

ETICS-CoA-015-2018



European Testing Inspection and Certification System

CERTIFICATE OF ACCEPTANCE

EZU – Elektrotechnický zkušební ústav, s.p

Pod Lisem 129, 171 02 Praha 8 – Troja Czech Republic

has been assessed and determined to fully comply with the requirements of EN-ISO/IEC 17065, PD ECS 050 and the Rules of Procedure relevant to the European Schemes for which the responsible CB is member.

EZU Elektrotechnický zkušební ústav, s.p

is therefore entitled to operate as Certification Body within the European Schemes ENEC, ENEC+, HAR, CCA, CCA-EMC and KMK for the Scope (Product Category(ies) and Standard(s)) as listed in the relevant part of the ETICS Web Site at

www.etics.org.

This certificate remains valid until 24th January 2021, at which time it will be reissued by the ETICS Secretary General upon successful completion of the normally scheduled 3-year Reassessment Programme administered by the ETICS.

Brussels, 14 April 2018

Giancarlo Zappa, Secretary General



LUG Light Factory Ltd.
Producer of Professional Lighting Fittings



PHOTOMETRIC TEST REPORT

Test Report according to LM-79 / EN13032

1. Device Under Test specification:

TEST REPORT NO. :	112/2018
TEST PROTOCOL NO. :	4768
PLACE/DATE:	ZIELONA GÓRA, 26.04.2018
TESTED AND COMPILED BY:	KRZYSZTOF OLEK
APPROVED BY:	MARCIN BIAŁAS
DEVICE UNDER TEST:	LIGHT FITTING
LUMINAIRE NAME:	URBINI LED ED 2350lm 740 O10 szary
ARTICLE NO:	130232.5L041.111
MANUFACTURER:	LUG LIGHT FACTORY
VERSION INFO:	STANDARD
LED MODULE:	ML1600400.W740.02A
LAMP IDENTIFICATION :	LED 4000K
LED DRIVER:	ELT LCM 42/350...1050-E
INPUT VOLTAGE/FREQUENCY:	230V/50Hz
LUMINAIRE DIMENSIONS :	L : 0.407 m / W : 0.110 m / H : 0.120 m
LIGHT OUTPUT DIMENSIONS :	L : 0.145 m / W : 0.045 m

2. Goniophotometry Test Results:

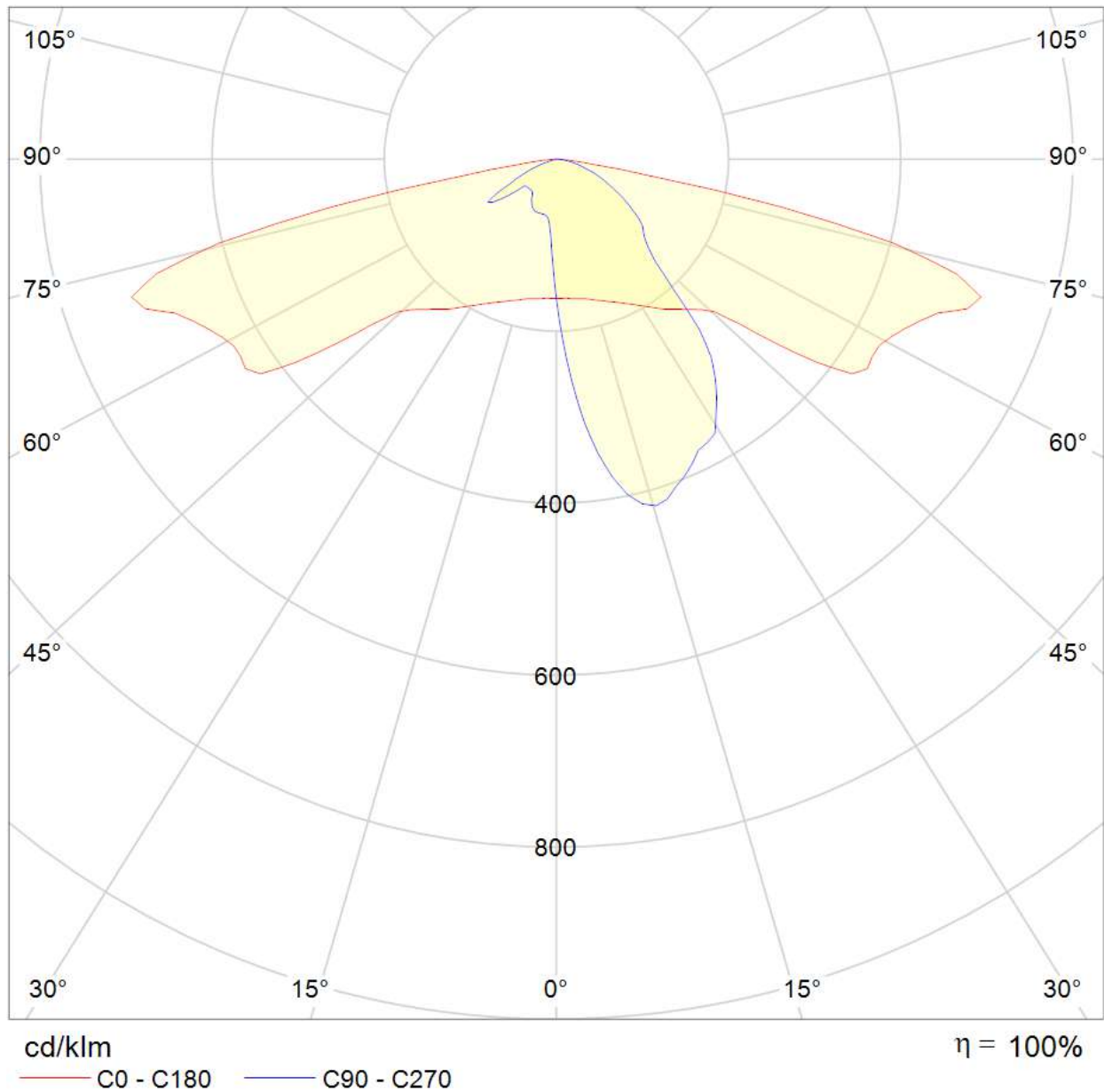
LUMINOUS FLUX :	2400lm
ACTIVE POWER :	20W
EFFICIENCY :	114,3lm/W
RMS SUPPLY CURRENT	0,10A
POWER FACTOR:	0,946
RMS SUPPLY VOLTAGE :	230,0V
FREQUENCY :	50,0Hz
LIGHT DISTRIBUTION ANGLE:	N/A
ACCURACY :	± 5 %
AMBIENT TEMPERATURE :	25 °C ± 1 °C

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Producer of Professional Lighting Fittings



3. LIGHT DISTRIBUTION (POLAR) CURVE:





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4. LUMINOUS INTENSITY DISTRIBUTION in cd/1000lm:

C/γ	90	105	120	135	150	165	180	195	210	225	240	255	270
0	161,8	161,8	161,8	161,8	161,8	161,8	161,8	161,8	161,8	161,8	161,8	161,8	161,8
2	119,9	121,9	124,8	131,6	140,1	150,9	162,0	173,9	185,3	194,6	202,5	206,7	209,6
4	90,9	92,4	97,2	106,6	120,9	140,2	162,0	186,4	209,1	228,9	245,0	254,5	259,2
6	76,1	77,6	80,7	88,7	104,4	130,3	163,1	199,3	234,9	265,0	288,0	301,0	306,6
8	69,0	70,0	72,6	78,5	91,9	121,1	163,7	212,5	260,9	299,0	325,1	338,8	344,6
10	66,8	67,0	68,3	72,8	83,4	113,1	164,8	227,0	286,5	328,9	355,6	369,6	375,4
12	65,7	65,9	66,5	69,2	78,0	105,5	166,1	241,7	310,8	354,1	380,7	394,1	398,9
14	65,7	65,5	66,1	68,1	74,0	99,1	168,1	257,2	332,6	375,9	400,5	410,2	413,1
16	65,7	65,3	65,7	67,0	71,2	94,2	170,7	272,4	352,4	394,0	412,8	417,4	419,2
18	65,7	65,5	65,7	66,5	69,3	90,0	172,9	288,6	371,4	408,4	418,6	418,3	415,9
20	65,7	65,9	65,5	66,1	68,0	86,5	176,2	305,1	388,8	417,5	420,3	409,1	405,5
22	65,7	65,5	66,1	66,1	66,9	83,3	179,0	322,4	405,1	423,1	413,2	400,9	397,5
24	64,2	64,6	65,4	65,2	66,0	80,4	182,7	340,4	419,7	427,0	405,5	392,4	387,7
26	62,7	63,1	64,2	64,6	64,7	78,3	186,9	358,0	433,5	425,7	397,9	381,7	376,5
28	60,5	61,2	62,8	62,8	63,6	76,5	191,5	376,6	446,6	421,7	390,5	376,5	373,2
30	57,2	58,5	60,7	61,1	62,1	74,6	196,8	395,5	459,1	417,9	392,1	376,9	368,5
32	54,2	56,0	57,8	59,1	60,8	73,1	202,4	414,6	472,1	419,1	395,2	360,4	350,1
34	49,7	52,7	55,2	56,7	59,3	72,0	209,0	434,2	484,7	433,9	374,5	341,9	333,0
36	47,5	48,8	53,0	53,9	57,6	70,7	215,6	454,6	498,4	446,5	353,6	321,5	313,9
38	46,4	47,1	49,3	50,9	55,6	69,2	221,5	475,4	517,7	433,0	330,7	300,3	292,1
40	46,4	46,4	45,6	48,3	53,6	67,6	227,8	499,1	544,9	413,5	304,9	272,2	258,8
42	46,8	46,6	43,5	45,7	51,7	66,5	234,9	525,7	572,4	383,4	271,9	220,1	202,0
44	46,4	46,8	42,0	43,5	49,3	65,4	243,4	555,4	582,8	346,4	220,3	169,8	165,1
46	47,1	47,5	41,1	40,2	47,4	65,4	255,5	587,0	595,8	297,9	164,4	148,2	148,8
48	47,1	49,2	40,7	37,0	45,2	67,4	285,7	639,7	596,9	235,6	140,9	135,8	138,3
50	48,2	49,0	40,7	35,5	43,0	72,8	333,3	716,7	590,0	173,3	129,9	127,1	132,1
52	63,8	53,4	40,7	34,4	40,2	77,6	383,2	797,7	569,5	142,0	121,5	121,3	127,4
54	77,6	74,8	39,8	32,6	37,8	77,9	424,6	864,4	537,7	129,6	114,8	115,5	119,1
56	89,8	80,7	42,0	30,5	35,4	76,1	435,7	895,5	486,6	120,3	110,2	106,1	107,9
58	93,9	95,0	48,3	29,4	33,0	72,4	432,6	893,3	410,1	111,2	104,2	96,5	98,1
60	80,9	87,4	52,4	27,9	30,2	66,7	433,3	896,6	332,3	103,9	95,5	86,2	88,0
62	60,5	72,2	55,2	26,3	27,6	60,2	440,3	905,0	270,8	95,7	86,5	76,2	77,5
64	52,0	54,7	57,8	25,5	25,0	53,7	450,0	923,2	224,4	87,5	76,3	67,9	68,4
66	40,1	44,9	58,7	25,7	22,8	47,6	462,3	949,5	186,9	78,2	68,3	60,3	60,5
68	33,0	36,4	53,1	26,1	20,9	42,4	477,8	1 013,3	153,4	69,6	61,4	53,0	52,9
70	22,6	30,4	43,9	26,3	19,3	36,8	508,3	1 135,2	121,9	60,9	54,9	46,9	45,6
72	15,6	30,1	36,5	26,7	18,2	32,6	518,9	1 127,5	90,8	53,8	48,7	38,0	36,6

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74	7,1	31,4	31,1	26,9	17,1	28,7	483,4	998,5	64,4	47,6	42,9	32,2	31,1
76	0,0	33,6	27,4	26,1	16,5	23,1	404,5	787,1	47,4	43,2	35,6	27,0	25,7
78	0,0	33,0	26,1	24,4	16,3	18,1	266,8	502,8	36,4	42,3	30,5	22,3	20,6
80	0,0	28,4	27,2	20,9	15,8	12,8	107,1	216,5	26,7	41,5	25,4	17,9	16,3
82	0,0	21,7	27,2	17,0	14,6	6,8	43,1	88,0	19,0	37,0	20,7	13,6	12,3
84	0,0	13,7	25,6	13,5	12,4	3,3	22,3	46,7	13,5	29,0	16,2	9,4	8,7
86	0,0	8,2	20,4	9,4	8,3	2,0	10,3	20,8	8,2	20,6	11,1	6,0	5,1
88	0,0	4,4	13,0	2,4	3,7	0,7	4,0	7,9	4,2	11,8	7,1	3,1	1,8
90	0,0	2,0	4,3	0,6	3,9	0,0	1,7	2,8	2,0	4,9	3,3	0,4	0,0

5. LIGHT SPECTRAL DISTRIBUTION :

CIE Colorimetric Parameters

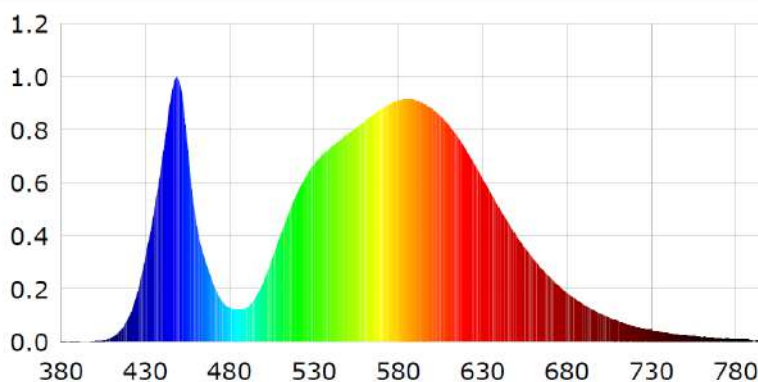
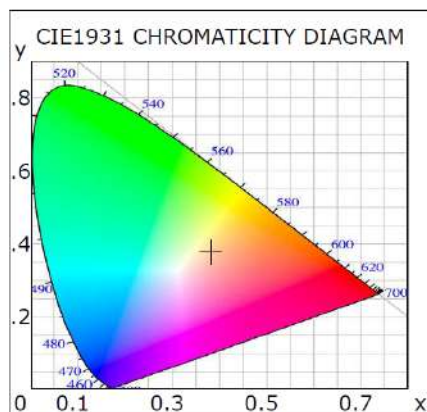
Chromaticity coordinates: $x=0.3815$ $y=0.3762$ $u(u')=0.2260$ $v=0.3343$ $v'=0.5015$ CCT: $T_c=3968K$ ($duv=-0.00055$)Color Ratio: $R=0.172$ $G=0.805$ $B=0.023$

Peak Wavelength: 449nm

Half Bandwidth: 23.7nm

Dominant Wavelength: 579.5nm

Color Purity: 0.274

CRI: R_i : $R_a=73.1$ $R_1=71$ $R_2=79$ $R_3=84$ $R_4=73$ $R_5=70$ $R_6=70$ $R_7=81$ $R_8=56$ $R_9=0$ $R_{10}=49$ $R_{11}=68$ $R_{12}=43$ $R_{13}=72$ $R_{14}=91$ $R_{15}=66$ 

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6. TEST INFORMATION

INTEGRATION TIME: AUTO
INTEGRATOR STABILIZATION TIME: 60 MIN
PHOTOMETRIC DISTANCE: 10,478M
TEST PERFORMED AFTER 2H OF AGING

7. LIST OF EQUIPMENT

SPECIFICATION OF MEASURING APPARATUS USED IN TESTS			
NO.	EQUIPMENT/PRODUCER/TYPE	MARK	USED
1.	SPHERE-SPECTRORADIOMETER LISUN LMS-9000A(PLUS),SCAN RANGE: 380NM~800NM:1NM, SPHERE DIAMETER: 1.50M, 4PI, INTEGRATION TIME: AUTO	SPE/51/LAB	☒
2.	SPECTROMETER: UPRTEK ADVANCED MK350S, SCAN RANGE: 380NM~780NM:1NM	45/LAB/LM	☐
3.	GONIOPHOTOMETER TYPE C-GAMA GONIOMETR GLG-20-1500, G1500-019 4/2017	LAB/UP/26	☒
4.	POWERMETER WITH HARMONIC ANALISER: PF9811 EVERFINE, ACCURACY: CLASS 0,5	53/LAB/DPM	☒
5.	AC TESTING POWER SOURCE DPS1005 EVERFINE	54/LAB/TPS	☒
6.	DIGITAL MULTIMETER, TEKTRONIX	42/LAB/DM	☒
7.	SPEKTROMETER GL SPECTIS 1.0 FLICKER VIS XT010065/16J00129	LAB/PP/34	☒
8.	SPEKTROMETER GL SPECTIS 1.0 VIS GLX10 X0010261/B14W0060	LAB/PP/35	☐
9.	SPEKTROMETER GL SPECTIS 5.0 UV-VIS-NIR XT050149/1104N069	LAB/PP/36	☐
10.	DIGITAL LUXMETER L-100 379/2009	LAB/PP/01	☐
11.	DIGITAL TEMPERATURE&HUMIDITY LOGGER TR-72WF 4214 085A	LAB/PP/15	☐



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PHOTOMETRIC TEST REPORT

Test Report according to LM-79 / EN13032

1. Device Under Test specification:

TEST REPORT NO. :	113/2018
TEST PROTOCOL NO. :	4769
PLACE/DATE:	ZIELONA GÓRA, 26.04.2018
TESTED AND COMPILED BY:	KRZYSZTOF OLEK
APPROVED BY:	MARCIN BIAŁAS
DEVICE UNDER TEST:	LIGHT FITTING
LUMINAIRE NAME:	URBINI LED ED 3150lm 740 O10 szary
ARTICLE NO:	130232.5L071.111
MANUFACTURER:	LUG LIGHT FACTORY
VERSION INFO:	STANDARD
LED MODULE:	ML1600400.W740.01A
LAMP IDENTIFICATION :	LED 4000K
LED DRIVER:	ELT LCM 42/350...1050-E
INPUT VOLTAGE/FREQUENCY:	230V/50Hz
LUMINAIRE DIMENSIONS :	L : 0.407 m / W : 0.110 m / H : 0.120 m
LIGHT OUTPUT DIMENSIONS :	L : 0.145 m / W : 0.045 m

2. Goniophotometry Test Results:

LUMINOUS FLUX :	3200lm
ACTIVE POWER :	27W
EFFICIENCY :	110,3lm/W
RMS SUPPLY CURRENT	0,13A
POWER FACTOR:	0,946
RMS SUPPLY VOLTAGE :	230,0V
FREQUENCY :	50,0Hz
LIGHT DISTRIBUTION ANGLE:	N/A
ACCURACY :	± 5 %
AMBIENT TEMPERATURE :	25 °C ± 1 °C

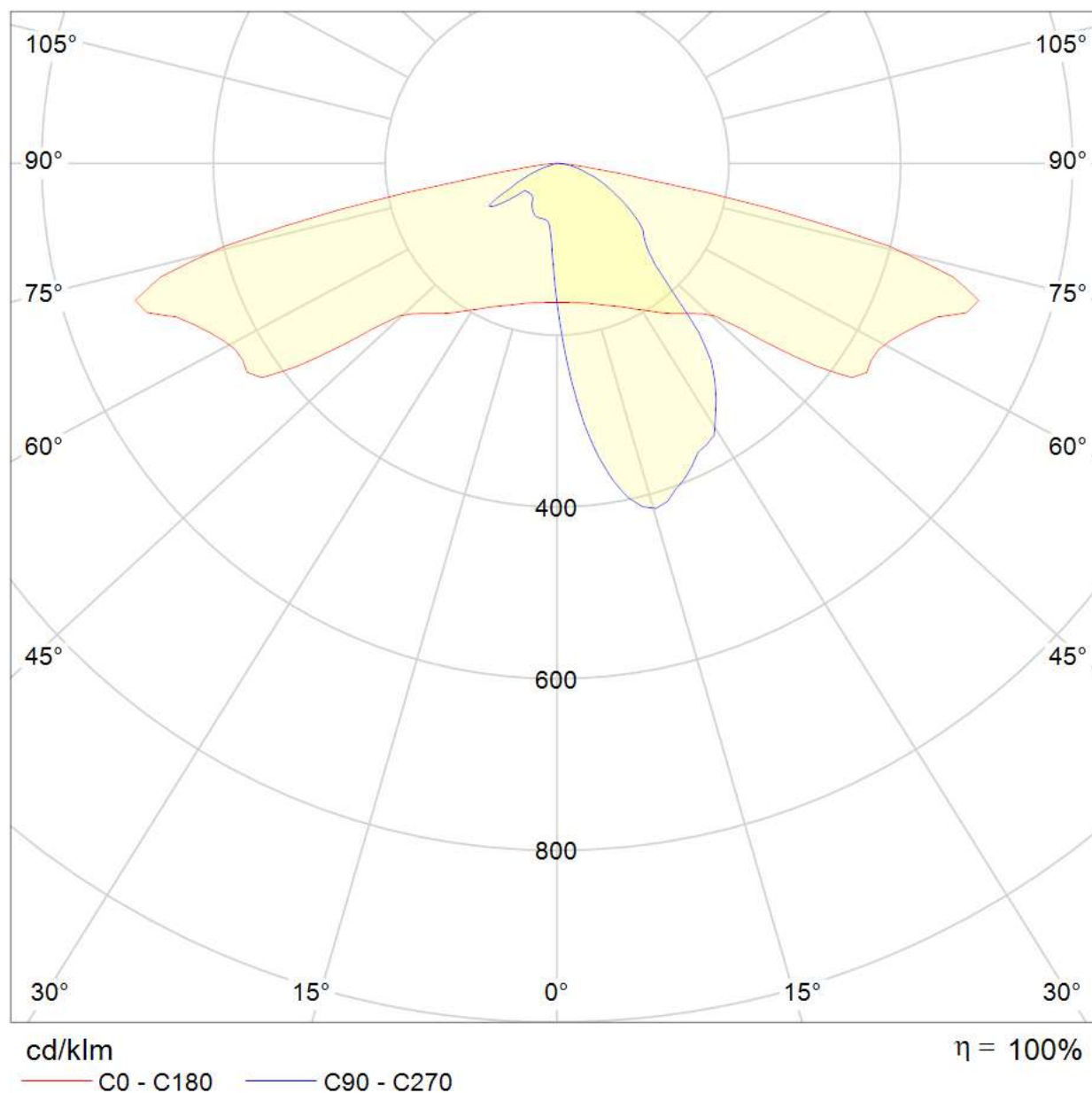


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3. LIGHT DISTRIBUTION (POLAR) CURVE:





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4. LUMINOUS INTENSITY DISTRIBUTION in cd/1000lm:

C/°	90	105	120	135	150	165	180	195	210	225	240	255	270
0	161,8	161,8	161,8	161,8	161,8	161,8	161,8	161,8	161,8	161,8	161,8	161,8	161,8
2	120,4	121,9	125,1	132,2	140,2	150,4	162,1	173,8	185,3	194,7	202,3	206,9	209,3
4	91,4	93,0	97,7	107,2	120,8	140,0	162,4	186,1	209,3	229,0	244,7	254,7	258,9
6	76,8	78,2	81,4	89,4	104,8	130,3	163,1	199,2	234,5	265,0	288,3	300,7	306,1
8	69,6	70,6	73,4	79,3	92,2	121,0	163,9	212,5	260,9	299,2	324,9	338,5	343,9
10	67,4	67,7	69,1	73,4	84,2	113,0	164,9	226,7	286,9	329,1	355,5	369,3	374,4
12	66,6	66,6	67,5	70,2	78,6	105,8	166,2	241,7	310,8	354,4	380,5	393,6	397,8
14	66,6	66,5	66,6	68,8	74,8	99,5	168,3	256,9	332,7	376,4	400,2	409,4	411,9
16	66,6	66,1	66,5	67,9	71,9	94,5	170,6	272,4	352,6	394,2	412,2	416,7	417,8
18	66,6	66,3	66,4	67,2	70,1	90,3	173,4	288,5	371,6	408,0	417,7	417,9	414,3
20	66,8	66,6	66,4	66,9	68,7	86,8	176,0	304,9	388,9	417,1	419,7	408,2	403,8
22	66,3	66,5	66,6	66,9	67,9	83,7	179,2	322,3	405,1	422,7	412,2	399,8	396,2
24	65,2	65,5	65,9	65,9	66,8	81,2	182,6	340,0	419,6	426,5	404,7	391,3	386,0
26	63,0	63,8	65,3	65,1	65,5	78,8	186,9	357,8	433,4	425,3	396,9	380,8	374,4
28	61,0	61,9	63,5	63,7	64,1	76,8	191,9	376,3	446,8	420,9	389,1	375,2	370,9
30	57,7	59,3	61,5	61,9	62,9	75,3	196,9	395,1	459,0	416,8	390,7	375,2	365,7
32	55,0	56,7	58,6	60,0	61,5	73,8	202,5	414,3	471,8	418,1	393,4	358,1	347,9
34	50,3	53,5	56,0	57,5	60,0	72,5	209,0	434,1	484,4	432,5	372,6	340,6	331,2
36	48,3	49,5	53,8	54,8	58,5	71,3	215,4	454,0	497,9	444,8	352,0	320,0	312,3
38	47,2	47,8	50,1	51,9	56,6	69,8	221,8	474,8	517,2	430,7	329,3	299,2	291,0
40	46,9	47,3	46,5	49,1	54,5	68,1	228,1	498,2	543,9	411,5	303,5	270,6	256,5
42	47,5	47,3	44,3	46,8	52,3	67,0	235,0	525,1	571,5	381,2	270,3	218,4	200,4
44	46,9	47,4	42,9	44,4	50,4	66,2	243,5	554,7	581,9	344,2	218,3	169,0	164,8
46	48,0	48,2	41,9	41,0	48,3	66,2	255,7	586,1	595,0	295,5	163,6	147,9	148,6
48	48,0	49,9	41,7	37,8	46,1	67,7	286,1	639,1	595,7	233,1	140,4	135,9	138,4
50	48,9	49,9	41,5	36,4	43,6	73,6	333,9	715,0	588,3	172,0	129,9	127,1	131,9
52	64,1	54,6	41,7	35,5	41,0	77,9	383,6	796,4	566,3	141,6	121,6	121,6	127,0
54	77,6	74,8	40,7	33,5	38,6	78,3	424,4	862,6	534,0	129,7	115,1	115,5	118,9
56	90,0	80,8	42,9	31,7	36,3	76,4	435,0	892,8	482,1	120,5	110,4	106,4	108,4
58	93,6	95,1	48,7	30,3	33,8	73,1	431,6	890,3	405,4	111,5	104,4	96,5	98,2
60	80,9	87,3	53,3	29,0	31,2	67,0	432,7	895,0	328,5	104,0	95,8	86,5	87,9
62	61,0	72,4	55,9	27,0	28,7	60,7	439,7	902,7	267,9	96,0	86,8	76,7	77,7
64	52,5	55,3	58,5	26,6	25,9	54,1	449,5	921,6	222,7	87,7	76,7	68,3	69,1
66	40,9	45,5	59,2	26,6	23,7	48,4	461,8	947,9	185,6	78,6	68,8	60,7	61,0
68	33,7	37,3	53,7	26,9	21,9	42,8	477,5	1 014,1	153,0	69,8	61,9	54,0	53,4
70	23,8	31,2	44,4	27,2	20,4	37,6	507,7	1 134,8	121,2	61,3	55,4	47,4	46,4
72	16,8	31,1	37,4	27,5	19,0	33,2	516,3	1 121,6	90,2	54,4	49,3	38,6	37,2

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74	8,0	32,6	32,0	27,7	18,1	29,3	479,8	989,7	64,1	48,0	43,5	33,1	31,8
76	0,0	34,8	28,3	27,2	17,5	23,8	398,9	774,4	47,7	44,1	36,3	27,9	26,7
78	0,0	34,0	27,1	25,3	17,4	19,1	258,5	489,8	36,9	42,8	31,2	23,2	21,6
80	0,0	29,3	28,3	22,1	16,8	13,5	101,7	205,9	27,5	42,4	26,5	18,8	17,3
82	0,0	22,5	28,2	18,2	15,6	8,0	42,7	84,8	20,4	37,7	21,8	14,4	13,0
84	0,0	14,6	26,5	14,6	13,4	4,5	23,1	46,3	14,8	29,8	17,2	10,5	9,4
86	0,0	9,1	21,1	10,5	9,4	3,0	11,1	21,5	9,3	21,2	12,1	6,8	5,9
88	0,0	5,7	14,1	3,0	5,0	1,9	5,2	8,9	5,3	12,8	7,9	4,1	3,0
90	0,0	3,2	5,4	1,9	5,1	0,6	2,7	4,0	3,0	5,8	4,2	1,4	0,5

5. LIGHT SPECTRAL DISTRIBUTION :

CIE Colorimetric Parameters

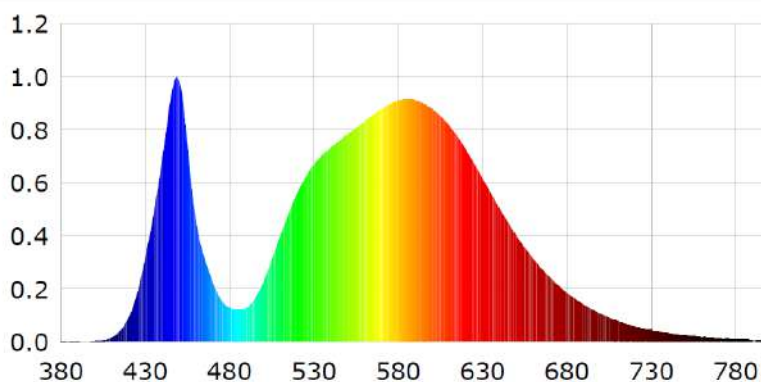
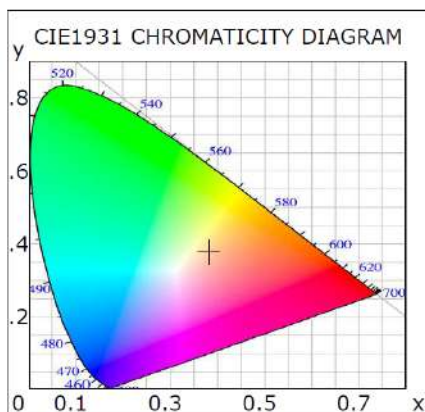
Chromaticity coordinates: $x=0.3815$ $y=0.3762$ $u(u')=0.2260$ $v=0.3343$ $v'=0.5015$ CCT: $T_c=3968K$ ($duv=-0.00055$)Color Ratio: $R=0.172$ $G=0.805$ $B=0.023$

Peak Wavelength: 449nm

Half Bandwidth: 23.7nm

Dominant Wavelength: 579.5nm

Color Purity: 0.274

CRI: R_i : $R_a=73.1$ $R_1=71$ $R_2=79$ $R_3=84$ $R_4=73$ $R_5=70$ $R_6=70$ $R_7=81$ $R_8=56$ $R_9=0$ $R_{10}=49$ $R_{11}=68$ $R_{12}=43$ $R_{13}=72$ $R_{14}=91$ $R_{15}=66$ 

**LUG**[®]**LUG Light Factory Ltd.**
Producer of Professional Lighting Fittings

6. TEST INFORMATION

INTEGRATION TIME: AUTO
INTEGRATOR STABILIZATION TIME: 60 MIN
PHOTOMETRIC DISTANCE: 10,478M
TEST PERFORMED AFTER 2H OF AGING

7. LIST OF EQUIPMENT

SPECIFICATION OF MEASURING APPARATUS USED IN TESTS			
NO.	EQUIPMENT/PRODUCER/TYPE	MARK	USED
1.	SPHERE-SPECTRORADIOMETER LISUN LMS-9000A(PLUS),SCAN RANGE: 380NM~800NM:1NM, SPHERE DIAMETER: 1.50M, 4PI, INTEGRATION TIME: AUTO	SPE/51/LAB	☒
2.	SPECTROMETER: UPRTEK ADVANCED MK350S, SCAN RANGE: 380NM~780NM:1NM	45/LAB/LM	☐
3.	GONIOPHOTOMETER TYPE C-GAMA GONIOMETR GLG-20-1500, G1500-019 4/2017	LAB/UP/26	☒
4.	POWERMETER WITH HARMONIC ANALISER: PF9811 EVERFINE, ACCURACY: CLASS 0,5	53/LAB/DPM	☒
5.	AC TESTING POWER SOURCE DPS1005 EVERFINE	54/LAB/TPS	☒
6.	DIGITAL MULTIMETER, TEKTRONIX	42/LAB/DM	☒
7.	SPEKTROMETER GL SPECTIS 1.0 FLICKER VIS XT010065/16J00129	LAB/PP/34	☒
8.	SPEKTROMETER GL SPECTIS 1.0 VIS GLX10 X0010261/B14W0060	LAB/PP/35	☐
9.	SPEKTROMETER GL SPECTIS 5.0 UV-VIS-NIR XT050149/1104N069	LAB/PP/36	☐
10.	DIGITAL LUXMETER L-100 379/2009	LAB/PP/01	☐
11.	DIGITAL TEMPERATURE&HUMIDITY LOGGER TR-72WF 4214 085A	LAB/PP/15	☐

ANEXA LA CAIET DE SARCINI
privind organizarea si desfășurarea procedurii ce are ca obiect:

**LUCRĂRI DE MODERNIZARE SI EFICIENTIZARE A SISTEMULUI DE ILUMINAT PUBLIC
s. GĂUZENI**

1. OBIECTUL CERERII DE OFERTE

Procedura are ca obiect modernizarea sistemului de iluminat public din s. Găuzeni. Procedura aplicata pentru atribuirea contractului de achiziție publica este “**Licitație descisă**” si se desfășoara in conformitate cu actele normative in vigoare.

