

**TEST REPORT**

PN-EN 50366:2004

**Household and similar electrical appliances - Electromagnetic fields –  
Methods for evaluation and measurement**

Reference No. .... : BS-2/053/08  
Report Reference No. .... : BS-2/053/BIO/A/08  
Tested by (name+signature) ..... : Marek Sawicki .....  
Witnessed by (name+signature) ..... : L. Przyborowski .....  
Approved by (name+signature)..... : A. Piotrowski .....  
Date(s) of performance of tests ..... : 2008-04-01  
Date of issue ..... : 2008-04-18  
Page number ..... : 14

**Testing Laboratory name** ..... : Ośrodek Badawczo Rozwojowy „PREDOM-OBR”  
Address ..... : 02-255 Warszawa, ul. Krakowiaków 53  
Testing location ..... : Ośrodek Badawczo Rozwojowy „PREDOM-OBR”  
Address ..... : 02-255 Warszawa, ul. Krakowiaków 53

**Applicant's name** ..... : ELEKTRA  
Address ..... : 02-674 Warszawa; ul. Marynarska 14

**Test specification**

Standard ..... : PN-EN 50366:2004(U) +A1:2006(U)

**Test Report Form No.** ..... : 50366B/PREDOM-OBR/2005

TRF Originator ..... : PREDOM-OBR

Master TRF ..... : 11.2005

This test report contains only the results of a single investigation carried out on the product submitted. It is not generally valid judgement by the PREDOM-OBR. Testing and Certification Institute regarding the properties of similar product taken from current production. It does not apply all PREDOM-OBR specification applicable to tested products.

This test report may only be passed to a third party in its complete wording including this the preamble and the date of issue. Any publication or reproduction require the prior written approval of the PREDOM-OBR Testing and Certification Institute.

**Test item description** ..... : Heating cable  
Trade Mark ..... : ELEKTRA  
Model and/or type reference ..... : VCD10/1470; VCD17/1425; VCD25/1425 (see page 3)  
Manufacturer ..... : ELEKTRA  
02-674 Warszawa; ul. Marynarska 14  
Rating(s) ..... : (see page 3)

## **Contents**

- 1. General remarks**
- 2. Description of the Sample (EUT)**
- 3. Summary of testing**
  - 3.1 Equipment used for testing**
  - 3.2 Information concerning the test.**
  - 3.3 Test results**
- 4. Summary of test results**

## 1. General remarks

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory " OBR "PREDOM-OBR"

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

"(see Enclosure #)" refers to additional information appended to the report.

Throughout this report a comma is used as the decimal separator.

## 2. Description of the Sample (EUT)

### Technical data

Test item description	Heating cable	Heating cable	Heating cable
Type/model	VCD10/1470	VCD17/1425	VCD25/1425
Rated voltage	230V ~	230V ~	230V ~
Rated power input	1470 W	1425 W	1425 W
Type of load	Resistance	Resistance	Resistance
Protection class	I	I	I



PN-EN 50366



## PN-EN 50366

Series of types:

No	Type heating cable	Rated voltage	Rated power input	Lenght
	VCD 10/...	V	W	m
1	VCD 10/70	230V~	70	7
2	VCD 10/90	230V~	90	9
3	VCD 10/110	230V~	110	11
4	VCD 10/130	230V~	130	13
5	VCD 10/170	230V~	170	17
6	VCD 10/200	230V~	200	20
7	VCD 10/230	230V~	230	23
8	VCD 10/260	230V~	260	26
9	VCD 10/310	230V~	310	31
10	VCD 10/360	230V~	360	36
11	VCD 10/410	230V~	410	41
12	VCD 10/460	230V~	460	46
13	VCD 10/550	230V~	550	55
14	VCD 10/710	230V~	710	71
15	VCD 10/900	230V~	900	90
16	VCD 10/1100	230V~	1100	110
17	VCD 10/1220	230V~	1220	122
18	VCD 10/1470	230V~	1470	147
19	VCD 10/1560	230V~	1560	156
20	VCD 10/1730	230V~	1730	173
21	VCD 10/1900	230V~	1900	190
22	VCD 10/2070	230V~	2070	207
23	VCD 10/2250	230V~	2250	225
24	VCD 10/2760	230V~	2760	276
25	VCD 10/3380	230V~	3380	338

