



Test Report issued under the responsibility of:

PCBC S.A.

TEST REPORT
IEC 60335-2-73 and/or EN 60335-2-73
Safety of household and similar electrical appliances
Part 2: Particular requirements for fixed immersion heaters

Report Reference No......: BE/303/2011
Date of issue: 28.10.2010, Amendment No. 1: 05.07.2011
Total number of pages

CB/CCA Testing Laboratory.....: Polskie Centrum Badań i Certyfikacji S.A.
Address: ul. Kłobucka 23A; 02-699 Warszawa; POLAND

Applicant's name.....: CINI Sp. z o.o.
Address: ul. Piaskowa 31; 41-253 Czeladź; POLAND

Test specification:

Standard.....: IEC 60335-2-73:2002 (2. Edition) + A1:2006
 IEC 60335-1:2001 (4. Edition) (incl. Corrigendum 1:2002) +
A1:2004 + A2:2006 (incl. Corrigendum 1:2006) and/or
 EN 60335-2-73:2003 + A1:2006
 EN 60335-1:2002 + A1:2004 + A11:2004 + A12:2006 +
A2:2006+A13:2008¹
 EN 50366:2003 + A1:2006
Test procedure: CB / CCA
Non-standard test method.....: N/A

Test Report Form No......: IECEN60335_2_73A
Test Report Form(s) Originator: VDE
Master TRF: Dated 2007-03

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Test item description: Electric heater with electronic thermostat.
Trade Mark: CINI
Manufacturer: CINI
Model/Type reference: GT 150, GT 300, GT 500, GT 600, GT 900, GT 1200
GTX 300, GTX 600, GTX 900
Ratings: (150W, 600W, 900W, 1200W) – 203V; 50Hz; IP54
(300W, 500W) – 230-240V; 50Hz; IP54

Testing procedure and testing location:	
<input checked="" type="checkbox"/> CB/CCA Testing Laboratory:	Testing location/ address.....:
<input type="checkbox"/> Associated CB Laboratory:	Testing location/ address.....:
Tested by (name + signature)..... :	Grzegorz Fabijański
Approved by (+ signature)	Aleksander Deskiewicz
<input type="checkbox"/> Testing procedure: TMP	Testing location/ address.....:
Tested by (name + signature)..... :	
Approved by (+ signature)	
Testing location/ address.....:	
<input type="checkbox"/> Testing procedure: WMT	Testing location/ address.....:
Tested by (name + signature)..... :	
Witnessed by (+ signature)	
Approved by (+ signature)	
Testing location/ address.....:	
<input type="checkbox"/> Testing procedure: SMT	Testing location/ address.....:
Tested by (name + signature)..... :	
Approved by (+ signature)	
Supervised by (+ signature)..... :	
Testing location/ address.....:	
<input type="checkbox"/> Testing procedure: RMT	Testing location/ address.....:
Tested by (name + signature)..... :	
Approved by (+ signature)	
Supervised by (+ signature)..... :	
Testing location/ address.....:	

List of Attachments: This Amendment to the original Report No. BE/198/2010 contains Report Pages and inidnisdunisd	
Summary of testing:	
Tests performed (name of test and test clause): Cl. 7 - Marking and instructions Cl. 11 – Heating Cl. 16 – Leakage current and electric strength	Testing location: PCBC S.A. ul. Kłobucka 23A; 02-699 Warszawa; POLAND
Summary of compliance with National Differences:	

Copy of marking plate:



Test item particulars	Heating elements GTX series
Classification of installation and use.....	Class I appliance, unattended use
Supply Connection	Power supply cord with plug with type X attachment
.....	:
.....	:
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	03.06.2011
Date (s) of performance of tests	06.2011
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>Note: This TRF includes EN Group Differences together with National Differences and Special National Conditions, if any. All Differences are located in the Appendix to the main body of this TRF.</p> <p>Throughout this report a comma (point) is used as the decimal separator.</p> <p>¹⁾ PCBC TEST REPORT modifications: - EN 60335-1/A13:2008 see Appendix No. 1</p>	
General product information:	
<p>This Test Reports covers electric heater with electronic thermostat series GT. Electric heaters GT 150, GT 600, GT 900, GT 1200 are supplied by 230V. Electric heaters GT 300, GT 500 are supplied by 230-240V. Test Report covers also the result test according to standard EN 50366:2003+A1: 2006 (see ANNEX EMF)</p> <p>Amendment 1 Report: The original Test Report No. BE/198/2010, dated 28.10.2010 was modified on 05.07.2011 to include the following changes and/or additions, which were considered technical modifications:</p> <p>New models added: Are electric heater with electronic thermostat identical to the previous Series GT, except for sensor of temperatures (used capillary sensor) and markings. After review of the construction, three tests were considered necessary. See the "Summary of testing".</p> <p>A photos of modifications was added.</p>	

