.05	-15.05
c) Compressor								
— compressor frequency for inverter type	*Hz*	28.00	18.00	18.00	18.00	66.00	66.00	46.00
4) Data collection period	*min*	70.00	70.00	70.00	70.00	70.00	70.00	70.00
5) Calculations								
— heating capacity	*W*	4210.00	3022.00	3153.82	3846.03	6989.00	6989.00	5702.00
— heating capacity, P_H	*W*	4183.23	2995.23	3127.05	3818.60	6960.08	6960.08	5673.29
— COP	*W/W*	3.85	5.72	5.50	8.81	2.26	2.26	2.88

Heating/Colder - Medium temp.

Item	*Unit*	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})	Test G
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	100.64	100.17	100.62	100.78	100.23	100.23	100.35
2) Electrical quantities								
— voltage	*V*	397.25	398.53	400.50	400.50	398.05	398.05	398.55
— Frequency	*Hz*	50.03	50.03	50.03	50.00	50.03	50.03	50.03
— total current	*A*	2.51	1.11	1.15	0.98	6.45	6.45	4.00
— total power input, P_T	*W*	1638.00	710.00	745.50	615.58	4024.00	4024.00	2588.00
— effective power input, P_E	*W*	1611.35	687.00	733.94	602.94	3997.35	3997.35	2560.09
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	40.90	35.12	30.86	27.47	50.28	50.28	45.14
— outlet temperature	*°C*	44.01	37.00	31.99	27.98	55.03	55.03	49.02
— volume flow	*m^3/h*	1.29	1.29	1.30	1.30	1.29	1.29	1.28
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	12.66	10.23	4.22	4.69	12.66	12.66	13.68
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	-6.99	2.01	7.01	12.00	-21.99	-21.99	-14.99
— inlet temperature, wet bulb, if applicable	*°C*	-7.98	1.02	6.02	11.01	-15.05	-15.05	-15.05
c) Compressor								
— compressor frequency for inverter type	*Hz*	31.00	18.00	18.00	18.00	65.00	65.00	46.00
4) Data collection period	*min*	70.00	70.00	70.00	70.00	70.00	70.00	70.00
5) Calculations								
— heating capacity	*W*	4622.00	2798.00	3016.99	3568.08	7029.00	7029.00	5717.00
— heating capacity, P_H	*W*	4599.88	2778.66	3006.95	3557.14	7006.88	7006.88	5693.95
— COP	*W/W*	2.85	4.04	4.10	5.90	1.75	1.75	2.22

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	41.7	40.1	40.3	42	41.7	42.2	37.4	37.1	38.5	37.5	37.6	38.8	39.6	38.8
10^0.1Lpi	-	14791	10233	10715	15849	14791	16596	5495	5129	7079	5623	5754	7586	9120	7586
Averaged Sound Pressure Level	*dB(A)*	39.9													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S_0)	*dB(A)*	15.0													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	39.9													
Sound Power Level	*dB(A)*	54.3													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None

TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010504-5
Date of Issue:	19-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WDLRK-14 I BM/B3
Model Similarity:	N/A
Ratings:	220-240V~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
Date of Test Finished:	9-May-2025
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under tested complies with the ERP Requirements.
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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

DC Inverter Heat Pump

Model:	WDLRK-14 I BM/B3	
Rated Heating Capacity	kW	14.0
Rated Heating Input	kW	3.15
Rated Heating Current	A	14.64
COP	W/W	4.44
Rated Cooling Capacity	kW	15.0
Rated Cooling Input	kW	4.11
Rated Cooling Current	A	18.82
EER	W/W	3.65
Power Supply	V,Hz	220-240V~,50Hz
*Rated Power Input	kW	6.60
*Rated Current	A	30
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	1.35
GWP	/	3
C02 Equivalent	t	0.0041
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	52
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m^3/h	2.41
Min/Max Water Side Pressure	MPa	0.05/0.3
Net Dimensions (L×W×H)	mm	1370×500×935
Net Weight	kg	146

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/0utlet): 30℃/35℃
Cooling: Ambient Temp (DB/WB): 35℃/24℃
Water Temp. (Inlet/0utlet): 23℃/18℃
*According to safely tests
Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

