

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

TEST REPORT COMMISSION REGULATION (EU) No 811/2013 of 18 February 2013 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device COMMISSION REGULATION (EU) No 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters	
Report Reference No	GZEE251100609631
Tested by (name + signature)..... :	Project engineer / Vince Lin <i>Vince Lin</i>
Approved by (name + signature) :	Reviewer / David Lei <i>David Lei</i>
Date of issue.....	2025-12-11
Total number of pages	24 pages
Testing Laboratory	SGS-CSTC Standards Technical Services Co., Ltd. Shunde Branch
Address	Building 1, European Industrial Park, No.1, Shunhe South Road, Wusha, Daliang, Shunde District, Foshan, Guangdong, China
Applicant's name	Chiltrix Inc
Address	732E Eden Way North 255 Chesapeake, 23320, Virginia, United States of America
Test specification:	
Standard.....	COMMISSION REGULATION (EU) No 811/2013; (EU) No 813/2013 EN 14825:2022, EN 14511-2: 2022, EN 14511-3: 2022, EN 50564: 2011
Test procedure.....	STR: EU Directive 2009/125/EC
Non-standard test method.....	None
Test Report Form No.	811/2013_01/ 813/2013_1
Test Report Form(s) Originator.....	SGS-CSTC
Master TRF.....	2015-04-27
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Test item description	Air To Water Heat Pump
Trade Mark	Chiltrix
Manufacturer.....	Same as applicant
Model/Type reference	CX65, CX65X, CX75, CX75X
Ratings	230 V, 60 Hz; details refer to marking plates

Summary of testing:

Tests performed (name of test and test clause):

COMMISSION REGULATION (EU) No 811/2013
 and COMMISSION REGULATION (EU) No
 813/2013.
 EN 14825:2022
 EN 50564: 2011
 EN 14511-2: 2022
 EN 14511-3: 2022
 The test voltage: 230 V, 60 Hz

Testing location:

5th Floor, Building 3, Zhiying Sci-Tech Innovation
 Industrial Park, Dalan, Shishan Town, Nanhai
 District, Foshan City, Guangdong, China.

Copy of marking plate (The marking plate may be only the draft.)

 Inverter Air To Water Heat Pump	
Model:	CX65
Motor Ratings	1.6A
Motor Compressor Ratings	28.3A
Minimum Circuit Ampacity	37A
Max.Fuse/Maximum Overcurrent Protective Device	60A
Rated Heating Capacity (A47°F/W95°F)	66.36Kbtu
Rated Heating Input	4.02 KW
Rated Cooling Capacity(A95°F/W44°F)	41.29Kbtu
Rated Cooling Input	4.02KW
MAX Heating Capacity (A47°F/W95°F)	77.04 Kbtu
Rated Heating Capacity (A7°CW35°C)	19.01 KW
Rated Heating Input (A7°CW35°C)	4.03 KW
COP (A7°CW35°C)	4.71
Rated Heating Capacity (A7°CW55°C)	17.15 KW
Rated Heating Input (A7°CW55°C)	5.50 KW
COP (A7°CW55°C)	3.12
Maximum Input Current	30A
Rated Voltage / Frequency	230V / 60 Hz
Maximum Allowable Pressure	609 PSI
Normal Operating Pressure High Side	600 PSI
Normal Operating Pressure Low Side	25 PSI
Refrigerant(R32)	R32 (2.7Kg)
Waterproof Grade	IPX4
Noise	51dB(A)
Standard Max Water Outlet Temperature	140°F
Water Connection	1.25" NPT
Water Flow	13.7GPM
Net Dimensions (inch)	43.9*18.5*56.8
Net Weight	355Lbs.
Date Code	2025/10/30
Conforms to UL STD. 60355-1 & 60335-2-40 Certified to CSA STD. 22.2 No.60335-1 & 60335-2-40	
 	
  Use Refrigerant R32	
 (GROUNDED SYSTEM)	

 Inverter Air To Water Heat Pump	
Model:	CX75
Motor Ratings	1.6A
Motor Compressor Ratings	28.3A
Minimum Circuit Ampacity	37A
Max.Fuse/Maximum Overcurrent Protective Device	60A
Rated Heating Capacity (A47°F/W95°F)	66.36Kbtu
Rated Heating Input	4.02 KW
Rated Cooling Capacity(A95°F/W44°F)	41.29Kbtu
Rated Cooling Input	4.02KW
MAX Heating Capacity (A47°F/W95°F)	77.04 Kbtu
Rated Heating Capacity (A7°CW35°C)	19.01 KW
Rated Heating Input (A7°CW35°C)	4.03 KW
COP (A7°CW35°C)	4.71
Rated Heating Capacity (A7°CW55°C)	17.15 KW
Rated Heating Input (A7°CW55°C)	5.50 KW
COP (A7°CW55°C)	3.12
Maximum Input Current	30A
Rated Voltage / Frequency	230V / 60 Hz
Maximum Allowable Pressure	609 PSI
Normal Operating Pressure High Side	600 PSI
Normal Operating Pressure Low Side	25 PSI
Refrigerant(R32)	R32 (2.7Kg)
Waterproof Grade	IPX4
Noise	51dB(A)
Standard Max Water Outlet Temperature	140°F
Water Connection	1.25" NPT
Water Flow	13.7GPM
Net Dimensions (inch)	43.9*18.5*56.8
Net Weight	355Lbs.
Date Code	YYYY/MM/DD
Conforms to UL STD. 60355-1 & 60335-2-40 Certified to CSA STD. 22.2 No.60335-1 & 60335-2-40	
 	