2. TERMINOLOGIE

2.1. Sistem de iluminat public - ansamblu tehnologic si funcțional, amplasat într-o dispunere logică în scopul realizării unui mediu luminos confortabil și/sau funcțional și/sau estetic, capabil să asigure desfășurarea în condiții optime a unei activități / spectacol / sport / circulației / a unui efect luminos estetic-arhitectural și altele, alcătuit din construcții, instalații și echipamente specifice, care cuprinde:

- a) rețele electrice de joasă tensiune supratereane sau subterane, destinate iluminatului public;
- b) stâlpi de susținere a rețelei cu fundațiile aferente, respectiv a corpurilor de iluminat, destinați iluminatului public;
- c) posturi de transformare si cutii de distribuție aeriene, terestre sau subterane, destinate exclusiv iluminatului public;
- d) echipamente de comandă, automatizare, măsurare și control;
- e) corpuri de iluminat echipate cu sursă de lumină corespunzătoare, console și accesorii.

2.2. Aparat/corp de iluminat - aparatul de iluminat ce servește la distribuția, filtrarea și transmisia luminii produse de la una sau mai multe lămpi către exterior, care cuprinde toate dispozitivele necesare fixării și protejării lămpilor, circuitele auxiliare și componentele electrice de conectare la rețeaua de alimentare, care asigură amorsarea și funcționarea stabilă a surselor de lumină.

2.3. Iluminare medie E_m - media aritmetică a iluminărilor pe suprafața de calcul;

2.4. Iluminare minimă E_{min} - cea mai mică valoare a iluminării punctuale pe suprafața de calcul;

2.5. Luminanță media L_m – media aritmetică a luminanțelor de pe suprafața avută în vedere.

2.6. Luminanță minimă L_{min} – cea mai mică valoare a luminanței de pe suprafața avută în vedere.

2.7. Nivel de iluminare / nivel de luminanță – nivelul ales pentru valoarea iluminării / luminanței.

2.8. Uniformitate generală a luminanței – raportul dintre Iluminare minimă și Iluminare medie, ambele considerate pe toată suprafața de calcul.

2.9. Uniformitatea longitudinală a luminanței – raportul între luminanța minimă și Luminanța maximă, ambele considerate în axul benzii de circulație al zonei de calcul și în direcția de desfășurare a traficului rutier.

2.10. Indice de prag – creșterea pragului percepției vizuale, TI care conduce la orbirea inconfortabilă, caracterizând orbirea provocată de sursele de lumină aflate în câmpul vizual, în raport cu Luminanța medie a căii de circulație.

3.ORGANIZATORUL PROCEDURII:

Denumirea autorității contractante : Primaria s.Găuzeni

Adresa:

Nr. Telefon:

4.CONDIȚII DE PARTICIPARE LA CONCURS:

4.1 Ofertantul va prezenta oferta tehnica si oferta financiara pentru: Furnizare si montaj, de aparate de iluminat echipate cu surse LED – pentru reabilitarea si modernizarea sistemului de iluminat public.

Digitally signed by Ianco Gheorghe
Date: 2018.11.29 13:24:17 GMT+03:00
Reason: MoldSign Signature
Location: Moldova



5. OBIECTUL CONTRACTULUI

5.1 Modernizarea eficientizarea sistemului de iluminat public stradal se va face prin achiziționarea și montarea a **68** aparate de iluminat echipate cu surse LED pe stâlpi existenți (și nou montați după caz), împărțite pe clase ale sistemului de iluminat conform descrierii de mai jos:

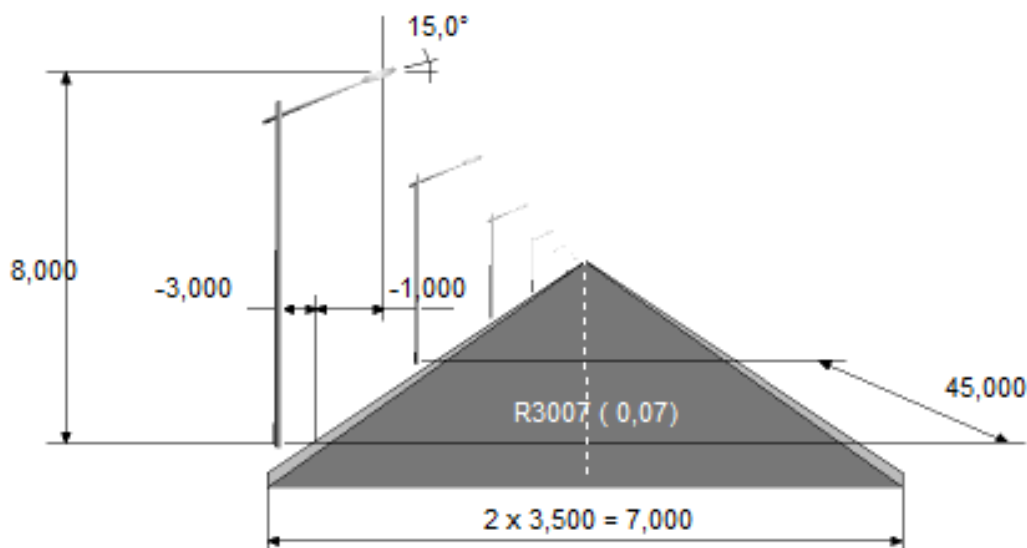
- Situația 1 - clasă de iluminat M6: 34buc aparate de iluminat de tipul 1 40W
- Situația 2 - clasă de iluminat P5: 32 buc aparate de iluminat de tipul 2 15W
- Situația 3 - clasă de iluminat P4: 2 buc aparate de iluminat de tipul 3 80W

și cuprinde furnizarea corpurilor de iluminat, consoalelor, cleme de conexiune, cablu de alimentare, etcetera în conformitate cu specificațiile tehnice, precum și montajul acestora pe stâlpii LEAI-0.4kV și LEC-0.4kV.

Aparatele de iluminat vor fi echipate cu surse LED, iar puterea lor se va alege de către fiecare ofertant în urma efectuării calculului luminotehnice pentru fiecare situație martor prezentată și detaliată în prezenta documentație, însă se va ține cont de următoarele:

- Pentru iluminarea străzilor încadrate în categoria M6, Situația 1 conform descrierii de mai jos, puterea instalată va fi de maxim 40W;
- Pentru iluminarea străzilor încadrate în categoria P5, Situația 2 conform descrierii de mai jos, puterea instalată va fi de maxim 15W;
- Pentru iluminarea străzilor încadrate în categoria P4, Situația 3 conform descrierii de mai jos, puterea instalată va fi de maxim 80W;

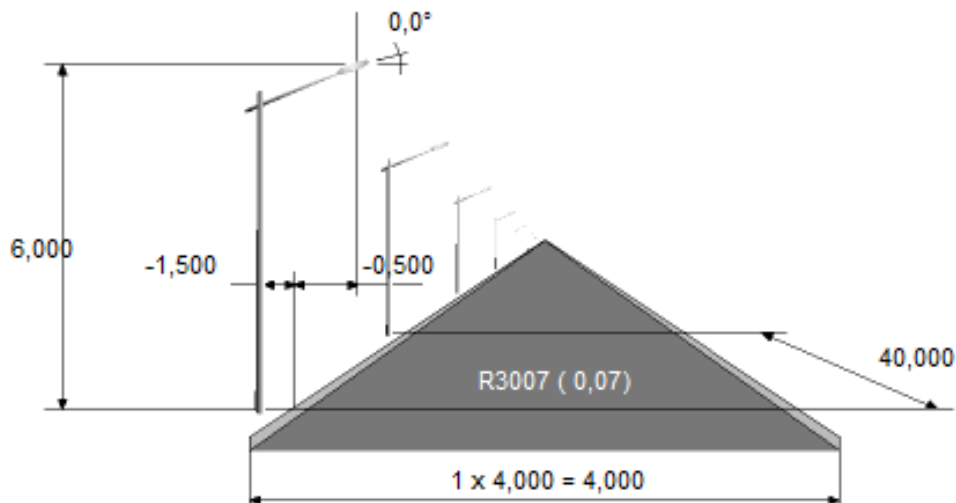
Configurația și cerințele pentru situație este descrisă mai jos:



Situația 1 : Strada centrala

clasă de iluminat M6:

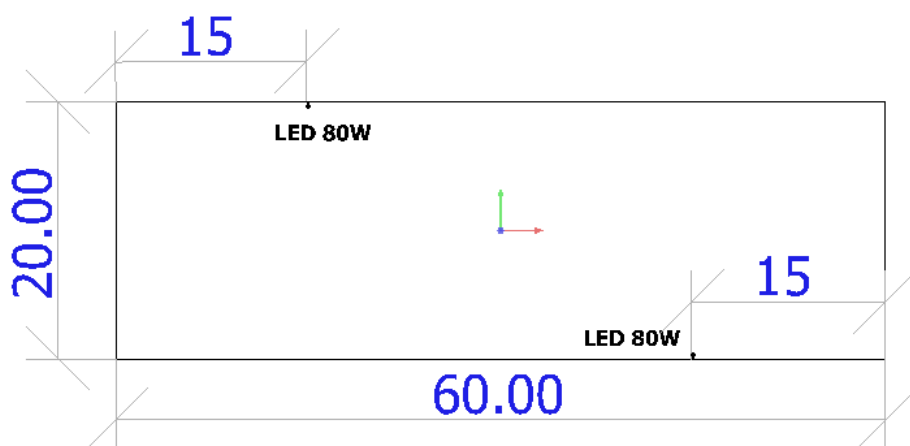
- Montaj : unilateral
- Distanța între stâlpi : 45 m
- Lățime carosabil : 7 m
- Retrageră stâlp : 3 m
- Înălțime montaj aparat de iluminat : 8 m
- Lungime braț : 1-2 m
- Unghi înclinare : 0° - maxim 15°
- Factor de menținere : 0.85



Situația 2 : străzi rezidențiale

clasă de iluminat P5:

- Montaj : unilateral
- Distanța între stâlpi : 40 m
- Lățime carosabil : 4 m
- Retrager stâlp : 1,5 m
- Înălțime montaj aparat de iluminat : 6-7 m
- Lungime braț : 1 m
- Unghi înclinare : 0° - maxim 15°
- Factor de menținere : 0.85



Situația 3 : Piața centru, clasa de iluminat P4

clasă de iluminat P4:

- Montaj : conform planului
- Distanța între stâlpi : 30 m
- Lățime arie : 20 m
- Lungime arie : 60 m
- Retrager stâlp : 0 m
- Înălțime montaj aparat de iluminat : 8 m
- Lungime braț : 0 m
- Unghi înclinare : 0° - maxim 15°
- Factor de menținere : 0.85

Cantitățile de lucrări și utilaj necesare sunt prezentate detaliat în Lista cantităților de lucrări anexată.

Toate lucrările se vor executa în conformitate cu instrucțiunile specifice fiecărei categorii elaborate, cu respectarea prevederilor din normele și legile în vigoare la data execuției.

5.2 Prin modernizarea sistemului de iluminat public stradal din or. Soroca, se urmărește realizarea următoarelor obiective:

1. **ameliorarea securității, siguranței și confortului cetățenilor** pe timp de noapte, prin aducerea iluminatului stradal la valorile cantitative și calitative din prescripțiile naționale și internaționale în domeniu;
2. realizarea unui **sistem de iluminat eficient**, prin:
 - o **integrarea funcțiilor** iluminatului public:
 - **funcționalitate** (satisfacerea nevoii de siguranță, securitate și confort în mod corect)
 - **eficiență**
 - **estetică.**

Pentru întocmirea ofertei tehnice și comerciale, ofertantul va avea în vedere următoarele activități :

- Calcul luminotehnic pentru configurațiile de cai de circulație maror (**situația 1-3 din prezenta documentație**);
- lucrări de modernizare a sistemului de iluminat public existent care constau în achiziționarea și montarea corpurilor de iluminat, brațelor de prindere și conectarea lor la rețea de distribuție prin cleme și cablul de alimentare pentru 68 corpuri de iluminat ;

6. CERINȚE TEHNICE SI DE CALITATE

Pentru iluminatul rutier și pietonal, calculele luminotehnice trebuie să garanteze atingerea următoarelor obiective :

- Asigurarea nivelurilor luminotehnice care să aibă valori egale sau superioare celor reglementate de standardele naționale și internaționale. Ne referim aici la nivelurile de iluminare și luminanța, uniformități generale, longitudinale și transversale atât pentru iluminare cât și pentru luminanța, pragul de orbire, etc.

- Asigurarea unui nivel minim al consumului de energie electrică, în condițiile îndeplinirii tuturor cerințelor, prin următoarele mijloace :

- Corpuri de iluminat cu randament mare și costuri de mentenanță redusă, cu grad mare de protecție și cu caracteristici optice deosebite, echipate cu sursă LED
- Componentele sistemului de iluminat vor fi executate în conformitate cu standardele în vigoare și vor avea certificate de conformitate
- Ca factor de evaluare a aprecierii soluției tehnice propuse va fi puterea electrică instalată a corpurilor de iluminat utilizate pentru modernizare. Obligativu acesta va fi calculată de fiecare ofertant.

- Vor fi prezentate:

- Fișe tehnice aparat de iluminat
- Certificat de conformitate/Licență de la un laborator terț acreditat
- Declarații de conformitate cu marca CE emise de producător
- Declarații de calitate emise de producător
- Certificate de garanție emise de producător.
- Raport de încercare/testare fotometrică fiecare tip de aparat de iluminat
- Raport IP; IK; EMC; termic.
- Fișier electronic pentru calcule luminotenice

Toate aparatele de iluminat vor avea un design adaptat tehnologiei LED, indiferent de formă. Nu se acceptă aparate de tip **retrofit**, adică aparate de iluminat **dezvoltate pentru surse cu descărcări sau incandescentă**, care ulterior au fost adaptate pentru surse LED.

Ofertele care nu respecta această cerință vor fi declarate neconforme.

6.1 Cerințe tehnice minime impuse pentru aparate de iluminat cu LED, folosite pentru iluminatul exterior al zonelor carosabile și pietonale.

- Grad de protecție minim IP 65 pentru compartimentul optic
- Grad de protecție minim IP 65 pentru compartimentul aparataj
- Rezistență la șoc minim IK 07, pentru întreg aparatul de iluminat
- Difuzor din sticlă tratată termic sau policarbonat
- Carcasa realizată din aluminiu sau alt aliaj metalic necoroziv, pentru menținerea în timp a caracteristicilor mecanice inițiale, dimensionata astfel încât să aibă și rolul de radiator pasiv pentru sursele LED.
- Distribuția luminoasă va fi de tip stradal și nu va fi influențată de apariția unor defecte asupra LEDurilor; fiecare LED va avea asociată o lentilă specifică care reproduce distribuția luminoasă completă a aparatului
- Valoarea intensității luminoase va fi determinată de numărul de LED-uri și/sau valoarea curentului aplicat la bornele LED-urilor
- Durata de viață minim 50000 ore cu păstrarea a minim 70% din fluxul luminos inițial
- Randamentul luminos al aparatului de iluminat va fi minim 75%
- Se va prezenta diagrama polară a intensității luminoase și curbele K pentru aparatul de iluminat propus
- Carcasa și sistemul de fixare al aparatelor de iluminat vor fi vopsite în culoarea RAL solicitată de autoritatea contractantă
- Sistemul de fixare al aparatelor va fi pentru montaj pe braț
- Balastul electronic - compatibil cu tipul de sursă luminoasă utilizată cu factorul de putere 0,92
- Protecție împotriva electrocutării Clasă I
- Aparatele de iluminat vor fi echipate cu surse de iluminat având temperatura de culoare cuprinsă între 4000K-5000K
- $T_a=35^{\circ}\text{C}$
- Prevăzut cu protecție la descărcări atmosferice minim 4kV
- Se va prezenta declarație de conformitate a produselor cu cerințele esențiale prevăzute de directivele Uniunii Europene (marca CE)

6.4 Brațe de prindere

Cerințe tehnice minime impuse pentru brațe și coliere de prindere aparate de iluminat stradal

- Material: țevă de oțel protejată de corozie, având diametru minim $\varnothing 32\text{mm}$
- Dimensiuni: în funcție de geometria străzii , lungimea minimă a brațului pe orizontală 500mm; lungimea maximă nu va depăși $\frac{1}{4}$ din înălțimea de montaj
- Unghiuri de înclinare: în funcție de soluția aleasă dar nu mai mari de 15° față de planul orizontal
- Prinderea concolelor pe stâlpi se va face în brățări pereche cu șuruburi

6.5 Componente electrotehnice

Pentru montaj de utilizat numai materiale și utilaje certificate conform legislației în vigoare. Se admite înlocuirea materialelor și componentelor electrotehnice preconizate în specificația proiectului tehnic cu analogice.

6.6 Cerințe tehnice impuse pentru realizarea calculelor luminotehnice:

- în calcule se va folosi un factor de menținere global $MF=0.85$
- în calculele luminotehnice efectuate pentru oferta pe străzi martor se va considera carosabil conform situațiilor 1 din prezenta documentație.
- calculele luminotehnice se efectuează în conformitate cu prevederile standardului

SM EN 13201

- calculele luminotehnice se vor efectua, fie cu un program neutru recunoscut de către CIE (Comisia Internațională de Iluminat), fie cu un program de calcul certificat de un organism internațional sau național acreditat CIE
- valorile minime pentru clasele de iluminat vor fi conform situațiilor 1 din prezenta documentație .

6.7 Documente care să ateste respectarea condițiilor tehnice

6.7.1 Corpuri de iluminat

- Prospect tehnic/fisa de catalog aparat de iluminat in limba romana
- Certificat de conformitate/Licență de la un laborator terț acreditat
- Declarații de conformitate CE producător, din care sa rezulte caracteristicile tehnice solicitate și conformitatea cu standardele EN60598
- Declarații de calitate producător
- Certificat de garanție
- Declarații RoHS producător
- Raport de încercări IP pentru fiecare tip de aparat de iluminat, emis de un organism recunoscut. Se va face dovada acreditării laboratoarelor care a emis raportul.
- Teste IK pentru fiecare tip de aparat de iluminat, emis de un organism recunoscut. Se va face dovada acreditării laboratoarelor care a emis raportul.
- Teste EMC pentru fiecare tip de aparat de iluminat, emis de un organism recunoscut. Se va face dovada acreditării laboratoarelor care a emis raportul.
- Test termic pentru fiecare tip de aparat de iluminat, emis de un organism recunoscut. Se va face dovada acreditării laboratoarelor care a emis raportul.
- Raport de încercare/testare fotometrica fiecare tip de aparat de iluminat, emis de un organism recunoscut. Se va face dovada acreditării laboratoarelor care a emis raportul.

Produsele și componentele oferite trebuie să fie marcate corespunzător documentațiilor prezentate.

Îndeplinirea cerințelor tehnice minime anunțate mai sus este obligatorie, nerespectarea acestora atrage descalificarea ofertelor respective.

7. PREZENTARE OFERTĂ TEHNICĂ :

7.1 Se va prezenta pentru fiecare tip de echipament solicitat in caietul de sarcini, **fise tehnice semnate si stampilate**, care sa conțină o coloana cu cerințele caietului de sarcini si o coloana cu caracteristicile echipamentelor oferite. Caracteristicile echipamentelor oferite trebuie sa îndeplinesca întocmai sau să fie superioare celor solicitate. Declarațiile ofertanților vor fi dovedite prin prezentarea de certificate de conformitate sau alte documente avizate din care sa reiasă cele declarate.

Ofertanții care nu prezintă fisele tehnice, sau care nu îndeplinesc cerințele minime ale echipamentelor solicitate prin caietul de sarcini vor fi descalificați.

La solicitarea autorității contractante, in maxim 72 de ore de la acesta, se va prezenta o mostră cu fiecare tip de aparat de iluminat utilizat, care va rămâne la autoritatea contractanta până recepția la terminarea lucrărilor.

7.2 Prezentarea calculelor luminotehnice si descrierea programelor luminotehnice utilizate, pentru configurațiile de cai de circulație martor – situația 1-3 din prezenta documentație.

Descrierea soluțiilor tehnice propuse si a parametrilor luminotehnici obținuți pe fiecare tip de strada (clasă de iluminat) în urma reabilitării sistemului de iluminat, menționându-se aspectele calitative si cantitative.

Daca un parametru luminotenic al unei situații nu este îndeplinit oferta va fi descalificata din punct de vedere tehnic.

7.3 Evaluare energetică a soluției propuse pentru întreagă cantitate de aparate indicate in situația 1 martor. Evaluarea energetica va avea ca baza de calcul cantitatea **energiei active consumate** de cele 68 aparatele de iluminat indicate la situația 1-3.

În calcul energiei se vor considera 4000 ore de funcționare, se va ține cont de puterea surselor LED, de pierderile din sursele de alimentare și de profilul de reducere a consumului și fluxului luminos.

$$E_{ac} [kWh] = \{3877[h] * (N[buc] * P_i \text{ aparat Situația 1 [W]} + N[buc] * P_i \text{ aparat Situația 2 [W]} + N[buc] * P_i \text{ aparat Situația 3 [W]} + N[buc] * P_i \text{ aparat Situația 4 [W]} + \dots + N[buc] * P_i \text{ aparat Situația 19 [W]} + N[buc] * P_i \text{ aparat Situațiile nestandarte [W]})\} / 1000,$$

Unde:

E_{ac} = energia activă consumată

P_i aparat = puterea instalată pe TIP de aparat propus pentru situația respectivă.

$E_{ac} [kWh] = \{4000[h] * (36 * 40W + 30 * 15W + 2 * 90W)\} / 1000 = 8280 kWh$

Valoarea de **8280 kWh**, se considera valoare de referință a energiei electrice consumate de către sistemul de iluminat pe an.

Ofertele în care cantitatea de energie electrică consumată pentru cele 68 aparate de iluminat în condițiile de funcționare indicate, va fi mai mare decât valoarea indicată, vor fi descalificate.

8. Garanții solicitate:

- lucrări de construcții montaj: 2 ani;
- aparate de iluminat: 5 ani;

9. Avize și acorduri

Ofertantul câștigător va avea obligația să obțină avizele și acordurile necesare potrivit legislației în vigoare pentru realizarea lucrărilor.

12. CONDIȚII FINALE

- Ofertantul trebuie să prezinte în oferta tehnică pentru aparatele de iluminat propuse, rapoarte de încercări pentru aparatele cu LED-uri eliberate de un laborator acreditat în care să se specifice minim gradul de protecție IP și rezistența la impact IK, teste EMC, teste termice, rapoarte fotometrice.

- Ofertanții trebuie să prezinte pentru fiecare tip de echipament solicitat în caietul de sarcini la punctele 6.1 fișe tehnice semnate și stampilate, care să conțină o coloană cu cerințele caietului de sarcini și o coloană cu caracteristicile echipamentelor oferite. Caracteristicile echipamentelor oferite trebuie să îndeplinească întocmai sau să fie superioare celor solicitate.

- Ofertantul trebuie să prezinte în oferta tehnică pentru aparatele de iluminat declarație de conformitate CE din partea producătorului.

Aparatele de iluminat trebuie să aibă înscrispionate tipul, marca producătorului și CE. Tipul aparatelor de iluminat și marca producătorului din oferta trebuie să se identifice cu tipul aparatelor de iluminat și producătorul pentru care s-au prezentat atestatele, și cu cele folosite în proiectele luminotehnice.

- Programul de calcul luminotehnic folosit va fi DIALux. Pe CD (compact disc) fișierele de calcul luminotehnic pentru configurațiile de cai de circulație martor solicitate (situațiile 1-3 conform CS), atât în varianta pe CD, cât și calculele în varianta listată. Fișierele de calcul vor fi într-un format ce permite reluarea calculelor cu programul de calcul folosit, pentru a putea fi verificate proiectele prezentate și pentru a face dovada concordantei dintre datele de intrare solicitate prin caietul de sarcini, cerințele impuse de Standardul SR EN 13201 și rezultatele calculelor luminotehnice.

- Documentația tehnică (pliante, prospecte, manual de utilizare etc.) și documentele emise de instituții / organisme din țara în care ofertanții străini sunt rezidenți, pot fi prezentate într-o altă limbă. Organizarea informațiilor din propunerea tehnică va fi structurată astfel încât să se permită validarea conformității ofertei.

Prezentul Caiet de sarcini este parte integrantă din contractul de achiziție publică.



LUG Light Factory Ltd.
Producer of Professional Lighting Fittings

Zielona Góra, 26.07.2013

EC Declaration of Conformity

RoHS2 Directive 2011/65/EU

LUG Light Factory Ltd. hereby declare that our all products are in full compliance with EU Directive 2011/65/EC (the RoHS2 Directive) that restricts the use of the hazardous substances in electrical and electronic equipment.

We have confirmed our suppliers' statements regarding the absence of the restricted substances.

Compiled by :

LUG Light Factory Sp. z o.o.
Inżynier Laboratorium
Laboratory Engineer
mgr inż. Marcin Białas

Approved by:

LUG Light Factory Sp. z o.o.
DYREKTOR OS. TECHNICZNYCH
mgr inż. Mariusz Ejmont

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NIP 929-17-85-452



NÁRODNÍ AKREDITAČNÍ ORGÁN

EA MLA Signatory
Český institut pro akreditaci, o.p.s.
Olšanská 54/3, 130 00 Praha 3

issues

according to section 16 of Act No. 22/1997 Coll., on technical requirements for products, as amended

CERTIFICATE OF ACCREDITATION

No. 42/2017

Elektrotechnický zkušební ústav, s.p.
with registered office Pod Lisem 129, 171 02 Praha 8 - Troja, Company Registration No. 00001481

to the Certification Body No. 3018
Product Certification Body

Scope of accreditation:

Certification of products in the field of electrical engineering industry and in the field of medical devices, certification of information systems and software including certification according to the National standard of electronic document management systems (NSESSS), certification of electronic tools according to the Regulation No. 9/2011 Coll., verification of Environmental Product Declaration (EPD), trust service certification according to the Regulation (EU) No. 910/2014 of the EP and of the Council (eIDAS) to the extent as specified in the appendix to this Certificate.

This Certificate of Accreditation is a proof of Accreditation issued on the basis of assessment of fulfillment of the accreditation criteria in accordance with

ČSN EN ISO/IEC 17065:2013

In its activities performed within the scope and for the period of validity of this Certificate, the Body is entitled to refer to this Certificate, provided that the accreditation is not suspended and the Body meets the specified accreditation requirements in accordance with the relevant regulations applicable to the activity of an accredited Conformity Assessment Body.

This Certificate of Accreditation replaces, to the full extent, Certificate No.: 620/2015 of 3 September 2015, or any administrative acts building upon it.