CE

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

Product Details

Item	Data
Model number of Unit Under Tested	WDLRK-14 I BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	1350
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Panasonic Wanbao Appliances Compressor (Guangzhou) Co., Ltd.	H550D7VZBAJ6	R290, DC520V
Fan motor	Zhuhai Kaibang Motor Manufacturer Co. Ltd.	ZWR200-N52	200W, DC310V, 10P, Class B
Pump	Wilo China Ltd.	PARA 25/9-87/IPWM1	230V, 50/60Hz, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd.	220V/35W	220V, 35W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	220V/80W+60W	220V,140W±7%

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	REQUIREMENTS FOR SEASONAL SPACE HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		Pass
	Fuel boiler space heaters with rated heat output ≤ 70 kW and fuel boiler combination heaters with rated heat output ≤ 70 kW, with the exception of type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 30 kW: The seasonal space heating energy efficiency shall not fall below 86 %.		N/A
	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
	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: The seasonal space heating energy efficiency shall not fall below 100 %.		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 110 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		Pass
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	207	148	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	10.88	11.07	kW
Seasonal coefficient of performance	*SCOP*	5.24	3.77	—
Bivalent temperature	*Tbiv*	-10	-10	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	9.59	9.79	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.22	2.49	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.98	0.99	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	6.03	5.78	kW
Declared COP for part load, Tj =+2 °C	*COPd*	5.01	3.47	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.96	0.97	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	3.84	3.83	kW
Declared COP for part load, Tj =+7 °C	*COPd*	7.23	5.20	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.93	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	4.05	3.83	kW
Declared COP for part load, Tj =+12 °C	*COPd*	9.71	7.49	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	10.88	11.07	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.80	2.17	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.99	0.99	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	10.88	11.07	kW
Declared COP for part load, Tj =Tbiv	*COPd*	2.80	2.17	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.99	0.99	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	12	12	W
Thermostat-off mode	P_{TO}	54	54	W
Standby mode	P_{SB}	12	12	W
Crankcase heater mode	P_{CK}	36	36	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	0.00	0.0	kW
Annual energy consumption	Q_{HE}	4292	6058	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	51.1	51.1	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Technical parameters - Colder

Item	Symbol	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	191	141	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	8.12	8.79	kW
Seasonal coefficient of performance	*SCOP*	4.84	3.60	—
Bivalent temperature	*Tbiv*	-22	-22	°C
Operating limit temperature	*TOL*	-22	-22	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	4.95	5.37	kW
Declared COP for part load, Tj = -7 °C	*COPd*	4.05	3.06	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.96	0.97	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	3.01	3.16	kW
Declared COP for part load, Tj =+2 °C	*COPd*	5.93	4.13	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.90	0.93	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	3.40	3.86	kW
Declared COP for part load, Tj =+7 °C	*COPd*	7.26	5.78	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	3.95	3.86	kW
Declared COP for part load, Tj =+12 °C	*COPd*	9.39	7.95	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	8.12	8.79	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.26	1.75	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.98	0.99	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	8.12	8.79	kW
Declared COP for part load, Tj =Tbiv	*COPd*	2.26	1.75	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.98	0.99	—
Declared capacity for part load, Tj = -15°C (if TOL<-20°C)	*Pdh*	6.67	7.13	kW
Declared COP for part load, Tj =-15°C (if TOL<-20°C)	*COPd*	2.91	2.29	—
Degradation co-efficient, Tj = -15°C (if TOL<-20°C)	*Cdh*	0.98	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	12	12	W
Thermostat-off mode	P_{TO}	54	54	W
Standby mode	P_{SB}	12	12	W
Crankcase heater mode	P_{CK}	36	36	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	0.00	0.0	kW
Annual energy consumption	Q_{HE}	4136	6017	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	51.1	51.1	dB(A)