  Use Refrigerant R32	
 (GROUNDED SYSTEM)	

Inverter Air To Water Heat Pump		Inverter Air To Water Heat Pump	
Model:	CX65X	Model:	CX75X
Motor Ratings	1.6A	Motor Ratings	1.6A
Motor Compressor Ratings	28.3A	Motor Compressor Ratings	28.3A
Minimum Circuit Ampacity	37A	Minimum Circuit Ampacity	37A
Max.Fuse/Maximum Overcurrent Protective Device	60A	Max.Fuse/Maximum Overcurrent Protective Device	60A
Rated Heating Capacity (A47°F/W95°F)	66.36Kbtu	Rated Heating Capacity (A47°F/W95°F)	66.36Kbtu
Rated Heating Input	4.02 KW	Rated Heating Input	4.02 KW
Rated Cooling Capacity(A95°F/W44°F)	41.29Kbtu	Rated Cooling Capacity(A95°F/W44°F)	41.29Kbtu
Rated Cooling Input	4.02KW	Rated Cooling Input	4.02KW
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Rated Heating Input (A7°CW55°C)	5.50 KW	Rated Heating Input (A7°CW55°C)	5.50 KW
COP (A7°CW55°C)	3.12	COP (A7°CW55°C)	3.12
Maximum Input Current	30A	Maximum Input Current	30A
Rated Voltage / Frequency	230V / 60 Hz	Rated Voltage / Frequency	230V / 60 Hz
Maximum Allowable Pressure	609 PSI	Maximum Allowable Pressure	609 PSI
Normal Operating Pressure High Side	600 PSI	Normal Operating Pressure High Side	600 PSI
Normal Operating Pressure Low Side	25 PSI	Normal Operating Pressure Low Side	25 PSI
Refrigerant(R32)	R32 (2.7Kg)	Refrigerant(R32)	R32 (2.7Kg)
Waterproof Grade	IPX4	Waterproof Grade	IPX4
Noise	51dB(A)	Noise	51dB(A)
Standard Max Water Outlet Temperature	140°F	Standard Max Water Outlet Temperature	140°F
Water Connection	1.25" NPT	Water Connection	1.25" NPT
Water Flow	13.7GPM	Water Flow	13.7GPM
Net Dimensions (inch)	43.9*18.5*56.8	Net Dimensions (inch)	43.9*18.5*56.8
Net Weight	355Lbs.	Net Weight	355Lbs.
Date Code	YYYY/MM/DD	Date Code	YYYY/MM/DD
Conforms to UL STD. 60355-1 & 60335-2-40 Certified to CSA STD. 22.2 No.60335-1 & 60335-2-40		Conforms to UL STD. 60355-1 & 60335-2-40 Certified to CSA STD. 22.2 No.60335-1 & 60335-2-40	
Use Refrigerant R32		Use Refrigerant R32	
(GROUNDED SYSTEM)		(GROUNDED SYSTEM)	

Test item particulars :	
Classification of installation and use	Fixed appliance
Supply Connection	Connected to fixed wiring
..... :	
Possible test case verdicts:	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing	
Date of receipt of test item	2025-08-29
Date (s) of performance of tests	2025-08-29 to 2025-11-04
General remarks:	
<p>The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p> <p>This document is issued by the company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.</p> <p>Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.</p> <p>Unless otherwise stated: (a) the results shown in this document refer only to the sample(s) tested and (b) such sample(s) are retained for 3 months. This document cannot be reproduced except in full, without prior approval of the company.</p> <p>Test data is based on the original report GZEE250800455031 which was issued on 2025-11-04, the difference them is just only the applicant's name, model name and trade mark.</p>	
General product information:	
Heat pump for space heating used.	
The appliance was assembled with a variable speed compressor MYK42FABMC(MITSUBISHI ELECTRIC).	
Model CX65, CX65X, CX75 and CX75X are identical except the different model name.	

COMMISSION REGULATION (EU) No 813/2013			
Cl.	Requirement-Test	Result-Remark	Verdict
	Ecodesign requirements		—
ANNEX I	Definitions applicable for Annexes II to V		P
ANNEX II	Ecodesign requirements		P
1. (a)	From 26 September 2015 the seasonal space heating energy efficiency and useful efficiencies of heaters shall not fall below the following values:		P
	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:		N/A
	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:		N/A
	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:		N/A
	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:		N/A
	The seasonal space heating energy efficiency shall not fall below 30 %.		N/A
	Cogeneration space heaters:		N/A
	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:		P
	The seasonal space heating energy efficiency shall not fall below 100 %.		P
	Low-temperature heat pumps:		N/A
	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:		P
	Electric boiler space heaters and electric boiler combination heaters:		N/A
	The seasonal space heating energy efficiency shall not fall below 36 %.		N/A
	Cogeneration space heaters:		N/A
	The seasonal space heating energy efficiency shall not fall below 100 %.		N/A

