



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

ИА "БСА"
Пер.№ 101 ЛИ
ЛАБОРАТОРИЯ ЗА
ИЗПИТВАНЕ

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Accredited certificate
№ 101 ЛИ / 24.11.2014
Valid until: 24.11.2018
of EA BAS, according
EN ISO/IEC 17025

TEST REPORT

№ 2e-15-068 / 06.04.2015

OBJECT TO BE TESTED: Luminaire - LED lighting fixtures, "PANEL" Model: LED PANEL, cat.№ 92LEDPANEL014
Representative sample from fixtures group LED PANEL with cat. №: 92LEDPANEL012;
92LEDPANEL013; 92LEDPANEL015
*(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
Application № 068/ 11.03.2015
(name of the firm – applicant, address, telephone, number and date of the test application)

METHOD OF TEST : BDS EN 60598-1:2008+A11:2009 Luminaires - Part 1: General requirements and tests
(number and name of the standards)

DATE OF ACCEPTANCE IN THE TEST LABORATORY: 11.03.2015

CODE OF THE OBJECT: 1 piece
(identification number, year of production)

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

DECLARED DATA: Declared voltage 230 V
Declared frequency 50-60 Hz
Declared power 48 W
Class II

ELECTRONIC CONTROL GEAR: LCM-60 ELMARK

TECHNICAL REQUIREMENTS: BDS EN 60598-2-2:2012 Luminaires –
Part 2-2: Particular requirements - Recessed luminaires
BDS EN 60598-1:2008+A11:2009 Luminaires - Part 1: General requirements and tests

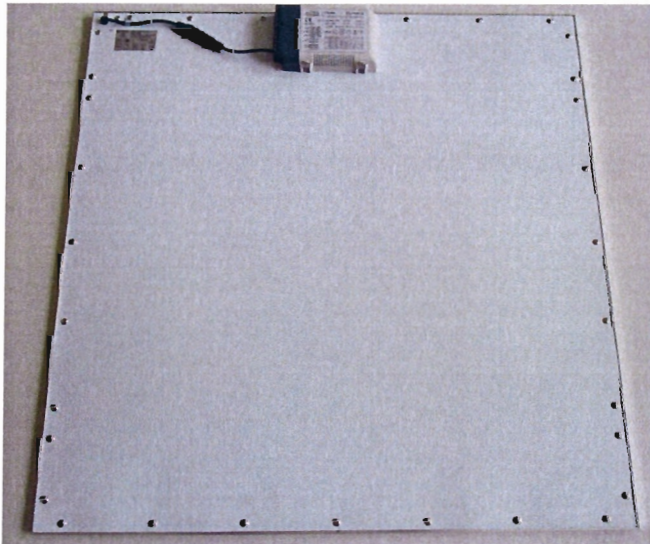
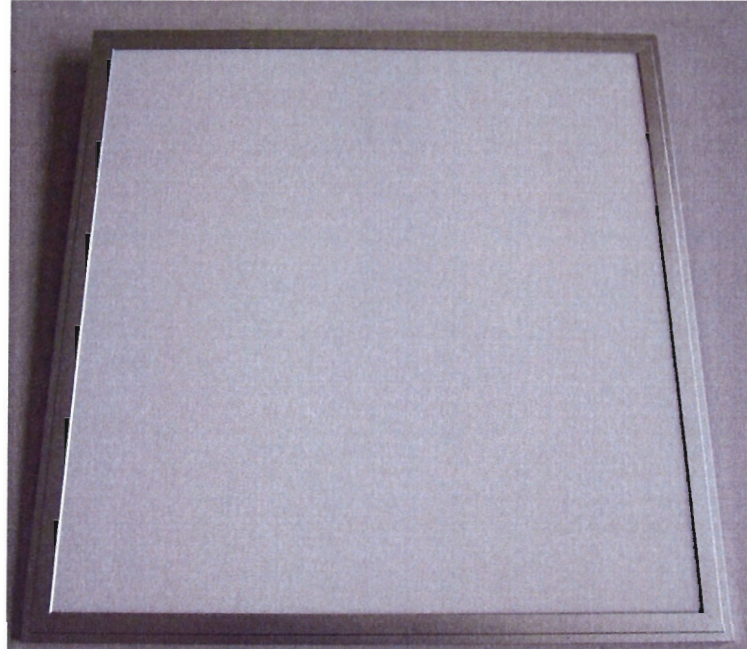
DATE OF TEST PERFORMANCE: 11.03.2015 - 03.04.2015

LABORATORY CHIEF :
/ T. Hristov /



**The results showed in present certificate concern tested sample only
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laboratory**

Copy of identification table and/or photo of tested object



ELMARK Model: LED PANEL
 Watt: 48W
 Colour temp.: 4000-4300K
 Cat. No: 92PANEL014