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	101.42	102.02	101.86	101.94	102.82	101.68	101.68
2) Electrical quantities								
— voltage	*V*	229.94	230.70	229.34	230.25	230.17	230.30	230.30
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	14.63	13.92	8.22	3.99	2.46	17.80	17.80
— total power input, P_T	*W*	3168.00	3034.36	1263.00	588.00	475.00	3939.26	3939.26
— effective power input, P_E	*W*	3110.88	2977.24	1203.67	531.35	417.49	3882.29	3882.29
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	29.91	30.51	27.85	25.60	23.34	31.09	31.09
— outlet temperature	*°C*	34.97	33.97	30.01	27.00	23.96	35.03	35.03
— volume flow	*m^3/h*	2.41	2.41	2.43	2.39	2.41	2.40	2.40
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	23.52	23.52	24.763	23.407	23.776	23.52	23.52
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.01	-7.00	2.01	7.01	12.01	-10.00	-10.00
— inlet temperature, wet bulb, if applicable	*°C*	5.98	-8.00	0.97	6.00	11.00	-10.99	-10.99
c) Compressor								
— compressor frequency for inverter type	*Hz*	68	65	32	20	18	78	78
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	14172.00	9631.77	6076.00	3882.00	4096.00	10925.78	10925.78
— heating capacity, P_H	*W*	14130.63	9590.40	6033.39	3840.89	4054.41	10884.49	10884.49
— COP	*W/W*	4.54	3.22	5.01	7.23	9.71	2.80	2.80

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	101.03	100.48	100.61	100.45	102.20	100.81	100.81
2) Electrical quantities								
— voltage	*V*	229.98	230.18	228.96	230.30	230.11	228.62	228.62
— Frequency	*Hz*	50.00	50.03	50.00	50.00	50.00	50.00	50.00
— total current	*A*	20.96	17.98	9.84	5.21	2.71	23.07	23.07
— total power input, P_T	*W*	4678.00	3961.00	1692.00	788.00	536.00	5124.00	5126.00
— effective power input, P_E	*W*	4649.86	3933.61	1663.59	759.60	510.72	5095.99	5097.99
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	46.89	46.34	38.64	33.76	28.99	48.55	48.55
— outlet temperature	*°C*	54.95	52.02	41.96	36.04	29.94	54.99	54.99
— volume flow	*m^3/h*	1.51	1.50	1.52	1.51	1.51	1.50	1.50
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	11.74	11.341	11.831	11.905	10.002	11.74	11.74
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.01	-6.99	2.01	7.01	12.01	-9.99	-9.99
— inlet temperature, wet bulb, if applicable	*°C*	5.99	-7.89	0.99	5.99	11.00	-10.90	-10.90
c) Compressor								
— compressor frequency for inverter type	*Hz*	70	65	32	22	18	76	76
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	14318.00	9815.00	5804.00	3977.00	3847.00	11093.00	11093.00
— heating capacity, P_H	*W*	14294.79	9792.34	5780.59	3953.59	3825.92	11069.88	11069.88
— COP	*W/W*	3.07	2.49	3.47	5.20	7.49	2.17	2.17

Heating/Colder - Low temp.

Item	*Unit*	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})	Test G
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	100.63	100.62	100.68	100.78	100.15	100.15	100.09
2) Electrical quantities								
— voltage	*V*	230.29	231.70	230.70	230.70	228.60	228.60	230.26
— Frequency	*Hz*	50.03	50.03	50.03	50.00	50.03	50.03	50.03
— total current	*A*	8.32	3.85	2.61	2.43	16.86	16.86	10.72
— total power input, P_T	*W*	1282.00	568.00	513.71	466.47	3658.00	3658.00	2355.00
— effective power input, P_E	*W*	1220.92	507.71	468.28	421.02	3597.08	3597.08	2293.92
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	28.19	25.88	24.39	23.69	32.00	32.00	29.63
— outlet temperature	*°C*	29.97	26.97	25.09	24.01	34.92	34.92	32.03
— volume flow	*m^3/h*	2.43	2.43	2.43	2.43	2.42	2.42	2.43
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	25.91	25.39	16.00	16.01	25.91	25.91	25.91
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	-6.99	2.01	7.01	12.00	-21.99	-21.99	-14.99
— inlet temperature, wet bulb, if applicable	*°C*	-7.91	0.97	5.95	11.00	-15.05	-15.05	-15.05
c) Compressor								
— compressor frequency for inverter type	*Hz*	33	18	18	18	75	75	54
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	4991.00	3052.00	3432.01	3986.18	8168.00	8168.00	6714.00
— heating capacity, P_H	*W*	4947.41	3008.85	3397.38	3951.54	8124.50	8124.50	6670.41
— COP	*W/W*	4.05	5.93	7.26	9.39	2.26	2.26	2.91

Heating/Colder - Medium temp.