COMMISSION REGULATION (EU) No 813/2013																																				
Cl.	Requirement-Test						Result-Remark				Verdict																									
	Heat pump space heaters and heat pump combination heaters, with the exception of low-temperature heat pumps:										P																									
	The seasonal space heating energy efficiency shall not fall below 110 %.										P																									
	Low-temperature heat pumps:										N/A																									
	The seasonal space heating energy efficiency shall not fall below 125 %.										N/A																									
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																									
	<table border="1"> <thead> <tr> <th>Declared load profile</th> <th>3XS</th> <th>XXS</th> <th>XS</th> <th>S</th> <th>M</th> <th>L</th> <th>XL</th> <th>XXL</th> <th>3XL</th> <th>4XL</th> </tr> </thead> <tbody> <tr> <td>Water heating energy efficiency</td> <td>22 %</td> <td>23 %</td> <td>26 %</td> <td>26 %</td> <td>30 %</td> <td>30 %</td> <td>30 %</td> <td>32 %</td> <td>32 %</td> <td>32 %</td> </tr> </tbody> </table>											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 %	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 %																										
(b)	From 26 September 2017 the water heating energy efficiency of combination heaters shall not fall below the following values:										N/A																									
	<table border="1"> <thead> <tr> <th>Declared load profile</th> <th>3XS</th> <th>XXS</th> <th>XS</th> <th>S</th> <th>M</th> <th>L</th> <th>XL</th> <th>XXL</th> <th>3XL</th> <th>4XL</th> </tr> </thead> <tbody> <tr> <td>Water heating energy efficiency</td> <td>32 %</td> <td>32 %</td> <td>32 %</td> <td>32 %</td> <td>36 %</td> <td>37 %</td> <td>38 %</td> <td>60 %</td> <td>64 %</td> <td>64 %</td> </tr> </tbody> </table>											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 %	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										No Testing																									
	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																									
	<table border="1"> <thead> <tr> <th colspan="2">Rated heat output ≤ 6 kW</th> <th colspan="2">Rated heat output > 6 kW and ≤ 12 kW</th> <th colspan="2">Rated heat output > 12 kW and ≤ 30 kW</th> <th colspan="2">Rated heat output > 30 kW and ≤ 70 kW</th> </tr> <tr> <th>Sound power level (L_{WA}), indoors</th> <th>Sound power level (L_{WA}), outdoors</th> <th>Sound power level (L_{WA}), indoors</th> <th>Sound power level (L_{WA}), outdoors</th> <th>Sound power level (L_{WA}), indoors</th> <th>Sound power level (L_{WA}), outdoors</th> <th>Sound power level (L_{WA}), indoors</th> <th>Sound power level (L_{WA}), outdoors</th> </tr> </thead> <tbody> <tr> <td>60 dB</td> <td>65 dB</td> <td>65 dB</td> <td>70 dB</td> <td>70 dB</td> <td>78 dB</td> <td>80 dB</td> <td>88 dB</td> </tr> </tbody> </table>											Rated heat output ≤ 6 kW		Rated heat output > 6 kW and ≤ 12 kW		Rated heat output > 12 kW and ≤ 30 kW		Rated heat output > 30 kW and ≤ 70 kW		Sound power level (L _{WA}), indoors	Sound power level (L _{WA}), outdoors	Sound power level (L _{WA}), indoors	Sound power level (L _{WA}), outdoors	Sound power level (L _{WA}), indoors	Sound power level (L _{WA}), outdoors	Sound power level (L _{WA}), indoors	Sound power level (L _{WA}), outdoors	60 dB	65 dB	65 dB	70 dB	70 dB	78 dB	80 dB	88 dB	N/A
Rated heat output ≤ 6 kW		Rated heat output > 6 kW and ≤ 12 kW		Rated heat output > 12 kW and ≤ 30 kW		Rated heat output > 30 kW and ≤ 70 kW																														
Sound power level (L _{WA}), indoors	Sound power level (L _{WA}), outdoors	Sound power level (L _{WA}), indoors	Sound power level (L _{WA}), outdoors	Sound power level (L _{WA}), indoors	Sound power level (L _{WA}), outdoors	Sound power level (L _{WA}), indoors	Sound power level (L _{WA}), outdoors																													
60 dB	65 dB	65 dB	70 dB	70 dB	78 dB	80 dB	88 dB																													
4.	REQUIREMENTS FOR EMISSIONS OF NITROGEN OXIDES										N/A																									
5	REQUIREMENTS FOR PRODUCT INFORMATION										P																									
	From 26 September 2015 the following product information on heaters shall be provided:										P																									
(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:										P																									
	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																									

COMMISSION REGULATION (EU) No 813/2013			
Cl.	Requirement-Test	Result-Remark	Verdict
	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;		P
	any specific precautions that shall be taken when the heater is assembled, installed or maintained;		P
	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;		N/A
(b)	the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		P
	the elements specified in point (a);		P
	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;		P
(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
ANNEX III	Measurements and calculations		—

