Prüfbericht-Nr.: *Test Report No.:*	**16074145 001**	**Auftrags-Nr.:** *Order No.:*	174046599	Seite 1 von 17 *Page 1 of 17*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	2016.03.02	
Auftraggeber: *Client:*	GUANGDONG PHNIX ECO-ENERGY SOLUTION LTD. NO.3 TIANYUAN ROAD, DAGANG TOWN, NANSHA, GUANGZHOU 511470 P.R.China			
Prüfgegenstand: *Test item:*	**Heat pump space heater**			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	PASHW050S-PS			
Auftrags-Inhalt: *Order content:*	ERP test			
Prüfgrundlage: *Test specification:*	**EN 14825:2013** **COMMISSION REGULATION (EU) No 813/2013** **COMMISSION DELEGATED REGULATION (EU) No 811/2013**			

Wareneingangsdatum: *Date of receipt:*	2016.03.02
Prüfmuster-Nr.: *Test sample No.:*	545RW160328001-10
Prüfzeitraum: *Testing period:*	2016.03.02 to 2016.04.14
Ort der Prüfung: *Place of testing:*	See test location on page 2
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Guangdong) Ltd.
Prüfergebnis*: *Test result*:*	Pass

Detaillierte Fotodokumentation
siehe Anlage zu diesem Bericht

Detailed photo documentation
see appendix to this report

geprüft von / *tested by*:			**kontrolliert von** / *reviewed by*:		
2016.04.19	Felix Tong	Felix Tong	2016.04.21	Brenda Fan	Brenda Fan
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*:

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Testing results summary

The appliance meets the requirement of the seasonal space heating energy efficiency in COMMISSION DELEGATED REGULATION (EU) No 813/2013.

According to COMMISSION DELEGATED REGULATION (EU) No 811/2013 with regard to the energy labelling of space heater, the seasonal space heating energy efficiency class of the unit is A++ for low temperature application and A+ for medium temperature application.

Summary of testing

1. The appliances were tested according to EN 14825:2013, EN 12102:2013, COMMISSION REGULATION (EU) No 813/2013, COMMISSION DELEGATED REGULATION (EU) No 811/2013.
2. All tests were performed on the model PASHW050S-PS.
3. For seasonal space heating energy efficiency test, the test location is below:
   NO.3 TIANYUAN ROAD, DAGANG TOWN, NANSHA, GUANGZHOU 511470 P.R.China
4. For sound power level test, the test location is below:
   Vkan certification & Testing Co., Ltd.
   No.3, Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou, 510663, P. R. China

Test sample particulars .....:	
Classification of installation and use .....:	Fixed appliance
Type of the appliance .....:	Air to water heat pump
Function of the appliance .....:	Cooling water and space heating
Heating season (heating function applicable) .....:	Average

Possible test case verdicts:

- test case does not apply to the test object ..... :	N/A
- test object does meet the requirement ..... :	P(Pass)
- test object does not meet the requirement ..... :	F(Fail)

Testing ..... :	
Date of receipt of test item ..... :	2016.03.02
Date (s) of performance of tests ..... :	2016.03.02 to 2016.04.14

General product information

- The appliance is air to water heat pump which installed at outdoor.
- The appliance can provide cooling water and space heating.
- The water pump is not an integral part of the appliance.

Model list:

Model		PASHW050S-PS
Rated voltage		380-415V 3N~ 50Hz
Refrigerant/charge		R410A/3.5kg
Compressor	Manufacturer	Emerson Climate Technologies (Suzhou) Co., Ltd
	Model type	ZW54KSP-TFP-522
	Rated capacity	10.1 kW
	Rated input	4.17 kW
Condenser	Manufacturer	Gimleo Heat Exchanger Co., Ltd.
	Model type	GAH07-CME
	Heat exchanger	Tube in shell heat exchanger
	Dimension	Φ19.05, 2*5040 mm
Evaporator	Manufacturer	Guangzhou Panyu YaoHua Home Appliance Co., Ltd
	Bauart Construction	Finned-coil heat exchanger
	Fin type	Hydrophilic aluminum
	Fin spacing	2.2mm
	Tube pitch x row pitch	21.65mm×25mm
	Pip specification	Φ7mm
	Dimension	710×300×1150×Φ7×3
Fan motor	Manufacturer	Zhuhai KaiBang motor manufacture Co. Ltd.
	Type	Axial flow motor
	Specification	TUV080-1206P01-001