Item	*Unit*	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})	Test G
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	100.63	100.02	100.61	100.56	100.06	100.06	100.15
2) Electrical quantities								
— voltage	*V*	229.31	231.02	230.60	229.98	231.07	231.07	229.14
— Frequency	*Hz*	50.03	50.03	50.03	50.00	50.03	50.03	50.03
— total current	*A*	11.52	3.69	2.87	2.60	22.58	22.58	14.60
— total power input, P_T	*W*	1784.00	789.00	579.23	504.00	5060.00	5060.00	3143.00
— effective power input, P_E	*W*	1755.09	763.90	561.85	485.62	5031.09	5031.09	3114.09
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	40.95	35.15	30.80	27.42	49.86	49.86	44.87
— outlet temperature	*°C*	43.99	36.98	31.97	27.97	54.95	54.95	49.01
— volume flow	*m^3/h*	1.51	1.50	1.51	1.51	1.51	1.51	1.51
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	12.24	9.97	5.99	6.44	12.24	12.24	12.24
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	-6.99	2.01	7.02	12.00	-21.99	-21.99	-14.99
— inlet temperature, wet bulb, if applicable	*°C*	-8.02	0.96	6.00	11.00	-15.05	-15.05	-15.05
c) Compressor								
— compressor frequency for inverter type	*Hz*	36	21	18	18	77	77	57
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	5393.00	3179.00	3261.87	3878.00	8815.00	8815.00	7154.00
— heating capacity, P_H	*W*	5369.22	3158.05	3247.00	3862.33	8791.22	8791.22	7130.22
— COP	*W/W*	3.06	4.13	5.78	7.95	1.75	1.75	2.29

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	38.7	37.5	36.9	38.8	37.6	39.5	35	32.9	35.3	33.8	34.7	36.3	35.9	35.4
10^0.1Lpi	-	7413	5623	4898	7586	5754	8913	3162	1950	3388	2399	2951	4266	3890	3467
Averaged Sound Pressure Level	*dB(A)*	36.7													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S_0)	*dB(A)*	15.0													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	36.7													
Sound Power Level	*dB(A)*	51.1													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None

TEST REPORT - PERFORMANCE

HEAT PUMP SPACE HEATER

Report Number:	CTEW-EGZ-P25010504-6
Date of Issue:	19-Jun-2025
Date of Revise:	NONE
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:	Zhejiang AMA & Hien Technology Co., Ltd. No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, 325609, Zhejiang, P.R. China
Manufacturing Site/Address:	Same as the applicant
Testing Location/Address:	Same as the testing laboratory (except for noise test) CVC Testing Technology Co., Ltd. (for noise test)
Product:	DC Inverter Heat Pump
Trade Mark:	N/A
Model(s):	WDLRK-16 I BM/B3
Model Similarity:	N/A
Ratings:	220-240V~, 50Hz, other ratings refer to nameplate.
Date of Sample(s) Received:	27-Jan-2025
Date of Test Started:	27-Jan-2025
Date of Test Finished:	9-May-2025
Standard(s)/Regulation(s):	(EU) No 811/2013 + (EU) 2017/254 (EU) No 813/2013 + (EU) 2016/2282 EN 14825:2022 EN 14511-1,2,3,4:2022 EN 12102-1:2022 (This standard is not within the scope of A2LA)
Conclusion:	The product under tested complies with the ERP Requirements.
Prepared by (name, function, signature):	Crane YAN Project Engineer
Approved by (name, function, signature):	Jeff ZHANG Performance Manager

Photos:

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

DC Inverter Heat Pump

Model:	WDLRK-16 I BM/B3	
Rated Heating Capacity	kW	16.0
Rated Heating Input	kW	3.50
Rated Heating Current	A	15.90
COP	W/W	4.57
Rated Cooling Capacity	kW	17.0
Rated Cooling Input	kW	4.40
Rated Cooling Current	A	19.50
EER	W/W	3.86
Power Supply	V,Hz	220-240V~,50Hz
*Rated Power Input	kW	6.60
*Rated Current	A	30
HP. PS	MPa	3.2
LP. PS	MPa	0.9
Maximum Allowable Pressure	MPa	3.2
Refrigerant Type	/	R290
Charge	kg	1.50
GWP	/	3
C02 Equivalent	t	0.0045
Waterproof Grade	/	IPX4
Electrical Shockproof	/	Class I
Sound Power Level	dB(A)	55
Max Water Outlet Temperature	℃	75
Diameter of Water Connection	/	DN25
Rating Water Flow	m^3/h	2.75
Min/Max Water Side Pressure	MPa	0.05/0.3
Net Dimensions (L×W×H)	mm	1370×500×935
Net Weight	kg	151