IEC/EN 60335-2-73			
Clause	Requirement + Test	Result - Remark	Verdict
5	GENERAL CONDITIONS FOR THE TESTS		
	Tests performed according to cl. 5, e.g. nature of supply, sequence of testing, etc.		P

6	CLASSIFICATION		
6.1	Protection against electric shock: Class 0, 0I, I, II, III	Class I	P
	Immersion heaters shall be class I, class II or class III. (IEC 60335-2-73)	Class I	P
6.2	Protection against harmful ingress of water	IP54	P

7	MARKING AND INSTRUCTIONS		
7.1	Rated voltage or voltage range (V)	230V – GTX 300 230-240V – GTX 600; GTX 900	P
	Nature of supply	~	P
	Rated frequency (Hz)	50Hz	P
	Rated power input (W)	300W, 600W, 900W	P
	Appliances for multiple supply shall be marked with their rated power input for each supply circuit. (IEC 60335-2-73)		N/A
	Rated current (A)	-	N/A
	Manufacturer's or responsible vendor's name, trademark or identification mark	CINI	P
	Model or type reference	GTX 300; GTX 600; GTX 900	P
	Symbol 5172 of IEC 60417, for Class II appliances		N/A
	IP number, other than IPX0	IP54	P
	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		N/A
	Appliances shall be marked "Do not cover". (IEC 60335-2-73)		P
7.2	Warning for stationary appliances for multiple supply		N/A
	Warning placed in vicinity of terminal cover		N/A

IEC/EN 60335-2-73			
Clause	Requirement + Test	Result - Remark	Verdict
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen		P
	Different rated values marked with the values separated by an oblique stroke		N/A
7.4	Appliances adjustable for different rated voltages, the voltage setting is clearly discernible		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 is related to the arithmetic mean value of the rated voltage range	230V - 204V	P
	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
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply		N/A
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 (N)		N/A
	- marking of protective earthing terminals (symbol 5019 of IEC 60417)		P
	- 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	Numbers	P
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		P
7.11	Indication for direction of adjustment of controls		P
7.12	Instructions for safe use provided		P
	The instructions state that:		
	- the appliance is not to be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction		P

IEC/EN 60335-2-73			
Clause	Requirement + Test	Result - Remark	Verdict
	- children being supervised not to play with the appliance		P
7.12.1	Sufficient details for installation supplied		P
	The installation instructions shall include the substance of the following: (IEC 60335-2-73)		
	– the type and dimensions of the tank in which the immersion heater can be installed; (IEC 60335-2-73)		N/A
	– the positioning of the immersion heater within the tank; (IEC 60335-2-73)		P
	– a statement that the installer must check that there is water in the tank before the immersion heater is first switched on; (IEC 60335-2-73)		P
	– a statement that the immersion heater is to be installed only in a system where the heating element is always below water level, such as in a cistern-fed tank, if applicable (IEC 60335-2-73/A1)		P
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	Supply cord with plug	P
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions stating that the fixed wiring must be protected		N/A
7.12.4	Instructions for built-in appliances:		
	- dimensions of space		N/A
	- dimensions and position of supporting means		N/A
	- distances between parts and surrounding structure		N/A
	- dimensions of ventilation openings and arrangement		N/A
	- connection to supply mains and interconnection of separate components		N/A
	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless		N/A
	a switch complying with 24.3		N/A

IEC/EN 60335-2-73			
Clause	Requirement + Test	Result - Remark	Verdict
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord		P
	Replacement cord instructions, type Y attachment		N/A
	Replacement cord instructions, type Z attachment		N/A
7.12.6	Caution in the instructions for heating appliances with a non-self-resetting thermal cut-out		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
7.13	Instructions and other texts in an official language	English, Polish, German, Czech, Russian	P
7.14	Marking clearly legible and durable		P
7.15	Marking 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
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		P
8	PROTECTION AGAINST ACCESS TO LIVE PARTS		N/A
	This test are not contain in the test program. See "Summary of testing".		

