



TEST REPORT
IEC 60335-2-40

Safety of household and similar electrical appliances
Part 2-40: Particular requirements for electrical heat pumps, air
conditioners and dehumidifiers

Report Number.....: E-202504DQAQSZDQGX250177.01003

Date of issue.....: April 7, 2025

Total number of pages.....: 19

Applicant's name.....: Gree Electric Appliances, Inc. of Zhuhai

Address.....: West Jinji Rd, Qianshan, Zhuhai, Guangdong, China, 519070

Manufacturer's name.....: Gree Electric Appliances, Inc. of Zhuhai

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Factory's name.....: Gree Electric Appliances, Inc. of Zhuhai

Factory's Address.....: West Jinji Rd, Qianshan, Zhuhai, Guangdong, China, 519070

Test specification:

Standard.....: PNS IEC 60335-1:2011
PNS IEC 60335-2-40:2013

Test procedure.....: Safety report

Non-standard test method.....: N/A

Testing location:

Testing Laboratory.....: Testing Center of Gree Electric Appliances Inc. of Zhuhai

Testing address.....: West Jinji Rd, Qianshan, Zhuhai, Guangdong, China, 519070

Tested by(name+signature): Duan Weihao

Approved by(name+signature): Luo Liangchen

Test item description.....: Split Type Air Conditioner

Trade Mark.....: GREE

Model/Type reference.....: GWC24AVEXF-S6DTA1H(KS-IW25-GPAI13P1M32)

Manufacturer.....: Same as applicant

Ratings.....: 220-240V~, 50/60Hz., Class I, R32, IPX4 for outdoor part
Rated Current: 12A

General disclaimer:

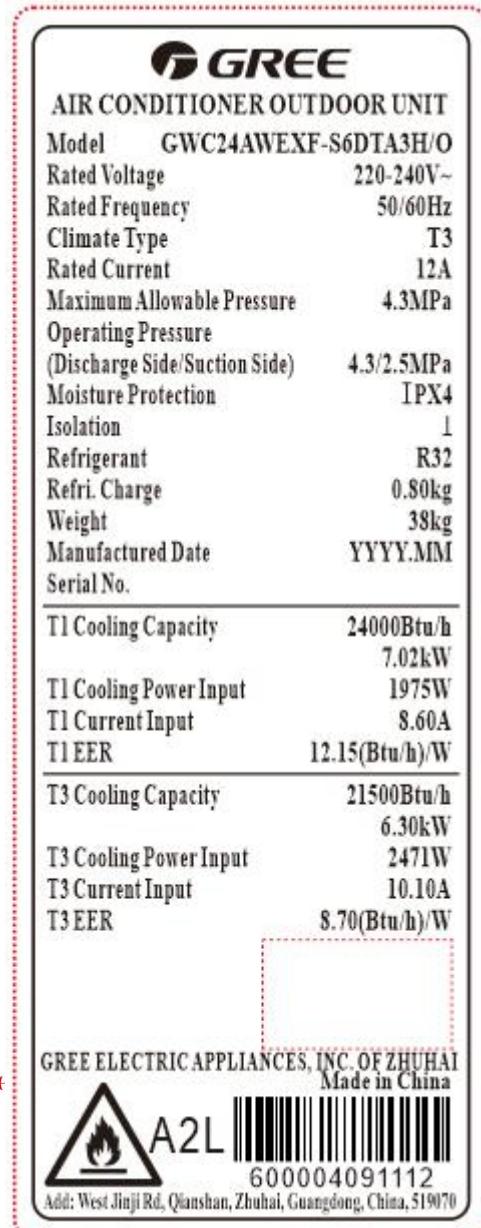
The test results presented in this report relate only to the object tested.