This Certificate is valid until: **8. 11. 2018**

Prague: 20. 1. 2017




Jiří Růžička
Director
Czech Accreditation Institute
Public Service Company

**The Appendix is an integral part of
Certificate of Accreditation No. 42/2017 of 20/01/2017**

Accredited entity according to ČSN EN ISO/IEC 17065:2013:

Elektrotechnický zkušební ústav, s.p.
Product Certification Body
Pod Lisem 129, 171 02 Praha 8 – Troja

Certification of products (including material products, processes, services)

Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
1*	Other rubber products (limited to technical rubber for electrical engineering)	EZÚ Certificate	ČSN EN 60903 ed. 2
2*	Radiators and boilers, including repair and maintenance (limited to heat exchangers, water heaters and heat exchange stations of central heating and hot water systems)	EZÚ Certificate	ČSN EN 60335-1 ed. 3 ČSN EN 60335-1 ed. 2 ČSN EN 60335-1 ČSN EN 60335-2-21 ed. 2 ČSN EN 60335-2-35 ed. 2
3*	Furnaces and furnace burners, including their parts, installation, repair and maintenance (limited to electric laboratory furnaces and ovens)	EZÚ Certificate	ČSN EN 60335-1 ed. 3 ČSN EN 60335-1 ed. 2 ČSN EN 60335-1 ČSN EN 61010-1 ed. 2 ČSN EN 61010-2-010 ed. 2
4*	Cooling, ventilation and air-conditioning machines /except household appliances/, including their parts, installation, repair and maintenance	EZÚ Certificate	ČSN EN 60204-1 ed. 2 ČSN EN 60335-1 ed. 3 ČSN EN 60335-1 ed. 2 ČSN EN 60335-1 ČSN EN 60335-2-24 ed. 5 ČSN EN 60335-2-30 ed. 3 ČSN EN 60335-2-40 ed. 2 ČSN EN 60335-2-65 ed. 2 ČSN EN 60335-2-80 ed. 2 ČSN EN 60335-2-88 ed. 2
5*	Electro-mechanical hand tools with self-contained electric motor	EZÚ Certificate	ČSN 361559-1 ČSN 361559-2-15 ČSN EN 61029-1 ed. 2 ČSN EN 61029-1 ed. 3 ČSN EN 1870-10 ČSN EN 1870-11 ČSN EN 1870-12 ČSN EN 60745-1 ed. 2 ČSN EN 60745-1 ed. 3 ČSN EN 60745-2-1 ed. 2 ČSN EN 60745-2-2 ed. 2 ČSN EN 60745-2-3 ed. 2 ČSN EN 60745-2-4 ed. 2 ČSN EN 60745-2-5 ed. 3 ČSN EN 60745-2-6 ed. 2 ČSN EN 60745-2-8 ed. 2 ČSN EN 60745-2-9 ed. 2 ČSN EN 60745-2-11 ed. 2 ČSN EN 60745-2-12 ed. 2 ČSN EN 60745-2-13 ČSN EN 60745-2-14 ČSN EN 60745-2-15



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Product Certification Body
Pod Lisem 129, 171 02 Praha 8 – Troja

Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
			ČSN EN 60745-2-17 ed. 2 ČSN EN 60745-2-18 ed. 2 ČSN EN 60745-2-19 ČSN EN 60745-2-20 ed. 2 ČSN EN 60745-2-21 ČSN EN 61029-2-8 ČSN EN 61029-2-11 ed. 3
6*	Machinery for food and tobacco processing, including their parts, installation, repair and maintenance (limited to machines and devices for public catering and sale)	EZÚ Certificate	ČSN EN 60335-1 ed. 2 ČSN EN 60335-1 ed. 3 ČSN EN 60335-1 ČSN EN 60335-2-36 ed. 3 ČSN EN 60335-2-37 ed. 3 ČSN EN 60335-2-38 ed. 3 ČSN EN 60335-2-39 ed. 3 ČSN EN 60335-2-42 ed. 3 ČSN EN 60335-2-47 ed. 3 ČSN EN 60335-2-48 ed. 3 ČSN EN 60335-2-49 ed. 3 ČSN EN 60335-2-50 ed. 3 ČSN EN 60335-2-58 ed. 2 ČSN EN 60335-2-62 ed. 2 ČSN EN 60335-2-64 ed. 2 ČSN EN 60335-2-70 ed. 2 ČSN EN 60335-2-71 ed. 2 ČSN EN 60335-2-90 ed. 3 ČSN EN 60204-1 ed. 2
7*	Machinery for textile, apparel and leather production, including their parts, installation, repair and maintenance (limited to machines and devices for cleaning, washing, ironing and hairdressing)	EZÚ Certificate	ČSN EN 60335-1 ed. 2 ČSN EN 60335-1 ed. 3 ČSN EN 60335-1 ČSN EN 60335-2-67 ed. 4 ČSN EN 60335-2-68 ed. 4 ČSN EN 60335-2-69 ed. 4 ČSN EN 60335-2-72 ed. 2 ČSN EN 60335-2-79 ed. 4 ČSN EN ISO 10472-1 ČSN EN ISO 10472-2 ČSN EN ISO 10472-3 ČSN EN ISO 10472-4 ČSN EN ISO 10472-5 ČSN EN ISO 10472-6 ČSN EN 60204-1 ed. 2 ČSN EN ISO 8230-1
8*	Electric household appliances, their parts	EZÚ Certificate	ČSN EN 60335-1 ed. 2 ČSN EN 60335-1 ed. 3 ČSN EN 60335-1 ČSN EN 60335-2-2 ed. 3 ČSN EN 60335-2-3 ed. 2 ČSN EN 60335-2-4 ed. 3 ČSN EN 60335-2-5 ed. 2 ČSN EN 60335-2-6 ed. 2 ČSN EN 60335-2-7 ed. 4



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Product Certification Body
Pod Lisem 129, 171 02 Praha 8 – Troja

Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
			ČSN EN 60335-2-8 ed. 2 ČSN EN 60335-2-9 ed. 2 ČSN EN 60335-2-10 ed. 2 ČSN EN 60335-2-11 ed. 4 ČSN EN 60335-2-12 ed. 2 ČSN EN 60335-2-13 ed. 3 ČSN EN 60335-2-14 ed. 3 ČSN EN 60335-2-15 ed. 2 ČSN EN 60335-2-16 ed. 2 ČSN EN 60335-2-17 ed. 3 ČSN EN 60335-2-21 ed. 2 ČSN EN 60335-2-23 ed. 2 ČSN EN 60335-2-24 ed. 5 ČSN EN 60335-2-25 ed. 5 ČSN EN 60335-2-26 ed. 2 ČSN EN 60335-2-27 ed. 4 ČSN EN 60335-2-28 ed. 2 ČSN EN 60335-2-29 ed. 2 ČSN EN 60335-2-30 ed. 3 ČSN EN 60335-2-31 ed. 2 ČSN EN 60335-2-32 ed. 2 ČSN EN 60335-2-34 ed. 4 ČSN EN 60335-2-35 ed. 2 ČSN EN 60335-2-36 ed. 3 ČSN EN 60335-2-37 ed. 3 ČSN EN 60335-2-38 ed. 3 ČSN EN 60335-2-39 ed. 3 ČSN EN 60335-2-40 ed. 2 ČSN EN 60335-2-41 ed. 2 ČSN EN 60335-2-42 ed. 3 ČSN EN 60335-2-43 ed. 2 ČSN EN 60335-2-44 ed. 2 ČSN EN 60335-2-45 ed. 2 ČSN EN 60335-2-47 ed. 3 ČSN EN 60335-2-48 ed. 3 ČSN EN 60335-2-49 ed. 3 ČSN EN 60335-2-50 ed. 3 ČSN EN 60335-2-51 ed. 2 ČSN EN 60335-2-52 ed. 2 ČSN EN 60335-2-53 ed. 3 ČSN EN 60335-2-54 ed. 3 ČSN EN 60335-2-55 ed. 2 ČSN EN 60335-2-56 ed. 2 ČSN EN 60335-2-58 ed. 2 ČSN EN 60335-2-59 ed. 2 ČSN EN 60335-2-60 ed. 2 ČSN EN 60335-2-61 ed. 2 ČSN EN 60335-2-62 ed. 2 ČSN EN 60335-2-64 ed. 2



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Product Certification Body
Pod Lisem 129, 171 02 Praha 8 – Troja

Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
			ČSN EN 60335-2-65 ed. 2 ČSN EN 60335-2-66 ed. 2 ČSN EN 60335-2-67 ed. 4 ČSN EN 60335-2-68 ed. 4 ČSN EN 60335-2-69 ed. 4 ČSN EN 60335-2-70 ed. 2 ČSN EN 60335-2-71 ed. 2 ČSN EN 60335-2-72 ed. 2 ČSN EN 60335-2-73 ed. 2 ČSN EN 60335-2-74 ed. 2 ČSN EN 60335-2-75 ed. 2 ČSN EN 60335-2-76 ed. 2 ČSN EN 60335-2-77 ed. 3 ČSN EN 60335-2-78 ed. 2 ČSN EN 60335-2-79 ed. 4 ČSN EN 60335-2-80 ed. 2 ČSN EN 60335-2-81 ed. 2 ČSN EN 60335-2-82 ed. 2 ČSN EN 60335-2-83 ČSN EN 60335-2-84 ed. 2 ČSN EN 60335-2-85 ed. 2 ČSN EN 60335-2-86 ed. 2 ČSN EN 60335-2-87 ed. 2 ČSN EN 60335-2-88 ed. 2 ČSN EN 60335-2-89 ed. 2 ČSN EN 60335-2-90 ed. 3 ČSN EN 60335-2-91 ČSN EN 60335-2-92 ČSN EN 60335-2-95 ed. 2 ČSN EN 60335-2-96 ČSN EN 60335-2-97 ed. 2 ČSN EN 60335-2-98 ed. 2 ČSN EN 60335-2-99 ČSN EN 60335-2-101 ČSN EN 60335-2-103 ČSN EN 60335-2-105 ČSN EN 60204-1 ed. 2 ČSN EN 60065 ČSN EN 60519-1 ed. 3 ČSN EN 62233
9*	Office machinery and computers	EZÚ Certificate	ČSN EN 62040-1 ČSN EN 60065 ČSN EN 60950-1 ed. 2 ČSN EN 61010-1 ed. 2
10*	Electric motors, generators and transformers, including their parts, installation, repair and maintenance (limited	EZÚ Certificate	ČSN 350000-1-1 ČSN EN 60034-1 ed. 2 ČSN EN 60034-5 ed. 2

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Product Certification Body
Pod Lisem 129, 171 02 Praha 8 – Troja

Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
	to electric motors, power transformers and ballasts, generating sets and electric drive systems)		ČSN EN 60034-7 + A1 ČSN EN 60034-8 ed. 2 ČSN EN 60034-12 ČSN EN 60034-14 ed. 2 ČSN EN 60065 ČSN EN 60950-1 ed. 2 ČSN EN 61558-1 ČSN EN 61558-1 ed. 2 ČSN EN 61558-2-1 ed. 2 ČSN EN 61558-2-2 ed. 2 ČSN EN 61558-2-3 ed. 2 ČSN EN 61558-2-4 ed. 2 ČSN EN 61558-2-5 ed. 2 ČSN EN 61558-2-6 ed. 2 ČSN EN 61558-2-7 ed. 2 ČSN EN 61558-2-8 ed. 2 ČSN EN 61558-2-12 ed. 2 ČSN EN 61558-2-13 ed. 2 ČSN EN 61558-2-15 ed. 2 ČSN EN 61558-2-20 ed. 2 ČSN EN 61558-2-23 ed. 2
11*	Electricity distribution and control apparatus, including their parts, installation, repair and maintenance	EZÚ Certificate	ČSN 34 0350 ed. 2 ČSN 35 4516 ČSN 35 4701-2 ed. 2 ČSN 35 4701-3 ed. 2 ČSN EN 50085-1 ed. 2 ČSN EN 50085-2-1 ČSN EN 50085-2-3 ed. 2 ČSN EN 50262 ČSN EN 60269-1 ed. 3 ČSN EN 60309-1 ed. 3 ČSN EN 60309-2 ed. 3 ČSN EN 60400 ed. 3 ČSN EN 60669-1 ed. 2 ČSN EN 60669-2-1 ed. 3 ČSN EN 60669-2-2 ed. 2 ČSN EN 60669-2-3 ed. 2 ČSN EN 60670-1 ČSN EN 60730-1 ed. 3 ČSN EN 60730-2-1 ČSN EN 60730-2-2 ed. 2 ČSN EN 60730-2-3 ed. 2 ČSN EN 60730-2-4 ed. 2 ČSN EN 60730-2-5 ed. 2 ČSN EN 60730-2-6 ed. 2 ČSN EN 60730-2-7 ed. 2 ČSN EN 60730-2-8 ed. 2 ČSN EN 60730-2-9 ed. 3



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Product Certification Body
Pod Lisem 129, 171 02 Praha 8 – Troja

Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
			ČSN EN 60730-2-10 ed. 2 ČSN EN 60730-2-11 ed. 2 ČSN EN 60730-2-12 ed. 2 ČSN EN 60730-2-13 ed. 2 ČSN EN 60730-2-14 ČSN EN 60730-2-15 ed. 2 ČSN EN 60730-2-19 ČSN EN 60898-1 ČSN EN 60898-2 ed. 2 ČSN EN 60947-1 ed. 4 ČSN EN 60947-2 ed. 3 ČSN EN 60947-3 ed. 3 ČSN EN 60947-4-1 ed. 3 ČSN EN 60947-4-2 ed. 3 ČSN EN 60947-4-3 ČSN EN 60947-5-1 ed. 2 ČSN EN 60947-5-2 ed. 3 ČSN EN 60947-5-3 ČSN EN 60947-5-4 ed. 2 ČSN EN 60947-5-5 ČSN EN 60947-5-7 ČSN EN 60947-6-1 ed. 2 ČSN EN 60947-6-2 ed. 2 ČSN EN 60947-7-1 ed. 3 ČSN EN 60947-7-2 ed. 3 ČSN EN 60947-7-3 ed. 2 ČSN EN 60947-8 ČSN EN 60998-1 ed. 2 ČSN EN 60998-2-1 ed. 2 ČSN EN 60998-2-2 ed. 2 ČSN EN 60998-2-3 ed. 2 ČSN EN 60998-2-4 ed. 2 ČSN EN 61008-1 ed. 3 ČSN EN 61008-2-1 ČSN EN 61009-1 ed. 3 ČSN EN 61009-2-1 ČSN EN 61010-1 ed. 2 ČSN EN 61010-2-010 ed. 2 ČSN EN 61010-2-032 ed. 3 ČSN EN 61010-2-040 ČSN EN 61010-2-051 ed. 2 ČSN EN 61010-2-061 ed. 2 ČSN EN 61010-031 ČSN EN 61058-1 ČSN EN 61058-2-1 ed. 2 ČSN EN 61058-2-5 ed. 2 ČSN EN 61242 ČSN EN 61537 ed. 2 ČSN IEC 60884-1



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Elektrotechnický zkušební ústav, s.p.
Product Certification Body
Pod Lisem 129, 171 02 Praha 8 – Troja

Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
			ČSN IEC 884-2-5 ČSN EN 12675 ČSN EN 50075 ČSN EN 61386-1 ed. 2 ČSN EN 61386-21 ČSN EN 61386-22 ČSN EN 61386-23 ČSN EN 61386-24 ČSN EN 61386-25 ČSN EN 61439-1 ed. 2 ČSN EN 61439-2 ed. 2 ČSN EN 61439-3 ČSN EN 61439-4 ČSN EN 61439-5 ČSN EN 61914 ČSN EN 62208 ed. 2 ČSN EN 62275
12*	Cables and wires	EZÚ Certificate	ČSN EN 60228 ČSN 34 7402 ČSN 34 7614 -1 ČSN 34 7614 -3A ČSN 34 7614 -3C ČSN 34 7614 -3I ČSN 34 7614 -3L ČSN 34 7614 -4B ČSN 34 7614 -4E ČSN 34 7614 -4F ČSN 34 7614 -4G ČSN 34 7614 -4J ČSN 34 7614 -4K ČSN 34 7614 -4M ČSN 34 7614 -4N ČSN 34 7614 -5D ČSN 34 7614 -5I ČSN 34 7614 -6B ČSN 34 7614 -6D ČSN 34 7614 -6E ČSN 34 7614 -6J ČSN 34 7614 -6K ČSN 34 7614 -6N ČSN 34 7614 -7H ČSN 34 7614 -8H ČSN 34 7614 -9F ČSN 34 7614 -9G ČSN 34 7614 -9I ČSN 34 7614 -9N ČSN 34 7614 -10N ČSN 34 7659-1 ČSN 34 7659-3A



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Product Certification Body
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Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
			ČSN 34 7659-3B ČSN 34 7659-3D ČSN 34 7659-3E ČSN 34 7659-3F ČSN 34 7659-3G ČSN 34 7659-3H ČSN 34 7659-3L ČSN 34 7659-3M ČSN 34 7659-4A ČSN 34 7659-4C ČSN 34 7659-5A ČSN 34 7659-5B ČSN 34 7659-5C ČSN 34 7659-5D ČSN 34 7659-5E ČSN 34 7659-5F ČSN 34 7659-5G ČSN 34 7659-5H ČSN 34 7659-5N ČSN 34 7659-5O ČSN 34 7659-5P ČSN 34 7659-5U ČSN 34 7659-7A ČSN 34 7659-7B ČSN 34 7659-7C ČSN 34 7660-1 ed. 2 ČSN 34 7660-3A ČSN 34 7660-3B ČSN 34 7660-3C ČSN 34 7660-3D ed.2 ČSN 34 7660-3F ČSN 34 7660-4A ČSN 34 7660-4B ČSN 34 7660-4C ČSN 34 7660-4D ČSN 34 7660-4F ČSN 34 7660-5B ČSN 34 7660-5C ČSN 34 7660-5D ČSN 34 7660-5F ČSN 34 7660-5G ČSN 34 7660-5H ed.2 ČSN 34 7660-5I ed.2 ČSN 34 7660-5J ČSN EN 50200 ed. 2 ČSN EN 50267-2-1 ČSN EN 50267-2-2 ČSN EN 50267-2-3 ČSN EN 50290-2-21



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Product Certification Body
Pod Lisem 129, 171 02 Praha 8 – Troja

Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
			ČSN EN 50290-2-22 ČSN EN 50290-2-23 ČSN IEC 60331-21 ČSN IEC 60331-23 ČSN IEC 60331-25 ČSN EN 60332-1-2 ČSN EN 60332-2-2 ČSN EN 60332-2-1 ČSN EN 60332-3-21 ČSN EN 60332-3-22 ČSN EN 60332-3-23 ČSN EN 60332-3-24 ČSN EN 60332-3-25 ČSN EN 50363-1 ČSN EN 50363-2-1 ČSN EN 50363-2-2 ČSN EN 50363-3 ČSN EN 50363-4-1 ČSN EN 50363-4-2 ČSN EN 50363-5 ČSN EN 50363-6 ČSN EN 50363-7 ČSN EN 50363-8 ČSN EN 50363-9-1 ČSN EN 50363-10-1 ČSN EN 50363-10-2 ČSN EN 50399 ČSN EN 50395 ČSN EN 50396 ČSN EN 50525-1 ČSN EN 50525-2-11 ČSN EN 50525-2-12 ČSN EN 50525-2-21 ČSN EN 50525-2-22 ČSN EN 50525-2-31 ČSN EN 50525-2-41 ČSN EN 50525-2-42 ČSN EN 50525-2-51 ČSN EN 50525-2-71 ČSN EN 50525-2-72 ČSN EN 50525-2-81 ČSN EN 50525-2-82 ČSN EN 50525-2-83 ČSN EN 50525-3-11 ČSN EN 50525-3-21 ČSN EN 50525-3-41 ČSN EN 61034-1



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Product Certification Body
Pod Lisem 129, 171 02 Praha 8 – Troja

Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
			ČSN EN 61034-2
13*	Accumulators, primary cells and primary batteries, including their parts	EZÚ Certificate	ČSN EN 50342-1 ČSN EN 60086-1 ed. 4 ČSN EN 60086-2 ed. 4 ČSN EN 60086-3 ed. 3 ČSN EN 60086-4 ed. 2 ČSN EN 60086-5 ed. 3 ČSN EN 60254-1 ed. 2 ČSN EN 60254-2 ed. 2 ČSN EN 60623 ed. 2 ČSN EN 61960 ed. 2 ČSN EN 60896-21 ČSN EN 61951-1 ed. 3 ČSN EN 61951-2 ed. 3 ČSN EN 62133 ed. 2 ČSN EN 62259
14*	Lighting equipment and electric lamps, including their parts	EZÚ Certificate	ČSN EN 12352 ČSN EN 12368 ČSN EN 60598-1 ed. 5 ČSN EN 60598-2-1 ČSN EN 60598-2-2 ed.2 ČSN EN 60598-2-3 ed. 2 ČSN EN 60598-2-4 ČSN EN 60598-2-5 ČSN EN 60598-2-6 ČSN EN 60598-2-7 ČSN EN 60598-2-8 ČSN EN 60598-2-8 ed. 2 ČSN EN 60598-2-9 ČSN EN 60598-2-10 ed. 2 ČSN EN 60598-2-11 ČSN EN 60598-2-11 ed. 2 ČSN EN 60598-2-12 ČSN EN 60598-2-12 ed. 2 ČSN EN 60598-2-14 ČSN EN 60598-2-17 ČSN EN 60598-2-18 ČSN EN 60598-2-19 ČSN EN 60598-2-20 ed. 2 ČSN EN 60598-2-22 ed. 2 ČSN EN 60598-2-23 ČSN EN 60598-2-24 ČSN EN 60598-2-24 ed. 2 ČSN EN 60598-2-25 ČSN EN 61347-1 ed. 2 ČSN EN 61347-2-1

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Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
			ČSN EN 61347-2-2 ed. 2 ČSN EN 61347-2-3 ed. 2 ČSN EN 61347-2-7 ed. 3 ČSN EN 61347-2-8 ČSN EN 61347-2-9 ed. 2 ČSN EN 61347-2-10 ČSN EN 61347-2-11 ČSN EN 61549 ed. 2 L-14 – ICAO - Aerodromes Annex 14 FAA - AC 150/5345-43E ČSN ISO 6742-1 ČSN EN 12899-1 ČSN EN 60432-1 ed. 2 ČSN EN 60432-2 ed. 2 ČSN EN 60432-3 ed. 2 ČSN EN 60570 ed. 2 ČSN EN 61167 ČSN EN 62493 ČSN EN 12966-1+A1 ČSN EN 61347-2-13 ČSN EN 60598-2-13 ČSN EN 62031 ČSN EN 62471
15*	reserved	---	---
16*	Television and radio transmitters; apparatus for line telephony and telegraphy, including their parts, installation, repair and maintenance	EZÚ Certificate	ČSN EN 60065
17*	Television and radio receivers; sound or video recording or reproducing apparatus and associated goods, including their parts	EZÚ Certificate	ČSN EN 60065 ČSN EN 60335-1 ed. 2 ČSN EN 60335-1 ed. 3 ČSN EN 60335-1 ČSN EN 60950-1 ed. 2 ČSN EN 61010-1 ed. 2 ČSN EN 60950-21
18*	reserved	---	---
19*	Instruments and appliances for measuring, checking, testing, navigating and other purposes, including their parts, installation, repair and maintenance (limited to electric measuring devices, electronic measuring devices and electron microscopes, machines and instruments for the determination of properties and defects of materials, scientific and laboratory instruments, vacuum devices, automatic control systems, meters and devices for measurement of geometric	EZÚ Certificate	ČSN EN 60065 ČSN EN 60825-1 ed. 2 ČSN EN 60825-2 ed. 2 ČSN EN 60825-4 ed. 2 ČSN EN 60950-1 ed. 2 ČSN EN 61010-1 ed. 2 ČSN EN 61010-2-091 ČSN EN 61243-3 ed. 2 ČSN EN 61010-031 ČSN EN 61010-2-032 ed. 3 ČSN EN 61010-2-033 ČSN EN 60730-1

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Product Certification Body
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Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
	quantities / with supply voltage from 50V to 380 V only/)		ČSN EN 60730-1 ed. 2 ČSN EN 60730-1 ed. 3 ČSN EN 60730-2-1 ČSN EN 60730-2-2 ed. 2 ČSN EN 60730-2-3 ed. 2 ČSN EN 60730-2-4 ed. 2 ČSN EN 60730-2-5 ed. 2 ČSN EN 60730-2-6 ed. 2 ČSN EN 60730-2-7 ed. 2 ČSN EN 60730-2-8 ed. 2 ČSN EN 60730-2-9 ed. 3 ČSN EN 60730-2-10 ed. 2 ČSN EN 60730-2-11 ed. 2 ČSN EN 60730-2-12 ed. 2 ČSN EN 60730-2-13 ed. 2 ČSN EN 60730-2-14 ČSN EN 60730-2-15 ed. 2 ČSN EN 60730-2-19 ČSN EN 60044-8 ČSN EN 62052-11 ČSN EN 62053-11 ČSN EN 62053-21 ČSN EN 62053-22 ČSN EN 62053-23 ČSN EN 62056-21 ČSN EN 62056-62 ed. 2 ČSN EN 50129 ČSN EN 50470-1 ČSN EN 50470-2 ČSN EN 50470-3
20*	reserved	---	---
21*	Games and toys (limited to technical equipment for public entertainment)	EZÚ Certificate	ČSN EN 60335-1 ed. 2 ČSN EN 60335-1 ed. 3 ČSN EN 60335-1 ČSN EN 60065
22*	Miscellaneous manufactured goods n.e.c. (limited to teaching aids)	EZÚ Certificate	ČSN EN 60065 ČSN EN 61010-1 ed. 2 ČSN EN 60950-1 ed. 2
23*	Products containing electric and electronic systems, including equipment and installations – EMC tests	EZÚ Certificate	ČSN EN 61000-3-2 ČSN EN 61000-3-3 ČSN EN 61000-3-11 ČSN EN 61000-6-1 ČSN EN 61000-6-2 ČSN EN 61000-6-3 ČSN EN 61000-6-4 ČSN EN 50130-4 ČSN EN 55014 ČSN EN 55015 ČSN EN 55011

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Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
			ČSN EN 55013 ČSN EN 55020 ČSN EN 55022 ČSN EN 60601-1-2 ČSN EN 55103-1 ČSN EN 55103-2 ČSN EN 12015 ČSN EN 12016 ČSN EN 50148 ČSN EN 55024 ČSN EN 61800-3 ČSN EN 60521 ČSN EN 61326-1 ČSN EN 61547 ČSN EN 60118-13 ČSN EN 60730-1 ČSN EN 60730-2-1 ČSN EN 60730-2-2 ČSN EN 60730-2-3 ČSN EN 60730-2-4 ČSN EN 60730-2-5 ČSN EN 60730-2-6 ČSN EN 60730-2-7 ČSN EN 60730-2-8 ČSN EN 60730-2-9 ČSN EN 60730-2-10 ČSN EN 60730-2-11 ČSN EN 60730-2-12 ČSN EN 60730-2-13 ČSN EN 60730-2-14 ČSN EN 60730-2-15 ČSN EN 60870-2-1 ČSN EN 300339 ČSN ETS 300683 ČSN ETS 300445 ČSN ETS 300342-1 ČSN ETS 300342-2 ČSN ETS 300680-2 ČSN ETSI EN 301489-1 ČSN ETSI EN 301489-3 ČSN ETSI EN 300 220-1 ČSN ETSI EN 300 220-2 ČSN ETSI EN 300 220-3 ČSN ETSI EN 300 330-1 ČSN ETSI EN 300 330-2 ČSN EN 50370-2 ČSN EN 62041 ČSN EN 50293 ČSN EN 50121-3-2



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Ordinal number ¹⁾	Product name	Certification scheme	Specification of standards (normative documents)
24	reserved	---	---
25	Information systems, software	SW Certification	ISO/IEC 15288 ISO/IEC 12207 ISO/IEC 25051 National standard of electronic document management systems (NSESSS)
26	Electronic tools and electronic operations carried out within the process of public contracts ²⁾	Regulation No. 9/2011, part three: Certification of the conformity of electronic tools	Annex to the Regulation No. 9/2011

Explanations:

- 1) Asterisk at the ordinal number identifies that within the scope of accreditation, the certification body is allowed to include new/updated/revised normative documents from time to time provided that the product group and certification scheme don't change. Updated list of activities provided within the scope of accreditation is available at the Certification Body from the Quality Manager.
- 2) according to Act No. 137/2006 Coll. on Public Contracts, as amended
- Gov. Reg. Government Regulation
IT Information Technologies
SW Software
NSESSS MoI CR Bulletin

Explanations to Certification Schemes:

EZÚ Certificate, Regulation No. 9/2011, GR 336/2004 Coll. Annex 3, 4; GR 154/2004 Coll. Annex 3, 4; corresponding to the Certification System No. 1 and ČSN EN ISO/IEC 17067:2014 standard;
SW Certification - Certification system corresponding to the Certification System No. 6 of ČSN EN ISO/IEC 17067:2014;



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**Verification of Environmental Product Declaration
Verification of Product Declaration creation process**

Ordinal number	Product name	Certification scheme	Specification of standards ¹⁾ (normative documents)
1	Chemistry and chemical products		ČSN ISO 14025 The International EPD® System - General Programme Instruction The Norwegian EPD Foundation - General Programme Instruction Institute Construction and Environment e.V. - General Programme Instruction Instructions INIES - General Programme Instruction ČSN EN 15804 Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products.
2	Rubber and plastic products		
3	Other non-metallic mineral products		
4	Basic metals and metallurgical products		
5	Metallic products		
6	Office equipment and computers		
7	Electric equipment and apparatuses		
8	Radio, television and communication equipment		
9	Transport equipment		
10	Furniture		
11	Recycling		
12	Generation and distribution of electricity, gas and water		
13	Disposal of waste, sanitation		
14	Construction		

Explanations:

¹⁾ International EPD system - General programme instruction (Swedish system) – <http://www.environdec.com>
Norwegian EPD Foundation - General programme instruction (Norwegian system) - <http://www.epd-norge.no>
Institute Construction and Environment - General programme instruction (German system) - <http://bau-umwelt.de>
INIES - General programme instruction (French system) - <http://www.inies.fr>

If no PCR are available for a specific product, the Certification Body proceeds in accordance with the General Programme Instructions (GPI, available at www.environdec.com) and Rules set in the National programme of environmental labelling.



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Trust service certification ²⁾

Ordinal number	Process/service name	Certification scheme	Specification of standards (normative documents)
1.	Trust service certification - Issuing qualified certificates for electronic signatures	ČSN ETSI EN 319 403 V2.2.2 in connection with DKP version 2	Regulation (EU) No. 910/2014 of the European Parliament and of the Council: • Clause 5. • Clause 13. • Clause 15. • Clause 19. • Clause 24. • Clause 28. • Annex I.
2.	Trust service certification – Issuing qualified certificates for electronic seals	ČSN ETSI EN 319 403 V2.2.2 in connection with DKP version 2	Regulation (EU) No. 910/2014 of the European Parliament and of the Council: • Clause 5. • Clause 13. • Clause 15. • Clause 19. • Clause 24. • Clause 38. • Annex III.
3.	Trust service certification - Issuing qualified certificates for website authentication	ČSN ETSI EN 319 403 V2.2.2 in connection with DKP version 2	Regulation (EU) No. 910/2014 of the European Parliament and of the Council: • Clause 5. • Clause 13. • Clause 15. • Clause 19. • Clause 24. • Clause 45. • Annex IV.
4.	Trust service certification – Issuing qualified electronic stamps	ČSN ETSI EN 319 403 V2.2.2 in connection with DKP version 2	Regulation (EU) No. 910/2014 of the European Parliament and of the Council: • Clause 5. • Clause 13. • Clause 15. • Clause 19. • Clause 24. • Clause 42.
5.	Trust service certification – qualified service for the verification of qualified	ČSN ETSI EN 319 403 V2.2.2 in connection with	Regulation (EU) No. 910/2014 of the European Parliament and of the Council:

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Ordinal number	Process/service name	Certification scheme	Specification of standards (normative documents)
	electronic signatures or qualified electronic seals	DKP version 2	• Clause 5. • Clause 13. • Clause 15. • Clause 19. • Clause 24. • Clause 32. • Clause 33. • Clause 40 (verification of qualified electronic seals)
6.	Trust service certification – Qualified service for keeping qualified electronic signatures or qualified electronic seals	ČSN ETSI EN 319 403 V2.2.2 in connection with DKP version 2	Regulation (EU) No. 910/2014 of the European Parliament and of the Council: • Clause 5. • Clause 13. • Clause 15. • Clause 19. • Clause 24. • Clause 34. • Clause 40 (keeping qualified electronic seals)

Explanations:

- 2) – acc. to the Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC.