IEC/EN 60335-2-73			
Clause	Requirement + Test	Result - Remark	Verdict
10	POWER INPUT AND CURRENT		N/A
	This test are not contain in the test program. See "Summary of testing".		

11	HEATING		
11.1	No excessive temperatures in normal use		P
11.2	Placing and mounting of appliance as described		P
11.3	Temperature rises, other than of windings, determined by thermocouples		P
	Temperature rises of windings determined by resistance method, unless		N/A
	the windings makes it difficult to make the necessary connections	Thermocouples	P
11.4	Heating appliances operated under normal operation at 1.15 times rated power input	345W – GTX 300 690W – GTX 600 1035W – GTX 900	P
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage	-	N/A
11.6	Combined appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage	-	N/A
11.7	Operation duration corresponding to the most unfavourable conditions of normal use		P
	Appliances are operated until steady conditions are established. However, the test is terminated after 24 h provided that a thermal control has operated. (IEC 60335-2-73)		P
11.8	Temperature rises not exceeding values in table 3	(see appended tables)	P
	Sealing compound does not flow out		P
	Protective devices do not operate, except		P
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		N/A

13	LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE		N/A
	This test are not contain in the test program. See "Summary of testing".		

IEC/EN 60335-2-73			
Clause	Requirement + Test	Result - Remark	Verdict
14	TRANSIENT OVERVOLTAGES		N/A
	This test are not contain in the test program. See "Summary of testing".		
15	MOISTURE RESISTANCE		N/A
	This test are not contain in the test program. See "Summary of testing".		
16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		
16.1	Leakage current not excessive and electric strength adequate		P
	Protective impedance disconnected from live parts before carrying out the tests		P
16.2	Single-phase appliances: test voltage 1.06 times rated voltage	243,8V – GTX 600; GTX 900 254,4V – GTX 300	P
	Three-phase appliances: test voltage 1.06 times rated voltage divided by $\sqrt{3}$	-	N/A
	Leakage current measurements	(see appended table)	P
16.3	Electric strength tests according to table 7	(see appended table)	P
	No breakdown during the tests		P
17	OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS		N/A
	This test are not contain in the test program. See "Summary of testing".		
19	ABNORMAL OPERATION		N/A
	This test are not contain in the test program. See "Summary of testing".		
20	STABILITY AND MECHANICAL HAZARDS		N/A
	This test are not contain in the test program. See "Summary of testing".		
21	MECHANICAL STRENGTH		N/A
	This test are not contain in the test program. See "Summary of testing".		
22	CONSTRUCTION		N/A
	This test are not contain in the test program. See "Summary of testing".		

IEC/EN 60335-2-73			
Clause	Requirement + Test	Result - Remark	Verdict
23	INTERNAL WIRING		N/A
	This test are not contain in the test program. See "Summary of testing".		
24	COMPONENTS		N/A
	This test are not contain in the test program. See "Summary of testing".		
25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS		N/A
	This test are not contain in the test program. See "Summary of testing".		
26	TERMINALS FOR EXTERNAL CONDUCTORS		N/A
	This test are not contain in the test program. See "Summary of testing".		
27	PROVISION FOR EARTHING		N/A
	This test are not contain in the test program. See "Summary of testing".		
28	SCREWS AND CONNECTIONS		N/A
	This test are not contain in the test program. See "Summary of testing".		
29	CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION		N/A
	This test are not contain in the test program. See "Summary of testing".		
30	RESISTANCE TO HEAT AND FIRE		N/A
	This test are not contain in the test program. See "Summary of testing".		
31	RESISTANCE TO RUSTING		N/A
	This test are not contain in the test program. See "Summary of testing".		
32	RADIATION, TOXICITY AND SIMILAR HAZARDS		N/A
	This test are not contain in the test program. See "Summary of testing".		
A	ANNEX A (INFORMATIVE) ROUTINE TESTS		N/A
	This test are not contain in the test program. See "Summary of testing".		