Rating labels and marking:

PASHW050S-PS

AIR TO WATER HEAT PUMP

RATED VOLTAGE/PHASE/FREQ:	380-415V/3N~/50Hz
MOISTURE RESISTANCE:	IPX4
ELECTRICAL SHOCK PROOF:	I
*RATED HEATING CAPACITY:	15.1kW
**RATED HEATING CAPACITY:	15.9kW
RATED COOLING CAPACITY:	11.5kW
*RATED HEATING POWER INPUT:	3.3kW
**RATED HEATING POWER INPUT:	5.3kW
RATED COOLING POWER INPUT:	4.0kW
*RATED HEATING CURRENT INPUT:	6.0A
**RATED HEATING CURRENT INPUT:	8.7A
RATED COOLING CURRENT INPUT:	6.9A
MAX. POWER INPUT:	20.0kW
MAX. CURRENT INPUT:	10.5A
WATER PRESSURE DROP:	2.6m³/h
WATER FLOW RATE	50kPa
REFRIGERANT/PROPER INPUT:	R410A/3.5kg
NOISE:	58dB(A)
NET WEIGHT:	213kg
OPERATION PRESSURE(LOW SIDE):	1.4MPa
OPERATION PRESSURE(HIGH SIDE):	4.4MPa

FACTORY NUMBER:ON THE BAR CODE

MAKING DATE:ON THE BAR CODE

*HEATING: AMBIENT TEMP.(DB/WB): 7℃/6℃
WATER TEMP.(IN/OUT): 30℃/35℃

**HEATING: AMBIENT TEMP.(DB/WB): 7℃/6℃
WATER TEMP.(IN/OUT): 47℃/55℃

COOLING: AMBIENT TEMP.(DB/WB): 35℃/24℃
WATER TEMP.(IN/OUT): 12℃/7℃

PHNIX CE

COMMISSION REGULATION (EU) No 813/2013 COMMISSION DELEGATED REGULATION (EU) No 811/2013			
Clause	Requirement - Test	Result - Remark	Verdict

COMMISSION REGULATION (EU) No 813/2013			
Article 1	Subject matter and scope		P
1	This Regulation establishes ecodesign requirements for the placing on the market and/or putting into service of space heaters and combination heaters with a rated heat ouput heater ≤ 400 kW including those integrated in packages of space heater, temperature contorl and solar device or packages of combination heater, temperautre control and solar device as defined in article 2 of Commission Delegated Regulation (EU) No 811/2013.		P
2	This Regulation shall not apply to: (a) heaters specifically designed for using gaseous or liquid fuels predominantly produced from biomass; (b) heaters using solid fuels; (c) heaters within the scope of Directive 2010/75/EU of the European Parliament and of the Council; (d) heaters generating heat only for the purpose of providing hot drinking or sanitary water; (e) heaters for heating and distributing gaseous heat transfer media such as vapour or air; (f) cogeneration space heaters with a maximum electrical capacity of 50 kW or above. (g) heat generators designed for heaters and heater housings to be equiped with such heat generators placed on the market before 1 January 2018 to replace identical heat generators and identical heater housings. The replacement product or its packaging shall clearly indicate the heater for which it is intended.		N/A
Article 3	Ecodesign requirements and timetable		P
1	The ecodesign requirements for heaters are set out in Annex II.		P
2	Each ecodesign requirement shall apply in accordance with the following timetable:		P
	(a) from 26 September 2015: (i) heates shall meet the requirements set out in Annex II, points 1(a), 3 and 5; (ii) combination heaters shall meet the requirements set out in Annex II, point 2(a);		P

COMMISSION REGULATION (EU) No 813/2013 COMMISSION DELEGATED REGULATION (EU) No 811/2013			
Clause	Requirement - Test	Result - Remark	Verdict