DKP - Document specifying the requirements for qualified trust service providers and the qualified trust services provided by them. The document is available at <http://www.mvcr.cz/informace-pro-odborniky.aspx>



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Assessment of conformity for notification purposes

Ordinal number ¹⁾	Product/Product group name	Conformity assessment procedure/module	Standards/normative documents
1 ^x	Medical devices (MDD)	Gov. Reg. No. 54/2015 Coll. Annex 2, 3, 4, 5, 6 ²⁾	ČSN EN 1060-3 ČSN EN 1060-4 ČSN EN 45502-1 ČSN EN 45502-2-1 ČSN EN 50077 ČSN EN 60601-1 ČSN EN 60601-1 ed. 2 ČSN EN 60601-1-1 ed. 2 ČSN EN 60601-1-2 ed. 2 ČSN EN 60601-1-3 ed. 2 ČSN EN 60601-1-4 ČSN EN 60601-1-6 ed. 3 ČSN EN 60601-1-8 ed. 2 ČSN EN 60601-1-10 ČSN EN 60601-1-11 ČSN EN 60601-2-1 ČSN EN 60601-2-2 ed. 3 ČSN EN 60601-2-3 ČSN EN 60601-2-4 ČSN EN 60601-2-5 ČSN EN 60601-2-8 ČSN EN 60601-2-10 ČSN EN 60601-2-11 ČSN EN 60601-2-12 ČSN EN 60601-2-13 ČSN EN 60601-2-16 ČSN EN 60601-2-17 ČSN EN 60601-2-18 ČSN EN 60601-2-19 ČSN EN 60601-2-2 ČSN EN 60601-2-20 ed. 2 ČSN EN 60601-2-21 ed. 2 ČSN EN 60601-2-22 ČSN EN 60601-2-23 ČSN EN 60601-2-24 ČSN EN 60601-2-25 ČSN EN 60601-2-26 ed. 2 ČSN EN 60601-2-27 ed. 2 ČSN EN 60601-2-28 ed. 2 ČSN EN ISO 19054 ČSN EN 60601-2-29 ed. 2 ČSN EN 60601-2-3 ČSN EN 60601-2-31 ČSN EN 60601-2-32 ČSN EN 60601-2-33 ed. 3 ČSN EN 60601-2-34 ed. 2 ČSN EN 60601-2-36 ČSN EN 60601-2-37 ed. 2



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Ordinal number ¹⁾	Product/Product group name	Conformity assessment procedure/module	Standards/normative documents
			ČSN EN 60601-2-39 ed. 2 ČSN EN 60601-2-4 ČSN EN 60601-2-40 ČSN EN 60601-2-41 ed. 2 ČSN EN 60601-2-43 ed. 2 ČSN EN 60601-2-44 ed. 3 ČSN EN 60601-2-45 ed. 2 ČSN EN 60601-2-46 ČSN EN 60601-2-47 ČSN EN 60601-2-49 ČSN EN 60601-2-50 ed.2 ČSN EN 60601-2-51 ČSN EN 60601-2-52 ČSN EN 60601-2-54 ČSN EN 60601-2-5 ČSN EN 60601-2-7 ČSN EN 60601-2-8 ČSN EN 60601-2-9 ČSN EN 60601-3-1 ČSN EN 80601-2-30 ČSN EN 80601-2-35 ČSN EN 80601-2-58 ČSN EN 80601-2-59 ČSN EN 60645-1 ČSN EN 60645-2 ČSN EN 60645-3 ed. 2 ČSN EN 60645-4 ČSN EN 60118-13 ed. 2 ČSN EN 60825-1 ČSN EN 60825-2 ČSN EN 60825-4 ČSN EN 61262-1 ČSN EN 61262-2 ČSN EN 61262-3 ČSN EN 61262-4 ČSN EN 61262-5 ČSN EN 61262-6 ČSN EN 61262-7 ČSN EN 61846 ČSN EN 61010-1 ČSN EN 61010-2-010 ČSN EN 61010-2-020 ČSN EN 61010-2-031 ČSN EN 61010-2-032 ČSN EN 61010-2-040 ČSN EN 61010-2-051 ČSN EN 61010-2-061 ČSN EN 61010-2-081 ČSN EN 62304



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Ordinal number ¹⁾	Product/Product group name	Conformity assessment procedure/module	Standards/normative documents
			ČSN EN 62366 ČSN EN 737-1 ČSN EN 737-2 ČSN EN 737-3 ČSN EN 737-4 ČSN EN 794-1 ČSN EN 794-3 ČSN EN ISO 8185 ČSN EN ISO 10079-1 ČSN EN ISO 10079-2 ČSN EN ISO 10079-3 ČSN EN ISO 21647 ČSN EN ISO 11197 ČSN EN ISO 7494-1 ČSN EN ISO 9680 ČSN EN 285 ČSN EN 12342 ČSN EN 1282-2 ČSN EN 1820 ČSN EN ISO 14408 ČSN EN ISO 4135 ČSN EN ISO 5356-1 ČSN EN ISO 5356-2 ČSN EN ISO 5360 ČSN EN ISO 5366-1 ČSN EN 1041 ČSN EN 13867 ČSN EN 1707 ČSN EN 20594-1 ČSN EN ISO 10555-1 ČSN EN ISO 15747 ČSN EN ISO 21649 ČSN EN ISO 3826-2 ČSN EN ISO 3826-3 ČSN EN ISO 7886-3 ČSN EN ISO 7886-4 ČSN EN 1985 ČSN EN ISO 14155 ČSN EN ISO 14971 ČSN EN ISO 10328 ČSN EN ISO 22523 ČSN EN ISO 22675 ČSN EN 12470-1 ČSN EN 12470-2 ČSN EN ISO 81060-1 ČSN EN 14139 ČSN EN ISO 12870



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Ordinal number ¹⁾	Product/Product group name	Conformity assessment procedure/module	Standards/normative documents
			ČSN EN ISO 14889 ČSN EN ISO 15798 ČSN EN ISO 21987 ČSN EN 14683 ČSN EN 1618 ČSN EN 27740 ČSN EN 455-1 ČSN EN 455-3 ČSN EN 455-4 ČSN EN ISO 11810-1 ČSN EN ISO 11810-2 ČSN EN ISO 16061 ČSN EN ISO 21171 ČSN EN ISO 22610 ČSN EN ISO 22612 ČSN EN ISO 4074 ČSN EN 13624 ČSN EN 13727 ČSN EN 14348 ČSN EN 14561 ČSN EN 14562 ČSN EN 14563 ČSN EN 12006-2 ČSN EN ISO 25539-1 ČSN EN ISO 25539-2 ČSN EN ISO 5840 ČSN EN ISO 14602 ČSN EN ISO 21534 ČSN EN ISO 21535 ČSN EN ISO 21536 ČSN EN ISO 14630 ČSN EN ISO 7197 ČSN EN ISO 9713 ČSN EN ISO 11979-8 ČSN EN ISO 14607 ČSN EN 13726-1 ČSN EN 13726-2 ČSN EN 14079 ČSN EN 1639 ČSN EN 15986 ČSN EN 1641 ČSN EN 1642 ČSN EN 13544-1 ČSN EN 13544-2 ČSN EN 13544-3 ČSN EN 14931 ČSN EN ISO 10651-2 ČSN EN ISO 10651-4 ČSN EN ISO 10651-6

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Ordinal number ¹⁾	Product/Product group name	Conformity assessment procedure/module	Standards/normative documents
			ČSN EN ISO 15001 ČSN EN ISO 18778 ČSN EN ISO 23328-1 ČSN EN ISO 23328-2 ČSN EN ISO 23747 ČSN EN ISO 26782 ČSN EN ISO 7376 ČSN EN ISO 8835-2 ČSN EN ISO 8835-3 ČSN EN ISO 8835-4 ČSN EN ISO 8835-5 ČSN EN ISO 9360-1 ČSN EN ISO 9360-2 ČSN EN 1640 ČSN EN 13060 ČSN EN 14180 ČSN EN 1422 ČSN EN ISO 15883-1 ČSN EN ISO 15883-2 ČSN EN ISO 15883-3 ČSN EN ISO 15883-4 ČSN EN ISO 16201 ČSN EN 12183 ČSN EN 12184 ČSN EN 13976-1 ČSN EN 13976-2 ČSN EN 1789 ČSN EN 1865-3 ČSN EN 1865-4 ČSN EN 1865-5 ČSN EN ISO 10535 ČSN EN ISO 10524-1 ČSN EN ISO 10524-2 ČSN EN ISO 10524-3 ČSN EN ISO 10524-4 ČSN EN ISO 15002 ČSN EN ISO 18777 ČSN EN ISO 18779 ČSN EN ISO 21969 ČSN EN ISO 5359 ČSN EN ISO 7396-1 ČSN EN ISO 7396-2 ČSN EN ISO 8359 ČSN EN ISO 9170-1 ČSN EN ISO 9170-2 ČSN EN 60522 ČSN EN 60580 ČSN EN 60627 ČSN EN 61676



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Ordinal number ¹⁾	Product/Product group name	Conformity assessment procedure/module	Standards/normative documents
			ČSN EN 62220-1 ČSN EN 62220-1-2 ČSN EN 62220-1-3 ČSN EN 12470-3 ČSN EN 12470-4 ČSN EN 12470-5 ČSN EN ISO 17510-1 ČSN EN ISO 17510-2 ČSN EN 61217 ed. 2 ČSN EN 62083 ed. 2 ČSN EN ISO 22442-1 ČSN EN ISO 22442-2 ČSN EN ISO 22442-3 ČSN EN ISO 17664 ČSN EN ISO 17665-1 ČSN EN ISO 13408-1 ČSN EN ISO 13408-2 ČSN EN ISO 13408-3 ČSN EN ISO 13408-4 ČSN EN ISO 13408-5 ČSN EN ISO 13408-6 ČSN EN ISO 11135-1 ČSN EN ISO 11137-1 ČSN EN ISO 11137-2 ČSN EN ISO 11138-2 ČSN EN ISO 11138-3 ČSN EN ISO 11140-1 ČSN EN ISO 11140-3 ČSN EN 556-1 ČSN EN 556-2 ČSN EN ISO 11607-1 ČSN EN ISO 11607-2 ČSN EN ISO 11737-1 ČSN EN ISO 11737-2 ČSN EN ISO 14937 ČSN EN 13718-1 ČSN EN ISO 10993-1 ČSN EN ISO 10993-11 ČSN EN ISO 10993-12 ČSN EN ISO 10993-13 ČSN EN ISO 10993-14 ČSN EN ISO 10993-15 ČSN EN ISO 10993-16 ČSN EN ISO 10993-17 ČSN EN ISO 10993-18 ČSN EN ISO 10993-3 ČSN EN ISO 10993-4 ČSN EN ISO 10993-5 ČSN EN ISO 10993-6



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Ordinal number ¹⁾	Product/Product group name	Conformity assessment procedure/module	Standards/normative documents
2 ^x	Medical devices - active implantable (AIMD)	Gov. Reg. No. 55/2015 Coll. Annex 2, 3, 4, 5 ³⁾	ČSN EN ISO 10993-7 ČSN EN ISO 10993-9 ČSN EN 45502-1 ČSN EN 45502-2-1 ČSN EN 50077 ČSN EN 60601-1 ČSN EN 60601-1 ed. 2 ČSN EN 60601-1-1 ed. 2 ČSN EN 60601-1-2 ed. 2 ČSN EN 60601-1-3 ed. 2 ČSN EN 60601-1-4 ČSN EN 60601-1-6 ed. 3 ČSN EN 60601-1-8 ed. 2 ČSN EN 60601-1-10 ČSN EN 61010-1 ČSN EN 62304 ČSN EN 62366 ČSN EN ISO 14971

1/ Asterisk at the ordinal number identifies that within the scope of accreditation, the certification body is allowed to include new/updated/revised technical specifications listed in the relevant conformity assessment procedure for the assessment of conformity with safety requirements. The precondition is that the product area, regulations and conformity assessment procedure must not change. Updated list of activities provided within the flexible scope of accreditation is available at the Certification Body from the Medical Devices Product Manager.

2/ Government Regulation No. 54/2015 Coll., laying down technical requirements for medical devices and amending the Government Regulation No. 251/2003 Coll., amending some of the Government Regulations implementing the Act No. 22/1997 Coll. on product technical requirements and on change and amendment of some relating acts, as amended, as amended by Government Regulation No. 212/2007 Coll., Government Regulation No. 245/2009 Coll. and Government Regulation No. 65/2011 Coll. (corresponds to the Council Directive 93/42/EEC, as amended)

3/ Government Regulation No. 55/2015 Coll., laying down technical requirements for active implantable medical devices, amending Government Regulation No. 251/2003 Coll., amending some government regulations issued as implementing for Act No 22/1997 Coll., on Technical Requirements for Products and Amendments to Some Related Acts, as amended (corresponds to the Council Directive 90/385/EEC, as amended)

The Certificate of Accreditation does not replace the Decision on Notification issued by the Authorizing Body.



$$E_{ac} \text{ [kWh]} = \{4000[h] \cdot (36 \cdot 36W + 30 \cdot 14W + 2 \cdot 37W)\} / 1000 = 7\,160 \text{ kWh}$$

Fisa tehnica pentru corpurilor

Nr.	Parametrii solicitați	URBINI LED 130232.5I101.101	Urbini LED 130232.5L132.101	Urbino LED 130222.5I131.061
1	Grad de protecție minim IP 65 pentru compartimentul optic	IP66	IP66	IP66
2	Grad de protecție minim IP 65 pentru compartimentul aparataj	IP66	IP66	IP66
3	Rezistență la șoc minim IK 07, pentru întreg aparatul de iluminat	IK08	IK08	IK09
4	Difuzor din sticlă tratată termic sau policarbona	Difuzor din sticlă tratată termic	Difuzor din sticlă tratată termic	Difuzor din sticlă tratată termic
5	Carcasa realizată din aluminiu sau alt aliaj metalic necoroziv, pentru menținerea în timp a caracteristicilor mecanice inițiale, dimensionata astfel încât să aibă și rolul de radiator pasiv pentru sursele LED.	Carcasa realizată din aluminiu, pentru menținerea în timp a caracteristicilor mecanice inițiale, dimensionata astfel încât să aibă și rolul de radiator pasiv pentru sursele LED.	Carcasa realizată din aluminiu, pentru menținerea în timp a caracteristicilor mecanice inițiale, dimensionata astfel încât să aibă și rolul de radiator pasiv pentru sursele LED.	Carcasa realizată din aluminiu, pentru menținerea în timp a caracteristicilor mecanice inițiale, dimensionata astfel încât să aibă și rolul de radiator pasiv pentru sursele LED.
6	Distribuția luminoasă va fi de tip stradal și nu va fi influențată de apariția unor defecte asupra LEDurilor; fiecare LED va avea asociată o lentilă specifică care reproduce distribuția luminoasă completă a aparatului	Distribuția luminoasă de tip stradal și nu este influențată de apariția unor defecte asupra LEDurilor	Distribuția luminoasă de tip stradal și nu este influențată de apariția unor defecte asupra LEDurilor	Distribuția luminoasă de tip stradal și nu este influențată de apariția unor defecte asupra LEDurilor
7	Valoarea intensității luminoase va fi determinată de numărul de LED-uri și/sau valoarea curentului aplicat la bornele LED-urilor	Valoarea intensității luminoase este determinată de numărul de LED-uri și/sau valoarea curentului aplicat la bornele LED-urilor	Valoarea intensității luminoase este determinată de numărul de LED-uri și/sau valoarea curentului aplicat la bornele LED-urilor	Valoarea intensității luminoase este determinată de numărul de LED-uri și/sau valoarea curentului aplicat la bornele LED-urilor
8	Durata de viață minim 50000 ore cu păstrarea a minim 70% din fluxul luminos inițial	100 000 ore cu min 70%	100 000 ore cu min 70%	100 000 ore cu min 70%
9	Randamentul luminos al aparatului de iluminat va fi minim 75%	>75%	>75%	>75%
10	Se va prezenta diagrama polară a intensității luminoase și curbele K pentru aparatul de iluminat propus	Sunt prezentate în fisa tehnică	Sunt prezentate în fisa tehnică	Sunt prezentate în fisa tehnică
11	Carcasa și sistemul de fixare al aparatelor de iluminat vor fi vopsite în culoarea RAL solicitată de autoritatea contractantă	RAL 7035	RAL 7035	RAL 7035
12	Sistemul de fixare al aparatelor va fi pentru montaj pe braț	Sistemul de fixare al aparatelor pentru montaj pe braț	Sistemul de fixare al aparatelor pentru montaj pe braț	Sistemul de fixare al aparatelor pentru montaj pe braț
13	Balastul electronic - compatibil cu tipul de sursă luminoasă utilizată cu factorul de putere 0,92	0,92	0,92	0,92
14	Protecție împotriva electrocutării Clasă I	Clasa 1	Clasa 1	Clasa 1
15	Aparatele de iluminat vor fi echipate cu surse de iluminat având temperatura de culoare cuprinsă între 4000K-5000K	4000K	4000K	4000K
16	Ta=35°C	-20°C ... +40°C	-40°C ... +55°C	-40°C ... +55°C
17	Prevăzut cu protecție la descărcări atmosferice minim 4kV	4kV	4kV	4kV
18	Se va prezenta declarație de conformitate a produselor cu cerințele esențiale prevăzute de directivele Uniunii Europene (marca CE)	Sunt anexate, inclusiv certificat ENEC	Sunt anexate, inclusiv certificat ENEC	Sunt anexate, inclusiv certificat ENEC



LUG Light Factory Ltd.
Producer of Professional Lighting Fittings



Zielona Góra 13.04.2017

Сертификат - Гарантия

Настоящим письмом подтверждаем, что гарантия на уличные светильники Urbano, Urbino и Urbini производства компании LUG Light Factory это 5 лет. Все общие условия гарантии Вы можете узнать на официальном сайте компании.

Ссылка на Общие Условия Гарантии:

http://www.luglightfactory.ru/resources/lug-com-pl/Pliki/Do_pobrania/gwarancje/LUG_warranty_conditions_102016_RU.pdf

 **LUG LIGHT FACTORY** Sp. z o.o.
65-127 Zielona Góra, ul. Gorzowska 11
tel. (068) 45 33 200, fax (068) 45 33 201
NIP 929-17-95-452 (6)

С уважением,



ОБЩИЕ УСЛОВИЯ ГАРАНТИИ НА ОСВЕТИТЕЛЬНУЮ ПРОДУКЦИЮ КОМПАНИИ LUG LIGHT FACTORY SP. Z O. O.

1. Общие условия гарантии

- 1.1. Компания LUG Light Factory Sp. z o. o., зарегистрированная по адресу: ул. Гожовска, 11, 65-127 Зелена-Гура, KRS 0000290498 (далее – «Гарант»), настоящим предоставляет гарантию на осветительную продукцию в соответствии с положениями, определенными в настоящем документе.
- 1.2. Гарант заявляет, что вышеназванные продукты не имеют производственных дефектов и дефектов материала и в случае использования по назначению будут действовать надлежащим образом в период не короче срока действия гарантийной защиты, с оговоркой случаев, описанных в настоящем документе.
- 1.3. Гарант дает гарантию на продаваемую продукцию на срок:
 - 5 лет на всю продукцию бренда LUG, содержащие светодиодный источник света;
 - 5 лет на всю продукцию бренда FLASH&DQ;
 - 3 года на продукцию бренда LUGBOX;
 - 2 года на традиционные светильники (не содержащие светодиодного источника света);
 - 1 год на светильники в аварийном исполнении.
- 1.4. Гарантия действует только при выполнении следующих условий:
 - 1.4.1. Гарантия распространяется только на производственные дефекты и дефекты, возникшие по причинам, связанным с товаром, т. е. дефекты, возникшие в результате производственных дефектов или скрытых дефектов материалов;
 - 1.4.2. Светильники используются, устанавливаются и хранятся согласно информации, содержащейся в каталожной карте и монтажной инструкции;
 - 1.4.3. Если в каталожной карте не указано иначе, светильники LUG Light Factory Sp. z o. o. предназначены для стандартных условий работы;
 - 1.4.4. Стандартные условия – это температура окружающей среды от -10°C до +25°C, влажность: <85%, давление: 690-1060 гПа;
 - 1.4.5. Светильники не следует применять в среде с условиями, создающими опасность для конструкции, лакового покрытия и электрооснастки светильника. К таким условиям относятся высокая влажность, температура, запыление, присутствие в воздухе неинертных химических веществ, УФ-излучение, а также тряска и вибрации;



- 1.4.6. Каталогная карта содержит детальное описание продукции с общими указаниями по применению, которые относятся к стандартным условиям работы;
 - 1.4.7. Если продукция предназначена для среды использования, требующей специальных технических свойств, эти свойства описываются в каталожной карте. Если специальные технические свойства не указаны, применение светильника следует согласовать с техническим отделом LUG;
 - 1.4.8. Если условия, в которых должны применяться светильники, отличаются от условий, для которых эти светильники предназначены, Покупатель перед покупкой сообщил Гаранту об условиях, преобладающих в месте монтажа светильников, а Гарант подтвердил возможность их применения в такой среде;
 - 1.4.9. Продукция эксплуатируется по назначению в соответствии с приложенной спецификацией продукции (монтажная инструкция, каталожная карта, этикетка); кроме того, проводились техосмотры, проконсультированные с техническим отделом LUG Light Factory Sp. z o. o., если такое требование предусмотрено в документации, приложенной к продукции;
 - 1.4.10. Установка продукции проводится профессионально, уполномоченным персоналом, согласно условиям, приведенным в монтажной инструкции, приложенной к продуктам, и каталожной карте, а также принятой практике и техническим знаниям;
 - 1.4.11. Модификацию функций продукции или обновления программного обеспечения проводит исключительно производитель светильников или назначенное ним третье лицо;
 - 1.4.12. Все ремонты или техуход за продуктами производился согласно профессиональным знаниям и рекомендациям производителя;
 - 1.4.13. Продукция не подвергалась механическим и/или химическим нагрузкам, не соответствующим ее назначению и создающим опасность для конструкции светильника, лакового покрытия или электронных компонентов, находящихся внутри светильника;
 - 1.4.14. Температура окружающей среды и напряжение в сети питания не превышали номинальных величин, указанных для данной продукции в спецификации или технических стандартах.
- 1.5. Нарушение вышеперечисленных и других приведенных в настоящем документе положений ведет к утрате прав по гарантии.

2. Объем гарантии

- 2.1. Гарантия действует с даты покупки продукта Покупателем, указанной в счете-фактуре НДС, которая подтверждает факт покупки товара.



- 2.2. Исключаются права Покупателя по ответственности за дефекты, о которой говорится в гражданском кодексе. Это положение также относится к программному обеспечению.
- 2.3. Настоящая Гарантия распространяется исключительно на дефекты продукции, возникшие по причине ошибок в конструкции, материале или производстве, а также превышения среднего номинального показателя аварийности, который для электронных компонентов (блоки питания, контроллеры, стабилизаторы, светодиодные модули) составляет 0,2% повреждений на 1000 ч работы, если технические карты / брошюры о продукции предусматривают иное.
- 2.4. Гарантия не распространяется на:
- 2.4.1. Любые сменные элементы, такие как традиционные источники света, стартеры, конденсаторы, аккумуляторы, батареи и другие элементы, подверженные нормальному износу в ходе эксплуатации;
 - 2.4.2. Компоненты, поставленные внешними субъектами, такие как жесткие диски, компьютеры, серверы и т. д. На такое оборудование производитель может дать свою гарантию, что требует подтверждения у этого производителя оборудования;
 - 2.4.3. Естественный износ используемых материалов, например, обесцвечивание или утрата эластичности деталей из пластмассы (например, пожелтение поликарбонатных колпаков), утрата блеска лаковых покрытий в результате действия атмосферных факторов, процесса старения и т. д.;
 - 2.4.4. Дефекты, возникшие из-за поврежденного программного обеспечения, вирусов, услуг, связанных с обновлением программного обеспечения или перезапуском, ошибочных настроек компонентов в результате износа, загрязнения, действия третьих лиц (в частности, монтажников, использующих продукты, на которые распространяется гарантия) и т. д.;
 - 2.4.5. Дефекты, возникающие из-за воздействия химических, тепловых, механических, световых и иных факторов, воздействие которых на продукцию противоречит инструкциям по обслуживанию и техническим знаниям;
 - 2.4.6. Дополнительные затраты, связанные с принятием гарантии и устранением дефектов, состоящие из стоимости монтажа и демонтажа дефектного продукта, стоимости транспортировки этого продукта производителю и отправления нового или отремонтированного продукта, а также иные аналогичные затраты. Эти затраты оплачивает Покупатель;
 - 2.4.7. Продукты со снятыми, закрытыми или нечитабельными серийными номерами, номерами артикулов, названием светильника, знаками, указывающими на их производителя, или иной маркировкой, дающей возможность их идентификации.



- 2.5. Уменьшение светового потока в течение срока службы продукции до 0,6%/1000 ч и изменение цвета модулей светодиодов – это нормальное явление, на которое гарантия не распространяется.
- 2.6. Общее время свечения светильников в течение года не может превышать 4300 ч.
- 2.7. Параметры новых светодиодных светильников (модулей) имеют допуск +/-10% для светового потока, мощности и цветовой температуры.

3. Требования по гарантии

- 3.1. Заявление вносится при помощи рекламационного заявления, образец которого доступен на веб-сайте LUG Light Factory Sp. z o. o. по адресу: <http://www.lug.com.pl/download/dokumenty>
- 3.2. Клиент, вносящий рекламацию, обязан заполнить рекламационное заявление и немедленно отправить его Гаранту.
- 3.3. Требования по гарантии имеют силу только при внесении их Гаранту в письменной форме, по факсу или по электронной почте по адресу: service@lug.com.pl с детальным описанием обнаруженного дефекта, приложенным подтверждением факта покупки продукта (счет-фактура НДС, кассовый чек или копия договора купли-продажи) и документированным описанием возникшего дефекта.
- 3.4. Гарант рассматривает заявление в течение 14 дней с даты поставки ему дефектного товара и документов, перечисленных в пункте 3.3, с возможностью продления этого срока при необходимости проведения детальных технических исследований, о чем Гарант немедленно сообщит Покупателю.
- 3.5. О рассмотрении заявления Гарант сообщит заявителю в письменной форме, по телефону, факсу или электронной почте.
- 3.6. Ответственность Гаранта ограничивается стоимостью продукта на дату его покупки.
- 3.7. В случае принятия гарантийного требования Гарант в каждом случае принимает решение о ремонте дефектного продукта, его замене на продукт без дефектов, снижении его цены или замене на продукт с аналогичным назначением и схожими техническими параметрами, когда продукт, по которому была заявлена рекламация, уже не продается.
- 3.8. Гарант, ремонтируя дефектный продукт, допускает замену компонентов на бывшие в употреблении или восстановленные компоненты, которые с точки зрения продуктивности, функциональности и надежности эквивалентны новым компонентам, не имеют дефектов и брака материала.
- 3.9. По мере осуществления гарантийного процесса ремонт продукта или его замена на продукт без дефектов проводятся бесплатно.



- 3.10. Если в результате принятия гарантийного заявления в дефектном продукте меняются какие-либо элементы, гарантийный срок не начинается отсчитываться с начала.
- 3.11. В случае принятия рекламации Гарант исполнит гарантийное обязательство в течение 21 дня, если не наступят не зависящие от Гаранта обстоятельства, которые могут повлиять на продление этого срока, такие как необходимость проведения дополнительных лабораторных тестов и заказ нестандартных компонентов, которые будут использоваться в ремонтируемом светильнике и должны заказываться у поставщиков, и т. д.
- 3.12. Если заявление будет признано необоснованным, Покупатель обязан сам забрать продукт. Если после получения требования Гаранта забрать товар Покупатель его не заберет, он обязан оплатить стоимость его хранения и, возможно, стоимость его отправления Покупателю.
- 3.13. Все затраты, связанные с рассмотрением Гарантом необоснованного гарантийного заявления, несет Покупатель.

4. Другие положения

- 4.1. Если Покупатель или назначенные им третьи лица вмешиваются в конструкцию светильника, ремонтируют его, меняют что-либо или устраняют дефекты в продуктах без письменного согласия Гаранта, все претензии по настоящей гарантии становятся недействительными в момент выполнения вышеперечисленных действий.
- 4.2. Гарантия также аннулируется при использовании продукции не по назначению.
- 4.3. В случае получения от Покупателя рекламационного заявления Гарант оставляет за собой право на проверку дефектов продуктов на месте их использования. Отсутствие согласия Покупателя на проведение такой проверки Гарантом или назначенным им представителем рассматривается как отзыв рекламационного заявления.
- 4.4. Гарант допускает возможность выполнения платных сервисных ремонтов продукции, в том числе послегарантийных, условия которых будут в каждом случае подлежать согласованию между Покупателем и Гарантом.
- 4.5. Компания LUG Light Factory Sp. z o. o. в рамках, установленных действующим законодательством, не несет ответственности за какие-либо потери, ущерб, возросшие расходы или издержки, потерю возможности пользоваться продуктом, его функциями, повреждение продукта, а также какую-либо утраченную выгоду, экономию, контракты, поступления, потери или дополнительные затраты, которые не возникли непосредственно по вине LUG Light Factory Sp. z o. o.
- 4.6. Настоящая гарантия регулируется законодательством Польши.
- 4.7. Условия гарантия доступны на веб-сайте производителя: www.lug.com.pl.

Projektant:
Michał Wierzykowski , Lighting
designer / Export Dept.