No	Type heating cable	Rated voltage	Rated power input	Lenght
	VCD 17/...	V	W	m
1	VCD 17/100	230V~	100	6
2	VCD 17/135	230V~	135	8
3	VCD 17/170	230V~	170	10
4	VCD 17/220	230V~	220	13
5	VCD 17/255	230V~	255	15
6	VCD 17/285	230V~	285	17
7	VCD 17/340	230V~	340	20
8	VCD 17/390	230V~	390	23
9	VCD 17/460	230V~	460	27
10	VCD 17/530	230V~	530	31
11	VCD 17/595	230V~	595	35
12	VCD 17/710	230V~	710	42
13	VCD 17/915	230V~	915	54
14	VCD 17/1170	230V~	1170	69
15	VCD 17/1425	230V~	1425	84
16	VCD 17/1595	230V~	1595	94
17	VCD 17/1920	230V~	1920	113
18	VCD 17/2040	230V~	2040	120
19	VCD 17/2260	230V~	2260	133
20	VCD 17/2480	230V~	2480	146
21	VCD 17/2720	230V~	2720	160
22	VCD 17/2920	230V~	2920	172
23	VCD 17/3420	230V~	3420	212
24	VCD 17/4400	230V~	4400	260

## PN-EN 50366

No	Type heating cable	Rated voltage	Rated power input	Lenght
	VCD 20/...	V	W	m
1	VCD 20/100	230V~	100	5
2	VCD 20/160	230V~	160	7
3	VCD 20/190	230V~	190	9
4	VCD 20/240	230V~	240	12
5	VCD 20/280	230V~	280	14
6	VCD 20/340	230V~	340	16
7	VCD 20/380	230V~	380	19
8	VCD 20/440	230V~	440	22
9	VCD 20/520	230V~	520	26
10	VCD 20/580	230V~	580	29
11	VCD 20/660	230V~	660	33
12	VCD 20/800	230V~	800	40
13	VCD 20/1000	230V~	1000	49
14	VCD 20/1300	230V~	1300	65
15	VCD 20/1560	230V~	1560	78
16	VCD 20/1720	230V~	1720	86
17	VCD 20/2040	230V~	2040	102
18	VCD 20/2200	230V~	2200	110
19	VCD 20/2460	230V~	2460	122
20	VCD 20/2700	230V~	2700	135
21	VCD 20/2920	230V~	2920	146
22	VCD 20/3180	230V~	3180	159
23	VCD 20/3900	230V~	3900	195
24	VCD 20/4800	230V~	4800	239

No	Type heating cable	Rated voltage	Rated power input	Lenght
	VCD 25/...	V	W	m
1	VCD 25/100	230V~	100	4
2	VCD 25/175	230V~	175	7
3	VCD 25/250	230V~	250	10
4	VCD 25/300	230V~	300	12
5	VCD 25/350	230V~	350	14
6	VCD 25/400	230V~	400	16
7	VCD 25/475	230V~	475	19
8	VCD 25/550	230V~	550	22
9	VCD 25/650	230V~	650	26
10	VCD 25/700	230V~	700	28
11	VCD 25/875	230V~	875	35
12	VCD 25/1100	230V~	1100	44
13	VCD 25/1425	230V~	1425	57
14	VCD 25/1750	230V~	1750	70
15	VCD 25/1925	230V~	1925	77
16	VCD 25/2250	230V~	2250	90
17	VCD 25/2450	230V~	2450	98
18	VCD 25/2750	230V~	2750	110
19	VCD 25/3000	230V~	3000	120
20	VCD 25/3250	230V~	3250	130
21	VCD 25/3550	230V~	3550	142
22	VCD 25/4380	230V~	4380	175
23	VCD 25/5350	230V~	5350	214

PN-EN 50366

For test was chosen three representative heating cables:

- heating cable VCD10/1470
- heating cable VCD17/1425
- heating cable VCD25/1425

### 3. Summary of testing

#### 3.1 Equipment used for testing

Instruments	Type/model	Manufacturer	Serial number
Measuring instrument	ELT-400	NARDA	BN 2304/03 S/N C-0033
Sensor	B-FIELD SENSOR	NARDA	BN 2300/90 C-0033

