



**LABORATORY FOR TESTING OF MACHINERY,  
EQUIPMENT AND DEVICES**  
**CENTER FOR TESTING AND EUROPEAN CERTIFICATION LTD**

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Accredited certificate  
№ 101 ЛМ / 21.06.2013  
Valid until: 30.11.2014  
of EA BAS, according  
EN ISO/IEC 17025

## TEST REPORT

№ 2emc-e-14-808 / 09.10.2014

**OBJECT TO BE TESTED:** Lamps – LED tube 18W, Cat.№: 99LED355;  
Model representative from LED tube with cat.№ : 99LED351; 99LED352; 99LED353;  
99LED354; 99LED355; 99LED356;  
*(name of object to be tested, type, model, quantity,  
type – portable, fixed, for walling in and other)*

**APPLICANT FOR TEST:** "ELMARK INDUSTRIES" SC. 2 Dobrudja Blvd. Dobrich, Bulgaria ,  
Tel.: 058 500 055, e-mail: [denkov@elmark.bg](mailto:denkov@elmark.bg)  
Application № 808 / 28.10.2013  
*(name of the firm – applicant, address, telephone, number and date of the test application)*

**STANDARD:** BDS EN 55015:2006+A1:2007+A2:2009 Limits and methods of measurement of radio disturbance  
characteristics of electrical lighting and similar equipment.  
*(number and name of the standards)*

**DATE OF ACCEPTANCE IN THE TEST LABORATORY:** 01.10.2014

**MANUFACTURER:** "ELMARK INDUSTRIES" SC. 2 Dobrudja Blvd. Dobrich, Bulgaria ,  
Tel.: 058 500 055, e-mail: [denkov@elmark.bg](mailto:denkov@elmark.bg)  
*(firm, trade mark, address)*

**DECLARED TECHNICAL DATA:** Rated voltage – 230-240 VAC  
Rated frequency – 50-60 Hz  
Rated power – 18 W  
Cap – G 13

**DATE OF TEST PERFORMANCE:** 08.10.2014



**LABORATORY CHIEF:** .....  
/ T. Hristov /



**Emission of Radio disturbance characteristics of electrical lighting and similar equipment**

**Mains terminal disturbance voltage – 9kHz + 30MHz**

BDS EN 55015, cl. 4.3 – Disturbance voltage limits at mains terminals – Table 2a

BDS EN 55015, cl. 5.4 – Self-ballasted lamps

BDS EN 55015, cl. 6 – Operating conditions for lighting equipment

BDS EN 55015, cl. 6.4 – Ambient temperature: 24 °C; Relative Humidity: 48 %.

BDS EN 55015, cl.8.1 – Measuring arrangement and procedure

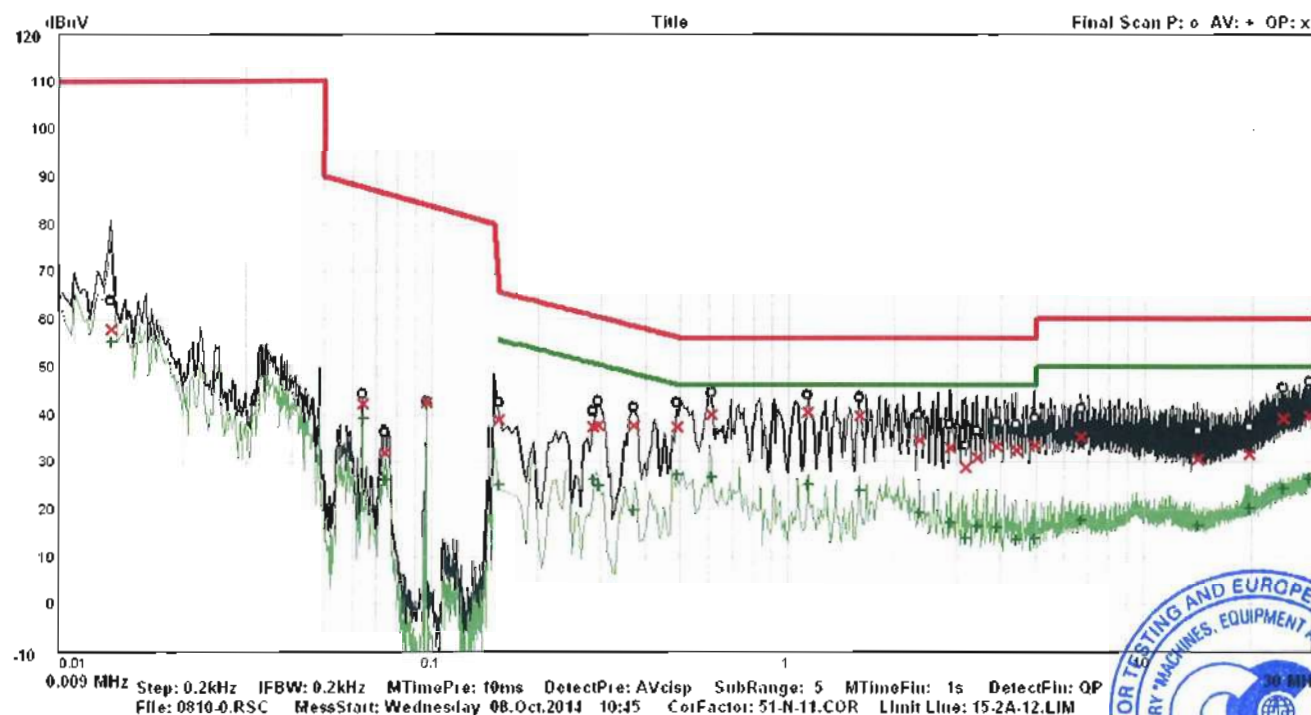
BDS EN 55015, cl.8.6 – Self-ballasted lamps and semi-luminaires– Figure 6c.