COMMISSION REGULATION (EU) No 813/2013			
Cl.	Requirement-Test	Result-Remark	Verdict
1	For the purposes of compliance and verification of compliance with the requirements of this Regulation, measurements and calculations shall be made using harmonised standards the reference numbers of which have been published in the Official Journal of European Union , or other reliable, accurate and reproducible method, which takes into account the generally recognised state of the art methods, and whose results are deemed to be of low uncertainty. They shall fulfil all of the following technical parameters.	EN 14825:2022; EN 50564: 2011; EN 14511-2: 2022; EN 14511-3: 2022 used	P
2	General conditions for measurements and calculations		P
	(a) For the purposes of the measurements set out in points 2 to 5, the indoor ambient temperature shall be set at $20\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$.		P
	(b) For the purposes of the calculations set out in points 3 to 5, consumption of electricity shall be multiplied by a conversion coefficient CC of 2,5.		P
	(c) Emissions of nitrogen oxides shall be measured as the sum of nitrogen monoxide and nitrogen dioxide, and expressed in nitrogen dioxide.		N/A
	(d) For heaters equipped with supplementary heaters, the measurement and calculation of rated heat output, seasonal space heating energy efficiency, water heating energy efficiency, sound power level and emissions of nitrogen oxides shall take account of the supplementary heater.		N/A
	(e) Declared values for rated heat output, seasonal space heating energy efficiency, water heating energy efficiency, sound power level and emissions of nitrogen oxides shall be rounded to the nearest integer.		P
	(f) Any heat generator designed for a heater, and any heater housing to be equipped with such a heat generator, shall be tested with an appropriate heater housing and heat generator, respectively.		N/A
3	Seasonal space heating energy efficiency of boiler space heaters, boiler combination heaters and cogeneration space heaters		N/A
	The seasonal space heating energy efficiency η_s shall be calculated as the seasonal space heating energy efficiency in active mode η_{son} , corrected by contributions accounting for temperature controls, auxiliary electricity consumption, standby heat loss, ignition burner power consumption (if applicable) and, for cogeneration space heaters, corrected by adding the electrical efficiency multiplied by a conversion coefficient CC of 2,5.		N/A
4	Seasonal space heating energy efficiency of heat pump space heaters and heat pump combination heaters		P

COMMISSION REGULATION (EU) No 813/2013			
Cl.	Requirement-Test	Result-Remark	Verdict
	(a) For establishing the rated coefficient of performance COP rated or rated primary energy ratio PER rated, the sound power level or emissions of nitrogen oxides, the operating conditions shall be the standard rating conditions set out in Table 3 and the same declared capacity for heating shall be used.		P
	(b) The active mode coefficient of performance SCOP on or active mode primary energy ratio SPER on shall be calculated on the basis of the part load for heating $P_h(T_j)$, the supplementary capacity for heating $sup(T_j)$ (if applicable) and the bin-specific coefficient of performance $COP_{bin}(T_j)$ or bin-specific primary energy ratio $PER_{bin}(T_j)$, weighted by the bin-hours for which the bin conditions apply, using the following conditions:		P
	— the reference design conditions set out in Table 4;		P
	— the European reference heating season under average climate conditions set out in Table 5;		P
	— if applicable, the effects of any degradation of energy efficiency caused by cycling depending on the type of control of the heating capacity.		P
	(c) The reference annual heat demand Q_H shall be the design load for heating $P_{designh}$ multiplied by the annual equivalent active mode hours H_{HE} of 2 066.		P
	(d) The annual energy consumption Q_{HE} shall be calculated as the sum of:		P
	— the ratio of the reference annual heating demand Q_H and the active mode coefficient of performance SCOP on or active mode primary energy ratio SPER on and		P
	— the energy consumption for off, thermostat-off, standby, and crankcase heater mode during the heating season.		P
	(e) The seasonal coefficient of performance SCOP or seasonal primary energy ratio SPER shall be calculated as the ratio of the reference annual heat demand Q_H and the annual energy consumption Q_{HE} .		P
	(f) The seasonal space heating energy efficiency η_s shall be calculated as the seasonal coefficient of performance SCOP divided by the conversion coefficient CC or the seasonal primary energy ratio SPER, corrected by contributions accounting for temperature controls and, for water-/brine-to-water heat pump space heaters and heat pump combination heaters, the electricity consumption of one or more ground water pumps.		P
5	Water heating energy efficiency of combination heaters		N/A
	The water heating energy efficiency η_{wh} of a combination heater shall be calculated as the ratio between the reference energy Q_{ref} of the declared load profile and the energy required for its generation under the following conditions:		N/A
	(a) measurements shall be carried out using the load profiles set out in Table 7;		N/A