	(a) from 26 September 2017: (i) electric space heaters, electric combination heaters, cogeneration space heaters, heat pump space heaters and heat pump combination heaters shall meet the requirements set out in Annex II, point 1(b); (ii) combination heaters shall meet the requirements set out in Annex II, point 2(b);		P
	(a) from 26 September 2018 heaters shall meet the requirements set out in Annex II, point 4(a).		N/A
3	Compliance with ecodesign requirements shall be measured and calculated in accordance with the requirements set out in Annex III.		P
Annex II	Ecodesign requirements		P
1	Requirements for seasonal space heating energy efficiency		P
	(a) From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		P
	- Heat pump space heaters and heat pump combination heaters, with the exception of low-temperature heat pumps: 100%		P
	- Low-temperature heat pumps: 115%		P
	(b) From 26 September 2017 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		P
	- Heat pump space heaters and heat pump combination heaters, with the exception of low-temperature heat pumps: 110%		P
	- Low-temperature heat pumps: 125%		P
2	Requirements for water heating energy efficiency		N/A
	(a) From 26 September 2015 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A

Declared load profile	3XS	XXS	XS	S	M	L	XL	XXL	3XL	4XL
Water heating energy efficiency	22%	23%	26%	26%	30%	30%	30%	32%	32%	32%

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COMMISSION REGULATION (EU) No 813/2013 COMMISSION DELEGATED REGULATION (EU) No 811/2013			
Clause	Requirement - Test	Result - Remark	Verdict

	(a) From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:		N/A

Declared load profile	3XS	XXS	XS	S	M	L	XL	XXL	3XL	4XL
Water heating energy efficiency	32%	32%	32%	32%	36%	37%	38%	60%	64%	64%

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

Rated heat output ≤ 6 kW		6 kW < Rated heat output ≤ 12 kW		12 kW < Rated heat output ≤ 30 kW		30 kW < Rated heat output ≤ 70 kW	
indoor	outdoor	indoor	outdoor	indoor	outdoor	indoor	outdoor
60 dB	65 dB	65 dB	70 dB	70 dB	78 dB	80 dB	88 dB

4	Requirements for emissions nitrogen oxides		N/A
5	Requirements for product information		N/A
	From 26 September 2015 the following product information on heaters shall be provided:		N/A
	(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:		N/A
	- For heat pump heaters and heat pump combination heaters, the technical parameters set out in Table 2, measured and calculated in accordance with Annex III;		N/A
	- Any specific precautions that shall be taken when the heater is assembled, installed or maintained;		N/A
	- Information relevant for disassembly, recycling and/or disposal at end-of-life;		N/A
Annex III	Measurements and calculations		P

COMMISSION REGULATION (EU) No 813/2013 COMMISSION DELEGATED REGULATION (EU) No 811/2013			
Clause	Requirement - Test	Result - Remark	Verdict

COMMISSION DELEGATED REGULATION (EU) No 811/2013			
Annex II	Energy efficiency classes		P
1	Seasonal space heating energy efficiency classes		P
	The seasonal space heating energy efficiency class of a heater, with the exception of low-temperature heat pumps and heat pump space heaters for low-temperature application, shall be determined on the basis of its sensonal space heating energy efficiency as set out in Table 1.		P
	The seasonal space heating energy efficiency class of a low-temperature heat pumps and a heat pump space heaters for low-temperature application shall be determined on the basis of its sensonal space heating energy efficiency as set out in Table 2.		P
	The seasonal space heating energy efficiency of a heater shall be calculated in accordance with point 3 and 4 of Annex VII, for heat pump space heaters, heat pump combination heaters and low-temperature heat pumps under average climate conditions.		P
2	Water heating energy efficiency classes		N/A
	The water heating energy efficiency class of a combination heater shall be determined on the basis of its water heating energy efficiency as set out in Table 3.		N/A
	The water heating energy efficiency of a combination heater shall be calculated in accordance with point 5 of Annex VII.		N/A

Information requirements for heat pump space heaters and heat pump combination heaters