Data:
11.12.2018



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l

Iluminat public stradal s. Gauzeni

LUCRĂRI DE MODERNIZARE SI EFICIENTIZARE A SISTEMULUI DE ILUMINAT PUBLIC s. GĂUZENI

Cuprins

Iluminat public stradal s. Gauzeni

Iluminat public stradal s. Gauzeni

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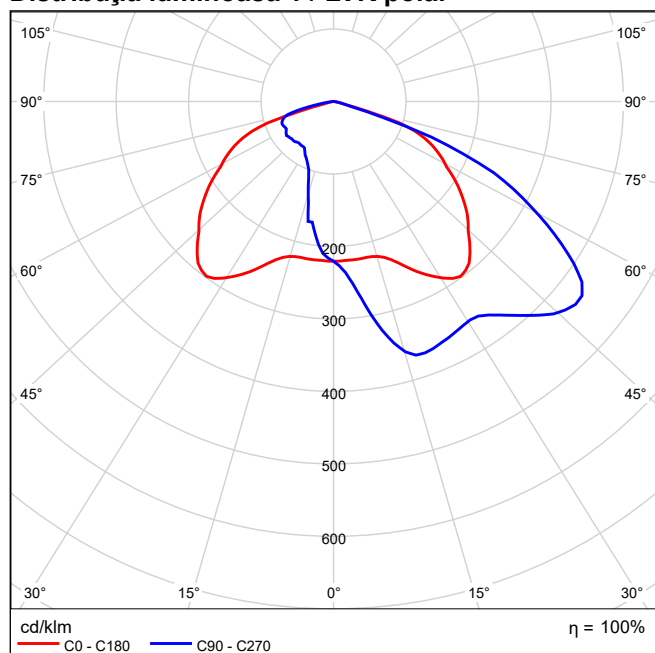
Piața centru - Situația 3: Alternativă 3

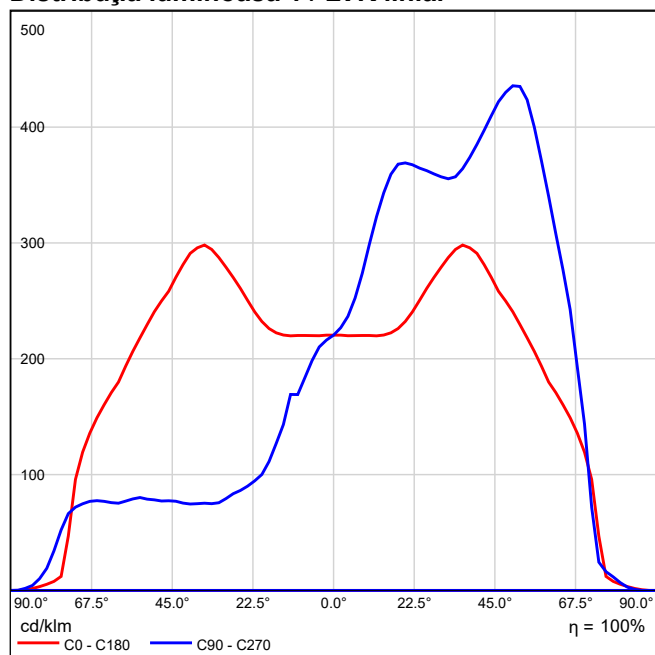
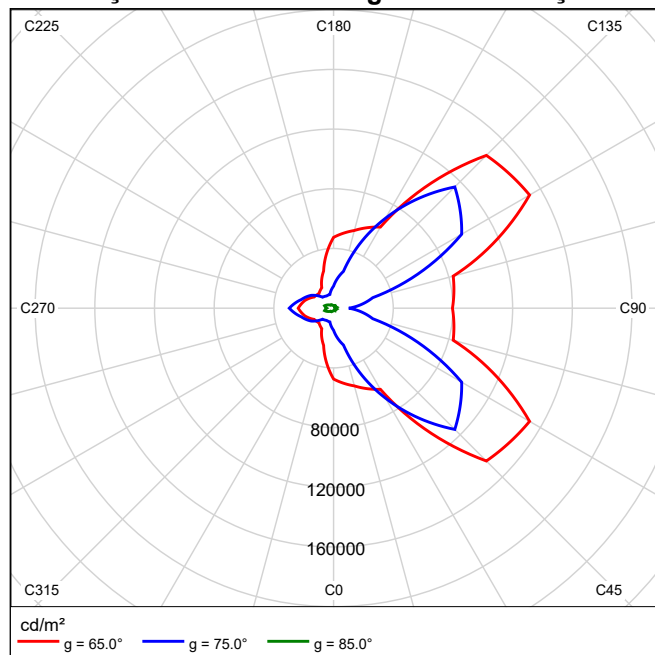
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**LUG LIGHT FACTORY 130222.5L131.061 3664_6 URBINO 16 LED 740 O7
1xMODUL LED 4000K**

Vedeți catalogul nostru
de corpuri de iluminat
pentru o imagine a
corpului de iluminat.

Randament luminos: 100%
Flux luminos corpuri de iluminat: 4150 lm
Putere: 37.0 W
Eficiența luminoasă: 112.2 lm/W

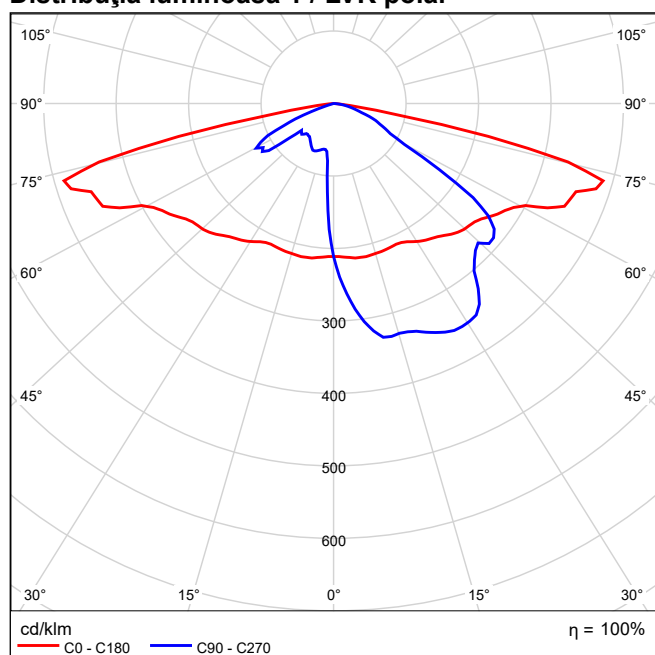
Distribuția luminoasă 1 / LVK polar

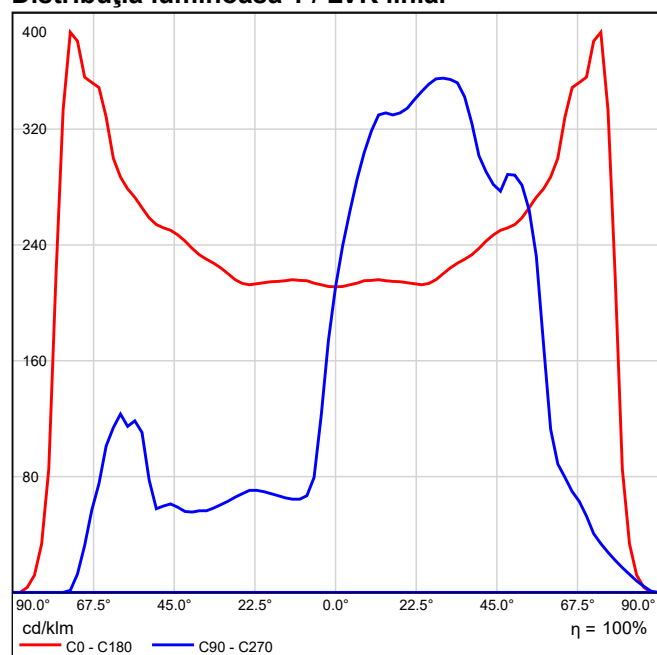
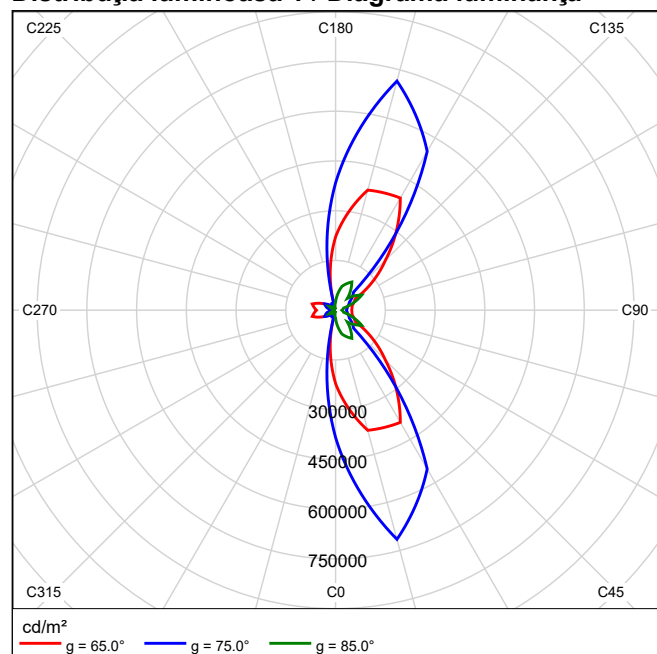
Distribuția luminoasă 1 / LVK liniar**Distribuția luminoasă 1 / Diagrama luminanță**

LUG LIGHT FACTORY 130232.5L132.101 4759 URBINI LED 740 O9 350 II 1xLED 4000K

Vedeți catalogul nostru
de corpuri de iluminat
pentru o imagine a
corpului de iluminat.

Randament luminos: 100%
Flux luminos corpuri de iluminat: 1800 lm
Putere: 14.0 W
Eficiența luminoasă: 128.6 lm/W

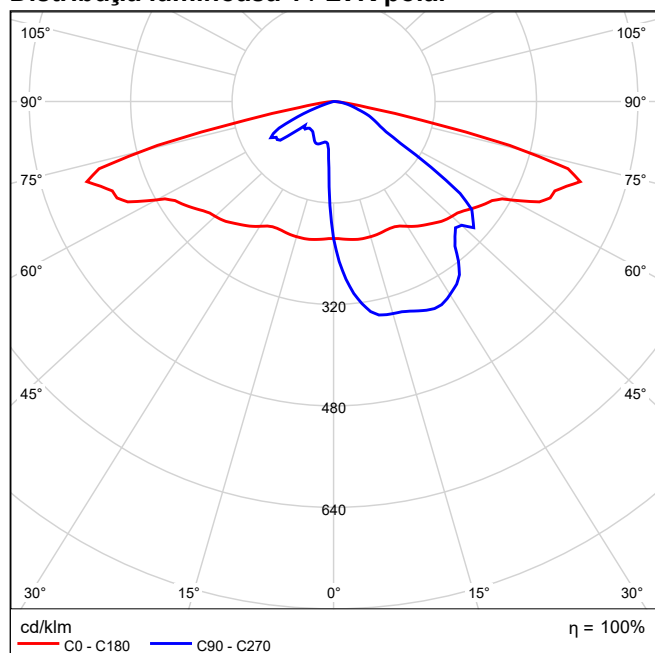
Distribuția luminoasă 1 / LVK polar

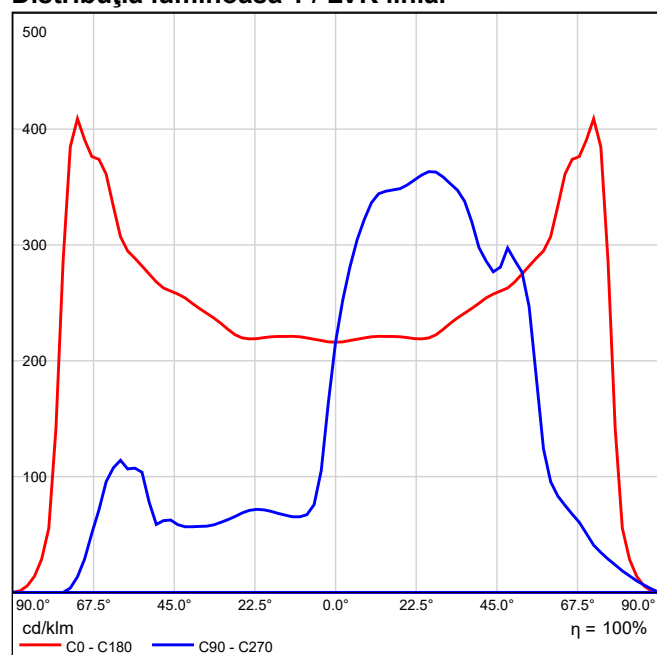
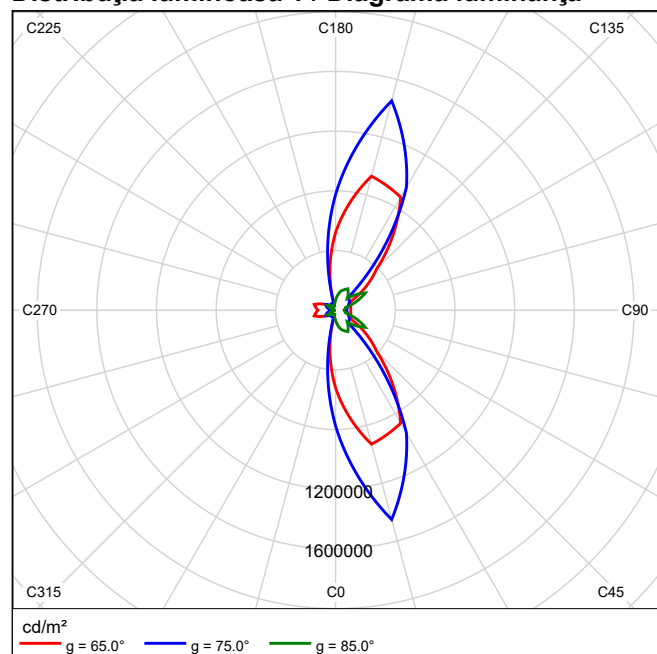
Distribuția luminoasă 1 / LVK liniar

Distribuția luminoasă 1 / Diagrama luminanță


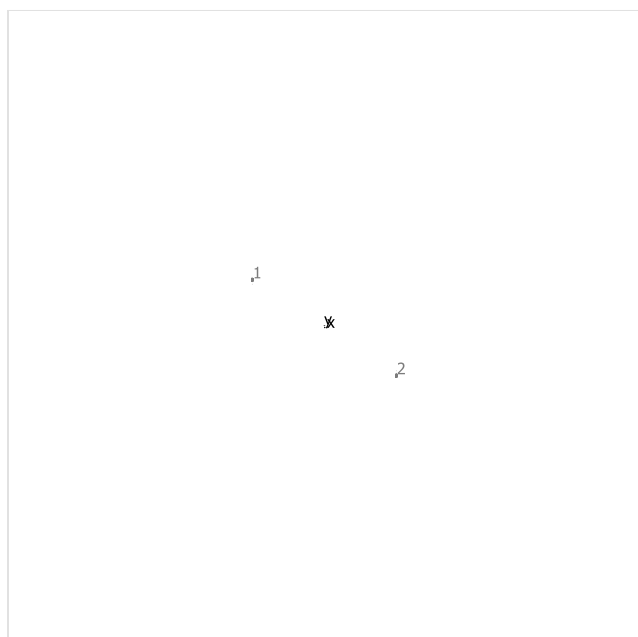
LUG LIGHT FACTORY 130232.5L101.101 4763 URBINI LED 740 O9 920 1xLED 4000K

Vedeți catalogul nostru
de corpuri de iluminat
pentru o imagine a
corpului de iluminat.

Randament luminos: 100.02%
Flux luminos corpuri de iluminat: 3901 lm
Putere: 36.0 W
Eficiența luminoasă: 108.4 lm/W

Distribuția luminoasă 1 / LVK polar

Distribuția luminoasă 1 / LVK liniar**Distribuția luminoasă 1 / Diagrama luminanță**

Teren 1**LUG LIGHT FACTORY 130222.5L131.061 3664_6 URBINO 16 LED 740 O7**

Nr.	X [m]	Y [m]	Înălțime de montare [m]	Factorul de menținere
1	-15.000	10.000	4.000	0.85
2	15.000	-10.000	4.000	0.85

Teren 1

# Corp de iluminat	Φ (Corp de iluminat) [lm]	Putere [W]	Eficiența luminoasă [lm/W]
2 LUG LIGHT FACTORY - 130222.5L131.061 3664_6 URBINO 16 LED 740 O7	4150	37.0	112.2
Suma tuturor corpurilor de iluminat	8300	74.0	112.2

Teren 1

Informații generale despre locație

Categorie de murdărire	Trafic mediu până la mare, încărcare cu praf sub 600 micrograme/metru cub
Interval de curățare	1.0 Ani

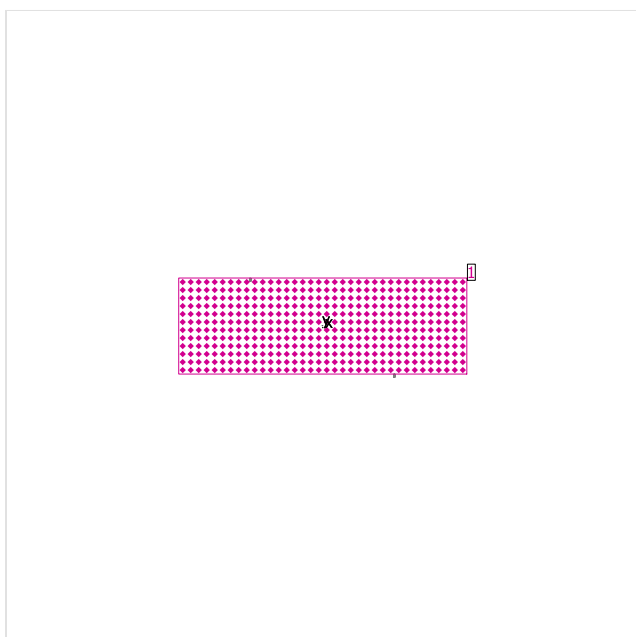
Corp de iluminat	Date de întreținere
1 Bucți LUG LIGHT FACTORY - 130222.5L131.061 3664_6 URBINO 16 LED 740 O7	
Dotare: 1 Bucți 1xMODUL LED 4000K 37.0 W	
Interval de curățare	2.0 Ani
Distribuție flux	Direct
Tip corpuri de iluminat	Definit de utilizator
Număr anual de ore de funcționare	3720 h
Tip lampă	Definit de utilizator
Interval de înlocuire a lămpilor	1.0 Ani
Înlocuiți imediat becurile defecte	Nu
Factorul de întreținere a încăperii (RMF)	/
Factor de menținere al corpurilor de iluminat (LMF)	/
Factor de menținere a fluxului luminos al lămpii (LLMF)	/
Factorul duratei de viață a becurilor (LSF)	/
Factorul de menținere (MF)	0.85

1 Bucți LUG LIGHT FACTORY - 130222.5L131.061 3664_6 URBINO 16 LED 740 O7

Dotare: 1 Bucți 1xMODUL LED 4000K 37.0 W

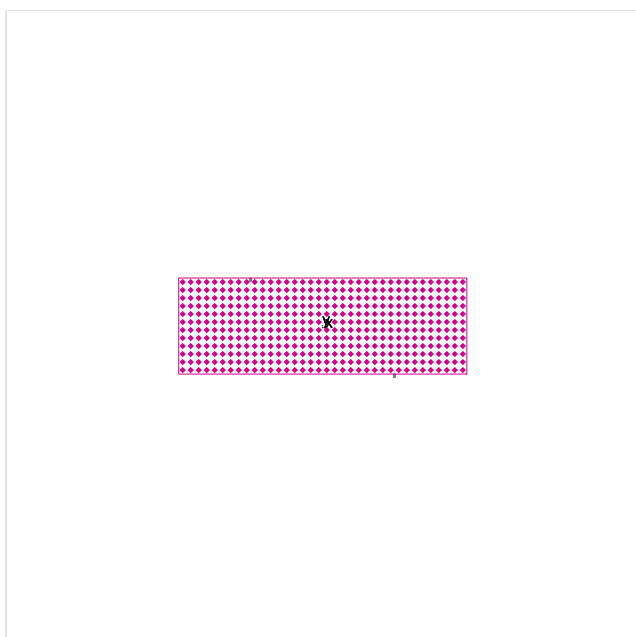
Interval de curățare	2.0 Ani
Distribuție flux	Direct
Tip corpuri de iluminat	IP2X închis
Număr anual de ore de funcționare	8760 h
Tip lampă	LED
Interval de înlocuire a lămpilor	1.0 Ani
Înlocuiți imediat becurile defecte	Nu
Factorul de întreținere a încăperii (RMF)	/
Factor de menținere al corpurilor de iluminat (LMF)	/
Factor de menținere a fluxului luminos al lămpii (LLMF)	/
Factorul duratei de viață a becurilor (LSF)	/
Factorul de menținere (MF)	0.85

Teren 1



Generalități

Suprafață	Rezultat	Mediu (Nominal)	Min	Max	Min/mediu	Min/Max
1 Suprafață de calcul 1	Intensitate de iluminare verticală [lx] Înălțime: 0.000 m	4.59	0.16	51.2	0.03	0.00

Suprafață de calcul 1 / Intensitate de iluminare verticală**Suprafață de calcul 1: Intensitate de iluminare verticală (Raster)****Scena luminii: Scena luminii 1**

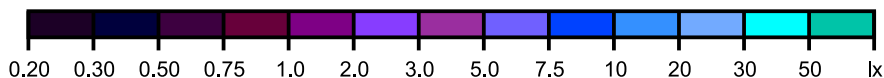
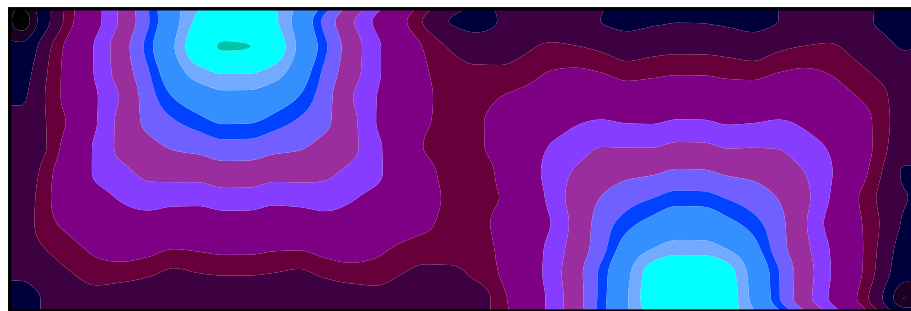
Mediu: 4.59 lx, Min: 0.16 lx, Max: 51.2 lx, Min/mediu: 0.03, Min/Max: 0.00

Înălțime: 0.000 m

Izoliii [lx]

Scară: 1 : 500

Culori false [lx]



Scară: 1 : 500

Raster valoric [lx]

0.16	0.97	3.5	16	40	32	6.8	1.9	0.7	0.45	0.58	0.55	0.46	0.50	0.48	0.50	0.58	0.48
0.33	1.2	4.2	19	51	40	8.1	2.3	0.96	0.6	0.7	0.76	0.62	0.68	0.65	0.70	0.76	0.58
0.43	1.3	3.9	15	31	25	6.9	2.2	1.0	0.80	0.86	1.1	0.87	0.95	0.9	0.95	0.96	0.70
0.48	1.2	3.3	10	17	13	6.0	2.1	1.1	0.90	1.1	1.5	1.3	1.4	1.3	1.4	1.2	0.84
0.52	1.1	3.6	7.2	10	8.6	5.5	2.0	1.0	0.96	1.4	1.9	2.0	2.1	1.9	2.1	1.5	0.90
0.5	1.3	3.4	5.2	6.5	5.6	4.3	2.3	0.96	0.95	1.6	2.5	3.0	3.3	2.9	2.9	1.9	0.89
0.51	1.4	2.7	3.5	4.0	3.6	3.3	2.2	1.1	0.85	1.6	3.2	4.5	5.3	4.7	3.8	2.1	0.79
0.63	1.4	2.1	2.3	2.5	2.3	2.4	1.6	1.1	0.95	1.4	3.7	6.4	8.6	7.3	4.9	2.0	0.72
0.64	1.1	1.6	1.5	1.6	1.5	1.7	1.4	1.1	0.94	1.4	3.6	8.8	14	11	5.8	1.8	0.75
0.63	0.92	1.2	1.0	1.1	1.0	1.1	1.1	0.88	0.86	1.5	3.8	13	24	19	6.1	2.0	0.72
0.53	0.75	0.86	0.76	0.77	0.74	0.8	0.67	0.68	0.8	1.5	4.3	18	46	35	7.7	2.1	0.68
0.45	0.6	0.62	0.52	0.56	0.53	0.57	0.66	0.54	0.55	1.4	4.1	19	44	37	7.9	2.0	0.56

Scară: 1 : 500

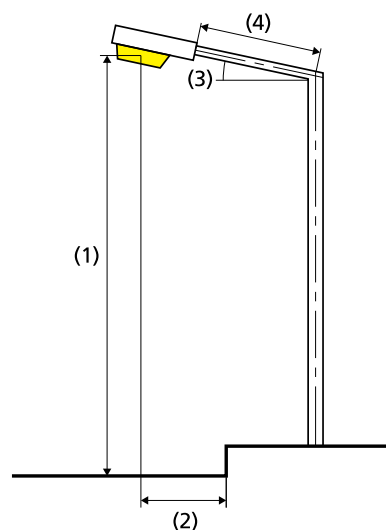
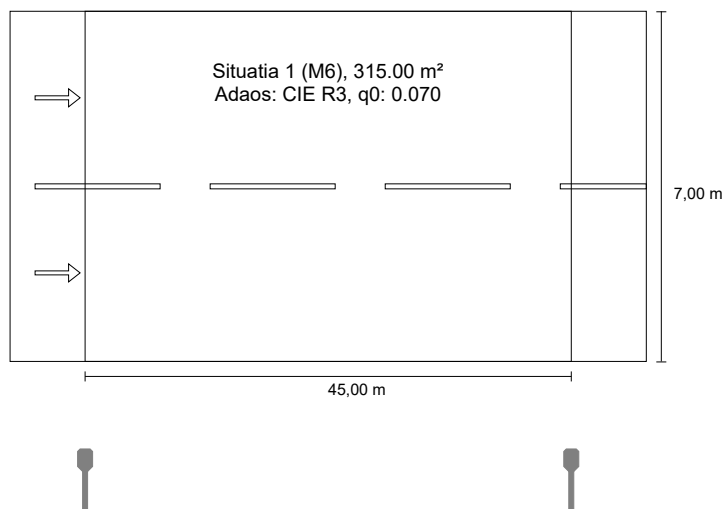
Tabel de valori [lx]

m	-29.167	-27.500	-25.833	-24.167	-22.500	-20.833	-19.167	-17.500	-15.833	-14.167	-12.500	-10.833	-9.167	-7.500	-5.833	-4.167
9.167	0.16	0.97	3.5	16	40	32	6.8	1.9	0.7	0.45	0.58	0.55	0.46	0.50	0.48	0.50
7.500	0.33	1.2	4.2	19	51	40	8.1	2.3	0.96	0.6	0.7	0.76	0.62	0.68	0.65	0.70
5.833	0.43	1.3	3.9	15	31	25	6.9	2.2	1.0	0.80	0.86	1.1	0.87	0.95	0.9	0.95
4.167	0.48	1.2	3.3	10	17	13	6.0	2.1	1.1	0.90	1.1	1.5	1.3	1.4	1.3	1.4
2.500	0.52	1.1	3.6	7.2	10	8.6	5.5	2.0	1.0	0.96	1.4	1.9	2.0	2.1	1.9	2.1
0.833	0.5	1.3	3.4	5.2	6.5	5.6	4.3	2.3	0.96	0.95	1.6	2.5	3.0	3.3	2.9	2.9
-0.833	0.51	1.4	2.7	3.5	4.0	3.6	3.3	2.2	1.1	0.85	1.6	3.2	4.5	5.3	4.7	3.8
-2.500	0.63	1.4	2.1	2.3	2.5	2.3	2.4	1.6	1.1	0.95	1.4	3.7	6.4	8.6	7.3	4.9
-4.167	0.64	1.1	1.6	1.5	1.6	1.5	1.7	1.4	1.1	0.94	1.4	3.6	8.8	14	11	5.8
-5.833	0.63	0.92	1.2	1.0	1.1	1.0	1.1	1.1	0.88	0.86	1.5	3.8	13	24	19	6.1
-7.500	0.53	0.75	0.86	0.76	0.77	0.74	0.8	0.67	0.68	0.8	1.5	4.3	18	46	35	7.7
-9.167	0.45	0.6	0.62	0.52	0.56	0.53	0.57	0.66	0.54	0.55	1.4	4.1	19	44	37	7.9

m	-2.500	-0.833	0.833	2.500	4.167	5.833	7.500	9.167	10.833	12.500	14.167	15.833	17.500	19.167	20.833	22.500	24.167	25.833
9.167	0.71	0.49	0.45	0.51	0.58	0.59	0.55	0.50	0.46	0.49	0.50	0.50	0.48	0.46	0.50	0.55	0.58	0.56
7.500	0.96	0.72	0.61	0.62	0.71	0.79	0.76	0.69	0.62	0.66	0.68	0.68	0.65	0.61	0.70	0.76	0.78	0.68
5.833	1.03	0.86	0.80	0.80	0.88	1.01	1.05	0.99	0.87	0.91	0.95	0.95	0.91	0.88	0.99	1.05	0.98	0.83
4.167	1.06	0.91	0.90	1.00	1.11	1.28	1.49	1.42	1.29	1.31	1.39	1.38	1.30	1.31	1.43	1.46	1.23	1.03
2.500	1.03	0.94	0.96	1.14	1.40	1.63	1.93	2.08	1.96	1.94	2.10	2.08	1.92	1.97	2.07	1.87	1.55	1.26
0.833	0.98	0.88	0.95	1.17	1.58	2.07	2.50	3.02	2.98	2.98	3.31	3.28	2.94	2.98	2.93	2.40	1.94	1.37
-0.833	1.12	0.90	0.85	1.09	1.57	2.35	3.19	3.94	4.49	4.75	5.35	5.29	4.71	4.45	3.81	3.04	2.13	1.32
-2.500	1.13	0.96	0.93	1.01	1.36	2.29	3.66	5.11	6.39	7.43	8.58	8.47	7.29	6.22	4.92	3.40	2.03	1.10
-4.167	1.06	0.93	0.94	1.08	1.41	2.03	3.57	6.12	8.80	11.4	13.9	13.7	11.1	8.48	5.76	3.25	1.80	1.15
-5.833	0.88	0.85	0.88	1.07	1.49	2.29	3.79	6.61	12.6	19.7	24.0	23.9	19.3	11.8	6.14	3.48	2.02	1.21

m	-2.500	-0.833	0.833	2.500	4.167	5.833	7.500	9.167	10.833	12.500	14.167	15.833	17.500	19.167	20.833	22.500	24.167	25.833
-7.500	0.69	0.69	0.81	1.03	1.49	2.39	4.29	8.36	17.9	36.6	45.8	45.6	35.4	16.2	7.72	3.89	2.10	1.20
-9.167	0.54	0.51	0.59	0.91	1.37	2.27	4.12	8.60	19.3	38.3	43.8	42.8	37.0	17.6	7.85	3.74	1.98	1.08

m	27.500	29.167
9.167	0.48	0.41
7.500	0.58	0.49
5.833	0.70	0.58
4.167	0.84	0.62
2.500	0.90	0.61
0.833	0.89	0.57
-0.833	0.79	0.49
-2.500	0.72	0.51
-4.167	0.75	0.48
-5.833	0.72	0.42
-7.500	0.68	0.36
-9.167	0.56	0.20

Strada Centrala - Situatia 1 până la EN 13201:2015**LUG LIGHT FACTORY 130232.5L101.101 4763
URBINI LED 740 O9 920****Rezultate pentru câmpurile de evaluare**
Factorul de menținere: 0.85

Situatia 1 (M6)

Lm [cd/m²] ≥ 0.30	Uo ≥ 0.35	UI ≥ 0.40	TI [%] ≤ 20	EIR ≥ 0.30
✓ 0.31	✓ 0.42	✓ 0.54	✓ 18	✓ 0.53

Rezultate pentru indicatorii de eficiență energetică**Indicatorul densității de putere (Dp)**

0.022 W/lxm²

Densitatea consumului de energie

Aranjament: 4763 URBINI LED 740 O9 920 (144.0 kWh/an) 0.5 kWh/m² an

Lampă: 1xLED 4000K
 Flux luminos (corp de iluminat): 3900.93 lm
 Flux luminos (lampă): 3900.00 lm
 Ore de lucru
 4000 h: 100.0 %, 36.0 W
 W/km: 792.0

Aranjament: Pe o parte Jos
 Distanță stâlp: 45.000 m
 Înclinare consolă (3): 0.0°
 Lungime consolă (4): 1.000 m
 Înălțimea deasupra planului util (1): 8.000 m
 Ieșirea în consolă a punctului de lumină (2): -2.000 m

ULR: 0.00
 ULOR: 0.00

Valori maxime ale intensității luminoase

La 70°: 757 cd/klm
 La 80°: 126 cd/klm
 La 90°: 13.2 cd/klm

Clasă intensitate luminoasă: G*2

Orice direcție ce formează unghiul dat cu verticala în jos a corpurilor de iluminat instalate pentru utilizare.