Rated Test Conditions:
Heating: Ambient Temp (DB/WB): 7℃/6℃
Water Temp. (Inlet/0utlet): 30℃/35℃
Cooling: Ambient Temp (DB/WB): 35℃/24℃
Water Temp. (Inlet/0utlet): 23℃/18℃
*According to safely tests
Zhejiang AMA & Hien Technology Co., Ltd.
No.9 Chuangxin Road, Yueshang Entrepreneurship Park, Yueqingwan Port District, Yueqing City, Wenzhou, Zhejiang Province,China

CE

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

Product Details

Item	Data
Model number of Unit Under Tested	WDLRK-16 I BM/B3
Serial number	N/A
Condition of sample(s)	Production
Heat Pump type (Air/Water/Brine-to-water)	Air-to-water
Heating only / Reversible	Reversible
Low-temperature heat pump (Yes/No)	No
Equipped with a supplementary heater (Yes/No)	No
Heat pump combination heater (Yes/No)	No
With integrated indoor liquid pump (Yes/No)	No
Able to work only during off-peak hours (Yes/No)	No
Declared load profile for combination heater	N/A
Refrigerant	R290
Charge of refrigerant [g]	1500
Capacity control (Fixed/Variable)	Variable

Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	Panasonic Wanbao Appliances Compressor (Guangzhou) Co., Ltd.	H650D7VZABJ6	R290 DC520V
Fan motor	Zhuhai Kaibang Motor Manufacturer Co. Ltd.	ZWR200-N52	200W, DC310V, 10P, Class B
Pump	Wilo China Ltd.	Para MAXO 25-130-10-F21-C08	230V, 50/60Hz, Class F
Compressor crankcase heater	Changzhou Qingshan Refrigeration Equipment Co., Ltd.	220V/35W	220V, 35W
Electric Chassis heater	Changzhou Xiangming Electric Appliance Co., Ltd	220V/80W+60W	220V,140W±7%

Ecodesign Requirements

Clause	Ecodesign requirements	Result - Remark	Verdict
1	REQUIREMENTS FOR SEASONAL SPACE HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		Pass
	Fuel boiler space heaters with rated heat output ≤ 70 kW and fuel boiler combination heaters with rated heat output ≤ 70 kW, with the exception of type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 30 kW: The seasonal space heating energy efficiency shall not fall below 86 %.		N/A
	Type B1 boilers with rated heat output ≤ 10 kW and type B1 combination boilers with rated heat output ≤ 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 ≤ 400 kW and fuel boiler combination heaters with rated heat output > 70 kW and ≤ 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 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 115 %.		N/A
(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:		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
	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: The seasonal space heating energy efficiency shall not fall below 100 %.		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 110 %.		Pass
	Low-temperature heat pumps: The seasonal space heating energy efficiency shall not fall below 125 %.		N/A
2	REQUIREMENTS FOR WATER HEATING ENERGY EFFICIENCY		--
(a)	From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A
3	REQUIREMENTS FOR SOUND POWER LEVEL		--
	From 26 September 2015 the sound power level of heat pump space heaters and heat pump combination heaters shall not exceed the following values:		Pass
4	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES		N/A
5	REQUIREMENTS FOR PRODUCT INFORMATION		--
	From 26 September 2015 the following product information on heaters shall be provided:		Pass
(a)	the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:		Pass
—	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;		Pass
—	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		Pass

Clause	Ecodesign requirements	Result - Remark	Verdict
—	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		Pass
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		Pass
—	the elements specified in point (a);		Pass
—	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;		Pass
(c)	the following information shall be durably marked on the heater:		N/A
—	if applicable, 'type B1 boiler' or 'type B1 combination boiler';		N/A
—	for cogeneration space heaters, the electrical capacity.		N/A