4000 Lumen

230V 50-60Hz

30000 h

IP20

110°-120°

CE

LCM-60 **ELMARK**
 For operation with LED modules only

AC/L AC/N

CE

INPUT: 200-240 V AC 0.37 A 50/60 Hz
 277 V AC 0.27 A 50/60 Hz

tc: 90°C

λ: 0.96 Vo max = 95 V for CC mode

FAN+ NTC+ DIM+ Vo+ ON OFF

SELV

ta	Vo DC	Current	1	2	3	4	5	6
50°C	90V	0.5A	—	—	—	—	—	—
	90V	0.6A	ON	—	—	—	—	—
	86V	0.7A	ON	ON	—	—	—	—
50°C	67V	0.9A	ON	ON	ON	—	—	ON
	57V	1.05A	ON	ON	ON	ON	—	ON
40°C	42V	1.4A	ON	ON	ON	ON	ON	ON

123456

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RESULTS OF TESTING:

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№	Factor name	Units	Standard method	№ of sample	Test results (indetermination)	Factor volume and tolerance	Test conditions
1.	Mechanical strength:	-	cl. 4.13	068	-	cl. 4.13	
1.1	Impact tests from spring hammer: - fragile parts - other parts	N.m N.m	cl. 4.13.1	068 068	withstand 0,20 0,35	cl. 4.13.1 Table 4.3 0,20 0,35	-
2.	Resistance to force and torque:	-	cl. 4.13	068	-	cl. 4.13	
2.1	Mechanical load: - four times the weight - torque 2,5 Nm	min N N.m	cl. 4.14.1	068 068 068	- - -	cl. 4.14.1	-
2.2	Straight test finger	N	cl. 4.13.3	068	withstand 30	30	-
2.3	Lampholder	N	cl. 4.4.4 and cl.4.12.4	068	-	30	1 min
2.4	Screws	N.m	cl.4.12	068	withstand 2,5	cl.4.12 2,5	-
3.	Creepage distances and clearances:	-	cl. 11.2.1	068	-	cl. 11.2	-
3.1	Creepage distances for a.c. (50 Hz) sinusoidal voltages ≤ 250 V	mm mm mm	t. 11.2.1	068 068 068	> 5 > 6 > 8	Table11.1 Basic insulation ≥ 2,5 Supplementary insulation ≥ 2,5 Reinforced insulation ≥ 5	-
3.2	Clearances for a.c. (50 Hz) sinusoidal voltages ≤ 250 V	mm mm mm	t. 11.2.1	068 068 068	> 4 > 5 > 7	Table11.1 Basic insulation ≥ 2,5 Supplementary insulation ≥ 2,5 Reinforced insulation ≥ 5	-
4.	Provision for earthing:	-	cl. 7.2	068	-	cl. 7.2	-
4.1	Metal parts in contact with supporting surface	Ω	cl. 7.2.3	068	-	cl. 7.2.1 ≤ 0,5	10A 1 min
5.	Resistance to tensile and torsional for power cords:	-	cl. 5.2	068	-	cl. 5.2	-
5.1	Cord anchorage - pull - torque - displacement	N N.m mm	cl. 5.2.10.3	068 068 068	- - -	cl. 5.2.10.1 Table 5.2 60 0,25 ≤ 2,0	

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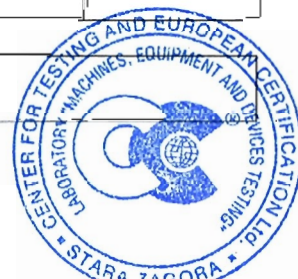
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№	Factor name	Units	Standard method	№ of sample	Test results (indetermination)	Factor volume and tolerance	Test conditions
6.	Protection against electric shock	N	cl. 8.2.5	068	withstand 10	cl. 8.2.1÷ cl. 8.2.4 10	-
7.	Protection against residual voltages	V	cl. 8.2.7	068	0	cl. 8.2.7 < 50	1 min
8.	Heating / Temperature /	-	cl. 12	068	-	cl. 12	-
8.1	Normal operation		cl. 12.4.1	068	Maximum temperature with LED P _n = 48 W	cl. 12.4.2 Table 12.1 ; 12.2	t=25°C U=1.06U _n
	Ballast	°C		068	55	≤ 90	
	Insulation of internal wiring	°C		068	44	≤ 90	
	Terminal blocks - Polyamide	°C		068	46	≤ 85	
8.2	Abnormal operation		cl. 12.5.1	068	-	cl. 12.5.2 Table 12.3	t=25°C U=1.1 U _n
9.	Endurance test	h	cl. 12.3.1	068	240	cl. 12.3.2 240	t=35°C U=1.1 U _n
10.	Protection against ingress of foreign bodies and moisture resistance. (IP-code)	-	cl. 9.2	068	withstand IP 20	≥ IP 20	-
10.1	Protection against penetration of solid objects and dust	-	cl. 9.2.0	068	withstand IP 2X	IP 2X	10 N
10.2	Protection against penetration of harmful water	-	cl. 9.2.0	068	IP X0	IP X0	-
11.	Humidity resistance	h	cl. 9.3.1	068	withstand 48 see cl. 12 , cl.13 of test report	cl. 9.3 48	Rh=95% t=25°C