The test is performed at supply voltage: 230 V

**RESULTS OF MEASUREMENT :**

Frequency MHz	Terminal disturbance voltages, mains line – N					
	Quasi peak - QP			Average - AV		
	Measuring dB(μV)	Margin dB(μV)	Limit dB(μV)	Measuring dB(μV)	Margin dB(μV)	Limit dB(μV)
0,013	58,01	51,99	110,00	55,40	-	-
0,285	37,22	23,45	60,67	26,11	24,56	50,67
0,295	37,64	22,74	60,38	24,88	25,50	50,38
0,370	37,55	20,95	58,50	19,85	28,65	48,50
0,490	37,42	18,74	56,16	27,27	18,89	46,16
0,610	40,00	16,00	56,00	26,68	19,32	46,00
1,140	40,29	15,71	56,00	25,10	20,90	46,00
1,595	39,53	16,47	56,00	23,78	22,22	46,00
2,360	34,36	21,64	56,00	19,12	26,88	46,00
2,890	32,83	23,17	56,00	17,02	28,98	46,00
3,425	30,88	25,12	56,00	16,29	29,71	46,00
3,885	33,15	22,85	56,00	16,20	29,80	46,00
4,415	32,26	23,74	56,00	13,64	32,36	46,00
4,960	33,38	22,62	56,00	13,75	32,25	46,00
24,480	39,02	20,98	60,00	24,31	25,69	50,00
29,065	39,64	20,36	60,00	26,39	23,61	50,00