Technical parameters - Average

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	194	149	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	12.17	12.37	kW
Seasonal coefficient of performance	*SCOP*	4.92	3.79	—
Bivalent temperature	*Tbiv*	-10	-10	°C
Operating limit temperature	*TOL*	-10	-10	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	10.35	10.82	kW
Declared COP for part load, Tj = -7 °C	*COPd*	3.09	2.55	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.98	0.98	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	6.81	6.78	kW
Declared COP for part load, Tj =+2 °C	*COPd*	4.55	3.51	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.95	0.96	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	4.46	4.42	kW
Declared COP for part load, Tj =+7 °C	*COPd*	7.15	5.08	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.91	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	4.57	4.42	kW
Declared COP for part load, Tj =+12 °C	*COPd*	9.17	7.40	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	12.17	12.37	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.85	2.21	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.98	0.99	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	12.17	12.37	kW
Declared COP for part load, Tj =Tbiv	*COPd*	2.85	2.21	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.98	0.99	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	12	12	W
Thermostat-off mode	P_{TO}	76	76	W
Standby mode	P_{SB}	12	12	W
Crankcase heater mode	P_{CK}	36	36	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	0.00	0.0	kW
Annual energy consumption	Q_{HE}	5109	6742	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	54	54	dB(A)
For air-to-water heat pumps: rated air flow, outdoor	—	N/A	N/A	m^3/h

Technical parameters - Colder

Item	*Symbol*	Low	Medium	Unit
Seasonal space heating energy efficiency	η_s	184	142	%
Seasonal space heating energy efficiency class	—	A+++	A++	—
Rated heat output	P_{rated}	10.01	9.81	kW
Seasonal coefficient of performance	*SCOP*	4.68	3.62	—
Bivalent temperature	*Tbiv*	-22	-22	°C
Operating limit temperature	*TOL*	-22	-22	°C
Declared capacity for part load, Tj = -7 °C	*Pdh*	6.08	6.05	kW
Declared COP for part load, Tj = -7 °C	*COPd*	4.02	3.01	—
Degradation co-efficient, Tj = -7 °C	*Cdh*	0.95	0.96	—
Declared capacity for part load, Tj = +2 °C	*Pdh*	3.74	3.60	kW
Declared COP for part load, Tj =+2 °C	*COPd*	5.47	4.21	—
Degradation co-efficient, Tj = +2 °C	*Cdh*	0.90	0.91	—
Declared capacity for part load, Tj = +7 °C	*Pdh*	4.06	4.61	kW
Declared COP for part load, Tj =+7 °C	*COPd*	7.31	5.84	—
Degradation co-efficient, Tj = +7 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = +12 °C	*Pdh*	4.67	4.61	kW
Declared COP for part load, Tj =+12 °C	*COPd*	9.22	7.96	—
Degradation co-efficient, Tj = +12 °C	*Cdh*	0.90	0.90	—
Declared capacity for part load, Tj = TOL or Tdesignh	*Pdh*	10.01	9.81	kW
Declared COP for part load, Tj =TOL or Tdesignh	*COPd*	2.27	1.79	—
Degradation co-efficient, Tj = TOL or Tdesignh	*Cdh*	0.98	0.99	—
Declared capacity for part load, Tj = Tbiv	*Pdh*	10.01	9.81	kW
Declared COP for part load, Tj =Tbiv	*COPd*	2.27	1.79	—
Degradation co-efficient, Tj = Tbiv	*Cdh*	0.98	0.99	—
Declared capacity for part load, Tj = -15°C (if TOL<-20°C)	*Pdh*	8.11	8.23	kW
Declared COP for part load, Tj =-15°C (if TOL<-20°C)	*COPd*	2.92	2.34	—
Degradation co-efficient, Tj = -15°C (if TOL<-20°C)	*Cdh*	0.97	0.98	—
Heating water operating limit temperature	*WTOL*	75	75	°C
Off mode	P_{OFF}	12	12	W
Thermostat-off mode	P_{TO}	76	76	W
Standby mode	P_{SB}	12	12	W
Crankcase heater mode	P_{CK}	36	36	W
Supplementary heater - type of energy input	—	Electricity	Electricity	—
Supplementary heater - rated heat output	P_{sup}	0.00	0.0	kW
Annual energy consumption	Q_{HE}	5271	6684	kWh
Sound power level - indoor	L_{WA}	N/A	N/A	dB(A)
Sound power level - outdoor	L_{WA}	54	54	dB(A)