Classification of installation and use: Fixed appliance	
Supply Connection: Type Y, supply cord with plug	
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)	
List of Attachments (including a total number of pages in each attachment):	
N/A	
Summary of testing: The product complies with the following standards: PNS IEC 60335-1:2011 PNS IEC 60335-2-40:2013	
Tests performed (name of test and test clause): After review, clause 7, 10, 11, 13, 27 were conducted on the model GWC24AVEXF-S6DTA1H	Testing location: Gree Electric Appliances, Inc. of Zhuhai West Jinji Rd, Qianshan, Zhuhai, Guangdong, China, 519070
Summary of compliance with National Differences	
N/A	
<input checked="" type="checkbox"/> The product fulfils the requirements of PNS IEC 60335-1:2011 and PNS IEC 60335-2-40:2013	

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

**Testing.....:****Date of receipt of test item.....:** April 7, 2025**Date (s) of performance of tests.....:** April 6, 2025 ~ April 7, 2025**General product information:**

The appliance is a split type air conditioner intended for household use. The appliance has cooling function only.

7	MARKING AND INSTRUCTIONS	—
7.1	Rated voltage or voltage range (V).....: See marking plates	P
	Symbol for nature of supply, or..... : ~	P
	Rated frequency (Hz).....: 60	P
	Rated power input (W), or.....: See marking plates	P
	Rated current (A), or.....: N/A	
	Manufacturer's or responsible vendor's name, trademark or identification mark.....: KOLIN	P
	Model or type reference.....: See marking plates	P
	Symbol IEC 60417- 5172, for class II appliances	N/A
	IP number, other than IPX0.....: outdoor part: IPX4	P
	Symbol IEC 60417- 5180, for class III appliances, unless	N/A
	the appliance is operated by batteries only, or	N/A
	for appliances powered by rechargeable batteries recharged in the appliance	N/A
	Symbol IEC 60417- 5018, for class II and class III appliances incorporating a functional earth	N/A
	Symbol IEC 60417- 5036, for the enclosure of electrically- operated water valves in external hose- sets for connection of an appliance to the water mains, if the working voltage exceeds extra- low voltage	N/A
	Refrigerant charge, or.....: See marking plates	P
	Refrigerant as designated under ISO 817 or ANSI/ASHRAE 34, or.....: R32	P
	Permissible excessive operating pressure for sanitary hot water heat pumps, or.....: N/A	
	Maximum operating pressure in the water and/or brine for the heat exchanger for hydronic fan coil units, or.....: N/A	
	Maximum operating pressure for the refrigerant circuit; if the permissible excessive operating pressure for the suction and discharge side differ, a separate indication is required;, or.....: See marking plates	P
	Symbol for degree of protection against ingress of water, other than IPX0, or.....: outdoor part: IPX4	P
	Separate marking of appliances with all rated characteristics of supplementary heaters, or.....: N/A	
	Marking of direction of fluid flow	N/A
7.2	Warning for stationary appliances for multiple supply	N/A
	Warning placed in vicinity of terminal cover	N/A
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen	N/A

	Different rated values marked with the values separated by an oblique stroke		N/A
7.4	Appliances adjustable for different rated voltages or rated frequencies, the voltage or the frequency setting is clearly discernible		N/A
	Requirement met if frequent changes are not required and the rated voltage or rated frequency to which the appliance is to be adjusted is determined from a wiring diagram		N/A
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless		N/A
	the power input or current are related to the arithmetic mean value of the rated voltage range		N/A
	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear		N/A
7.6	Correct symbols used		P
	Symbol for nature of supply placed next to rated voltage		P
	Symbol for class II appliances placed unlikely to be confused with other marking		N/A
	Units of physical quantities and their symbols according to international standardized system		P
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply, unless		N/A
	correct mode of connection is obvious		P
7.8	Except for type Z attachment, terminals for connection to the supply mains indicated as follows:		—
	- marking of terminals exclusively for the neutral conductor (letter N)		P
	- marking of protective earthing terminals (symbol IEC 60417-5019)		P
	- marking of functional earthing terminals (symbol IEC 60417-5018)		N/A
	- marking not placed on removable parts		P
7.9	Marking or placing of switches which may cause a hazard		N/A
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means.....:	By use of figures, letters or other visual means	P
	This applies also to switches which are part of a control		N/A
	If figures are used, the off position indicated by the figure 0		N/A
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		N/A