COMMISSION REGULATION (EU) No 813/2013																																															
Cl.	Requirement-Test		Result-Remark			Verdict																																									
	(b) measurements shall be carried out using a 24-hour measurement cycle as follows: — 00:00 to 06:59: no water draw-off; — from 07:00: water draw-offs according to the declared load profile; — from end of last water draw-off until 24:00: no water draw-off;					N/A																																									
	(c) the declared load profile shall be the maximum load profile or the load profile one below the maximum load profile;					N/A																																									
	(d) for heat pump combination heaters, the following additional conditions apply: — heat pump combination heaters shall be tested under the conditions set out in Table 3; — heat pump combination heaters which use ventilation exhaust air as the heat source shall be tested under the conditions set out in Table 6.					P																																									
Table 3	<p style="text-align: center;"><i>Table 3</i></p> <p style="text-align: center;">Standard rating conditions for heat pump space heaters and heat pump combination heaters</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="3">Heat source</th> <th>Outdoor heat exchanger</th> <th colspan="4">Indoor heat exchanger</th> </tr> <tr> <th rowspan="2">Inlet dry bulb (wet bulb) temperature</th> <th colspan="2">Heat pump space heaters and heat pump combination heaters, except low-temperature heat pumps</th> <th colspan="2">Low-temperature heat pumps</th> </tr> <tr> <th>Inlet temperature</th> <th>Outlet temperature</th> <th>Inlet temperature</th> <th>Outlet temperature</th> </tr> </thead> <tbody> <tr> <td>Outdoor air</td> <td>+ 7 °C (+ 6 °C)</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">+ 47 °C</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">+ 55 °C</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">+ 30 °C</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">+ 35 °C</td> </tr> <tr> <td>Exhaust air</td> <td>+ 20 °C (+ 12 °C)</td> </tr> <tr> <td></td> <td>Inlet/outlet temperature</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Water</td> <td>+ 10 °C/+ 7 °C</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Brine</td> <td>0 °C/- 3 °C</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Heat source	Outdoor heat exchanger	Indoor heat exchanger				Inlet dry bulb (wet bulb) temperature	Heat pump space heaters and heat pump combination heaters, except low-temperature heat pumps		Low-temperature heat pumps		Inlet temperature	Outlet temperature	Inlet temperature	Outlet temperature	Outdoor air	+ 7 °C (+ 6 °C)	+ 47 °C	+ 55 °C	+ 30 °C	+ 35 °C	Exhaust air	+ 20 °C (+ 12 °C)		Inlet/outlet temperature					Water	+ 10 °C/+ 7 °C					Brine	0 °C/- 3 °C					P
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	3XS	XXS	XS	S	M	L	XL	XXL																																																																																														
A***	$\eta_{wh} \geq 62$	$\eta_{wh} \geq 62$	$\eta_{wh} \geq 69$	$\eta_{wh} \geq 90$	$\eta_{wh} \geq 163$	$\eta_{wh} \geq 188$	$\eta_{wh} \geq 200$	$\eta_{wh} \geq 213$																																																																																														
A**	$53 \leq \eta_{wh} < 62$	$53 \leq \eta_{wh} < 62$	$61 \leq \eta_{wh} < 69$	$72 \leq \eta_{wh} < 90$	$130 \leq \eta_{wh} < 163$	$150 \leq \eta_{wh} < 188$	$160 \leq \eta_{wh} < 200$	$170 \leq \eta_{wh} < 213$																																																																																														
A*	$44 \leq \eta_{wh} < 53$	$44 \leq \eta_{wh} < 53$	$53 \leq \eta_{wh} < 61$	$55 \leq \eta_{wh} < 72$	$100 \leq \eta_{wh} < 130$	$115 \leq \eta_{wh} < 150$	$123 \leq \eta_{wh} < 160$	$131 \leq \eta_{wh} < 170$																																																																																														
A	$35 \leq \eta_{wh} < 44$	$35 \leq \eta_{wh} < 44$	$38 \leq \eta_{wh} < 53$	$38 \leq \eta_{wh} < 55$	$65 \leq \eta_{wh} < 100$	$75 \leq \eta_{wh} < 115$	$80 \leq \eta_{wh} < 123$	$85 \leq \eta_{wh} < 131$																																																																																														
B	$32 \leq \eta_{wh} < 35$	$32 \leq \eta_{wh} < 35$	$35 \leq \eta_{wh} < 38$	$35 \leq \eta_{wh} < 38$	$39 \leq \eta_{wh} < 65$	$50 \leq \eta_{wh} < 75$	$55 \leq \eta_{wh} < 80$	$60 \leq \eta_{wh} < 85$																																																																																														
C	$29 \leq \eta_{wh} < 32$	$29 \leq \eta_{wh} < 32$	$32 \leq \eta_{wh} < 35$	$32 \leq \eta_{wh} < 35$	$36 \leq \eta_{wh} < 39$	$37 \leq \eta_{wh} < 50$	$38 \leq \eta_{wh} < 55$	$40 \leq \eta_{wh} < 60$																																																																																														
D	$26 \leq \eta_{wh} < 29$	$26 \leq \eta_{wh} < 29$	$29 \leq \eta_{wh} < 32$	$29 \leq \eta_{wh} < 32$	$33 \leq \eta_{wh} < 36$	$34 \leq \eta_{wh} < 37$	$35 \leq \eta_{wh} < 38$	$36 \leq \eta_{wh} < 40$																																																																																														
E	$22 \leq \eta_{wh} < 26$	$23 \leq \eta_{wh} < 26$	$26 \leq \eta_{wh} < 29$	$26 \leq \eta_{wh} < 29$	$30 \leq \eta_{wh} < 33$	$30 \leq \eta_{wh} < 34$	$30 \leq \eta_{wh} < 35$	$32 \leq \eta_{wh} < 36$																																																																																														
F	$19 \leq \eta_{wh} < 22$	$20 \leq \eta_{wh} < 23$	$23 \leq \eta_{wh} < 26$	$23 \leq \eta_{wh} < 26$	$27 \leq \eta_{wh} < 30$	$27 \leq \eta_{wh} < 30$	$27 \leq \eta_{wh} < 30$	$28 \leq \eta_{wh} < 32$																																																																																														
G	$\eta_{wh} < 19$	$\eta_{wh} < 20$	$\eta_{wh} < 23$	$\eta_{wh} < 23$	$\eta_{wh} < 27$	$\eta_{wh} < 27$	$\eta_{wh} < 27$	$\eta_{wh} < 28$																																																																																														