IEC/EN 60335-2-73			
Clause	Requirement + Test	Result - Remark	Verdict
B	ANNEX B (NORMATIVE) APPLIANCES POWERED BY RECHARGEABLE BATTERIES		N/A
	This test are not contain in the test program. See "Summary of testing".		
C	ANNEX C (NORMATIVE) AGEING TEST ON MOTORS		N/A
	This test are not contain in the test program. See "Summary of testing".		
D	ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS		N/A
	This test are not contain in the test program. See "Summary of testing".		
E	ANNEX E (NORMATIVE) NEEDLE-FLAME TEST		N/A
	This test are not contain in the test program. See "Summary of testing".		
F	ANNEX F (NORMATIVE) CAPACITORS		N/A
	This test are not contain in the test program. See "Summary of testing".		
G	ANNEX G (NORMATIVE) SAFETY ISOLATING TRANSFORMERS		N/A
	This test are not contain in the test program. See "Summary of testing".		
H	ANNEX H (NORMATIVE) SWITCHES		N/A
	This test are not contain in the test program. See "Summary of testing".		
I	ANNEX I (NORMATIVE) MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE RATED VOLTAGE OF THE APPLIANCE		N/A
	This test are not contain in the test program. See "Summary of testing".		
K	ANNEX K (NORMATIVE) OVERVOLTAGE CATEGORIES		N/A
	This test are not contain in the test program. See "Summary of testing".		

IEC/EN 60335-2-73			
Clause	Requirement + Test	Result - Remark	Verdict
L	ANNEX L (INFORMATIVE) GUIDANCE FOR THE MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES		N/A
	This test are not contain in the test program. See "Summary of testing".		
M	ANNEX M (NORMATIVE) POLLUTION DEGREE		N/A
	This test are not contain in the test program. See "Summary of testing".		
N	ANNEX N (NORMATIVE) PROOF TRACKING TEST		N/A
	This test are not contain in the test program. See "Summary of testing".		
O	ANNEX O (INFORMATIVE) SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30		N/A
	This test are not contain in the test program. See "Summary of testing".		
P	ANNEX P (INFORMATIVE) GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN WARM DAMP EQUABLE CLIMATES		N/A
	This test are not contain in the test program. See "Summary of testing".		
Q	ANNEX Q (INFORMATIVE) SEQUENCE OF TESTS FOR THE EVALUATION OF ELECTRONIC CIRCUITS		N/A
	This test are not contain in the test program. See "Summary of testing".		
R	ANNEX R (NORMATIVE) SOFTWARE EVALUATION		N/A
	This test are not contain in the test program. See "Summary of testing".		
ANNEX EMF			
	The Tested product also complies to the requirements of EN 50366:2003 + A1 :2006		N/A
	This test are not contain in the test program. See "Summary of testing".		

11.8	TABLE: Heating test, thermocouples			P
	Test voltage (V)	1,15·Pn		—
	Ambient (°C).....	25		—
Thermocouple locations		dT (K)		Max. dT (K)
		GTX 300	GTX 600	GTX 900
Internal wiring		12	14	19
External wiring (supply cord insulation)		13	14	16
Thermoplastic material		40	41	41
Outer surface of capacitor		15	16	18
Handle, knob, grip (shor period)		12	13	13
PCB		40	41	41

16.2	TABLE: Leakage current		P
	Single phase appliances: 1.06 x rated voltage	243,8V – GTX 600; GTX 900 254,4V – GTX 300	—
	Three phase appliances 1.06 x rated voltage divided by $\sqrt{3}$:	-	—
Leakage current between		I (mA)	Max. allowed I (mA)
Live parts and accessible metal parts to metal foil which is in contact with accessible surface of insulating material GTX 300		0,01	0,75
Live parts and metal parts GTX 300		0,07	0,75
Live parts and accessible metal parts to metal foil which is in contact with accessible surface of insulating material GTX 600		0,01	0,75
Live parts and metal parts GTX 600		0,08	0,75
Live parts and accessible metal parts to metal foil which is in contact with accessible surface of insulating material GTX 900		0,01	0,75
Live parts and metal parts GTX 900		0,07	0,75