7.11	Indication for direction of adjustment of controls		N/A
7.12	Instructions for safe use provided		P
	Details concerning precautions during user maintenance		P
	Appliances not accessible to general public, classification of clause 6.101 included		N/A
	Appliances using flammable refrigerants, an installation, service and operation manual, either separate or combined manuals, provided and include information given in annex DD		P
	The instructions state that:		—
	- the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction		P
	- children being supervised not to play with the appliance		P
	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided		N/A
	Instructions for class III appliances state that it must only be supplied at SELV, unless		N/A
	it is a battery- operated appliance, the battery being charged outside the appliance		N/A
	For appliances for altitudes exceeding 2000 m, the maximum altitude is stated..... :		N/A
	The instructions for appliances incorporating a functional earth states that the appliance incorporates an earth connection for functional purposes only		N/A
7.12.1	Sufficient details for installation supplied		P
	For an appliance intended to be permanently connected to the water mains and not connected by a hose- set, this is stated		N/A
	If different rated voltages or different rated frequencies are marked, the instructions state what action to be taken to adjust the appliance		N/A
	Sufficient details for installation or maintenance supplied :		----
	- that the appliance shall be installed in accordance with national wiring regulations		P
	- the dimensions of the space necessary for correct installation of the appliance including the minimum permissible distance to adjacent structures		P
	- for appliances with supplementary heaters, the minimum clearance from the appliance to combustible surfaces		N/A

	- a wiring diagram with a clear indication of the connections and wiring to external control devices and supply cord		P
	- the range of external static pressures at which the appliance was tested (add-on heat pumps and appliances with supplementary heaters only)		N/A
	- the method of connection to the appliance to the electrical supply and interconnection of separate components		N/A
	- indication of which parts of the appliance are suitable for outdoor use, if applicable		P
	- details of type and rating of fuses, or rating of circuit breakers;		P
	- details of supplementary heating elements that may be used in conjunction with the appliance, including fitting instructions either with the appliance or with the supplementary heater		N/A
	- maximum and minimum water or brine operating temperatures		N/A
	- maximum and minimum water or brine operating pressures		N/A
	Open storage tanks of heat pumps for water heating, accompanied by an instruction sheet which state that the vent shall not be obstructed		N/A
7.12.2	Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules		N/A
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions state that the fixed wiring must be protected		N/A
7.12.4	Instructions for built-in appliances:		—
	- dimensions of space		P
	- dimensions and position of supporting and fixing		P
	- minimum distances between parts and surrounding structure		P
	- minimum dimensions of ventilating openings and arrangement		P
	- connection to supply mains and interconnection of separate components		P
	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless		P
	a switch complying with 24.3		N/A
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord		N/A
	Replacement cord instructions, type Y attachment		P

	Replacement cord instructions, type Z attachment		N/A
7.12.6	Caution in the instructions for appliances incorporating a non-self-resetting thermal cut-out that is reset by disconnection of the supply mains, if this cut-out is required to comply with the standard		N/A
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed		P
7.12.8	Instructions for appliances connected to the water mains:	—	
	- max. inlet water pressure (Pa).....:		N/A
	- min. inlet water pressure, if necessary (Pa).....:		N/A
	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets		N/A
7.12.9	Instructions specified in 7.12 and from 7.12.1 to 7.12.8 appear together before any other instructions supplied with the appliance		P
	These instructions may be supplied with the appliance separately from any functional use booklet		P
	They may follow the description of the appliance that identifies parts, or follow the drawings/sketches		P
	In addition, instructions are also available in an alternative format such as on a website or on request from the user in a format such as a DVD		P
	In addition, instructions are also available in an alternative format such as on a website or in a format such as a DVD.....:		P
7.13	Instructions and other texts in an official language	In English	P
7.14	Markings clearly legible and durable:	—	
	Signal words WARNING, CAUTION, DANGER in uppercase having a height as specified.....:		P
	Uppercase letter of the text explaining the signal word not smaller than 1,6 mm.....:		N/A
	Moulded in, engraved, or stamped markings either raised above or have a depth below the surface of at least 0,25 mm, unless		N/A
	contrasting colours are used		N/A
	Markings checked by inspection, measurement and rubbing test as specified		P
7.15	Markings on a main part		P
	Marking clearly discernible from the outside, if necessary after removal of a cover		P
	For portable appliances, cover can be removed or opened without a tool		N/A