#### 3.2 Information concerning the test:

Frequency range of the used field-probe	10 Hz – 400 kHz, area of probe: 100 cm <sup>2</sup> (according to EN 50366, section 4.2.3).
Information concerning the limits:	<p><b>Explanation of the measured values and limits:</b></p> <p>The limits for magnetic fields are not constant in the frequency range of 10 Hz to 400kHz.</p> <p>For the measurement according to PN-EN 50366 (time domain in accordance with 4.2.4.1) the characteristic of the limit level is reproduced in the instrument with the help of filter. This filter weights frequency components of the measured field. The measured value is given in percent. It contains the sum of weighted spectral components of the field. The limit value corresponds to 1 or 100%.</p> <p>The frequency components of the fields are added, each of them weighted by the filter. In case of the mix of field sources with different frequency and amplitude it is not possible to calculate a flux density (Tesla) out of the percent value.</p> <p>Exceptional case: The main component of the magnetic fields contains only one major frequency.</p> <p>Usually the frequencies of the field source are not known, so the conversion from percent to flux-density is usually not possible.</p>
Measurement distance:	Directly on the enclosure of the EUT (distance = 0 cm) the maximum magnetic field strength was searched. at these points the measurements are done in distance given by standard (e.g. 30 cm) (EN 50366 tab. A.1)
Observation time:	In minimum 5 s on each point



**3.3 Test results****Heating cable VCD10/1470****Environmental conditions**

Parameter	Rated value	Measured value
Ambient temperature:	15 <sup>0</sup> C – 25 <sup>0</sup> C	20,0 <sup>0</sup> C
Atmospheric pressure:	-	-
Relative humidity:	-	-
Rated voltage	230V~	230V~
Type of work	Sample on - normal operation	Sample on - normal operation

**Ambient field of the environment**

No.	Description	Value	% of limit	Remark
1.	Zero measurement	0,067		Sample off

**Testing**

No	Measureing distance [cm]	Masured value [% of limit]	Maximum value [measured % of limit]	Remark
1.	30	0,160	0,160	See photo

PN-EN 50366

**Heating cable VCD17/1425****Environmental conditions**

Parameter	Rated value	Measured value
Ambient temperature:	15 <sup>0</sup> C – 25 <sup>0</sup> C	20,0 <sup>0</sup> C
Atmospheric pressure:	-	-
Relative humidity:	-	-
Rated voltage	230V~	230V~
Type of work	Sample on - normal operation	Sample on - normal operation

**Ambient field of the environment**

No.	Description	Value % of limit	Remark
1.	Zero measurement	0,067	Sample off

**Testing**

No	Measureing distance [cm]	Masured value [% of limit]	Maximum value [measured % of limit]	Remark
1.	30	0,167	0,167	See photo

PN-EN 50366

**Heating cable VCD25/1425****Environmental conditions**

Parameter	Rated value	Measured value
Ambient temperature:	15 <sup>0</sup> C – 25 <sup>0</sup> C	20,0 <sup>0</sup> C
Atmospheric pressure:	-	-
Relative humidity:	-	-
Rated voltage	230V~	230V~
Type of work	Sample on - normal operation	Sample on - normal operation

**Ambient field of the environment**

No.	Description	Value % of limit	Remark
1.	Zero measurement	0,067	Sample off

**Testing**

No	Measureing distance [cm]	Masured value [% of limit]	Maximum value [measured % of limit]	Remark
1.	30	0,146	0,146	See photo