Heating/Average - Low temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	100.65	101.26	101.23	101.30	102.08	102.08	102.08
2) Electrical quantities								
— voltage	*V*	229.10	229.92	229.46	230.09	230.40	229.76	229.76
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	15.89	15.44	10.16	4.78	3.90	19.37	19.37
— total power input, P_T	*W*	3510.40	3403.60	1551.50	681.40	555.34	4330.50	4330.50
— effective power input, P_E	*W*	3453.43	3346.50	1494.40	624.18	498.37	4273.98	4273.98
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	30.02	30.52	27.95	25.63	23.46	31.15	31.15
— outlet temperature	*°C*	34.98	33.78	30.02	27.03	24.04	34.86	34.86
— volume flow	*m^3/h*	2.75	2.76	2.76	2.77	2.75	2.72	2.72
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	20.530	20.530	20.530	20.530	20.530	20.530	20.530
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.01	2.01	6.99	12.00	-10.00	-10.00
— inlet temperature, wet bulb, if applicable	*°C*	5.99	-8.13	1.01	6.00	11.00	-11.00	-11.00
c) Compressor								
— compressor frequency for inverter type	*Hz*	65	62	32	20	18	74	74
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	15895.55	10391.37	6847.52	4503.38	4612.09	12208.68	12208.68
— heating capacity, P_H	*W*	15854.26	10350.00	6806.15	4461.95	4570.80	12167.65	12167.65
— COP	*W/W*	4.59	3.09	4.55	7.15	9.17	2.85	2.85

Heating/Average - Medium temp.

Item	*Unit*	Standard	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	101.03	100.48	100.61	100.45	102.20	100.81	100.81
2) Electrical quantities								
— voltage	*V*	229.68	229.70	229.15	229.99	230.30	230.30	230.30
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	21.90	19.17	12.17	6.13	4.38	24.98	24.98
— total power input, P_T	*W*	4925.70	4283.60	1957.85	927.88	622.87	5631.14	5631.14
— effective power input, P_E	*W*	4900.55	4238.37	1932.69	875.74	597.74	5605.99	5605.99
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	46.95	46.70	38.71	33.88	29.00	48.94	48.94
— outlet temperature	*°C*	54.92	52.00	42.03	36.08	29.97	54.99	54.99
— volume flow	*m^3/h*	1.76	1.76	1.76	1.76	1.76	1.76	1.76
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	8.520	21.950	8.520	27.796	8.510	8.520	8.520
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	7.00	-7.00	2.00	6.99	12.01	-10.00	-10.00
— inlet temperature, wet bulb, if applicable	*°C*	6.01	-8.00	1.00	6.00	11.01	-11.00	-11.00
c) Compressor								
— compressor frequency for inverter type	*Hz*	64	52	30	21	18	71	71
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	16025.99	10850.48	6798.74	4484.77	4444.91	12386.24	12386.24
— heating capacity, P_H	*W*	16005.01	10815.97	6777.76	4446.22	4423.94	12365.25	12365.25
— COP	*W/W*	3.27	2.55	3.51	5.08	7.40	2.21	2.21

Heating/Colder - Low temp.

Item	*Unit*	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})	Test G
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	101.08	101.08	101.13	101.14	100.43	100.43	100.60
2) Electrical quantities								
— voltage	*V*	228.93	229.56	231.40	231.50	229.10	229.10	229.67
— Frequency	*Hz*	50.00	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	10.26	4.98	2.98	2.79	20.01	20.01	12.91
— total power input, P_T	*W*	1561.90	710.50	614.01	566.94	4461.70	4461.70	2821.90
— effective power input, P_E	*W*	1514.40	683.75	556.31	506.49	4414.20	4414.20	2774.23
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	28.07	25.90	24.27	23.68	31.97	31.97	29.48
— outlet temperature	*°C*	29.99	27.08	24.97	23.99	35.10	35.10	32.01
— volume flow	*m^3/h*	2.75	2.76	2.76	2.78	2.75	2.75	2.77
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	15.23	5.96	20.87	22.29	15.23	15.23	15.23
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	-7.02	1.99	7.01	12.00	-22.01	-22.01	-14.99
— inlet temperature, wet bulb, if applicable	*°C*	-8.02	0.99	6.01	11.00	-22.67	-22.67	-15.97
c) Compressor								
— compressor frequency for inverter type	*Hz*	35	19	18	18	78	78	57
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	6120.16	3761.16	4105.76	4713.33	10049.07	10049.07	8149.55
— heating capacity, P_H	*W*	6084.30	3738.97	4064.06	4670.09	10013.21	10013.21	8113.60
— COP	*W/W*	4.02	5.47	7.31	9.22	2.27	2.27	2.92