Aranjamentul respectă clasa cu indici de orbire D.2

Situatia 1 (M6)

Factorul de menținere: 0.85

Raster: 15 x 6 Puncte

Lm [cd/m ²] ≥ 0.30	Uo ≥ 0.35	UI ≥ 0.40	TI [%] ≤ 20	EIR ≥ 0.30
✓ 0.31	✓ 0.42	✓ 0.54	✓ 18	✓ 0.53

Observatori atașați (2):

Observator	Poziție [m]	Lm [cd/m ²] ≥ 0.30	Uo ≥ 0.35	UI ≥ 0.40	TI [%] ≤ 20
Observator 1	(-60.000, 1.750, 1.500)	0.31	0.47	0.54	18
Observator 2	(-60.000, 5.250, 1.500)	0.35	0.42	0.60	9

Situatia 1 (M6)**Iluminare orizontală [lx]**

6.417	4.76	4.38	4.05	3.45	3.02	2.63	2.31	2.23	2.31	2.63	3.02	3.45	4.05	4.38	4.76
5.250	5.86	5.19	4.85	4.12	3.37	2.86	2.54	2.45	2.54	2.86	3.37	4.12	4.85	5.19	5.86
4.083	8.23	6.92	5.87	4.76	3.51	2.99	2.69	2.68	2.69	2.99	3.51	4.76	5.87	6.92	8.23
2.917	10.9	9.05	7.07	4.96	3.60	3.09	2.70	2.53	2.70	3.09	3.60	4.96	7.07	9.05	10.9
1.750	13.3	10.7	7.80	5.08	3.63	2.98	2.49	2.34	2.49	2.98	3.63	5.08	7.80	10.7	13.3
0.583	14.9	11.6	7.91	5.00	3.31	2.68	2.25	2.12	2.25	2.68	3.31	5.00	7.91	11.6	14.9
m	1.500	4.500	7.500	10.500	13.500	16.500	19.500	22.500	25.500	28.500	31.500	34.500	37.500	40.500	43.500

Raster: 15 x 6 Puncte

Em [lx]	Emin [lx]	Emax [lx]	g1	g2
5.12	2.12	14.9	0.413	0.142

Observator 1**Densitate a luminii cu carosabil uscat [cd/m²]**

6.417	0.14	0.14	0.16	0.15	0.16	0.17	0.17	0.18	0.20	0.21	0.21	0.19	0.18	0.15	0.14
5.250	0.18	0.17	0.18	0.18	0.18	0.20	0.21	0.22	0.25	0.26	0.26	0.25	0.22	0.18	0.18
4.083	0.25	0.22	0.21	0.21	0.21	0.23	0.24	0.28	0.30	0.31	0.30	0.32	0.29	0.26	0.26
2.917	0.33	0.29	0.25	0.24	0.23	0.27	0.30	0.33	0.36	0.40	0.36	0.40	0.40	0.37	0.35
1.750	0.40	0.34	0.29	0.27	0.29	0.34	0.38	0.41	0.45	0.50	0.48	0.50	0.51	0.48	0.44
0.583	0.46	0.39	0.33	0.33	0.36	0.43	0.48	0.55	0.60	0.62	0.58	0.60	0.59	0.58	0.50
m	1.500	4.500	7.500	10.500	13.500	16.500	19.500	22.500	25.500	28.500	31.500	34.500	37.500	40.500	43.500

Raster: 15 x 6 Puncte

Lm [cd/m ²]	Lmin [cd/m ²]	Lmax [cd/m ²]	g1	g2
0.31	0.14	0.62	0.465	0.233

Densitate a luminii cu lampă nouă [cd/m²]

6.417	0.17	0.17	0.18	0.18	0.19	0.20	0.20	0.21	0.23	0.25	0.25	0.23	0.21	0.18	0.17
5.250	0.21	0.19	0.21	0.21	0.22	0.23	0.24	0.25	0.29	0.31	0.30	0.29	0.25	0.22	0.21
4.083	0.29	0.25	0.25	0.25	0.24	0.27	0.28	0.33	0.35	0.37	0.35	0.38	0.34	0.30	0.31
2.917	0.39	0.34	0.30	0.28	0.27	0.31	0.35	0.39	0.43	0.47	0.43	0.47	0.47	0.43	0.41
1.750	0.47	0.40	0.34	0.32	0.34	0.40	0.45	0.48	0.52	0.59	0.57	0.58	0.60	0.56	0.51
0.583	0.54	0.45	0.38	0.39	0.42	0.50	0.57	0.65	0.70	0.73	0.69	0.71	0.69	0.68	0.58
m	1.500	4.500	7.500	10.500	13.500	16.500	19.500	22.500	25.500	28.500	31.500	34.500	37.500	40.500	43.500

Raster: 15 x 6 Puncte

Lm [cd/m ²]	Lmin [cd/m ²]	Lmax [cd/m ²]	g1	g2
0.36	0.17	0.73	0.465	0.233

Observator 2**Densitate a luminii cu carosabil uscat [cd/m²]**

6.417	0.15	0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.21	0.23	0.22	0.20	0.18	0.15	0.15
5.250	0.18	0.17	0.19	0.20	0.20	0.22	0.23	0.24	0.26	0.28	0.27	0.26	0.23	0.19	0.18
4.083	0.26	0.23	0.23	0.24	0.23	0.26	0.29	0.32	0.34	0.34	0.32	0.34	0.31	0.27	0.27
2.917	0.35	0.31	0.28	0.28	0.29	0.34	0.37	0.40	0.44	0.45	0.41	0.44	0.43	0.38	0.36
1.750	0.42	0.38	0.34	0.35	0.38	0.43	0.49	0.54	0.56	0.58	0.55	0.54	0.54	0.50	0.45
0.583	0.47	0.41	0.37	0.40	0.47	0.57	0.65	0.69	0.72	0.73	0.66	0.66	0.62	0.60	0.51
m	1.500	4.500	7.500	10.500	13.500	16.500	19.500	22.500	25.500	28.500	31.500	34.500	37.500	40.500	43.500

Raster: 15 x 6 Puncte

Lm [cd/m ²]	Lmin [cd/m ²]	Lmax [cd/m ²]	g1	g2
0.35	0.15	0.73	0.419	0.199

Densitate a luminii cu lampă nouă [cd/m²]

6.417	0.17	0.17	0.19	0.19	0.20	0.21	0.21	0.22	0.25	0.27	0.26	0.24	0.22	0.18	0.17
5.250	0.21	0.20	0.22	0.23	0.24	0.26	0.27	0.28	0.31	0.33	0.32	0.31	0.27	0.22	0.22
4.083	0.31	0.27	0.27	0.28	0.27	0.31	0.34	0.38	0.39	0.40	0.38	0.41	0.36	0.32	0.31
2.917	0.41	0.36	0.33	0.33	0.35	0.40	0.43	0.47	0.51	0.53	0.48	0.52	0.50	0.44	0.42
1.750	0.50	0.45	0.40	0.41	0.45	0.51	0.58	0.64	0.66	0.68	0.65	0.64	0.63	0.59	0.53
0.583	0.55	0.49	0.43	0.47	0.55	0.67	0.76	0.82	0.85	0.86	0.78	0.78	0.73	0.70	0.60
m	1.500	4.500	7.500	10.500	13.500	16.500	19.500	22.500	25.500	28.500	31.500	34.500	37.500	40.500	43.500

Raster: 15 x 6 Puncte

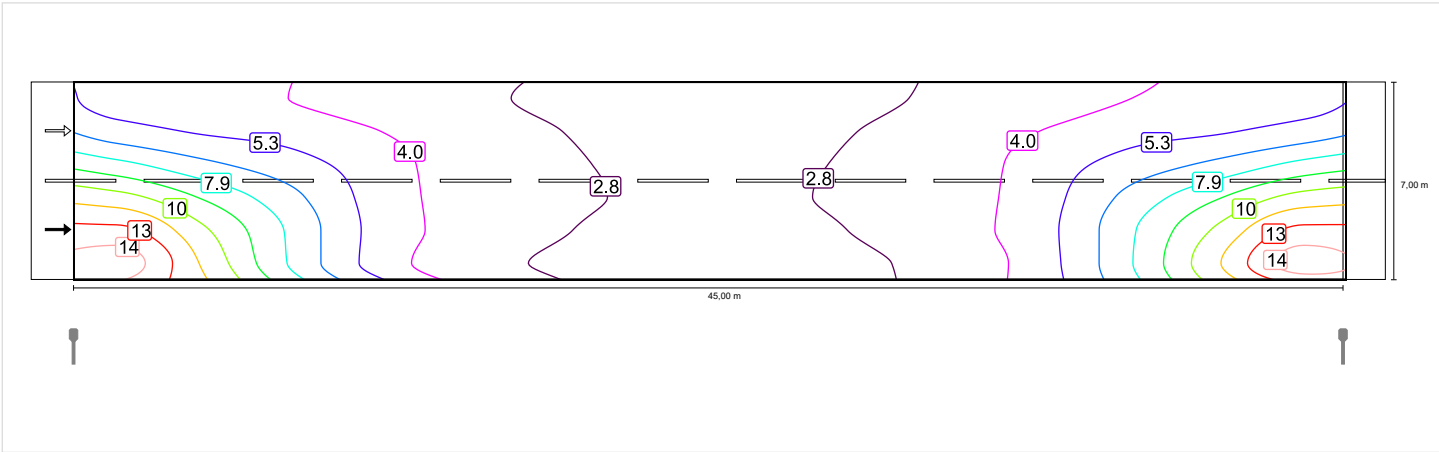
Lm [cd/m ²]	Lmin [cd/m ²]	Lmax [cd/m ²]	g1	g2
0.41	0.17	0.86	0.419	0.199

Situatie 1 (M6)

Factorul de menținere: 0.85
Raster: 15 x 6 Puncte

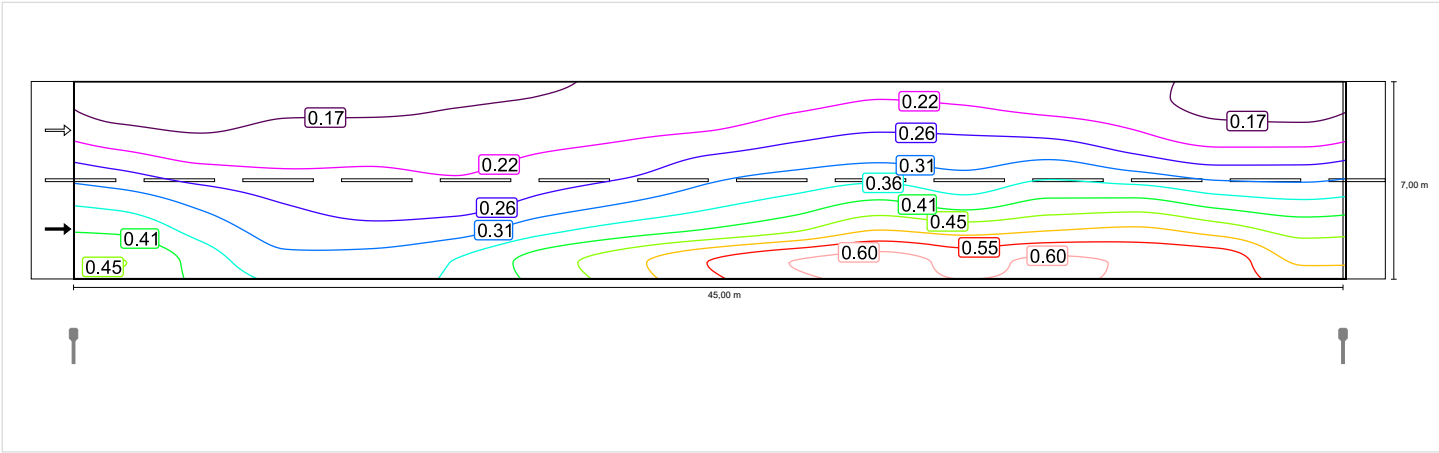
Lm [cd/m²] ≥ 0.30	Uo ≥ 0.35	UI ≥ 0.40	TI [%] ≤ 20	EIR ≥ 0.30
✓ 0.31	✓ 0.42	✓ 0.54	✓ 18	✓ 0.53

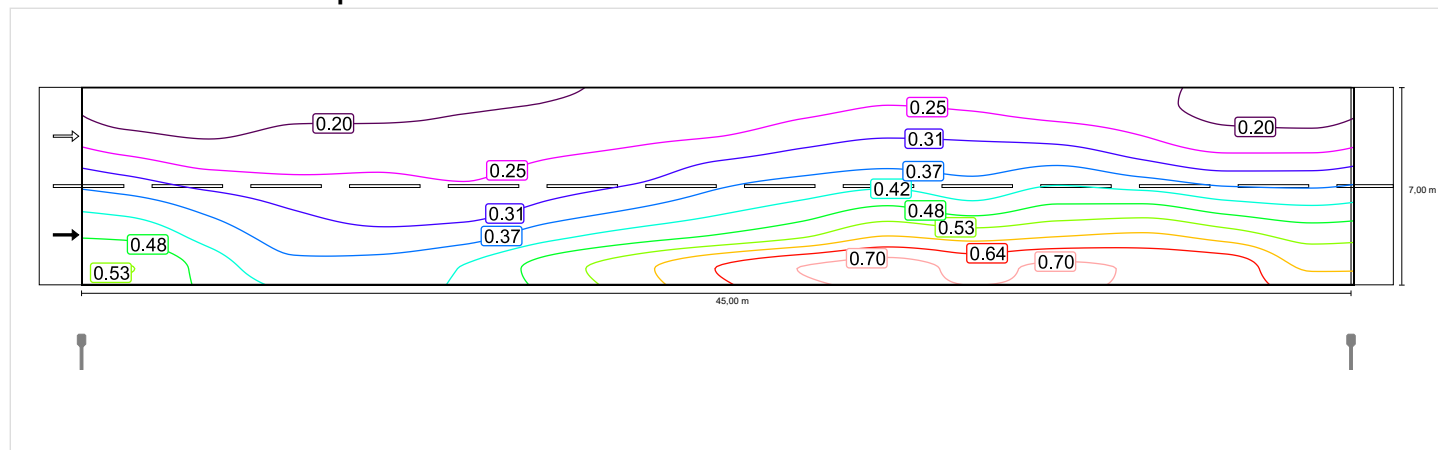
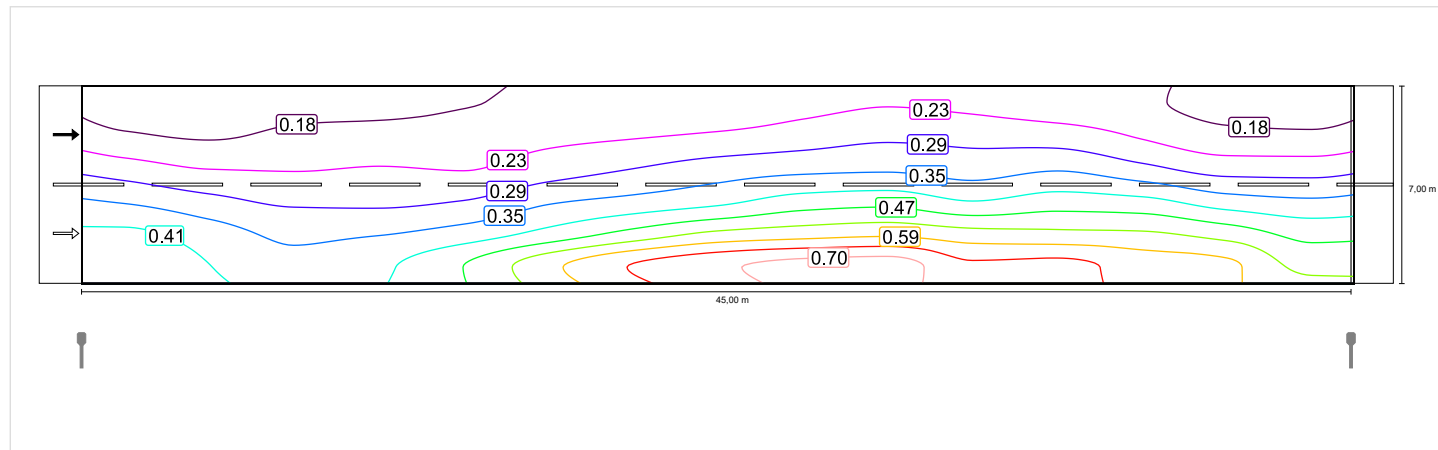
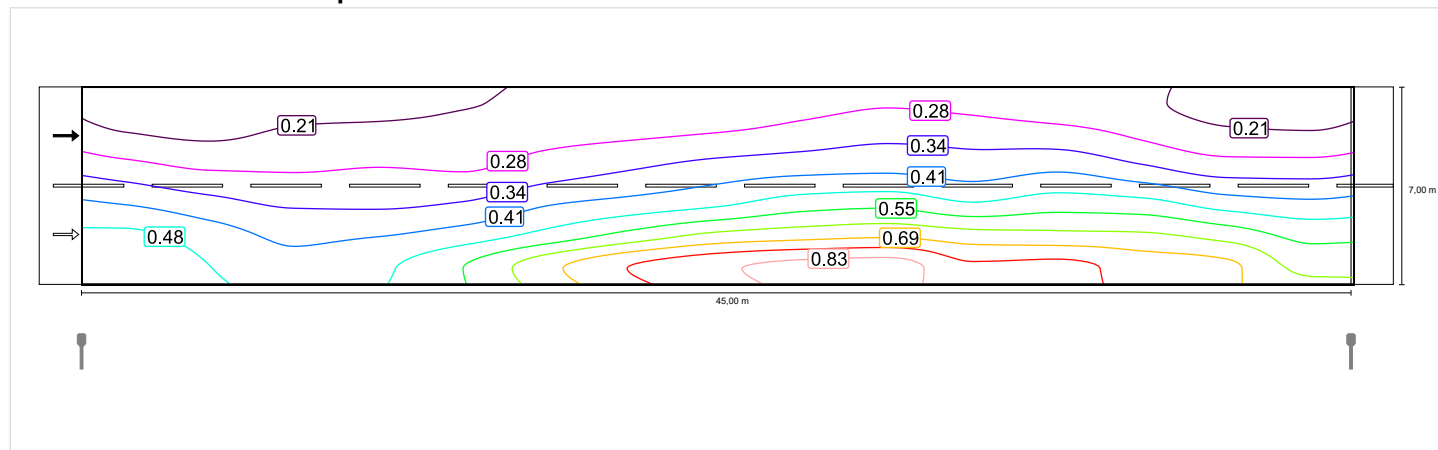
Iluminare orizontală

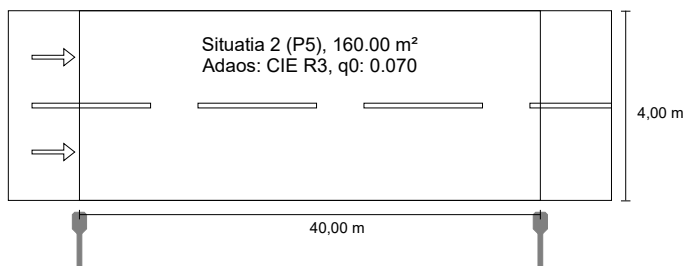


Observator 1

Densitate a luminii cu carosabil uscat



Densitate a luminii cu lampă nouă**Observator 2****Densitate a luminii cu carosabil uscat****Densitate a luminii cu lampă nouă**

Strazi Rezidentiale - Situatia 2 până la EN 13201:2015**LUG LIGHT FACTORY 130232.5L132.101 4759 URBINI LED 740 O9 350 II**

Rezultate pentru câmpurile de evaluare
Factorul de menținere: 0.85

Situatia 2 (P5)

Em [lx] ≥ 3.00 ≤ 4.50	Emin [lx] ≥ 0.60	TI [%] ≤ 30
✓ 3.49	✓ 0.96	✓ 12

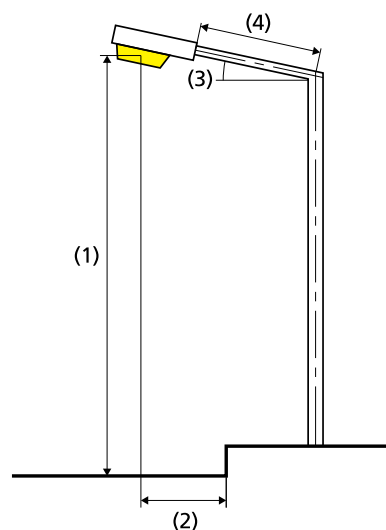
Rezultate pentru indicatorii de eficiență energetică

Indicatorul densității de putere (Dp)

0.025 W/lxm²

Densitatea consumului de energie

Aranjament: 4759 URBINI LED 740 O9 350 II (56.0 kWh/an) 0.4 kWh/m² an



Lampă: 1xLED 4000K
Flux luminos (corp de iluminat): 1800.25 lm
Flux luminos (lampă): 1800.00 lm
Ore de lucru
4000 h: 100.0 %, 14.0 W
W/km: 350.0
Aranjament: Pe o parte Jos
Distanță stâlp: 40.000 m
Înclinare consolă (3): 0.0°
Lungime consolă (4): 1.000 m
Înălțimea deasupra planului util (1): 7.000 m
Ieșirea în consolă a punctului de lumină (2): -0.500 m

ULR: 0.00
ULOR: 0.00
Valori maxime ale intensității luminoase
La 70°: 711 cd/klm
La 80°: 225 cd/klm
La 90°: 11.1 cd/klm
Clasă intensitate luminoasă: /

Orice direcție ce formează unghiul dat cu verticala în jos a corpurilor de iluminat instalate pentru utilizare.

Aranjamentul respectă clasa cu indici de orbire D.3

Situatia 2 (P5)

Factorul de menținere: 0.85

Raster: 14 x 6 Puncte

Em [lx] ≥ 3.00 ≤ 4.50	Emin [lx] ≥ 0.60	TI [%] ≤ 30
✓ 3.49	✓ 0.96	✓ 12

Observatori atașați (2):

Observator	Poziție [m]	TI [%] ≤ 30
Observator 1	(-60.000, 1.000, 1.500)	12
Observator 2	(-60.000, 3.000, 1.500)	11

Situatia 2 (P5)**Iluminare orizontală [lx]**

3.667	6.70	5.30	3.91	2.55	1.84	1.57	1.36	1.36	1.57	1.84	2.55	3.91	5.30	6.70
3.000	7.46	5.75	4.02	2.57	1.84	1.50	1.29	1.29	1.50	1.84	2.57	4.02	5.75	7.46
2.333	8.03	6.12	4.07	2.58	1.74	1.41	1.22	1.22	1.41	1.74	2.58	4.07	6.12	8.03
1.667	8.54	6.30	4.09	2.44	1.62	1.32	1.14	1.14	1.32	1.62	2.44	4.09	6.30	8.54
1.000	9.07	6.25	3.84	2.24	1.50	1.23	1.05	1.05	1.23	1.50	2.24	3.84	6.25	9.07
0.333	8.54	5.71	3.39	2.01	1.36	1.13	0.96	0.96	1.13	1.36	2.01	3.39	5.71	8.54
m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571

Raster: 14 x 6 Puncte

Em [lx]	Emin [lx]	Emax [lx]	g1	g2
3.49	0.96	9.07	0.275	0.106

Observator 1

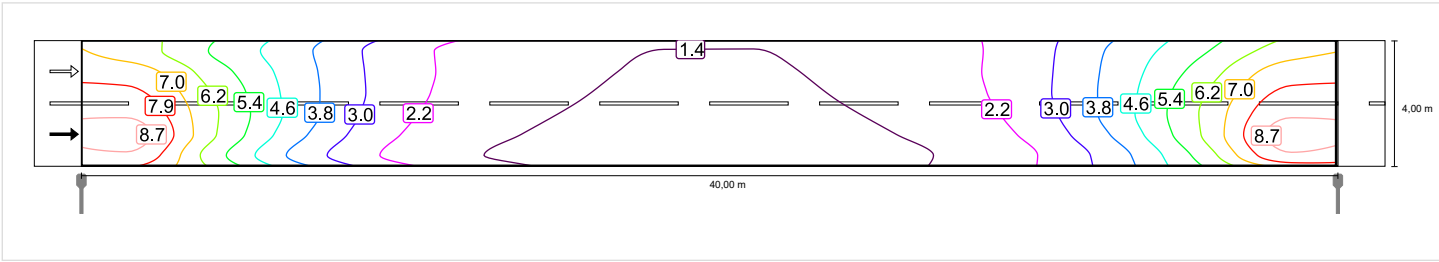
Observator 2

Situatia 2 (P5)

Factorul de menținere: 0.85
Raster: 14 x 6 Puncte

Em [lx] ≥ 3.00 ≤ 4.50	Emin [lx] ≥ 0.60	Tl [%] ≤ 30
✓ 3.49	✓ 0.96	✓ 12

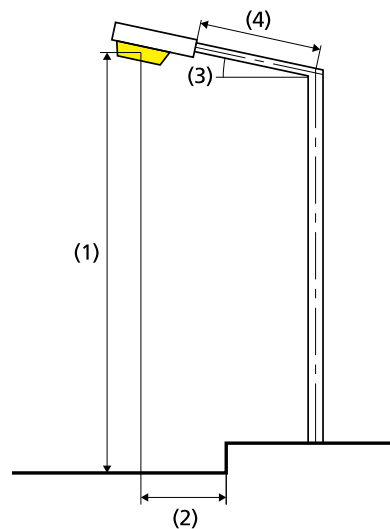
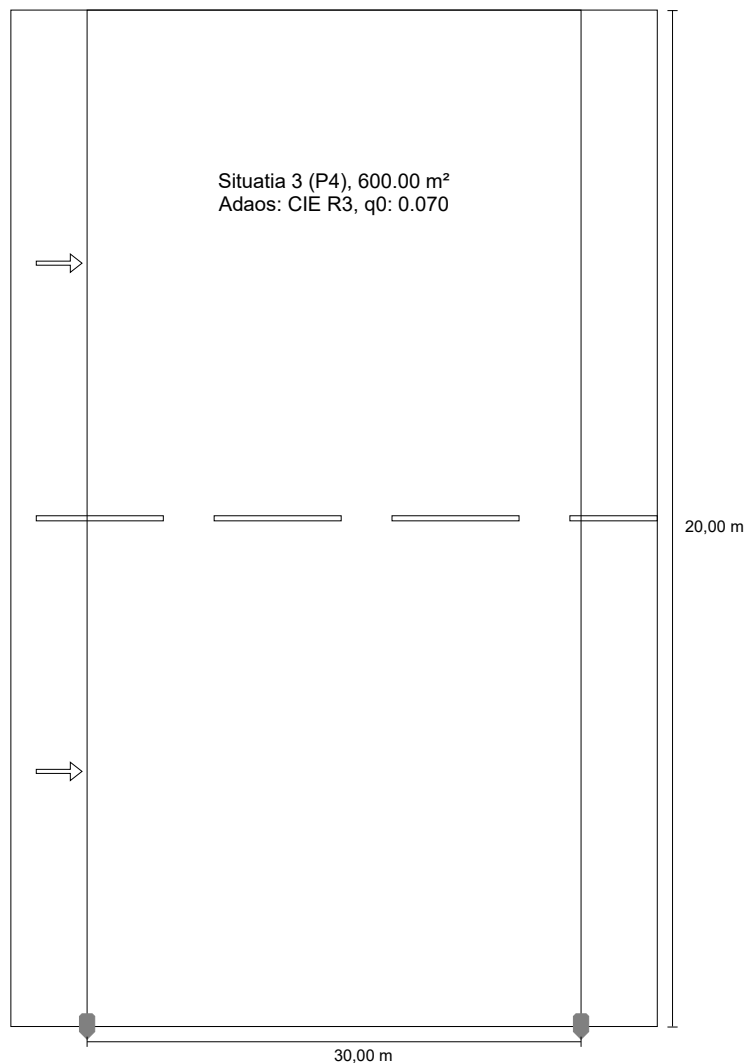
Iluminare orizontală



Observator 1

Observator 2

Piata centru - Situatia 3 până la EN 13201:2015

LUG LIGHT FACTORY 130222.5L131.061 3664_6
URBINO 16 LED 740 O7

Lampă:	1xMODUL LED 4000K
Flux luminos (corp de iluminat):	4150.19 lm
Flux luminos (lampă):	4150.00 lm
Ore de lucru	
4000 h:	100.0 %, 37.0 W
W/km:	1221.0
Aranjament:	Pe o parte Jos
Distanță stâlp:	30.000 m
Înclinare consolă (3):	0.0°
Lungime consolă (4):	0.000 m
Înălțimea deasupra planului util (1):	8.000 m
Ieșirea în consolă a punctului de lumină (2):	0.000 m

Rezultate pentru câmpurile de evaluare

Factorul de menținere: 0.85

Situatia 3 (P4)

TI [%] ≤ 30	Em [lx] ≥ 3.00 ≤ 4.50	Emin [lx] ≥ 0.60
✓ 4	✓ 4.28	✓ 0.92

Rezultate pentru indicatorii de eficiență energetică

Indicatorul densității de putere (Dp)

0.014 W/lx·m²

Densitatea consumului de energie

Aranjament: 3664_6 URBINO 16 LED 740 O7 (148.0 kWh/an)

0.2 kWh/m² an

ULR: 0.00

ULOR: 0.00

Valori maxime ale intensității luminoase

La 70°: 418 cd/klm

La 80°: 25.5 cd/klm

La 90°: 0.00 cd/klm

Clasă intensitate luminoasă: G*4

Orice direcție ce formează unghiul dat cu verticala în jos a corpurilor de iluminat instalate pentru utilizare.