Table 1:				P			
Information requirements for heat pump space heaters and heat pump combination heaters							
(the number of decimals in the box indicates the precision of reporting) Information to identify the model(s) to which the information relates to:							
Air-to-water heat pump: [yes/no]				Yes			
Water-to-water heat pump: [yes/no]				No			
Brine-to-water heat pump: [yes/no]				No			
Low-temperature heat pump: [yes/no]				No			
Equipped with a supplementary heater: [yes/no]				No			
Heat pump combination heater: [yes/no]				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.			
Item	symbol	value	unit	item	symbol	value	unit
Rated heat output (*)	Prated	16,8	kW	Seasonal space heating energy efficiency	η_s	152	%
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			
$T_j = -7\text{ °C}$	Pdh	14,9	kW	$T_j = -7\text{ °C}$	COPd	2,38	-
$T_j = +2\text{ °C}$	Pdh	9,1	kW	$T_j = +2\text{ °C}$	COPd	3,62	-
$T_j = +7\text{ °C}$	Pdh	6,0	kW	$T_j = +7\text{ °C}$	COPd	5,51	-
$T_j = +12\text{ °C}$	Pdh	6,9	kW	$T_j = +12\text{ °C}$	COPd	7,51	-
$T_j = \text{bivalent temperature}$	Pdh	14,9	kW	$T_j = \text{bivalent temperature}$	COPd	2,38	-
$T_j = \text{operation limit temperature}$	Pdh	14,1	kW	$T_j = \text{operation limit temperature}$	COPd	2,18	-
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20°C)	Pdh	N/A	kW	For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20°C)	COPd	N/A	-
Bivalent temperature	T biv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcyc	N/A	kW	Cycling interval efficiency	COPcyc	N/A	kW
Degradation coefficient (**)	Cdh	0,9	—	Heating water operating limit temperature	W_{TOL}	60	°C
Power consumption in modes other than active mode				Supplementary heater			

Off mode	P _{OFF}	0,009	kW	Rated heat output (*)	P _{sup}	2,7	kW
Thermostat-off mode	P _{TO}	0,009	kW	Type of energy input	Electric		
Standby mode	P _{SB}	0,009	kW				
Crankcase heater mode	P _{CK}	0,000	kW				
Other items							
Capacity control	Variable			For air-to-water heat pumps: Rated air flow rate, outdoors	—	8000	m ³ /h
Sound power level, indoors/outdoors	L _{WA}	-/66	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	—	N/A	m ³ /h
Emissions of nitrogen oxides	NO _x	N/A	mg/kWh				
Annual energy consumption	Q _{HE}	9000	kWh				
For heat pump combination heater:							
Declared load profile	N/A			Water heating energy efficiency	η _{wh}	N/A	%
Daily electricity consumption	Q _{elec}	N/A	kWh	Daily fuel consumption	Q _{fuel}	N/A	kWh
Contact details	Chiltrix Inc 732E Eden Way North 255 Chesapeake, 23320, Virginia, United States of America						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

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

Voltage: 230 V / frequency: 50 Hz ; Indoor heat exchanger: variable outlet
 Tj (bivalent temperature): -7 °C ; operating limit (TOL): -10 °C ;

Table 10 — Part load conditions for air-to-water(brine) units in medium temperature application for the reference heating seasons

	Part load ratio in %				Outdoor heat exchanger		Indoor heat exchanger			
					Dry (wet) bulb temperature °C		Fixed outlet °C	Variable outlet ^d °C		
	Formula	Average	Warmer	Colder	Outdoor air	Exhaust air	All climates	Average	Warmer	Colder
A	$(-7 - 16) / (T_{designh} - 16)$	88,46	n.a.	60,53	-7(-8)	20(12)	^a / 55	^a / 52	n.a.	^a / 44
B	$(+2 - 16) / (T_{designh} - 16)$	53,85	100	36,84	2(1)	20(12)	^a / 55	^a / 42	^a / 55	^a / 37
C	$(+7 - 16) / (T_{designh} - 16)$	34,62	64,29	23,68	7(6)	20(12)	^a / 55	^a / 36	^a / 46	^a / 32
D	$(+12 - 16) / (T_{designh} - 16)$	15,38	28,57	10,53	12(11)	20(12)	^a / 55	^a / 30	^a / 34	^a / 28
E	$(TOL^e - 16) / (T_{designh} - 16)$				TOL ^e	20(12)	^a / 55	^a / ^b	^a / ^b	^a / ^b
F	$(T_{biv} - 16) / (T_{designh} - 16)$				T _{biv}	20(12)	^a / 55	^a / ^c	^a / ^c	^a / ^c
G	$(-15 - 16) / (T_{designh} - 16)$	n.a.	n.a.	81,58	-15	20(12)	^a / 55	n.a.	n.a.	^a / 49

^a With the flow rate as determined at the standard rating conditions given in Table 14 of EN 14511-2:2018 at 47/55 conditions for units with a fixed flow rate, and with a fixed water temperature difference of 8 K for units with a variable flow rate. If for any of the test conditions the resulting flow rate is below the minimum flow rate then this minimum flow rate is used as a fixed flow rate with the outlet temperature for this test condition.

^b Variable outlet shall be calculated by interpolation from T_{designh} and the temperature which is closest to the TOL.

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

^d If the variable outlet temperature is below the minimum of the operation range of the unit, this minimum is used.