	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation		P
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions		P
	Indications for switches and controls placed on or near the components. Marking not on parts which can be positioned or repositioned in such a way that the marking is misleading		P
	The symbol IEC 60417- 5018 placed next to the symbol IEC 60417- 5172 or IEC 60417- 5180		N/A
	Marking on panel allowed, provided panel in place for intended operation of appliance		N/A
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		P
7.101	Marking of fuses and overload protective devices, if replaceable :	----	----
	- fuse rated current in amperes, type and rated voltage or		P
	- manufacturer and model of overload protective device		N/A
7.102	Marking for connection with aluminium wire, if necessary		N/A
7.103	For appliances made up of more than one factory made assembly specified by the manufacturer to be used together, instructions shall be provided for completing the assembly to ensure compliance with the requirements.		N/A
7.104	For partial units, the instructions or markings shall include the following additional information:	----	----
	- For evaporating units and condensing units, the instructions or markings shall include wording to assure that the maximum operating pressure is considered when connecting to any condenser unit or evaporator unit.		N/A
	- For evaporating units, condensing units and condenser units, the instructions or markings shall include refrigerant charging instructions.		N/A
	- A warning to assure that partial units shall only be connected to an appliance suitable for the same refrigerant.		N/A
	- This unit <model xxx> is a partial unit air conditioner, complying with partial unit requirements of this International Standard, and must only be connected to other units that have been confirmed as complying to corresponding partial unit requirements of this International Standard.		N/A

	- The electrical interfaces shall be specified with purpose, voltage, current, and safety class of construction.		N/A
	- The SELV connection points, if provided, are to be clearly indicated in the instructions. The connection point should be marked with the "read the instructions" symbol per ISO 7000-0790 (2004-01) and the Class III symbol according to IEC 60417-5180 (2003- 02).		N/A
10	POWER INPUT AND CURRENT		—
10.1	Power input at normal operating temperature, rated voltage and normal operation not deviating from rated power input by more than shown in table 1.....:	(see appended table)	P
	If the power input varies throughout the operating cycle and the maximum value of the power input exceeds, by a factor greater than two, the arithmetic mean value of the power input occurring during a representative period, the power input is the maximum value that is exceeded for more than 10 % of the representative period		N/A
	Otherwise the power input is the arithmetic mean value		P
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated power input is related to the arithmetic mean value		N/A
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2.....:	(see appended table)	N/A
	If the current varies throughout the operating cycle and the maximum value of the current exceeds, by a factor greater than two, the arithmetic mean value of the current occurring during a representative period, the current is the maximum value that is exceeded for more than 10 % of the representative period		N/A
	Otherwise the current is the arithmetic mean value		P
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated current is related to the arithmetic mean value of the range		N/A
11	HEATING		P
11.1	No excessive temperatures in normal use		P
	Compliance is checked by the tests of annex C, if :	—	
	- temperature of motor winding exceeds values shown in table 3		N/A
	- there is doubt about classification of insulation system of the motor		N/A

11.2	Placing and mounting of appliance :	---	
	- clearances to adjacent surfaces		P
	- flow rates for liquid source or sink equipment be minimum, except for hydronic fan coil units where flow rates and liquid temperatures be maximum		N/A
	- static pressures		N/A
	- means of adjusting the flow, flow for tests be minimum obtainable		N/A
	- adjustable limit controls set at maximum cut-out setting and minimum differential		N/A
	Appliances with supplementary heaters, use test casing of clause 11.9		N/A
11.2.1	Appliances with supplementary heaters, inlet duct connected to inlet air opening		N/A
	Appliance that includes or has provision for supplementary heater is fitted with a metal outlet duct in accordance with Figure 101a) or Figure 101b), depending on the direction of the airflow.		N/A
11.2.2	Ducted appliance without supplementary heaters, air outlet used		N/A
11.2.3	For the evaluation and testing of partial units, the following test setup and conditions are to be applied.		N/A
	- evaporator units and condenser units are tested as individual units at the maximum ambient temperature stated in the instructions. If not stated in the instructions, these units shall be tested at an ambient temperature that is equal to the saturated temperature of the refrigerant at the marked maximum allowable operating pressure ($\pm 0,1$ MPa) minus 10 K (± 1 K). (IEC 60335- 2- 40:2013/,am1:2016)		N/A
	- condensing units are tested in the cooling mode only, at the maximum specified ambient temperature with 9 K (± 1 K) sub-cooling and the maximum specified evaporating pressure with 11 K (± 1 K) superheat. For condensing units provided with expansion device(s), the superheat/sub-cooling is to be as under the normal control of the expansion device(s).		N/A
	- evaporating units, intended for cooling only, are tested in the cooling mode only with a condensing pressure that is equal to the marked maximum allowable operating pressure ($\pm 0,1$ MPa) with 9 K (± 1 K) sub-cooling.		N/A
	- evaporating units that are intended for reverse cycle operation are tested in the heating mode only, at the maximum specified evaporating pressure. (IEC 60335- 2- 40:2013/,am1:2016)		N/A
11.3	Temperature rise determine by thermocouples or resistance method	Thermocouples	P