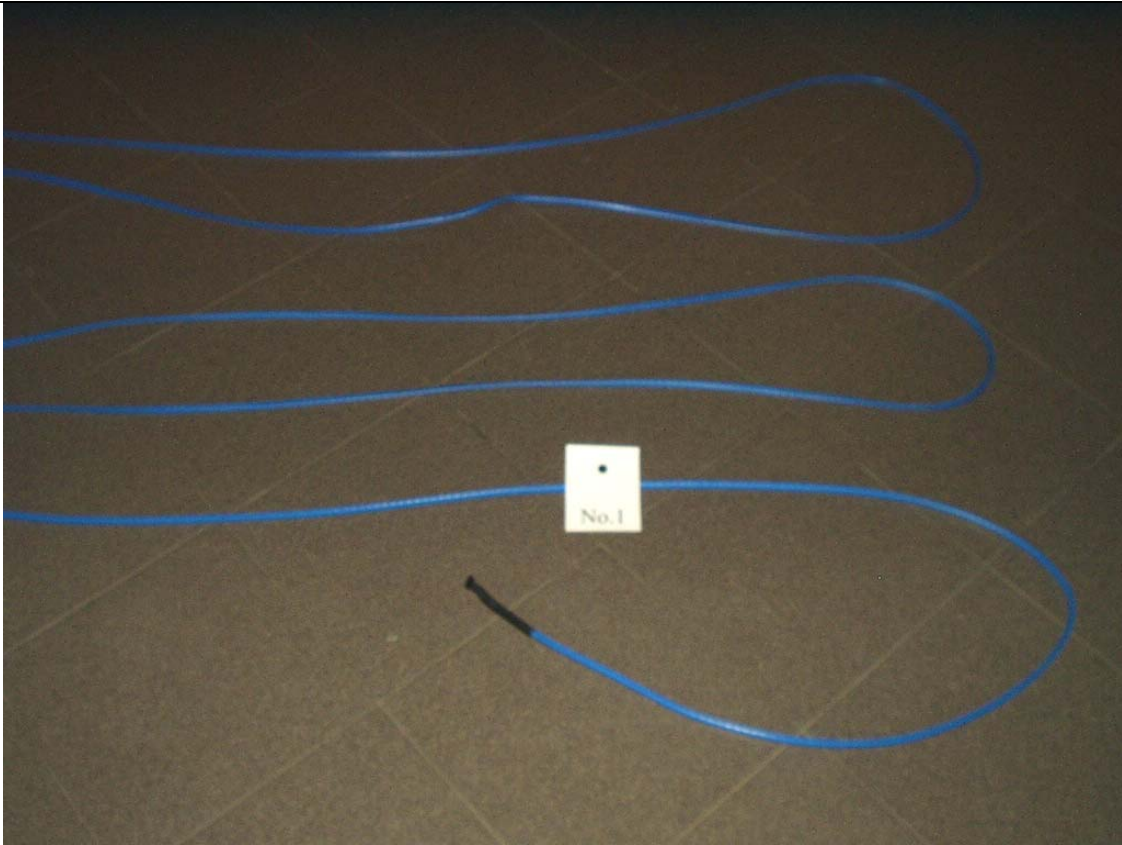
**4. Summary of test results**

The level of electromagnetic induction reach the values:

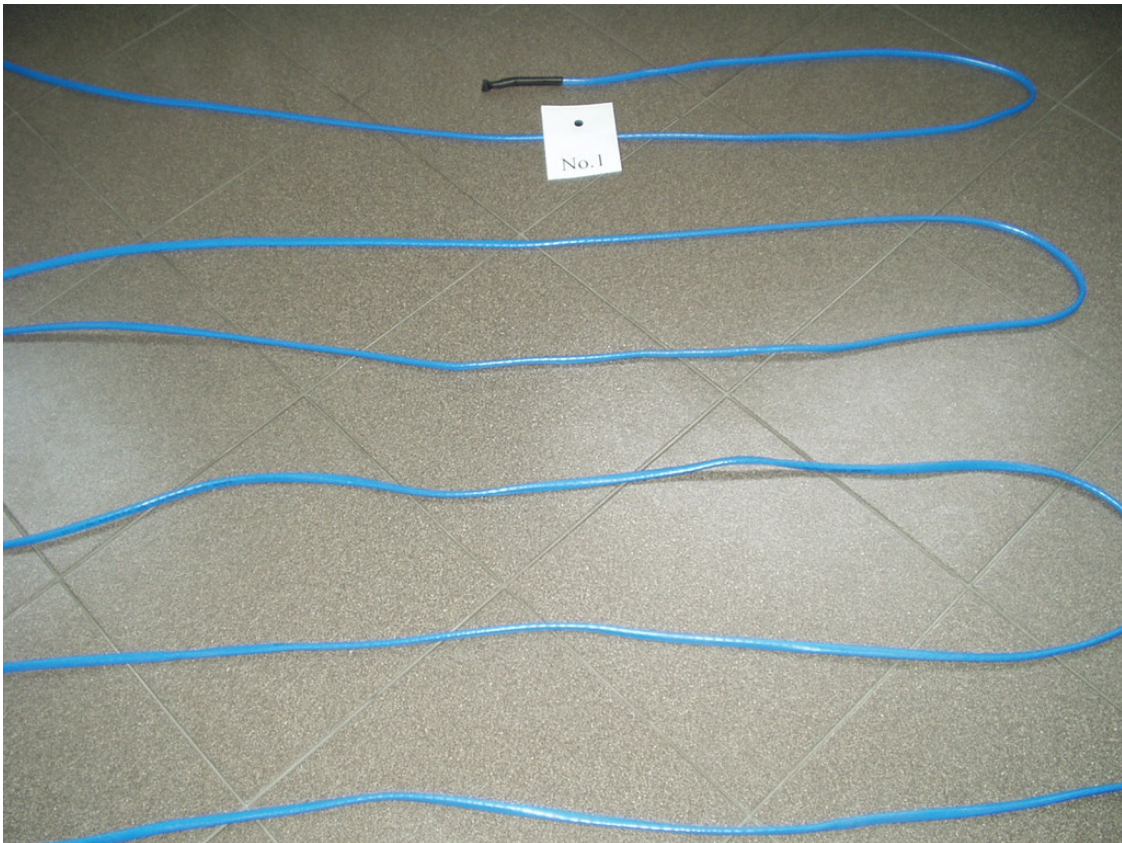
- VCD10/1470 - 0,160  $\mu$ T
- VCD17/1425 - 0,176  $\mu$ T
- VCD25/1425 - 0,146  $\mu$ T.