Models				PASHW050S-PS			
Air to water heat pump				☒ Yes		☐ No	
Water to water heat pump				☐ Yes		☒ No	
Brine to water heat pump				☐ Yes		☒ No	
Low-temperature heat pump				☐ Yes		☒ No	
Equipped with a supplementary heater				☒ Yes		☐ No	
Heat pump combination heater				☐ Yes		☒ No	
Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low-temperature heat pumps, parameters shall be declared for low-temperature application.							
Parameters shall be declared for average climate conditions for low temperature application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	Prated	13	kW	Seasonal space heating energy efficiency	η_s	151	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
T_j = -7 °C	Pdh	11.3	kW	T_j = -7 °C	COPd or PERd	3.12	-
T_j = +2 °C	Pdh	6.9	kW	T_j = +2 °C	COPd or PERd	3.59	-
T_j = +7 °C	Pdh	4.4	kW	T_j = +7 °C	COPd or PERd	5.03	-
T_j = +12 °C	Pdh	2.0	kW	T_j = +12 °C	COPd or PERd	5.88	-
T_j = operation limit temperautre	Pdh	12.8	kW	T_j = operation limit temperautre	COPd or PERd	2.84	-
T_j = bivalent temperautre	Pdh	11.3	kW	T_j = bivalent temperautre	COPd or PERd	3.12	-
For air to water heat pumps: T_j = -15 °C (if TOL < -20 °C)	Pdh	-	kW	For air to water heat pumps: T_j = -15 °C (if TOL < -20 °C)	COPd or PERd	-	-
Bivalent temperature	T_{biv}	-7	°C	For air to water heat pumps: Operation limit temperature	TOL	-10	°C

Cycling interval capacity for heating	Pcych	-	kW	Cycling interval efficiency	COPcyc or PERcyc	-	-
Degradation co-efficient	Cdh	0.98	-	Heating water operating limit temperature	WTOL	-	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.051	kW	Rated heat output	Psup	-	kW
Thermostat-off mode	P_{TO}	0.000	kW	Type of energy input	-		
Standby mode	P_{SB}	0.051	kW				
Crankcase heater mode	P_{CK}	0.000	kW				
Other items							
Capacity control	☒ fixed ☐ variable			For air to water heat pumps: Rated air flow rate, outdoors	-	-	m^3/h
Sound power level, indoors/outdoors	L_{WA}	58.3	dB	For water/brine to water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m^3/h
Emissions of nitrogen oxides	NO_x	-	mg/kWh				
Contact details	GUANGDONG PHNIX ECO-ENERGY SOLUTION LTD. NO.3 TIANYUAN ROAD, DAGANG TOWN, NANSHA, GUANGZHOU 511470 P.R.China						

Parameters shall be declared for average climate conditions for medium temperature application.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	Prated	16	kW	Seasonal space heating energy efficiency	η_s	122	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
T_j = -7 °C	Pdh	13.8	kW	T_j = -7 °C	COPd or PERd	2.29	-

T_j = +2 °C	Pdh	8.4	kW	T_j = +2 °C	COPd or PERd	2.87	-
T_j = +7 °C	Pdh	5.4	kW	T_j = +7 °C	COPd or PERd	4.44	-
T_j = +12 °C	Pdh	2.4	kW	T_j = +12 °C	COPd or PERd	5.56	-
T_j = operation limit temperautre	Pdh	15.7	kW	T_j = operation limit temperautre	COPd or PERd	2.03	-
T_j = bivalent temperautre	Pdh	12.0	kW	T_j = bivalent temperautre	COPd or PERd	2.59	-
For air to water heat pumps: T_j = -15 °C (if TOL < -20 °C)	Pdh	-	kW	For air to water heat pumps: T_j = -15 °C (if TOL < -20 °C)	COPd or PERd	-	-
Bivalent temperature	T_{biv}	-4	°C	For air to water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcych	-	kW	Cycling interval efficiency	COPcyc or PERcyc	-	-
Degradation co-efficient	Cdh	0.99	-	Heating water operating limit temperature	WTOL	-	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.051	kW	Rated heat output	Psup	-	kW
Thermostat-off mode	P_{TO}	0.000	kW	Type of energy input	-		
Standby mode	P_{SB}	0.051	kW				
Crankcase heater mode	P_{CK}	0.000	kW				
Other items							
Capacity control	☒ fixed ☐ variable			For air to water heat pumps: Rated air flow rate, outdoors	-	-	m^3/h
Sound power level, indoors/outdoors	L_{WA}	60.5	dB	For water/brine to water heat	-	-	m^3/h