11.4	Test performed at supply voltage between 0,94 and 1,06 times the rated voltage		P
	Heating elements energized at voltage which gives an electrical input of 1,15 times maximum rated power input		N/A
11.5	Test conducted in heating mode and cooling mode, if both exist	Cooling only	N/A
	All supplementary heating elements operative simultaneously		N/A
11.6	Defrost test in most unfavourable conditions, if needed		N/A
11.7	Appliances operated continuously until steady conditions except for defrost tests		P
11.8	Temperatures not exceeding values of table 3	(See appended tables)	P
	Protective devices do not operate		P
	Sealing compound not flowing out		P
	Temperature of air in outlet duct not exceed 90 °C		N/A
11.9	Test casing and installation of appliances in accordance with manufacturer's instructions		N/A
	Glass fibre insulation for appliances without indication of minimum clearances according to manufacturer; thermocouple in contact with enclosure		N/A
13	LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE		—
13.1	Leakage current not excessive and electric strength adequate		P
	Heating appliances operated at 1,15 times the rated power input (W)..... :		N/A
	Motor-operated appliances and combined appliances supplied at 1,06 times the rated voltage (V)..... :	1,06x240=254.4V;	P
	Protective impedance and radio interference filters disconnected before carrying out the tests		N/A
13.2	The leakage current is measured by means of the circuit described in figure 4 of IEC 60990:1999		P
	For stationary class I appliances, the leakage current shall not exceed 2 mA per kilowatt rated power input with a maximum value of 10 mA for appliances accessible to the general public, and a maximum value of 30 mA for appliances not accessible to the general public.		P
	Leakage current measurements..... :	(see appended table)	P
13.3	The appliance is disconnected from the supply		P
	Electric strength tests according to table 4.....:	(see appended table)	P
	No breakdown during the tests		P
27	PROVISION FOR EARTHING		----

27.1	Accessible metal parts of class 0I and I appliances permanently and reliably connected to an earthing terminal or earthing contact of the appliance inlet		P
	Earthing terminals and earthing contacts not connected to the neutral terminal		P
	Class 0, II and III appliances have no provision for protective earthing		N/A
	Class II appliances and class III appliances can incorporate an earth for functional purposes		N/A
	Safety extra-low voltage circuits not earthed, unless		N/A
	protective extra-low voltage circuits		N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening		P
	Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2,5 to 6 mm ² , and		N/A
	- do not provide earthing continuity between different parts of the appliance, and		N/A
	- conductors cannot be loosened without the aid of a tool		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
27.3	For a detachable part having an earth connection and being plugged into another part of the appliance, the earth connection is made before and separated after current-carrying connections when removing the part		N/A
	For appliances with supply cords, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		P
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
27.4	No risk of corrosion resulting from contact between parts of the earthing terminal and the copper of the earthing conductor or other metal		P
	Parts providing earthing continuity, other than parts of a metal frame or enclosure, have adequate resistance to corrosion		P
	If of steel, these parts provided with an electroplated coating with a thickness at least 5 µm		P
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		P
	In the body of the earthing terminal is a part of a frame or enclosure of aluminium or aluminium alloys, precautions taken to avoid risk of corrosion		P

	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts		P
	This requirement does not apply to connections providing earthing continuity in the protective extra-low voltage circuit, provided the clearances of basic insulation are based on the rated voltage of the appliance		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
	Resistance not exceeding 0,1 Ω at the specified low-resistance test (Ω).....:	Max. 0.0037Ω	P
	If the ground continuity between system components meets the minimum values specified in 27.5, it is considered to meet the requirements without dedicated grounding conductors. (IEC 60335-2-40:2018)		N/A

10.1 TABLE: Power input deviation						P
Input deviation of/at:	P rated (W)	P measured (W)	Δ P	Required Δ P	Remark	
—	-	—	—	—	—	—
—	-	—	—	—	—	—
Supplementary information: tested with all alternative fan motor and recorded the maximum value.						