16.3	TABLE: Electric strength		P
Test voltage applied between:		Voltage (V)	Breakdown (Yes/No)
Basic insulation		1250	No
Reinforced insulation		3000	No

Group/CENELEC Common Differences to IEC 60335-1:2001 (4. Edition)		
	This test are not contain in the test program. See "Summary of testing".	N/A

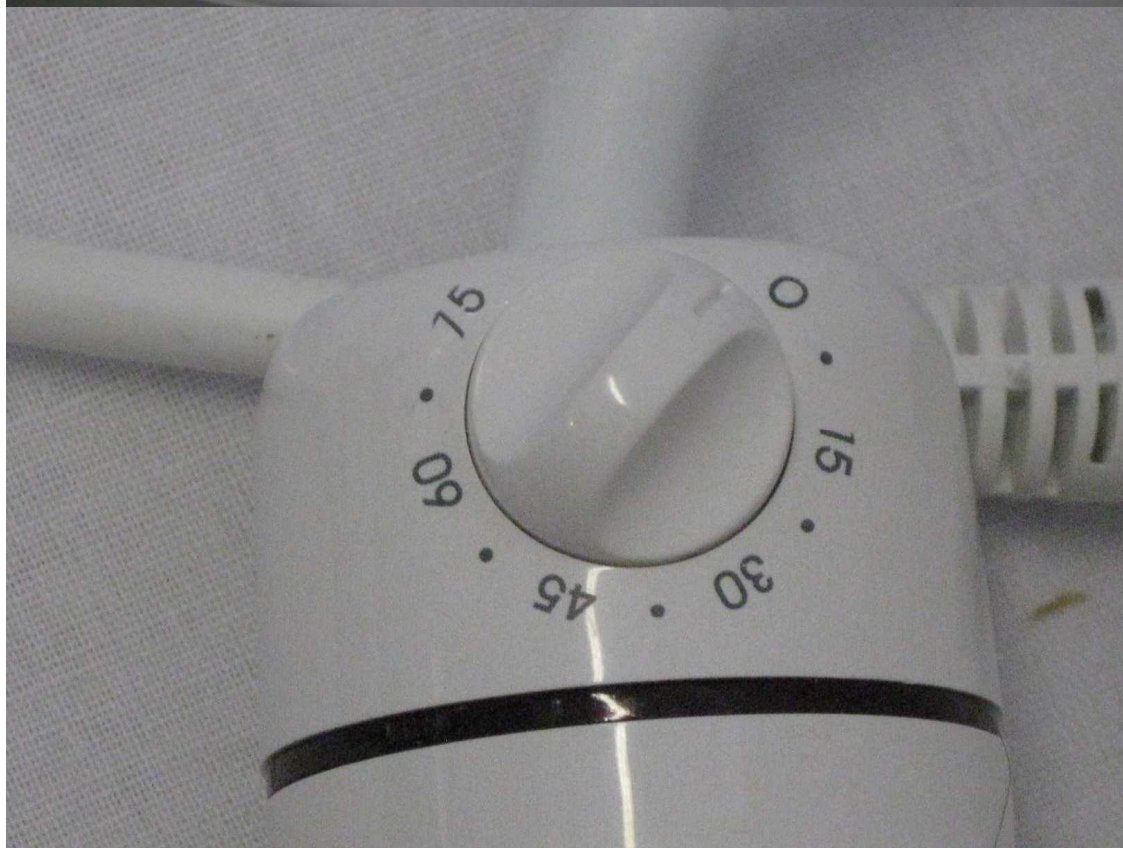
National Differences		
	This test are not contain in the test program. See "Summary of testing".	N/A

List of test equipment used:

(Note: This is an example of the required attachment. Other forms with a different layout but containing similar information are also acceptable.)

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date
11		Digital power meter YOKOGAWA; type: WT-110		11.2011
11		Temperature measurement device ALHBORN; type: THERM 3280-6		12.11.2011
16		Multimeter PHILIPS; type: PM 2718		09.2011
16		Leakage current measuring device; type: U-71		08.12.2011
16		High Voltage Test Apparatus GRABENHORST; type: H01.25		12.2011

Photo documentation



TRF No. IECEN60335_2_73A