Emissions of nitrogen oxides	NO_x	-	mg/kWh	pumps: Rated brine or water flow rate, outdoor heat exchanger			
Contact details	GUANGDONG PHNIX ECO-ENERGY SOLUTION LTD. NO.3 TIANYUAN ROAD, DAGANG TOWN, NANSHA, GUANGZHOU 511470 P.R.China						

Measurements and calculations for low temperature application

Model	PASHW050S-PS					
Test method	Air enthalpy method					
Outlet temperautre type	☐ Fixed outlet ☒ Variable outlet					
Test result	Test condition					
	A	B	C	D	E	F
Inlet dry bulb temperature for outdoor air °C	-7.00	2.09	7.00	12.00	-10.00	-7.00
Inlet wet bulb temperature for outdoor air °C	-8.03	1.06	6.00	11.00	-10.92	-8.03
Inlet temperatures for indoor °C	30.44	25.71	22.09	18.68	31.97	30.44
Outlet temperatures for indoor °C	34.00	29.15	27.00	24.02	35.29	34.00
Measured capacity W	11114	10988	15399	16736	10372	11114
Measured power input W	3434	2920	2903	2679	3530	3434
Static pressure difference kPa	64.3	64.3	65.2	66.2	64.3	64.3
Water volume flow rate m^3/h	2.70	2.70	2.70	2.70	2.70	2.70
Meausred power input of compressor off state W	51	51	51	51	51	51
Corrections of the power input of liquid pump if applicable						
P_{hydrau} W	48	48	49	50	48	48
Efficiency of the pump	0.25	0.25	0.25	0.25	0.25	0.25
Fraction power for calculation W	195	195	197	199	195	195
Effective capacity W	11309	11183	15596	16935	10567	11309
Effecitve power input W	3629	3115	3100	2878	3725	3629
Calculated COP	3.12	3.59	5.03	5.88	2.84	3.12
Electric power consumption during thermostat-off mode, standby mode, crankcase heater mode and off mode						
Off mode kW	0.051					
Thermostat-off mode kW	0.000					
Standby mode kW	0.051					
Crankcase heater mode kW	0.000					
Calculations for seasonal space heating energy efficiency						

Test condition	Outdoor heat exchanger	Indoor heat exchanger	Part Load Ratio %	Part Load kW	Tested Capacity kW	Tested COP	Cc	CR	COP at A, B, C, D, E, F condition
	Outdoor air °C	Outlet water temperature °C							
A	-7	34	88%	11.3	11.309	3.12	0.99	1.00	3.12

B	2	30	54%	6.9	11.183	3.59	0.98	0.62	3.55
C	7	27	35%	4.4	15.596	5.03	0.98	0.28	4.83
D	12	24	15%	2.0	16.935	5.88	0.98	0.12	5.19
E	-10	35.3	100%	12.8	10.567	2.84	0.99	1.00	2.84
F	-7	34.0	88%	11.3	11.309	3.12	0.99	1.00	3.12
SCOPon	3.85				SCOPnet	3.88			
SCOP	3.85								
η_s %	151								
Tested sound power level									
L_{WA} dB	58.3								

Measurements and calculations for medium temperature application

Model	PASHW050S-PS					
Test method	Air enthalpy method					
Outlet temperautre type	☐ Fixed outlet ☒ Variable outlet					
Test result	Test condition					
	A	B	C	D	E	F
Inlet dry bulb temperature for outdoor air °C	-7.00	2.18	7.00	12.00	-10.00	-4.00
Inlet wet bulb temperature for outdoor air °C	-8.31	1.22	6.00	11.00	-11.08	-5.53
Inlet temperatures for indoor °C	46.12	34.80	28.00	21.32	49.72	42.53
Outlet temperatures for indoor °C	51.93	40.43	36.00	29.99	55.31	48.64
Measured capacity W	11367	11114	15732	17108	10924	11963
Measured power input W	4916	3823	3483	3009	5332	4568
Static pressure difference kPa	26.8	26.8	27.2	28.0	26.8	26.8
Water volume flow rate m^3/h	1.70	1.70	1.70	1.70	1.70	1.70
Meausred power input of compressor off state W	51	51	51	51	51	51
Corrections of the power input of liquid pump if applicable						
P_{hydrau} W	13	13	13	13	13	13
Efficiency of the pump	0.16	0.16	0.16	0.16	0.16	0.16
Fraction power for calculation W	78	78	79	81	78	78
Effective capacity W	11445	11192	15811	17189	11002	12041
Effecitve power input W	4994	3901	3562	3090	5410	4646
Calculated COP	2.29	2.87	4.44	5.56	2.03	2.59
Electric power consumption during thermostat-off mode, standby mode, crankcase heater mode and off mode						
Off mode kW	0.051					