10.2 TABLE: Current deviation						P
Current deviation of/at:	I rated (A)	I measured (A)	Δ I	Required Δ I	Remark	
230V~ 60Hz	12	10.73	-10.6	+15%	Cooling mode	
230V~ 60Hz	12	10.73	-10.6	+15%	Cooling mode	
Supplementary information: —						

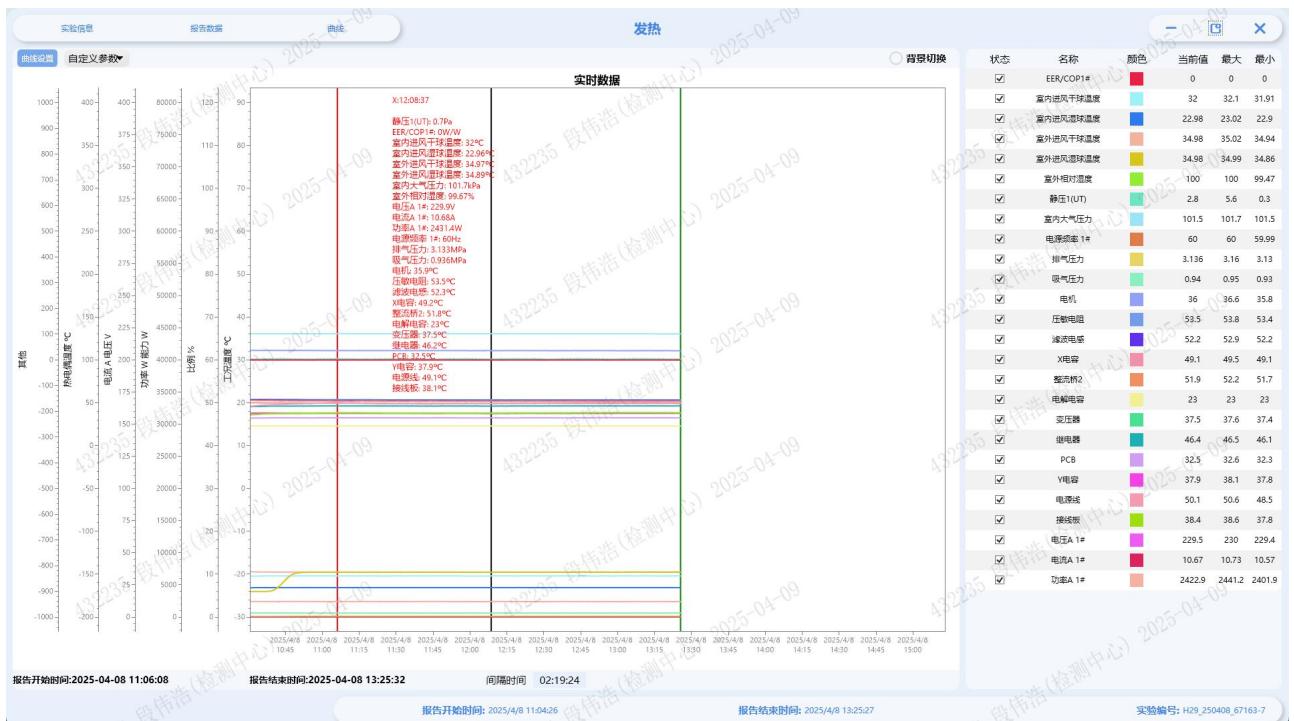