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Test report : № 2e-15-068 / 06.04.2015

№	Factor name	Units	Standard method	№ of sample	Test results (indetermination)	Factor volume and tolerance	Test conditions
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12.	Insulation resistance:	-	cl. 10.2.1	068	-	cl. 10.2.1 Table 10.1	-
12.1	Between current-carrying parts of different polarity	MΩ	cl. 10.2.1	068	-	R > 2	1 min , 500 V
12.2	Between life parts and mounting surface	MΩ	cl. 10.2.1	068	R > 999	R > 2	1 min , 500 V
12.3	Between life parts and metal parts of luminaire	MΩ	cl. 10.2.1	068	R > 999	R > 2	1 min , 500 V
12.4	Basic insulation	MΩ	cl. 10.2.1	068	R > 999	R > 2	1 min , 500 V
12.5	Additional insulation	MΩ	cl. 10.2.1	068	R > 999	R > 3	1 min , 500 V
12.6	Double or reinforced insulation	MΩ	cl. 10.2.1	068	R > 999	R > 4	1 min , 500 V

13.	Dielectric strenght of insulation :	-	cl. 10.2.2	068	-	cl. 10.2.2 Table 10.2	-
13.1	Between current-carrying parts of different polarity	V	cl. 10.2.2	068	-	U(perf.) = 1460	1 min , 50 HZ
13.2	Between life parts and mounting surface	V	cl. 10.2.2	068	withstand U = 1460	U(perf.) = 1460	1 min , 50 HZ
13.3	Between life parts and metal parts of luminaire	V	cl. 10.2.2	068	withstand U = 1460	U(perf.) = 1460	1 min , 50 HZ
13.4	Basic insulation	V	cl. 10.2.2	068	withstand U = 1460	U(perf.) = 1460	1 min , 50 HZ
13.5	Additional insulation	V	cl. 10.2.2	068	withstand U = 1460	U(perf.) = 1460	1 min , 50 HZ
13.6	Double or reinforced insulation	V	cl. 10.2.2	068	withstand U = 2920	U(perf.) = 2920	1 min , 50 HZ

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№	Factor name	Units	Standard method	№ of sample	Test results (indetermination)	Factor volume and tolerance	Test conditions
14.	Touch current,	mA	cl. 10.3	068	0,00	cl. 10.3 ≤ 0,7	-
	Protective conductor current	mA		068	0,02	≤ 3,5	
15.	Resistance to heat /Resistance to abnormal heat – Ball pressure test method/	mm	cl. 13.2.1	068	0,9	cl. 13.2 ≤ 2	t=125 °C 60 min
16.	Resistance to flame and ignition	-	cl. 13.3	068	-	cl. 13.3	-
16.1	Needle-flame test method	s	cl. 13.3.1	068	0	cl. 13.3.1 ≤ 30	-
16.2	Glow-wire flammability test method	°C	cl. 13.3.2	068	no ignition at 650 °C	cl. 13.3.2 glow-wire (650 ± 10) °C for 30s	-
17.	TRACKING TEST	V	cl. 13.4	068	-	cl. 13.4 175	50 drops
18.	PEAK PULSE VOLTAGE	V	cl. 4.4.5	068	-	cl. 4.4.5 ≤ 5000 V	-

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Used technical equipments:

№	Designation	Type	Manufacturer	Identification №	Date of last calibration
1.	Appliance multitester	CA6160	CHAUVIN ARNOUX France	16010173	21.03.2014
2.	Digital multimeter	UNIGOR 390	LEM- Austria	PI 3288	19.03.2014
3.	Climatic chamber	Alpha 990H	Design Environmental England	A3793	-
4.	Multi channel thermometer	MT100TD-16	Bulgaria	0418/2009	09.06.2014
5.	Digital gauge	-	China	090	31.10.2014
6.	Impact spring hammer tester	-	Bulgaria	011	21.07.2014
7.	Thermometer-hygrometer	177-H1	TESTO Germany	01320300/902	19.04.2012
8.	Testing finger with articulation	-	Bulgaria	№ 006	21.07.2014

TEST PERFORMER: 1.....
/ T. Hristov /



2.....
/ D. Chavalinov /

HEAD OF LABORATORY:.....
/ T. Hristov /