**Test results – positive**

PN-EN 50366

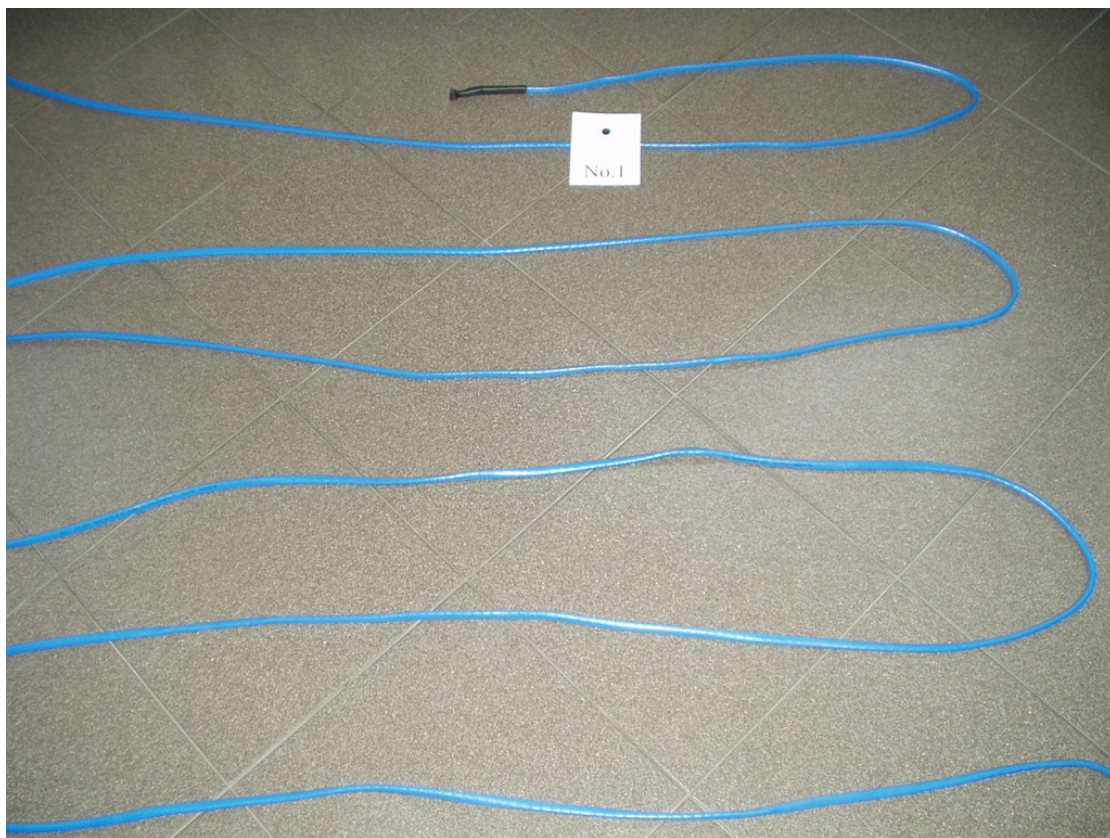


**Heating cable VCD 10/1470**



**Heating cable VCD 17/1425**

PN-EN 50366



**Heating cable VCD 25/1425**