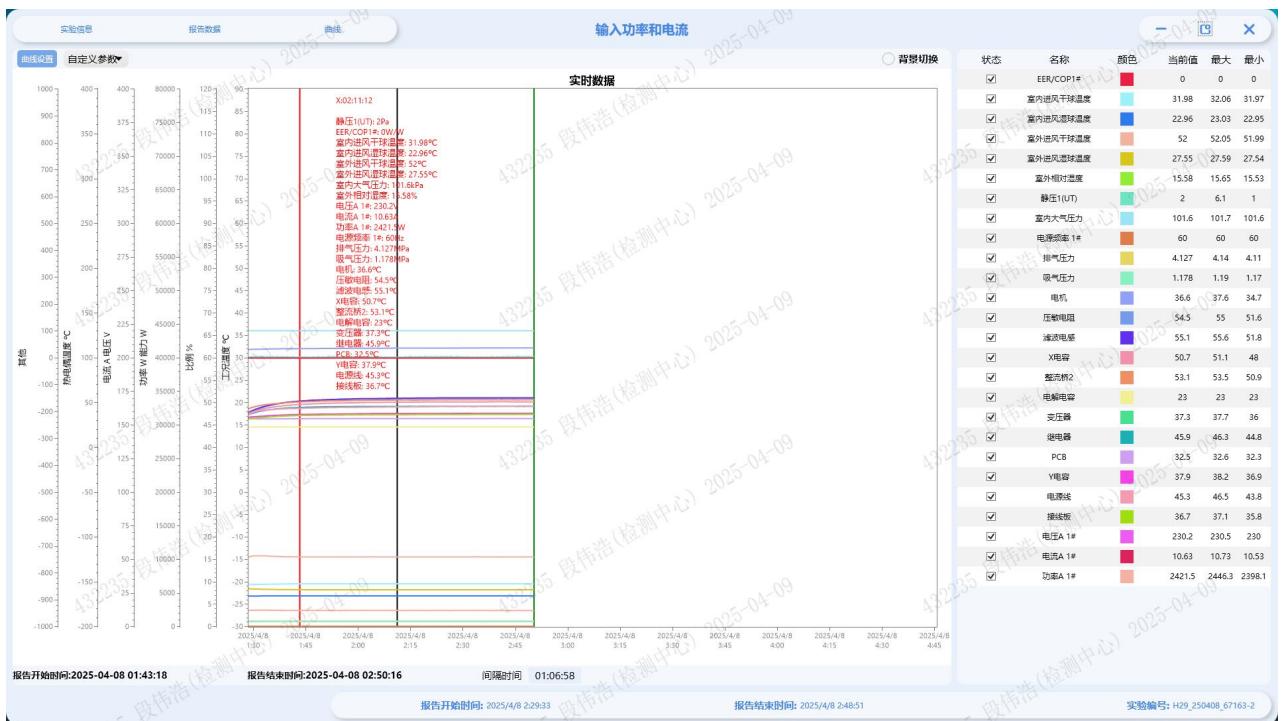
11.8 TABLE:						P
	Test voltage (V).....:	240x1,06=254.4				—
	Ambient (°C).....:	Cooling mode: Indoor(DB/WB) 32/23°C; outdoor(DB/WB) 43/26°C				—
Thermocouple locations			Max. temperature measured, T (°C)		Max. temperature limit, T (°C)	
			Cooling	Heating		