^e If TOL < T_{designh} then TOL shall be replaced by T_{designh}.
 n.a. means not applicable

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

Test data(Average):

General test conditions /Part-Load	Unit	A(-7)/ W52(88,46%)	A2/ W42(53,85%)	A7/ W36(34,62%)	A12/ W30(15,38%)	A(-10) /W55(100%)	A(-7)/ W52(88,46%)
		A	B	C	D	E	F
Data collection period	hh:mm	02:00	02:00	02:00	02:00	02:00	02:00
The heat pump defrosts	-	No	No	No	No	No	No
Complete cycles	-	0	0	0	0	0	0
Barometric	kPa	101,00	101,00	101,00	101,00	101,00	101,00

pressure							
Voltage	V	228,61	231,05	230,26	229,63	229,57	228,61
Current	A	27,19	10,62	4,62	4,11	28,19	27,19
Power input	W	6255	2486	1082	959	6510	6255
Test conditions indoor unit							
Inlet Water temperature, DB	°C	45,00	37,70	33,24	28,85	48,71	45,00
Outlet Water temperature, DB	°C	51,97	41,94	36,01	32,07	55,28	51,97
Test conditions outdoor unit							
Air inlet temperature, DB	°C	-6,90	2,00	7,00	12,00	-9,98	-6,90
Air outlet temperature, WB	°C	-7,90	1,00	5,97	11,00	-10,98	-7,90
Water flow	m ³ /h	1,84	1,83	1,86	1,84	1,84	1,84
Summary of test result:							
Test condition	Heating capacity (kW)	Heating power input (kW)	COP	Compressor frequency			
A	14,911	6,255	2,384	68 Hz			
B	9,064	2,486	3,646	34 Hz			
C	6,045	1,082	5,587	21 Hz			
D	6,939	0,959	7,236	20 Hz			
E	14,084	6,510	2,163	69 Hz			
F	14,911	6,255	2,384	68 Hz			
Electric power consumptions	Unit	Value					
Thermostat-off mode (P _{TO})	kW	0,009					
Standby mode(P _{SB})	kW	0,009					
Crankcase heater(P _{CK})	kW	0,000					
Off mode(P _{OFF})	kW	0,009					
P _{designh}	kW	16,856					
SCOP _{on} :	kWh/kWh	3,881					
SCOP:	kWh/kWh	3,881					
Q _H :	kWh	34824					
Q _{HE} :	kWh	8974					
η _{s,h}	%	152,2					
Seasonal space heating energy efficiency classes: (According (EU)No 811/2013 Table 1)		A+++					

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

 Voltage: 230 V / frequency: 50 Hz ; Indoor heat exchanger: variable outlet

 T_j (bivalent temperature): -7 °C; operating limit (TOL): -10 °C;

Table 8 — Part load conditions for air-to-water(brine) units in low temperature application for the reference heating seasons

	Part load ratio in %				Outdoor heat exchanger		Indoor heat exchanger			
					Dry (wet) bulb temperature °C		Fixed outlet °C	Variable outlet ^d °C		
	Formula	Average	Warmer	Colder	Outdoor air	Exhaust air	All climates	Average	Warmer	Colder
A	$\frac{(-7 - 16)}{(T_{\text{designh}} - 16)}$	88,46	n.a.	60,53	-7(-8)	20(12)	^a / 35	^a / 34	n.a.	^a / 30
B	$\frac{(+2 - 16)}{(T_{\text{designh}} - 16)}$	53,85	100,00	36,84	2(1)	20(12)	^a / 35	^a / 30	^a / 35	^a / 27
C	$\frac{(+7 - 16)}{(T_{\text{designh}} - 16)}$	34,62	64,29	23,68	7(6)	20(12)	^a / 35	^a / 27	^a / 31	^a / 25
D	$\frac{(+12 - 16)}{(T_{\text{designh}} - 16)}$	15,38	28,57	10,53	12(11)	20(12)	^a / 35	^a / 24	^a / 26	^a / 24
E	$\frac{(TOL^e - 16)}{(T_{\text{designh}} - 16)}$				TOL ^e	20(12)	^a / 35	^a / b	^a / b	^a / b
F	$\frac{(T_{\text{biv}} - 16)}{(T_{\text{designh}} - 16)}$				T _{biv}	20(12)	^a / 35	^a / c	^a / c	^a / c
G	$\frac{(-15 - 16)}{(T_{\text{designh}} - 16)}$	n.a.	n.a.	81,58	-15	20(12)	^a / 35	n.a.	n.a.	^a / 32

^a With the flow rate as determined at the standard rating conditions given in Table 12 of EN 14511-2:2018 at 30/35 conditions for units with a fixed flow rate, and with a fixed water temperature difference of 5 K for units with a variable flow rate. If for any of the test conditions the resulting flow rate is below the minimum flow rate then this minimum flow rate is used as a fixed flow rate with the outlet temperature for this test condition.
^b Variable outlet shall be calculated by interpolation from T_{designh} and the temperature which is closest to the TOL.
^c Variable outlet shall be calculated by interpolation between the upper and lower temperatures which are closest to the bivalent temperature.
^d If the variable outlet temperature is below the minimum of the operation range of the unit, this minimum is used.
^e If TOL < T_{designh} then TOL shall be replaced by T_{designh}.
 n.a. means not applicable

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

Test data(Average):