Aranjamentul respectă clasa cu indici de orbire D.6

Situatia 3 (P4)

Factorul de menținere: 0.85

Raster: 10 x 6 Puncte

TI [%] ≤ 30	Em [lx] ≥ 3.00 ≤ 4.50	Emin [lx] ≥ 0.60
✓ 4	✓ 4.28	✓ 0.92

Observatori atașați (2):

Observator	Poziție [m]	TI [%] ≤ 30	TI [%] ≤ 30
Observator 1	(-60.000, 5.000, 1.500)	4	
Observator 2	(-60.000, 15.000, 1.500)	1	

Situatia 3 (P4)

Iluminare orizontală [lx]

18.333	0.94	0.92	1.19	1.39	1.34	1.34	1.39	1.19	0.92	0.94
15.000	1.87	1.83	2.22	2.13	2.02	2.02	2.13	2.22	1.83	1.87
11.667	3.97	3.68	3.60	2.86	2.27	2.27	2.86	3.60	3.68	3.97
8.333	7.31	5.91	4.52	2.98	1.88	1.88	2.98	4.52	5.91	7.31
5.000	12.3	9.86	5.28	2.92	2.07	2.07	2.92	5.28	9.86	12.3
1.667	15.9	13.3	6.60	3.31	2.17	2.17	3.31	6.60	13.3	15.9
m	1.500	4.500	7.500	10.500	13.500	16.500	19.500	22.500	25.500	28.500

Raster: 10 x 6 Puncte

Em [lx]	Emin [lx]	Emax [lx]	g1	g2
4.28	0.92	15.9	0.214	0.058

Observator 1

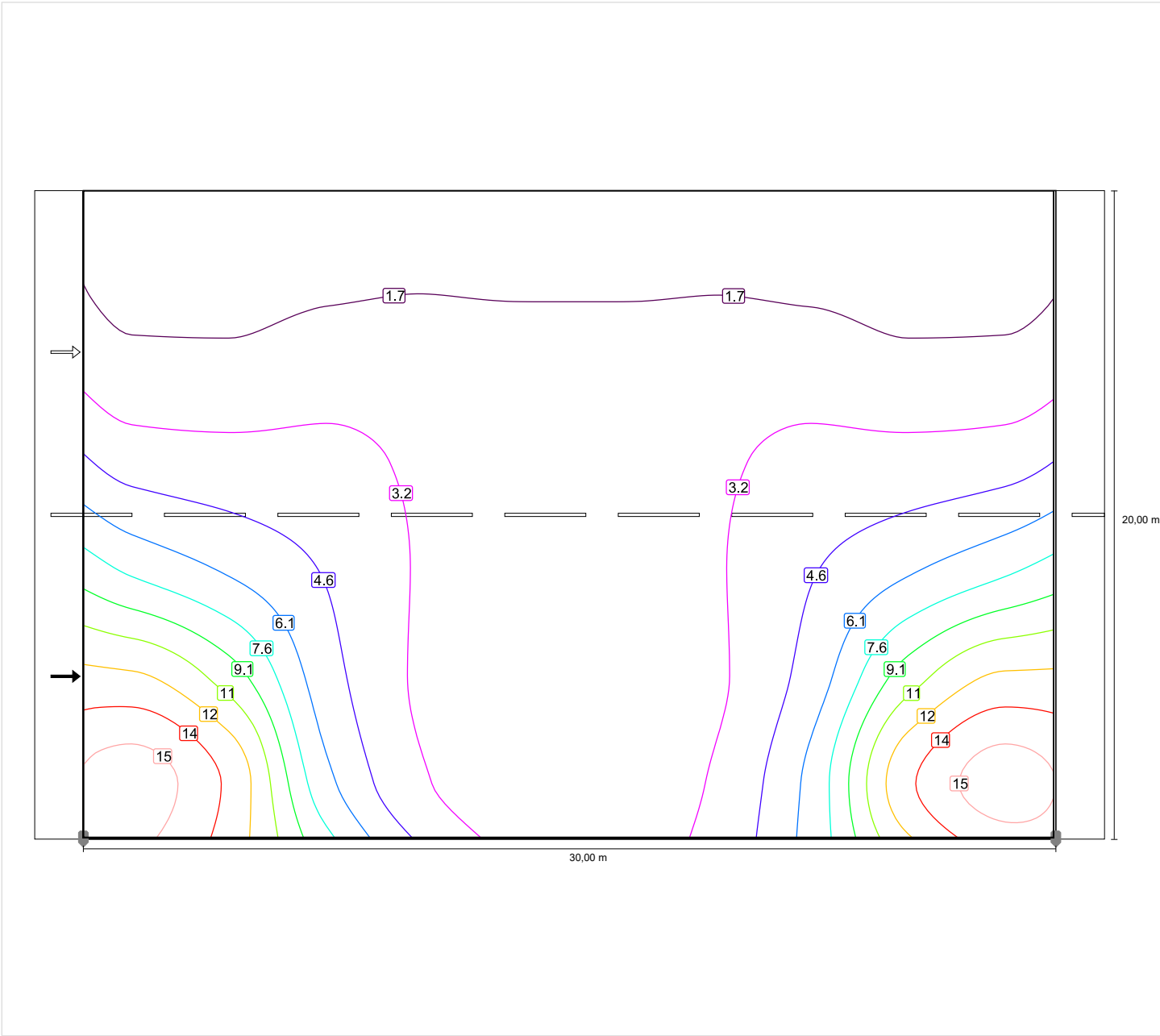
Observator 2

Situatie 3 (P4)

Factorul de menținere: 0.85
Raster: 10 x 6 Puncte

Tl [%] ≤ 30	Em [lx] ≥ 3.00 ≤ 4.50	Emin [lx] ≥ 0.60
✓ 4	✓ 4.28	✓ 0.92

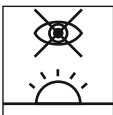
Iluminare orizontală



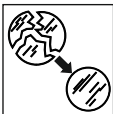
Observator 1

Observator 2

**WAŻNE INFORMACJE | IMPORTANT INFORMATION | IMPORTANTES
INFORMAÇÕES ÚTEIS | ВАЖНАЯ ИНФОРМАЦИЯ | WICHTIGE INFORMATIONEN**



Unikać bezpośredniego patrzenia na źródła led.
Avoid direct looking at led source light.
Il faut éviter un regard direct sur les sources led.
Evite olhar direto para a fonte de luz led.
Не следует смотреть непосредственно на светодиодные источники света.
Den direkten augenkontakt in die led vermeiden.

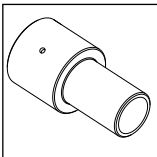


Wymienić stłuczoną szybę.
Replace broken glass.
Remplacement du vitre cassé.
Substituir o vidro quebrado.
Замена разбитого стекла.
Austausch zerbrochenes Glas.



Niniejszą instrukcję należy zachować do przyszłego wykorzystania.
Keep this instruction leaflet for any further reference.
Conserver cette notice jusqu'à un emploi prochain.
Este manual deve ser mantido para futuro uso.
Настоящую инструкцию следует сохранить для будущего использования.
Das vorliegende Bedienungsanleitung für zukünftigen Bedarf aufbewahren.

AKCESORIA | ACCESSORIES | ACCESSOIRES | ACESSÓRIOS | АКЦЕССУАРЫ | ZUBEHÖR



150170.00817

Reduktor 60/76mm
Reducer 60/76mm
Réducteur 60/76mm
Redutor 60/76mm
Редуктор 60/76mm
Minderer 60/76mm



LUG Light Factory Sp. z o.o.
65-127 Zielona Góra, ul. Gorzowska 11
e-mail: handlowy@lug.pl
tel. +48 68 411 72 68 | 69 | 70 | 71 | 79 |
fax +48 68 411 72 88 | 89

INFORMACJA KGO

W sprawie odbioru zużytych opraw prosimy kontaktować się
z Organizacją Odzysku Sprzętu Elektrycznego i Elektronicznego
BIOSYSTEM ELEKTRORECYCLING S.A.
30-556 Kraków ul. Wodna 4
tel. 012 29 666 25
KRS 0000256584
nr WEE E00006285
www.bioelektro.pl, www.biosystem.pl
Biuro@bioelektro.pl



INSTALLATION INSTRUCTION

Version 02/2017/002

URBINI LED

INSTRUKCJA MONTAŻU | ИНСТРУКЦИЯ ПО МОНТАЖУ | MONTAGEANLEITUNG | INSTRUCTIONS DE MONTAGE | NÁVOD K MONTÁŽI | SZERELÉSI UTASÍTÁSOK
MONTERINGSVEJLEDNING | INSTRUÇÕES DE MONTAGEM | MONTERINGSVEJLEDNING | INSTRUCCIONES DE MONTAJE | KOKOONPANO - JA KIINNITYSOHJEET
MONTAGE INSTRUCTIE | INSTRUZIONI DI MONTAGGIO | ИНСТРУКЦІЯ З МОНТАЖУ | MONTAJ YÖNERGESİ

PL MONTAŻU POWINNA DOKONAĆ OSOBA
POSIADAJĄCA ODPOWIEDNIE UPRAWNIENIA.

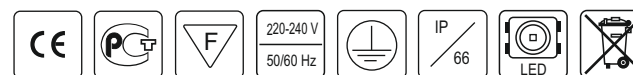
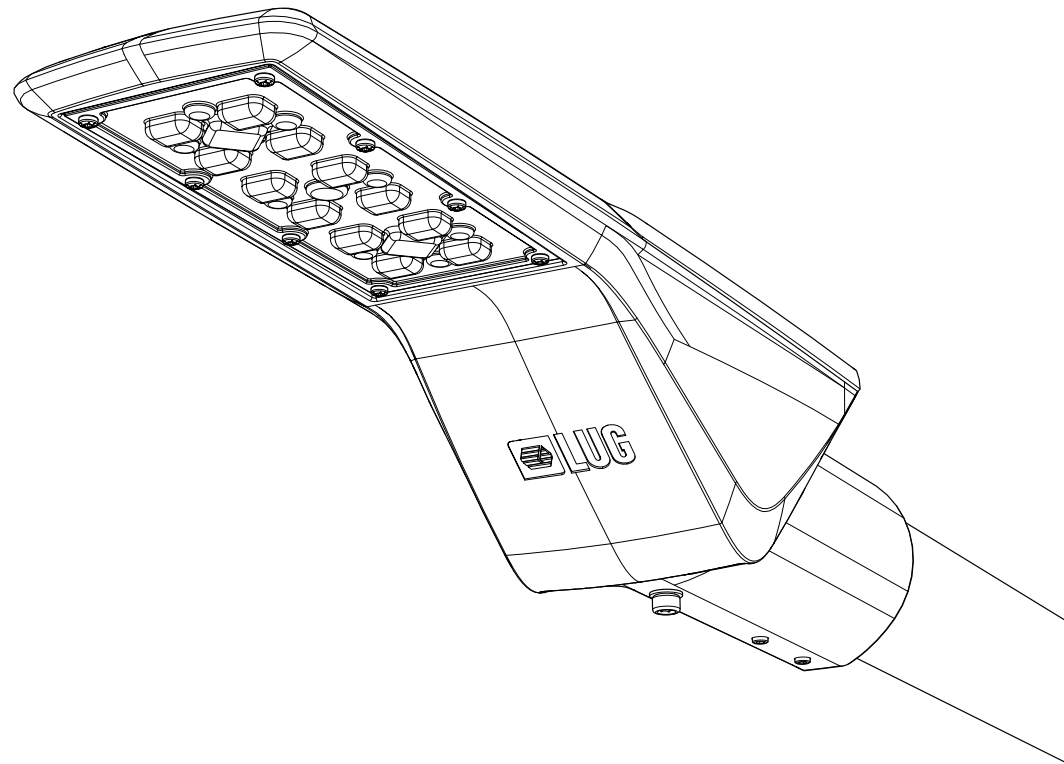
RU МОНТАЖ НУЖЕН БЫТЬ СОВЕРШЕН ЧЕРЕЗ
ЛИЦО ИМЕЮЩЕ СООТВЕТСТВЕННЫЕ ПРАВА.

D DIE MONTAGE VON EINER PERSONE, DIE ÜBER
ERFORDERLICHE KENNNTNISSE VERFÜGT GEMACHT WERDEN

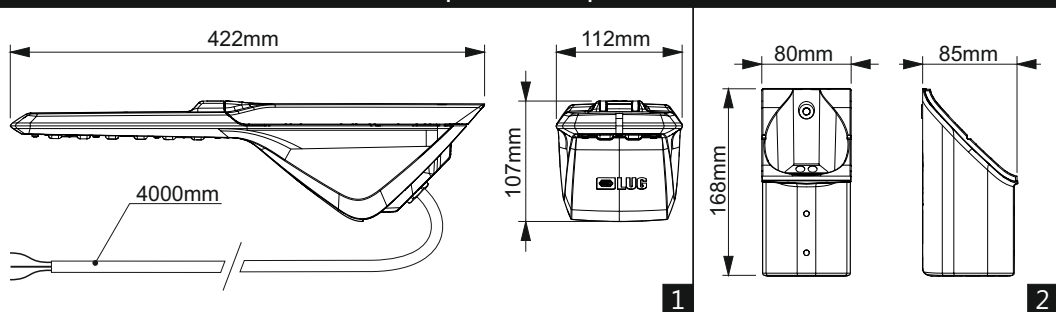
GB INSTALLATION MUST BE PERFORMED
BY AN AUTHORIZED TECHNICIAN.

UA МОНТАЖ ПОВИННА ЗРОБИТИ ОСОБА, ЩО МАЄ
ВІДПОВІДНІ УПОВНОВАЖЕННЯ.

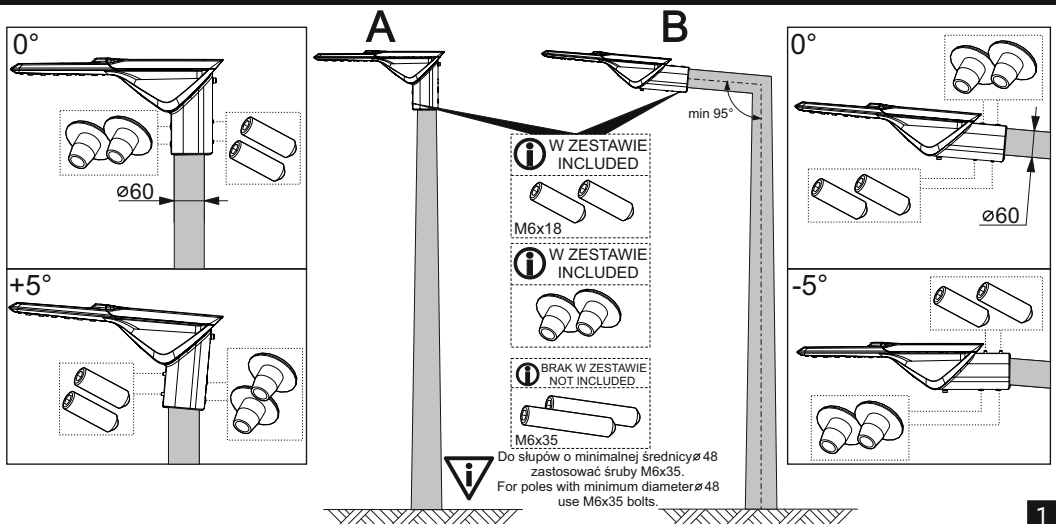
F LA MONTAGE DOIT FAIRE UNE PERSONNE QUI
POSSEDER LES EXPERIENCES COMPETENTES.



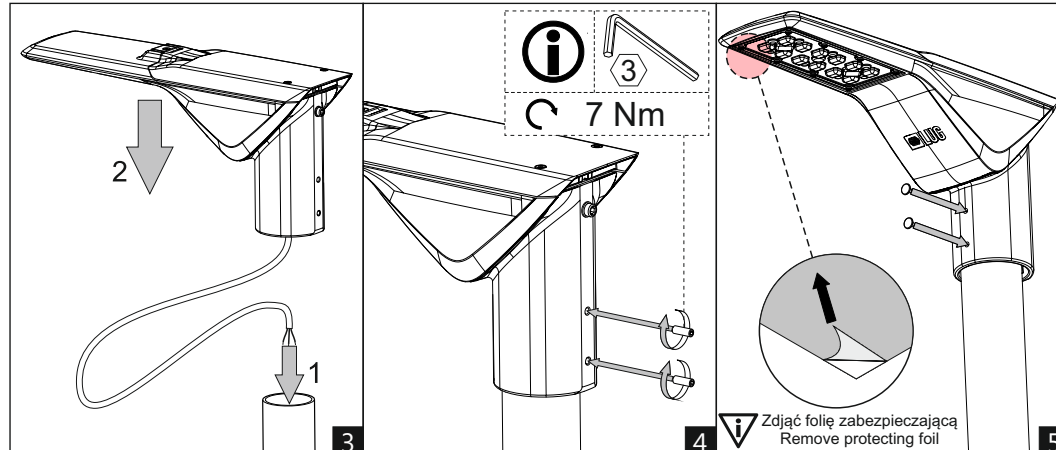
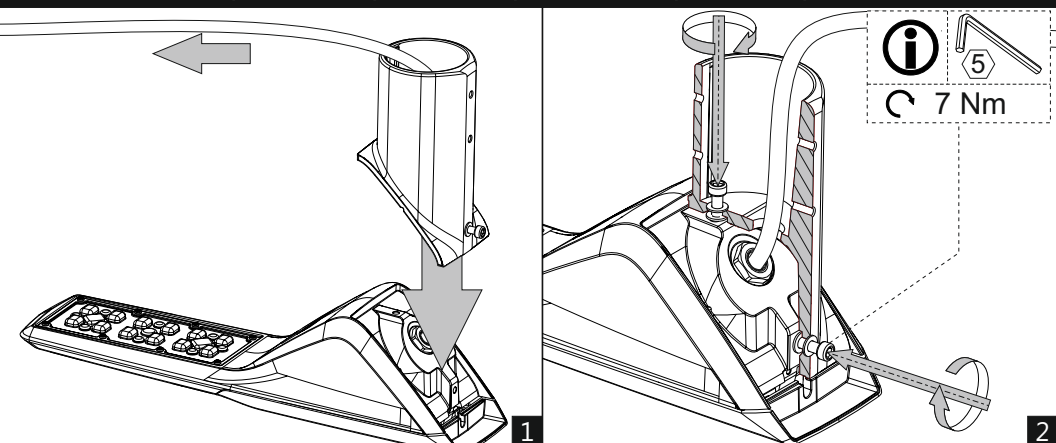
WYMIARY | DIMENSIONS | DIMENSIONS
DIMENSIONES | PAЗMEPЫ | ABMESSUNGEN



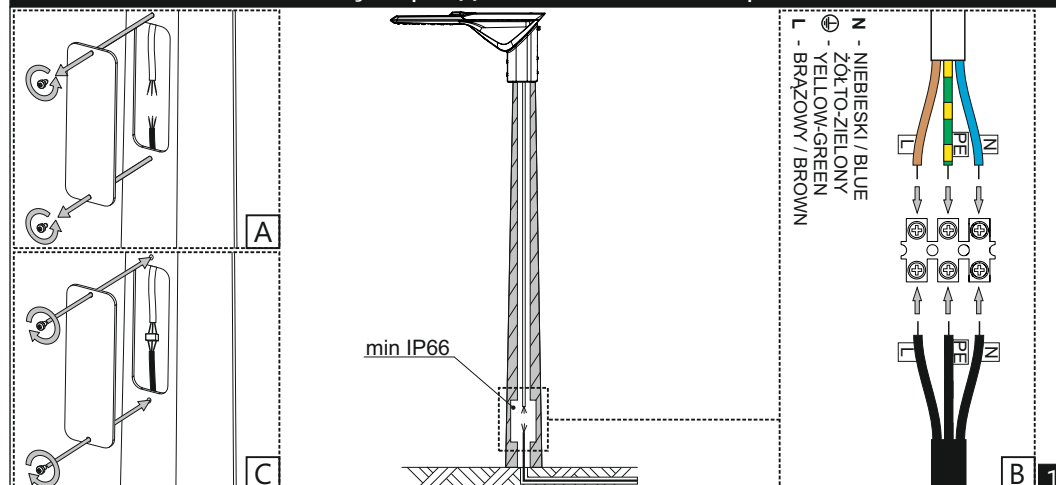
SPOSOBY MONTAŻU | INSTALLATION POSITIONS | DIFFÉRENTES POSSIBILITÉS DE MONTAGE
POSIÇÕES DE MONTAGEM | СПОСОБЫ МОНТАЖА | ANWENDUNGSBEREICH



MONTAŽ | MONTAGE | MONTAGE | MONTAGEM | MOHTAJ | MONTAGE



PODŁĄCZENIE ZASILANIA | POWER CONNECTION | BRANCHEMENT D'ALIMENTATION
CONEXÃO DA ALIMENTAÇÃO | ПОДКЛЮЧЕНИЕ ПИТАНИЯ | STROMVERSORGUNG



**WAŽNE INFORMACJE | IMPORTANT INFORMATIONS | IMPORTANTES
INFORMAÇÕES ÚTEIS | ВАЖНАЯ ИНФОРМАЦИЯ | WICHTIGE INFORMATIONEN**



Podczas montażu oprawy oraz czynności konserwacyjnych zaleca się stosowanie rękawic ochronnych.

Use protective gloves during the montage.

Durant l'installation et l'entretien du luminaire il est recommande de mettre les gants de protection.

Use luvas de proteção durante a montagem.

При монтаже и обслуживании светильника рекомендуется использовать защитные перчатки.

Bei der montage bitte die mitgelieferten schutzhandschuhe verwenden.

Kurz lub inne zabrudzenia należy usuwać za pomocą ściereczek z mikrofibry.

Remove the dirt & dust with microfiber wipes

La poussiere et les autres saletés il faut enlever en utilisant un tissu en microfibre.

Remove a sujeira e poeira com microfibras limpas.

Пыль или другие загрязнения должны быть удалены салфеткой из микрофибры.

Staub und schmutz bitte mit einem microfaser-tuch entfernen.

Nie dotykać komponentów elektrycznych, wrażliwe na uszkodzenia esd

Do not touch electrical appliances. Electrostatic sensitive device (esd)

Il est interdit de toucher les composants électriques, ils sont sensibles aux décharges électrostatiques

Não toque os aparelhos elétricos. Dispositivo sensível eletrostático (dse)

Не трогать электрических компонентов, чувствительные к есd

Die elektronischen Komponenten wegen einer möglichen elektrostatischen Aufladung nicht anfassen.



Management Service

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH

certifies that



LUG LIGHT FACTORY Sp. z o.o.

ul. Gorzowska 11
65-127 Zielona Góra
Poland

including the sites and scope of application
see enclosure

has established and applies
a Quality Management System.

An audit was performed, Report No. **73423157**.

Proof has been furnished that the requirements
according to

ISO 9001:2015

are fulfilled.

The certificate is valid from **2018-04-03** until **2021-03-06**.

Previous certificate valid until 2018-03-06.

Certificate Registration No.: **12 100 23152 TMS**.

Product Compliance Management
Munich, 2018-04-05





Management Service

**Enclosure of Certificate Registration No.:
12 100 23152 TMS**

Sites	Scope of application
LUG LIGHT FACTORY Sp. z o.o. ul. Gorzowska 11 65-127 Zielona Góra Poland	Designing, production and sales of lighting systems.
Lug Light Factory Sp. z o.o. ul. Nowa 7 66-002 Nowy Kisielin Poland	Designing and production of lighting systems.

Product Compliance Management
Munich, 2018-04-05

Page 2 of 2



Management Service

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH

certifies that



LUG LIGHT FACTORY Sp. z o.o.

ul. Gorzowska 11
65-127 Zielona Góra
Poland

including the sites and scope of application
see enclosure

has established and applies
an Environmental Management System.

An audit was performed, Report No. **73423157**.

Proof has been furnished that the requirements
according to

ISO 14001:2015

are fulfilled.

The certificate is valid from **2018-04-03** until **2021-04-02**.

Certificate Registration No.: **12 104 23152 TMS**.

Product Compliance Management
Munich, 2018-04-05





Management Service

**Enclosure of Certificate Registration No.:
12 104 23152 TMS**

Sites	Scope of application
LUG LIGHT FACTORY Sp. z o.o. ul. Gorzowska 11 65-127 Zielona Góra Poland	Designing, production and sales of lighting systems.
Lug Light Factory Sp. z o.o. ul. Nowa 7 66-002 Nowy Kisielin Poland	Designing and production of lighting systems.

Product Compliance Management
Munich, 2018-04-05

Page 2 of 2



Management Service

CERTIFICATE

The Certification Body
 of TÜV SÜD Management Service GmbH
 certifies that



LUG LIGHT FACTORY Sp. z o.o.

ul. Gorzowska 11
 65-127 Zielona Góra
 Poland

Scope of application

**Designing, production and sales of
 lighting systems**

ul. Nowa 7
 66-002 Nowy Kisielin
 Poland

Scope of application

**Designing and production of
 lighting systems**

has established and applies
 an Energy Management System.

An audit was performed, Report No. **73424335**.

Proof has been furnished that the requirements according to

ISO 50001:2011

are fulfilled.

The certificate is valid from **2018-04-18** until **2021-04-17**.

Certificate Registration No.: **12 340 23152 TMS**.

M. Wegner

Product Compliance Management
 Munich, 2018-04-18



Deutsche
 Akkreditierungsstelle
 D-ZM-14143-01-00



CERTIFICATE OF LABORATORY APPROVAL

No. TSP-17025-LB-001.00

Laboratory for Photometric, Thermal, Leak, Colorimetric and Electrical Tests

LUG LIGHT FACTORY Sp. z o.o.

ul. Gorzowska 11
65-127 Zielona Góra, Polska

Branch: **ul. Nowa 7, 66-002 Nowy Kisielin**

having met the criteria regarding technical requirements specified in point 5 of the standard PN-EN ISO/IEC 17025:2005 has been approved by TÜV SÜD Polska for performing of photometric, thermal, leak, colorimetric and electrical tests.

The scope of approved test methods is specified in the attachment to this certificate.

This certificate is valid from 04.04.2018 to 04.04.2021.

TÜV SÜD Polska Sp. z o.o.
00-252 Warszawa, ul. Podwale 17



[Signature]
M. Obiedziński
Head of Industry Service Department

Warszawa, on the 23rd of May 2018



Poland

No.	Tested object, object group	Tested features/Method	Standard
1.	Luminaires - general requirements	• CLASSIFICATION OF LUMINAIRES • MARKING • STRUCTURE • INTERNAL AND EXTERNAL WIRING • ADJUSTMENT TO EARTHING • PROTECTION AGAINST ELECTRIC SHOCK • RESISTANCE TO DUST, SOLIDS AND MOISTURE • RESISTANCE AND ELECTRICAL STRENGTH OF INSULATION • TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT • CLEARANCES AND CREEPAGE DISTANCES • DURABILITY TEST AND THERMAL TEST • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • SCREW CLAMPS • SCREWLESS CLAMPS AND ELECTRICAL CONNECTORS	PN-EN 60598-1:2015- 04
2.	Surface-mounted luminaires	• CLASSIFICATION OF LUMINAIRES • MARKING • STRUCTURE • INTERNAL AND EXTERNAL WIRING • ADJUSTMENT TO EARTHING • PROTECTION AGAINST ELECTRIC SHOCK • RESISTANCE TO DUST, SOLIDS AND MOISTURE • RESISTANCE AND ELECTRICAL STRENGTH OF INSULATION • TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT • CLEARANCES AND CREEPAGE DISTANCES • DURABILITY TEST AND THERMAL TEST • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • SCREW CLAMPS • SCREWLESS CLAMPS AND ELECTRICAL CONNECTORS	EN 60598-2-1:1989

3.	Flush-mounted luminaires	• CLASSIFICATION OF LUMINAIRES • STAMPING • STRUCTURE • CLEARANCES AND CREEPAGE DISTANCES • INTERNAL AND EXTERNAL WIRING • ADJUSTMENT TO EARTHING • PROTECTION AGAINST ELECTRIC SHOCK • RESISTANCE TO DUST, SOLIDS AND MOISTURE • RESISTANCE AND ELECTRICAL STRENGTH OF INSULATION • TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT • CLEARANCES AND CREEPAGE DISTANCES • DURABILITY TEST AND THERMAL TEST • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • CLAMPS	PN-EN 60598-2-2:2012
4.	Road and street luminaires	• CLASSIFICATION OF LUMINAIRES • STAMPING • STRUCTURE • INTERNAL AND EXTERNAL WIRING • ADJUSTMENT TO EARTHING • PROTECTION AGAINST ELECTRIC SHOCK • RESISTANCE TO DUST, SOLIDS AND MOISTURE • RESISTANCE AND ELECTRICAL STRENGTH OF INSULATION • TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT • CLEARANCES AND CREEPAGE DISTANCES • DURABILITY TEST AND THERMAL TEST • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • SCREW CLAMPS • SCREWLESS CLAMPS AND ELECTRICAL CONNECTORS	PN-EN 60598-2-3:2016/A1:2012
5.	Portable luminaires	• CLASSIFICATION OF LUMINAIRES • STAMPING • STRUCTURE • INTERNAL AND EXTERNAL WIRING • ADJUSTMENT TO EARTHING • PROTECTION AGAINST ELECTRIC SHOCK • RESISTANCE TO DUST, SOLIDS AND MOISTURE • RESISTANCE AND ELECTRICAL STRENGTH OF INSULATION • TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT • CLEARANCES AND CREEPAGE DISTANCES • DURABILITY TEST AND THERMAL TEST • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • CLAMPS	PN-EN 60598-2-4:2002

6.	Floodlights	• CLASSIFICATION OF LUMINAIRES • STAMPING • STRUCTURE • INTERNAL AND EXTERNAL WIRING • ADJUSTMENT TO EARTHING • PROTECTION AGAINST ELECTRIC SHOCK • RESISTANCE TO DUST, SOLIDS AND MOISTURE • RESISTANCE AND ELECTRICAL STRENGTH OF INSULATION • TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT • CLEARANCES AND CREEPAGE DISTANCES • DURABILITY TEST AND THERMAL TEST • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • SCREW CLAMPS • SCREWLESS CLAMPS AND ELECTRICAL CONNECTORS	PN-EN 60598-2-5:2016-02
7.	Luminaires for hospital clinical zones	• CLASSIFICATION OF LUMINAIRES • STAMPING • STRUCTURE • INTERNAL AND EXTERNAL WIRING • ADJUSTMENT TO EARTHING • PROTECTION AGAINST ELECTRIC SHOCK • RESISTANCE TO DUST, SOLIDS AND MOISTURE • RESISTANCE AND ELECTRICAL STRENGTH OF INSULATION • TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT • CLEARANCES AND CREEPAGE DISTANCES • DURABILITY TEST AND THERMAL TEST • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • SCREW CLAMPS • SCREWLESS CLAMPS AND ELECTRICAL CONNECTORS	PN-EN 60598-2- 25:2000 +A1:2005
8.	Ground recessed luminaires	• CLASSIFICATION OF LUMINAIRES • STAMPING • STRUCTURE • INTERNAL AND EXTERNAL WIRING • ADJUSTMENT TO EARTHING • PROTECTION AGAINST ELECTRIC SHOCK • RESISTANCE TO DUST, SOLIDS AND MOISTURE • RESISTANCE AND ELECTRICAL STRENGTH OF INSULATION • TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT • CLEARANCES AND CREEPAGE DISTANCES • DURABILITY TEST AND THERMAL TEST • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • SCREW CLAMPS • SCREWLESS CLAMPS AND ELECTRICAL CONNECTORS	PN-EN 60598-2-13:2017+A1:2012