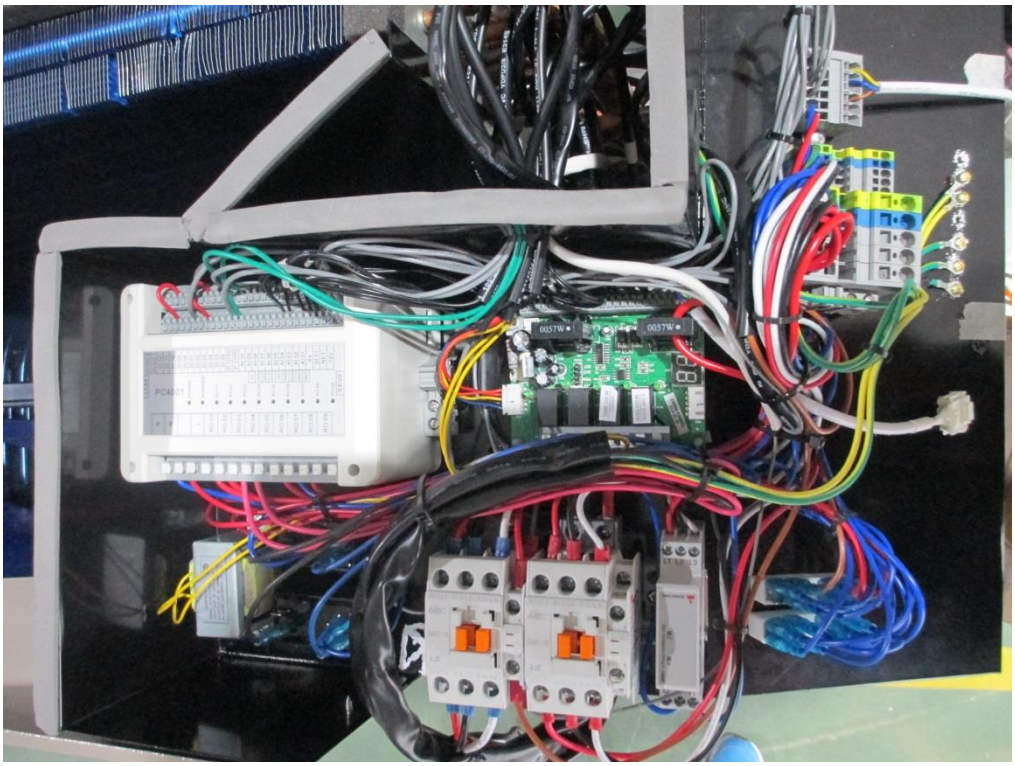
Thermostat-off mode kW			0.000						
Standby mode kW			0.051						
Crankcase heater mode kW			0.000						
Calculations for seasonal space heating energy efficiency									
Test condition	Outdoor heat exchanger	Indoor heat exchanger	Part Load Ratio %	Part Load kW	Tested Capacity kW	Tested COP	Cc	CR	COP at A, B, C, D, E, F condition
	Outdoor air °C	Outlet water temperature °C							
A	-7	52	88%	13.8	11.445	2.29	0.99	1.00	2.29
B	2	42	54%	8.4	11.192	2.87	0.99	0.75	2.86
C	7	36	35%	5.4	15.811	4.44	0.99	0.34	4.32
D	12	30	15%	2.4	17.189	5.56	0.98	0.14	5.05
E	-10	55.3	100%	15.7	11.002	2.03	0.99	1.00	2.03
F	-4	48.7	77%	12.0	12.041	2.59	0.99	1.00	2.59
SCOPon	3.12				SCOPnet	3.19			
SCOP	3.12								
η_s %	122								
Tested sound power level									
L_{WA} dB	60.5								

Photo

Picture 1

Picture 2

Picture 3



Picture 4

--End of report--