General test conditions /Part-Load	Unit	A(-7)/ W34(88,46%)	A2/ W30(53,85%)	A7/ W27(35,62%)	A12/ W24(15,38%)	A(-10)/ W35(100%)	A(-7)/ W34(88,46%)
		A	B	C	D	E	F
Data collection period	hours	02:00	02:00	02:00	02:00	02:00	02:00
The heat pump defrosts	-	No	No	No	No	No	No
Complete cycles	-	0	0	0	0	0	0
Barometric pressure	kPa	101,00	101,00	101,00	101,00	101,00	101,00
Voltage	V	229,1	225,1	226,5	226,6	228,4	229,1

Current	A	23,66	8,21	3,74	3,20	28,35	23,66
Power input	W	5535	1959	941	816	6593	5535
Test conditions indoor unit							
Inlet Water temperature, DB	°C	29,50	27,30	25,26	23,20	30,59	29,50
Outlet Water temperature, DB	°C	33,95	30,06	27,06	25,18	35,32	33,95
Test conditions outdoor unit							
Air inlet temperature, DB	°C	-6,83	2,21	7,20	12,01	-9,80	-6,83
Air outlet temperature, WB	°C	-7,47	0,99	6,00	11,00	-10,20	-7,47
Water flow	m ³ /h	3,25	3,25	3,24	3,24	3,26	3,25

Summary of test result:

Test condition	Heating capacity (kW)	Heating power input (kW)	COP	Compressor frequency
A	16,938	5,535	3,060	78 Hz
B	10,491	1,959	5,355	35 Hz
C	6,839	0,941	7,268	20 Hz
D	7,535	0,816	9,234	20 Hz
E	17,982	6,593	2,727	90 Hz
F	16,938	5,535	3,060	78 Hz

Electric power consumptions	Unit	Value
Thermostat-off mode (P _{TO})	kW	0,009
Standby mode(P _{SB})	kW	0,009
Crankcase heater(P _{CK})	kW	0,000
Off mode(P _{OFF})	kW	0,009
P _{designh}	kW	19,147
SCOPon:	kWh/kWh	5,362
SCOP:	kWh/kWh	5,36
Q _H :	kWh	39558
Q _{HE} :	kWh	7380
η _{s,h}	%	211,4
Seasonal space heating energy efficiency classes: (According (EU)No 811/2013 Table 2)		A+++

Information of efficiency class according to (EU) No 811/2013 for space heating		
Item	Measured value	Verdict
Average (mandatory)		
Declared temperature application	Medium-temperature	—
SCOP	3,881	—
seasonal space heating energy efficiency η_s ; %	152,2	A+++
Annual energy consumption Q_{HE} ; (KWh)	8974	—
Average (mandatory)		
Declared temperature application	Low-temperature	—
SCOP	5,360	—
seasonal space heating energy efficiency η_s ; %	211,4	A+++
Annual energy consumption Q_{HE} ; (KWh)	7380	—
<p>(a) for heat pump space heaters and heat pump combination heaters using electricity:</p> $\eta_s = (100/CC) \times SCOP - \sum F(i)$ <p>(1) For heat pump space heaters and heat pump combination heaters, the correction is $F(1) = 3\%$.</p> <p>(2) For water-/brine-to-water heat pump space heaters and heat pump combination heaters, the correction is $F(2) = 5\%$.</p>		

Information of efficiency class according to (EU) No 811/2013 for space heating

Seasonal space heating energy efficiency classes of heaters, with the exception of low-temperature heat pumps and heat pump space heaters for low-temperature application

Seasonal space heating energy efficiency class	Seasonal space heating energy efficiency η_s in %
A ⁺⁺⁺	$\eta_s \geq 150$
A ⁺⁺	$125 \leq \eta_s < 150$
A ⁺	$98 \leq \eta_s < 125$
A	$90 \leq \eta_s < 98$
B	$82 \leq \eta_s < 90$
C	$75 \leq \eta_s < 82$
D	$36 \leq \eta_s < 75$
E	$34 \leq \eta_s < 36$
F	$30 \leq \eta_s < 34$
G	$\eta_s < 30$

Seasonal space heating energy efficiency classes of low-temperature heat pumps and heat pump space heaters for low-temperature application

Seasonal space heating energy efficiency class	Seasonal space heating energy efficiency η_s in %
A ⁺⁺⁺	$\eta_s \geq 175$
A ⁺⁺	$150 \leq \eta_s < 175$
A ⁺	$123 \leq \eta_s < 150$
A	$115 \leq \eta_s < 123$
B	$107 \leq \eta_s < 115$
C	$100 \leq \eta_s < 107$
D	$61 \leq \eta_s < 100$
E	$59 \leq \eta_s < 61$
F	$55 \leq \eta_s < 59$
G	$\eta_s < 55$

Ecodesign requirements according to (EU) No 813/2013 for space heating				Pass
Model identification		CX65		
Declared temperature application		Medium-temperature		
Items	Measured value	Stage 1	Stage 2	Verdict
seasonal space heating energy efficiency η_s	152,2	<input checked="" type="checkbox"/> From 26 September 2015 ≥ 100	<input checked="" type="checkbox"/> From 26 September 2017 ≥ 110	Pass

Declared temperature application		Low-temperature		
Items	Measured value	Stage 1	Stage 2	Verdict
seasonal space heating energy efficiency η_s	211,4	<input checked="" type="checkbox"/> From 26 September 2015 ≥ 115	<input checked="" type="checkbox"/> From 26 September 2017 ≥ 125	Pass

Photo documents:

Outdoor unit



Compressor



--- End of Report ---