Heating/Colder - Medium temp.

Item	*Unit*	Test A	Test B	Test C	Test D	Test E (TOL)	Test F (T_{biv})	Test G
1) Ambient conditions								
— air temperature, dry bulb	*°C*	-	-	-	-	-	-	-
— atmospheric pressure	*kPa*	101.12	100.78	101.10	101.30	100.85	100.85	100.97
2) Electrical quantities								
— voltage	*V*	228.62	229.53	231.30	231.40	229.34	229.34	229.49
— Frequency	*Hz*	50.03	50.00	50.00	50.00	50.00	50.00	50.00
— total current	*A*	13.04	5.96	3.25	2.95	24.40	24.40	15.98
— total power input, P_T	*W*	2013.20	860.40	683.82	605.11	5488.70	5488.70	3528.60
— effective power input, P_E	*W*	2006.80	854.00	677.35	579.14	5482.32	5482.32	3522.18
3) Thermodynamic quantities								
a) Indoor heat exchanger - water or brine								
— inlet temperature	*°C*	41.13	35.28	30.68	27.53	50.28	50.28	45.06
— outlet temperature	*°C*	44.01	37.04	31.86	27.11	55.09	55.09	49.07
— volume flow	*m^3/h*	1.76	1.76	1.76	1.77	1.76	1.76	1.77
— liquid pump speed setting, if applicable	-	-	-	-	-	-	-	-
— external/internal static pressure difference	*kPa*	1.60	1.60	1.62	8.88	1.60	1.60	1.60
b) Outdoor heat exchanger - air								
— inlet temperature, dry bulb	*°C*	-7.00	2.04	7.01	12.00	-22.00	-22.00	-15.00
— inlet temperature, wet bulb, if applicable	*°C*	-8.00	1.00	6.00	11.01	-22.58	-22.58	-15.91
c) Compressor								
— compressor frequency for inverter type	*Hz*	34	20	18	18	73	73	55
4) Data collection period	*min*	70	70	70	70	70	70	70
5) Calculations								
— heating capacity	*W*	6054.39	3602.51	3962.33	4629.67	9817.52	9817.52	8232.69
— heating capacity, P_H	*W*	6048.77	3596.89	3956.65	4608.06	9811.92	9811.92	8227.05
— COP	*W/W*	3.01	4.21	5.84	7.96	1.79	1.79	2.34

Sound Power Test - Outdoor

Item	*Unit*	Value													
Method	--	Parallelepiped measurement surface													
Microphone Position	--	1	2	3	4	5	6	7	8	9	10	11	12	13	14
L_{pi}	*dB*	41.5	41.4	41.1	41.5	40.8	40.6	37.5	38	38.2	36.5	36	39	38.9	38.7
10^0.1Lpi	-	14125	13804	12882	14125	12023	11482	5623	6310	6607	4467	3981	7943	7762	7413
Averaged Sound Pressure Level	*dB(A)*	39.6													
Backgound noise level	*dB(A)*	18.0													
10lg(S/S_0)	*dB(A)*	15.0													
Background noise correction K1	*dB(A)*	0													
Environmental correction K2	*dB(A)*	-													
The reference quantility correction C1	*dB(A)*	-0.25													
The radiation impedance correction C2	*dB(A)*	-0.36													
Corrected averaged sound pressure level L_{pmc}	*dB(A)*	39.6													
Sound Power Level	*dB(A)*	54.0													

Revision Summary

Date/	Project Handler/ Reviewer	Item	Description of Change
			None