Motor	38.19	—	150
Varistor	57.3	—	85
X capacitor	58.73	—	120
Filtering inductor	53.01	—	100
X Capacitor	55.48	—	150
Rectifier Bridge	23	—	105
Electrolytic Capacitor	37.89	—	115
Transformer	47.05	—	85
Relay	32.6	—	145
PCB	38.47	—	100
Y Capacitor	52.06	—	75
Power Wire	39.2	—	85
Terminal Board	38.19	—	150
Supplementary information: --			

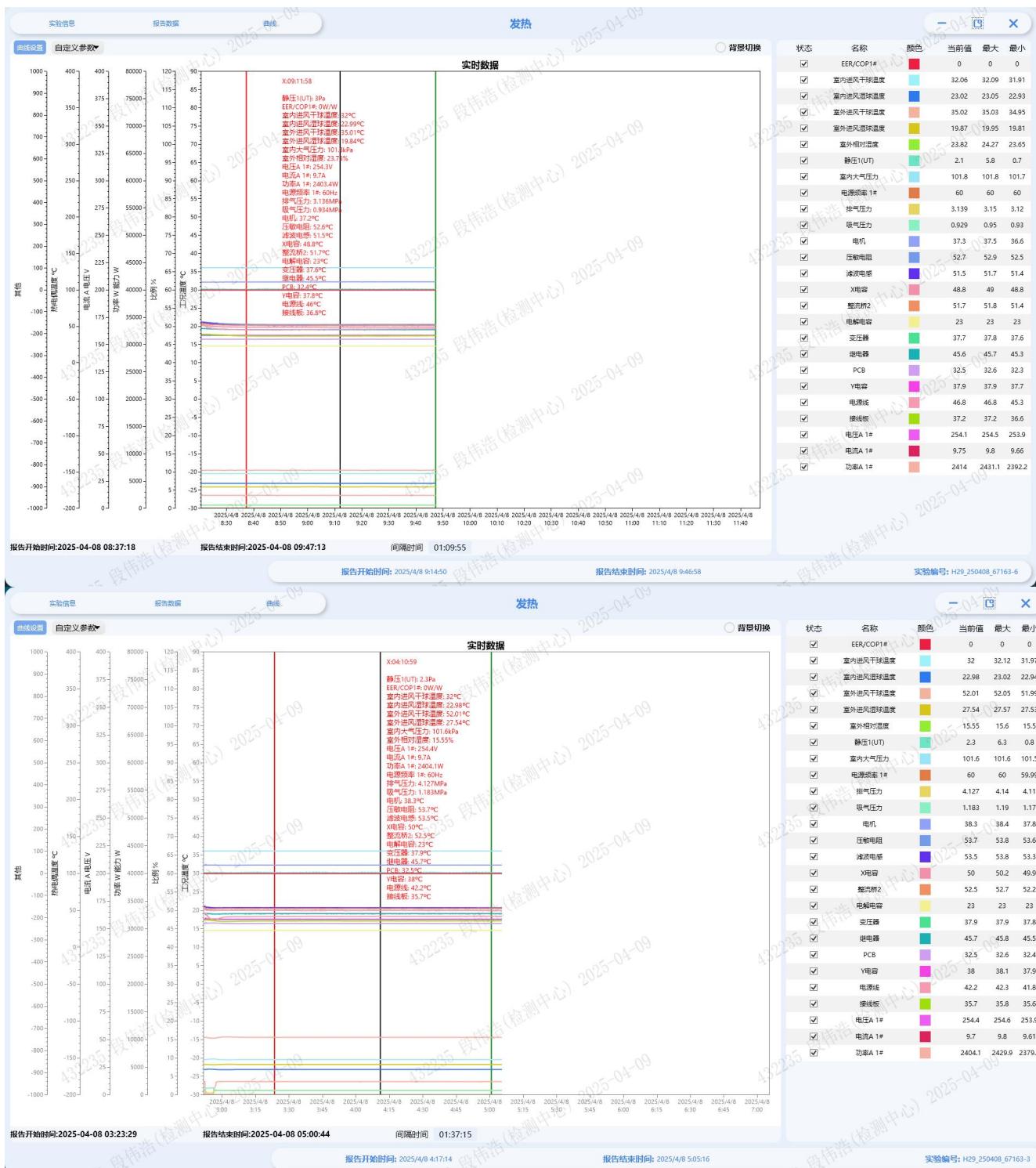
13.2	TABLE: Leakage current	P
	Heating appliances: 1,15 x rated input (W).....:	N/A
	Motor- operated and combined appliances: 1,06 x rated voltage (V).....:	254,4V; 60Hz
Leakage current between	I (mA)	Max. allowed I (mA)
Live parts and accessible earthed metal part	1.422	2
Live parts and plastic enclosure	Max. 0,0019peak	0.25 peak
Supplementary information: tested for all models and recorded maximum value.		

13.3	TABLE: Dielectric strength	P
Test voltage applied between:	Test potential applied (V)	Breakdown / flashover (Yes/No)
Live parts and accessible earthed metal part	1000	No
Live parts and plastic enclosure	3000	No
Supplementary information:		

Photo documents:
Power input and current



Heating test



Leakage current and electric strength





PROVISION FOR EARTHING



----End of Report----