Drawing of terminal disturbance voltages, mains line – N



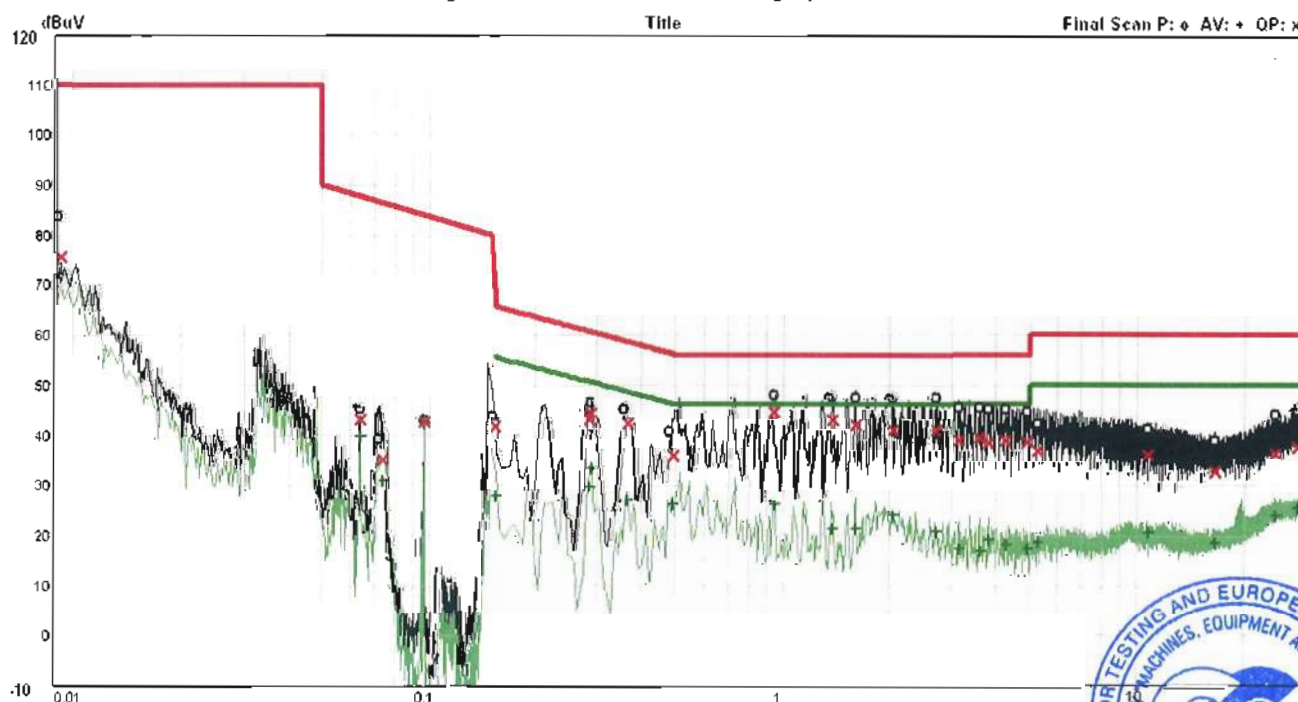
The results showed in present test report concern tested sample only

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Frequency	Terminal disturbance voltages, mains line - L					
	Quasi peak - QP			Average - AV		
	Measuring	Margin	Limit	Measuring	Margin	Limit
MHz	dB(μV)	dB(μV)	dB(μV)	dB(μV)	dB(μV)	dB(μV)
0,009	75,91	34,09	110,00	72,36	-	-
0,155	41,79	23,94	65,73	27,82	27,91	55,73
0,285	42,96	17,71	60,67	29,79	20,88	50,67
0,290	44,26	16,26	60,52	33,51	17,01	50,52
0,365	42,17	16,44	58,61	26,84	21,77	48,61
0,490	35,74	20,42	56,16	26,10	20,06	46,16
0,945	44,41	11,59	56,00	26,12	19,88	46,00
1,385	42,94	13,06	56,00	21,25	24,75	46,00
1,610	42,06	13,94	56,00	21,18	24,82	46,00
2,050	40,91	15,09	56,00	24,09	21,91	46,00
2,710	40,91	15,09	56,00	20,70	25,30	46,00
3,165	38,89	17,11	56,00	17,50	28,50	46,00
3,605	39,49	16,51	56,00	16,78	29,22	46,00
3,820	38,42	17,58	56,00	19,26	26,74	46,00
4,260	38,97	17,03	56,00	18,30	27,70	46,00
4,920	38,69	17,31	56,00	17,46	28,54	46,00
5,265	36,90	23,10	60,00	18,57	31,43	50,00
24,490	36,38	23,62	60,00	24,24	25,76	50,00
28,290	37,64	22,36	60,00	25,62	24,38	50,00

Drawing of terminal disturbance voltages, mains line – L



0.009 MHz Step: 0.2kHz IFBW: 0.2kHz MTimePre: 10ms DetectPre: AVcisp SubRange: 5 MTimeFin: 1s DetectFin: 0  
 File: 0010-1.RSC MessStart: Wednesday 08.Oct.2014 10:39 CorFactor: 51-L-11.COR Limit Line: 15.2A-12.LIM



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Used technical equipments:

	Appliance	Type	Manufacturer	Identity №	Last calibration date
1.	EMI – receiver 9 kHz ÷ 1000 MHz	SCR 3501	Schaffner Electrotest GmbH, Germany	522	26.06.2014
2.	Line impedance stabilisation networks	NNB 51	TESEQ Switzerland	26458	15.11.2011
3.	Digital multimeter	UNIGOR 390	LEM-Austria	PI 3288	19.03.2014
4.	Termometer-higrometer	177-H1	TESTO Germany	01320300/902	19.04.2012

TEST PERFORMER:

1. ....

/ T. Hristov /



2. ....

/ D. Chavalinov /

CHIEF LABORATORY : .....

/ T. Hristov /