9.	Luminaires for swimming pools	• CLASSIFICATION OF LUMINAIRES • STAMPING • STRUCTURE • INTERNAL AND EXTERNAL WIRING • ADJUSTMENT TO EARTHING • PROTECTION AGAINST ELECTRIC SHOCK • RESISTANCE TO DUST, SOLIDS AND MOISTURE • RESISTANCE AND ELECTRICAL STRENGTH OF INSULATION • TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT • CLEARANCES AND CREEPAGE DISTANCES • DURABILITY TEST AND THERMAL TEST • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • SCREW CLAMPS • SCREWLESS CLAMPS AND ELECTRICAL CONNECTORS	PN-EN 60598-2-18:2002+A1:2012
10.	Luminaires with limited surface temperatures	• CLASSIFICATION OF LUMINAIRES • STAMPING • STRUCTURE • INTERNAL AND EXTERNAL WIRING • ADJUSTMENT TO EARTHING • PROTECTION AGAINST ELECTRIC SHOCK • RESISTANCE TO DUST, SOLIDS AND MOISTURE • RESISTANCE AND ELECTRICAL STRENGTH OF INSULATION • TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT • CLEARANCES AND CREEPAGE DISTANCES • DURABILITY TEST AND THERMAL TEST • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • SCREW CLAMPS • SCREWLESS CLAMPS AND ELECTRICAL CONNECTORS	PN-EN 60598-2- 24:2014-02

11.	Emergency luminaires	• CLASSIFICATION OF LUMINAIRES • STAMPING • STRUCTURE • INTERNAL AND EXTERNAL WIRING • ADJUSTMENT TO EARTHING • PROTECTION AGAINST ELECTRIC SHOCK • RESISTANCE TO DUST, SOLIDS AND MOISTURE • RESISTANCE AND ELECTRICAL STRENGTH OF INSULATION • TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT • CLEARANCES AND CREEPAGE DISTANCES • DURABILITY TEST AND THERMAL TEST • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • SCREW CLAMPS • SCREWLESS CLAMPS AND ELECTRICAL CONNECTORS • PHOTOMETRIC DATA • SWITCHING OPERATION • WORK AT A HIGH TEMPERATURE	PN-EN 60598-2- 22:2015-01+AC:2016- 11
12.	Luminaires - light and lighting, measurement and presentation of lamps and luminaires photometric data: LED lamps, modules and luminaires	• LABORATORY REQUIREMENTS • PREPARATION, ASSEMBLY AND WORKING CONDITIONS • PHOTOMETRIC VALUE MEASUREMENT • COLORIMETRIC VALUE MEASUREMENT • TEST RESULTS PRESENTATION	PN-EN 13032-4:2015- 09
13.	Luminaires – Electrical and photometric tests of LED luminaires and modules	• LABORATORY REQUIREMENTS • TESTED OBJECTS POWER PARAMETERS • SEASONING OF TEST SAMPLES • STABILIZATION OF TEST SAMPLES • ELECTRICAL MEASUREMENTS • PREPARATION, ASSEMBLY AND WORKING CONDITIONS • METHODS OF PHOTOMETRIC VALUE MEASUREMENT • METHODS OF COLORIMETRIC VALUE MEASUREMENT • PRESENTATION OF TEST RESULTS • PERFORMANCE MEASUREMENT	IES LM-79-08
14.	Luminaires	• EVALUATION OF RISK TO RETINA DUE TO BLUE LIGHT EXPOSURE, RISK GROUP RG0, RG1, RG2, RG3 • Lb ENERGY LUMINANCE MEASUREMENT • Eb RADIATION INTENSITY MEASUREMENT • Es ACTINIC DOSE MEASUREMENT	PN-EN 62471:2010 & IEC/TR 62778:2104

15	Luminaires	DEFINING THE LEVEL OF PROTECTION AGAINST EXTERNAL MECHANICAL IMPACT PROVIDED BY ELECTRICAL APPLIANCES HOUSINGS (CODE IK)	PN-EN 62262.2003 REPLACES PN-EN 50102:2001
16	Luminaires	DEFINING THE LEVEL OF PROTECTION PROVIDED BY ELECTRICAL APPLIANCES HOUSINGS (CODE IP), (IP2X-IP6X, IPX3-IPX7)	PN-EN 60529:2003+AC:2017-12
17.	Devices for lamps – general requirements	- CLASSIFICATION - MARKING - CLAMPS - PROTECTIVE EARTHING - PROTECTION AGAINST INCIDENTAL TOUCH OF ACTIVE PARTS - RESISTANCE TO MOISTURE AND INSULATION - ELECTRIC STRENGTH - FAULT CONDITIONS - STRUCTURE - CLEARANCES AND CREEPAGE DISTANCES - SCREWS, POWER LEADING PARTS AND CONNECTIONS - RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT - RESISTANCE TO CORROSION - OUTPUT VOLTAGE WITHOUT LOAD	PN-EN 61347-1:2015- 09
18.	Devices for lamps – LED drivers	- CLASSIFICATION - MARKING - CLAMPS - PROTECTIVE EARTHING - PROTECTION AGAINST INCIDENTAL TOUCH OF ACTIVE PARTS - RESISTANCE TO MOISTURE AND INSULATION - ELECTRIC STRENGTH - FAULT CONDITIONS - STRUCTURE - CLEARANCES AND CREEPAGE DISTANCES - SCREWS, POWER LEADING PARTS AND CONNECTIONS - RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT - RESISTANCE TO CORROSION	PN-EN 61347-2- 13:2015-04

19.	Devices for lamps – Emergency modules	• CLASSIFICATION • MARKING • CLAMPS • PROTECTIVE EARTHING • PROTECTION AGAINST INCIDENTAL TOUCH OF ACTIVE PARTS • RESISTANCE TO MOISTURE AND INSULATION • ELECTRIC STRENGTH • FAULT CONDITIONS • STARTING CONDITIONS • LAMP CURRENT • INPUT CURRENT • EBLF FUNCTIONAL SAFETY • SWITCHING FUNCTION • RELOADING DEVICE • PROTECTION AGAINST EXCESSIVE DISCHARGING • INDICATOR • REMOTE CONTROL, SLEEP MODE, LOCK MODE • REGULAR THERMAL TESTS AND DURABILITY TESTS • STRUCTURE • POLARITY REVERSAL • CLEARANCES AND CREEPAGE DISTANCES • SCREWS, POWER LEADING PARTS AND CONNECTIONS • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • RESISTANCE TO CORROSION • ABNORMAL LAMP CONDITIONS • PROTECTION OF ASSOCIATED SUBASSEMBLIES	PN-EN 61347-2-7:2012
20.	LED modules for general lighting purposes – safety requirements	• CLASSIFICATION • MARKING • CLAMPS • PROTECTIVE EARTHING • PROTECTION AGAINST INCIDENTAL TOUCH OF ACTIVE PARTS • RESISTANCE TO MOISTURE AND INSULATION • ELECTRIC STRENGTH • FAULT CONDITIONS • STRUCTURE • CLEARANCES AND CREEPAGE DISTANCES • SCREWS, POWER LEADING PARTS AND CONNECTIONS • RESISTANCE TO HEAT, FIRE AND CREEPING CURRENT • RESISTANCE TO CORROSION	PN-EN 62031:2010+A1:2013-06

/round stamp /
TUV SUD Polska Sp. z o.o.
TUV SUD
Industrie Service

/signature illegible/
P. Kukula
Head of Industrie Service Department



ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЙ

LG/2016/03/287



Мы

LUG Light Factory Spółka z o.o.
ul. Gorzowska 11
65-127 Zielona Góra

заявляет под свою исключительную ответственность, что изделие

ИМЯ	URBINI LED
группа	Инфраструктурное освещение
Заводская	ПРИКРЕПЛЕНИЕ

в соответствии с положениями следующих актов:

Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility

Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits

Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products

и следующие стандарты:

PN-EN 60598-1:2015-04
PN-EN 55015:2013-10
PN-EN 61547:2009
PN-EN 61000-3-2:2014-10
PN-EN 61000-3-3:2013-10
PN-EN 50581:2013

PN-EN 62471:2010
PN-EN 60598-2-3:2006/A1:2012
IEC 62717:2014
IEC 62722-2-1:2011
IEC 62722-1:2011

LUG Light Factory Sp. z o.o.
Kierownik Laboratorium/Laboratory Manager
mgr inż. Marcin Białas

Опубликовано

DYREKTOR
DS. TECHNICZNYCH

mgr inż. Mariusz Ejsmont

Уполномоченное лицо подписи



ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЙ

LG/2016/03/287



ПРИКРЕПЛЕНИЕ

Заводская

130232.5L261.101	130232.5L081.111	130232.5L142.101	130232.5L192.111
130232.5L261.111	130232.5L281.101	130232.5L142.111	130232.5L202.101
130232.5L041.101	130232.5L281.111	130232.5L262.101	130232.5L202.111
130232.5L041.111	130232.5L101.101	130232.5L262.111	130232.5L282.101
130232.5L051.101	130232.5L101.111	130232.5L162.101	130232.5L282.111
130232.5L051.111	130232.5L111.101	130232.5L162.111	130232.5L222.101
130232.5L271.101	130232.5L111.111	130232.5L172.101	130232.5L222.111
130232.5L271.111	130232.5L252.101	130232.5L172.111	130232.5L232.101
130232.5L071.101	130232.5L252.111	130232.5L272.101	130232.5L232.111
130232.5L071.111	130232.5L132.101	130232.5L272.111	
130232.5L081.101	130232.5L132.111	130232.5L192.101	

Номера Производитель аксессуаров

150170.00817	150170.00818	150173.00906
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Данная декларация действительна для всех серийных номеров, произведенных по данному символу завода.



ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЙ

LG/2016/03/288



Мы

LUG Light Factory Spółka z o.o.
ul. Gorzowska 11
65-127 Zielona Góra

заявляет под свою исключительную ответственность, что изделие

имя	URBINO LED
группа	Инфраструктурное освещение
Заводская	ПРИКРЕПЛЕНИЕ

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PN-EN 50581:2013

PN-EN 62471:2010
PN-EN 60598-2-3:2006/A1:2012
IEC 62717:2014
IEC 62722-2-1:2011
IEC 62722-1:2011
PN-EN 62262:2003

LUG Light Factory Sp. z o.o.
Kierownik Laboratorium/Laboratory Manager
mgr inż. Marcin Białas

Опубликовано

DYREKTOR
DS. TECHNICZNYCH

mgr inż. Mariusz Ejsmont

Уполномоченное лицо подписи



ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЙ

LG/2016/03/288



ПРИКРЕПЛЕНИЕ

Заводская

130222.5L421.011	130222.5L022.061	130222.5L141.051	130222.5L052.021
130222.5L422.011	130222.5L021.081	130222.5L142.051	130222.5L051.031
130222.5L421.021	130222.5L022.081	130222.5L141.091	130222.5L052.031
130222.5L422.021	130222.5L021.101	130222.5L142.091	130222.5L051.041
130222.5L421.031	130222.5L022.101	130222.5L141.061	130222.5L052.041
130222.5L422.031	130222.5L431.011	130222.5L142.061	130222.5L051.051
130222.5L421.041	130222.5L432.011	130222.5L141.081	130222.5L052.051
130222.5L422.041	130222.5L431.021	130222.5L142.081	130222.5L051.091
130222.5L421.051	130222.5L432.021	130222.5L141.101	130222.5L052.091
130222.5L422.051	130222.5L431.031	130222.5L142.101	130222.5L051.061
130222.5L421.091	130222.5L432.031	130222.5L441.011	130222.5L052.061
130222.5L422.091	130222.5L431.041	130222.5L442.011	130222.5L051.081
130222.5L421.061	130222.5L432.041	130222.5L441.021	130222.5L052.081
130222.5L422.061	130222.5L431.051	130222.5L442.021	130222.5L051.101
130222.5L421.081	130222.5L432.051	130222.5L441.031	130222.5L052.101
130222.5L422.081	130222.5L431.091	130222.5L442.031	130222.5L451.011
130222.5L421.101	130222.5L432.091	130222.5L441.041	130222.5L452.011
130222.5L422.101	130222.5L431.061	130222.5L442.041	130222.5L451.021
130222.5L011.011	130222.5L432.061	130222.5L441.051	130222.5L452.021
130222.5L012.011	130222.5L431.081	130222.5L442.051	130222.5L451.031
130222.5L011.021	130222.5L432.081	130222.5L441.091	130222.5L452.031
130222.5L012.021	130222.5L431.101	130222.5L442.091	130222.5L451.041
130222.5L011.031	130222.5L432.101	130222.5L441.061	130222.5L452.041
130222.5L012.031	130222.5L131.011	130222.5L442.061	130222.5L451.051
130222.5L011.041	130222.5L132.011	130222.5L441.081	130222.5L452.051
130222.5L012.041	130222.5L131.021	130222.5L442.081	130222.5L451.091
130222.5L011.051	130222.5L132.021	130222.5L441.101	130222.5L452.091
130222.5L012.051	130222.5L131.031	130222.5L442.101	130222.5L451.061
130222.5L011.091	130222.5L132.031	130222.5L041.011	130222.5L452.061
130222.5L012.091	130222.5L131.041	130222.5L042.011	130222.5L451.081
130222.5L011.061	130222.5L132.041	130222.5L041.021	130222.5L452.081
130222.5L012.061	130222.5L131.051	130222.5L042.021	130222.5L451.101
130222.5L011.081	130222.5L132.051	130222.5L041.031	130222.5L452.101
130222.5L012.081	130222.5L131.091	130222.5L042.031	130222.5L071.011
130222.5L011.101	130222.5L132.091	130222.5L041.041	130222.5L072.011
130222.5L012.101	130222.5L131.061	130222.5L042.041	130222.5L071.021
130222.5L021.011	130222.5L132.061	130222.5L041.051	130222.5L072.021
130222.5L022.011	130222.5L131.081	130222.5L042.051	130222.5L071.031
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130222.5L022.021	130222.5L131.101	130222.5L042.091	130222.5L071.041
130222.5L021.031	130222.5L132.101	130222.5L041.061	130222.5L072.041
130222.5L022.031	130222.5L141.011	130222.5L042.061	130222.5L071.051
130222.5L021.041	130222.5L142.011	130222.5L041.081	130222.5L072.051
130222.5L022.041	130222.5L141.021	130222.5L042.081	130222.5L071.091
130222.5L021.051	130222.5L142.021	130222.5L041.101	130222.5L072.091
130222.5L022.051	130222.5L141.031	130222.5L042.101	130222.5L071.061
130222.5L021.091	130222.5L142.031	130222.5L051.011	130222.5L072.061
130222.5L022.091	130222.5L141.041	130222.5L052.011	130222.5L071.081
130222.5L021.061	130222.5L142.041	130222.5L051.021	130222.5L072.081



ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЙ

LG/2016/03/288



130222.5L071.101	130222.5L082.101	130222.5L101.011	130222.5L112.011
130222.5L072.101	130222.5L461.011	130222.5L102.011	130222.5L111.021
130222.5L081.011	130222.5L462.011	130222.5L101.021	130222.5L112.021
130222.5L082.011	130222.5L461.021	130222.5L102.021	130222.5L111.031
130222.5L081.021	130222.5L462.021	130222.5L101.031	130222.5L112.031
130222.5L082.021	130222.5L461.031	130222.5L102.031	130222.5L111.041
130222.5L081.031	130222.5L462.031	130222.5L101.041	130222.5L112.041
130222.5L082.031	130222.5L461.041	130222.5L102.041	130222.5L111.051
130222.5L081.041	130222.5L462.041	130222.5L101.051	130222.5L112.051
130222.5L082.041	130222.5L461.051	130222.5L102.051	130222.5L111.091
130222.5L081.051	130222.5L462.051	130222.5L101.091	130222.5L112.091
130222.5L082.051	130222.5L461.091	130222.5L102.091	130222.5L111.061
130222.5L081.091	130222.5L462.091	130222.5L101.061	130222.5L112.061
130222.5L082.091	130222.5L461.061	130222.5L102.061	130222.5L111.081
130222.5L081.061	130222.5L462.061	130222.5L101.081	130222.5L112.081
130222.5L082.061	130222.5L461.081	130222.5L102.081	130222.5L111.101
130222.5L081.081	130222.5L462.081	130222.5L101.101	130222.5L112.101
130222.5L082.081	130222.5L461.101	130222.5L102.101	
130222.5L081.101	130222.5L462.101	130222.5L111.011	

Номера Производитель аксессуаров

150170.00817

150170.00818

150173.00906

Данная декларация действительна для всех серийных номеров, произведенных по данному символу завода.



ELECTROTECHNICAL TESTING INSTITUTE
Pod Lisem 129
171 02 Praha 8 - Troja

No. of pages: 1
No. of annexes/No. of an. pages: 2/38

No. of the Test Report: 701588-01/01

Issued: 31. 7. 2017



TEST REPORT

Name of product: Luminaire for road and street lighting
Type of product: URBINI LED, class I
Ratings: 220-240 V, 50/60Hz, 21, 29, 38 W, IK 08, IP 66
Class I
Serial number: -
Manufacturer: LUG Light Factory Sp. z o.o.,
ul. Gorzowska 11, 65-127 Zielona Góra,
Republic of Poland
Production site: LUG Light Factory Sp. z o.o.,
ul. Gorzowska 11, 65-127 Zielona Góra,
Republic of Poland
Ordering firm: LUG Light Factory Sp. z o.o.,
ul. Gorzowska 11, 65-127 Zielona Góra,
Republic of Poland
Number of tested samples: 1
Samples submitted on: 3. 7. 2017
Location of testing: EZÚ
Tested from 3. 7. 2017 **through** 31. 7. 2017
Other data: -
The product was tested according to: IEC 60598-1:2014,
IEC 60598-2-3:02,
EN 60598-1:15,
EN 60598-2-3:03+A1:11,
~~IEC 62471:2006~~ blue light hazard only

Compiled by: Lukáš Fér



Approved by: Zdeněk Dvořák
Testing laboratory technical manager

Test results stated in the test report apply only to the tested subject and unless specified otherwise in the test report, the tests were performed using the method and under the conditions determined in the test regulations, technical norm, instructions for use and information provided by the manufacturer on the tested subject and using accessories required by the manufacturer.
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Test Report issued under the responsibility of:



TEST REPORT
IEC / EN 60598-2-3
Luminaires
Part 2: Particular requirements
Section 3: Luminaires for road and street lighting

Report Number..... : 701588-01/01
Date of issue : 31. 07. 2017
Total number of pages 37 + 1 Atachements (one page)

Name of Testing Laboratory **Elektrotechnický zkušební ústav (EZÚ)**
preparing the Report Pod Lisem 129, 171 02 Praha 71 – Troja, Czech Republic

Applicant's name LUG Light Factory Sp.z o.o.
Address Ul. Grozowska 11, 65-127 Żilena Góra, Poland

Test specification:

Standard : IEC 60598-1:2014,
IEC 60598-2-3:2002 + A1:2011
EN 60598-1:2015,
EN 60598-2-3:2003+A1:2011

Test procedure : CB, ENEC Scheme

Non-standard test method : N/A

Test Report Form No. : IEC60598_2_3J

Test Report Form(s) Originator : Intertek Semko AB

Master TRF : 2014-09

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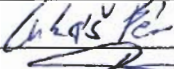
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General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description	Luminaires for road and street lighting	
Trade Mark		
Manufacturer	LUG Light Factory Sp.z o.o.	
Model/Type reference	URBINI LED see page 4	
Ratings	220-240 V, 50-60 Hz, 21, 29, 38 W LED, IP 66, IK08, class I	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ CB Testing Laboratory:		
Testing location/ address	Elektrotechnický zkušební ústav (EZÚ) Pod Lisem 129, 171 02 Praha 71 – Troja, Czech Republic	
☐ Associated CB Testing Laboratory:		
Testing location/ address		
Tested by (name, function, signature)	Lukáš Fér	
Approved by (name, function, signature) ...:	Zdeněk Dvořák	
☐ Testing procedure: TMP/CTF Stage 1:		
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ...:		
☐ Testing procedure: WMT/CTF Stage 2:		
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name, function, signature) ...:		
Approved by (name, function, signature) ...:		
☐ Testing procedure: SMT/CTF Stage 3 or 4:		
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) ...:		
Approved by (name, function, signature) ...:		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment):

Annex 1: components (one page)
 Annex 2: temperature measurements, thermal tests of Section 12 (one page)
 Annex 3: photo (two pages)
 Annex 4: instruction (two pages)
 Attachment 1: Photobiological hazard ČSN EN 62471 blue light hazard only (one page)

Summary of testing:

Tests performed (name of test and test clause): all required tests

Testing location: as above

Summary of compliance with National Differences: ---

List of countries addressed

☐ The product fulfils the requirements of _____ (insert standard number and edition and delete the text in parenthesis, leave it blank or delete the whole sentence, if not applicable)

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.



Test item particulars	
Classification of installation and use : Luminaires for road and street lighting	
Supply Connection : Wires	
Possible test case verdicts:	
- test case does not apply to the test object : N/A (Not applicable)	
- 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. 07. 2017	
Date (s) of performance of tests : 03. 07. 2017 - 31. 07. 2017	
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☒ comma / ☐ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60598-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : ---	
General product information:	
The tested sample was selected in accordance with Annex S of ČSN EN 60958-1. Tested type: LUG URBINI LED 130232.5L111.101 220-240 V, 50/60 Hz, IP 66, class I, ta 35 °C, IK 08	

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict

3.2 (0)	GENERAL TEST REQUIREMENTS		
3.2 (0.1)	Information for luminaire design considered	Standard Yes ☒ No ☐	—
3.2 (0.3)	More sections applicable	Yes ☐ No ☒	—

3.4 (2)	CLASSIFICATION		
3.4 (2.2)	Type of protection	Class I	—
3.4 (2.3)	Degree of protection	IP66	—
3.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes ☒ No ☐	—
3.4 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—
3.4 (-)	Modes of installation of road or street lighting		—
	a) on a pipe	Yes ☒ No ☐	—
	b) on a mast arm	Yes ☒ No ☐	—
	c) on a post top	Yes ☒ No ☐	—
	d) on span or suspension wires	Yes ☐ No ☒	—
	e) on a wall	Yes ☒ No ☐	—

3.5 (3)	MARKING		
3.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
3.5 (3.3)	Additional information		P
	Language of instructions		P
3.5 (3.3.1)	Combination luminaires		N/A
3.5 (3.3.2)	Nominal frequency in Hz		P
3.5 (3.3.3)	Operating temperature		N/A
3.5 (3.3.4)	Symbol or warning notice		N/A
3.5 (3.3.5)	Wiring diagram		P
3.5 (3.3.6)	Special conditions		N/A
3.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
3.5 (3.3.8)	Limitation for semi-luminaires		N/A
3.5 (3.3.9)	Power factor and supply current		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.5 (3.3.10)	Suitability for use indoors		N/A
3.5 (3.3.11)	Luminaires with remote control		N/A
3.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
3.5 (3.3.13)	Specifications of protective shields		N/A
3.5 (3.3.14)	Symbol for nature of supply		N/A
3.5 (3.3.15)	Rated current of socket outlet		N/A
3.5 (3.3.16)	Rough service luminaire		N/A
3.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
3.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
3.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
3.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
3.5 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided		N/A
	Cautionary symbol		N/A
3.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
3.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
3.5 (-)	Additional information in instruction leaflet		
	a) Design attitude		P
	b) Weight		P
	c) Overall dimensions		P
	d) Maximum projected area if applicable		P
	e) Cross-sectional area of wires if applicable		P
	f) Suitability for indoors use		N/A
	g) Dimensions of the compartment		N/A
	h) Torque setting to be applied to bolts or screws		P
	i) Maximum mounting height		P

3.6 (4)	CONSTRUCTION		
3.6 (4.2)	Components replaceable without difficulty		P

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.3)	Wireways smooth and free from sharp edges		P
3.6 (4.4)	Lampholders		
3.6 (4.4.1)	Integral lampholder		N/A
3.6 (4.4.2)	Wiring connection		N/A
3.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
3.6 (4.4.4)	Positioning		N/A
	- pressure test (N)		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N)		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
3.6 (4.4.5)	Peak pulse voltage		N/A
3.6 (4.4.6)	Centre contact		N/A
3.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
3.6 (4.4.8)	Lamp connectors		N/A
3.6 (4.4.9)	Caps and bases correctly used		N/A
3.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
3.6 (4.5)	Starter holders		
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
3.6 (4.6)	Terminal blocks		
	Tails		P
	Unsecured blocks		N/A
3.6 (4.7)	Terminals and supply connections		
3.6 (4.7.1)	Contact to metal parts		P
3.6 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
3.6 (4.7.3)	Terminals for supply conductors		N/A
3.6 (4.7.3.1)	Welded method and material		
	- stranded or solid conductor		N/A
	- spot welding		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.8.2		N/A
	- electrical test according to 15.9		N/A
	- heat test according to 15.9.2.3 and 15.9.2.4		N/A
3.6 (4.7.4)	Terminals other than supply connection		N/A
3.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
3.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
3.6 (4.8)	Switches		
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
3.6 (4.9)	Insulating lining and sleeves		
3.6 (4.9.1)	Retainment		N/A
	Method of fixing		—
3.6 (4.9.2)	Insulated linings and sleeves:		
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C)		N/A
3.6 (4.10)	Double or reinforced insulation		
3.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		P
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
3.6 (4.10.2)	Assembly gaps:		
	- not coincidental		N/A
	- no straight access with test probe		N/A
3.6 (4.10.3)	Retainment of insulation:		
	- fixed		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
3.6 (4.11)	Electrical connections and current-carrying parts		
3.6 (4.11.1)	Contact pressure		N/A
3.6 (4.11.2)	Screws:		
	- self-tapping screws		P
	- thread-cutting screws		N/A
3.6 (4.11.3)	Screw locking:		
	- spring washer		P
	- rivets		N/A
3.6 (4.11.4)	Material of current-carrying parts		P
3.6 (4.11.5)	No contact to wood or mounting surface		P
3.6 (4.11.6)	Electro-mechanical contact systems		N/A
3.6 (4.12)	Screws and connections (mechanical) and glands		
3.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:	1,2; Driver cover	P
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
3.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
3.6 (4.12.4)	Locked connections:		
	- fixed arms; torque (Nm).....:		N/A
	- lampholder; torque (Nm)		N/A
	- push-button switches; torque 0,8 Nm.....:		N/A
3.6 (4.12.5)	Screwed glands; force (Nm)	2,5	P
3.6 (4.13)	Mechanical strength		
3.6 (4.13.1)	Impact tests:		
	- fragile parts; energy (Nm).....:	Optical part; 5 (IK 08)	P
	- other parts; energy (Nm)	Body, covers; 5 (IK 08)	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.13.3)	Straight test finger		P
3.6 (4.13.4)	Rough service luminaires		
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
3.6 (4.13.6)	Tumbling barrel		N/A
3.6 (4.14)	Suspensions, fixings and means of adjusting		
3.6 (4.14.1)	Mechanical load:		
	A) four times the weight		N/A
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm).....:		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N/A
	Metal rod. diameter (mm)		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
3.6 (4.14.2)	Load to flexible cables		
	Mass (kg)		—
	Stress in conductors (N/mm ²)		N/A
	Mass (kg) of semi-luminaire		—
	Bending moment (Nm) of semi-luminaire		N/A
3.6 (4.14.3)	Adjusting devices:		
	- flexing test; number of cycles		N/A
	- strands broken.....:		N/A
	- electric strength test afterwards		N/A
3.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
3.6 (4.14.5)	Guide pulleys		N/A
3.6 (4.14.6)	Strain on socket-outlets		N/A
3.6 (4.15)	Flammable materials		
	- glow-wire test 650°C		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- spacing ≥ 30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		N/A
	- thermal protection		N/A
	- electronic circuits exempted		N/A
3.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
3.6 (4.16)	Luminaires for mounting on normally flammable surfaces		
	No lamp control gear	(compliance with Section 12)	N/A
3.6 (4.16.1)	Lamp control gear spacing:		
	- spacing 35 mm		P
	- spacing 10 mm		N/A
3.6 (4.16.2)	Thermal protection:		
	- in lamp control gear		P
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		P
3.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
3.6 (4.17)	Drain holes		
	Clearance at least 5 mm		N/A
3.6 (4.18)	Resistance to corrosion		
3.6 (4.18.1)	- rust-resistance		N/A
3.6 (4.18.2)	- season cracking in copper		N/A
3.6 (4.18.3)	- corrosion of aluminium		N/A
3.6 (4.19)	Igniters compatible with ballast		N/A
3.6 (4.20)	Rough service vibration		N/A
3.6 (4.21)	Protective shield		
3.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
3.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.21.3)	No direct path		N/A
3.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment.....:		N/A
3.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
3.6 (4.23)	Semi-luminaires comply Class II		N/A
3.6 (4.24)	Photobiological hazards		
3.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
3.6 (4.24.2)	Retinal blue light hazard	Risk Group 1	
	Luminaires with E_{thr} :		
	a) Fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2....:		N/A
	- marking and instruction according 3.2.23		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
3.6 (4.25)	Mechanical hazard		
	No sharp point or edges		P
3.6 (4.26)	Short-circuit protection		
3.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
3.6 (4.26.2)	Short-circuit test with test chain according 4.26.3		
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
3.6 (4.27)	Terminal blocks with integrated screwless earthing contacts		
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.28)	Fixing of thermal sensing control		
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		
	Max. temperature on adhesive material (°C).....:		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
3.6 (4.29)	Luminaires with non-replaceable light source		
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
3.6 (4.30)	Luminaires with non-user replaceable light source		
	If protective cover provide protection against electric shock and marked with "caution, electric shock risk" symbol:		
	Minimum two fixing means		N/A
3.6 (4.31)	Insulation between circuits		
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		P
3.6 (4.31.1)	SELV circuits		
	Used SELV source		P
	Voltage ≤ ELV		P
	Insulating of SELV circuits from LV supply		P
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		P
	Plugs not able to enter socket-outlets of other voltage systems		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
3.6 (4.31.2)	FELV circuits		
	Used FELV source		N/A
	Voltage $\leq$ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets does not have protective conductor contact		N/A
3.6 (4.31.3)	Other circuits		
	Other circuits insulated from accessible parts according Table X.1		P
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		
	- conductive parts are connected together		N/A
	- test according 7.2.3 of above		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
3.6 (4.32)	Overvoltage protective devices		
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
3.6.1 (-)	At least IP X3 or X5 respectively. IP :		N/A
	Column-integrated luminaires:		
	- parts below 2,5 m. IP :		N/A
	- parts above 2,5 m. IP :	IP66	P

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6.2 (-)	Suspension on span wires		N/A
3.6.3 (-)	Means for attaching the luminaire or external parts to its support appropriate to the weight		N/A
3.6.3.1 (-)	Static load test		
	- drag coefficient	1,2	P
	- loaded area (m²)	0,03489	P
	- used load (N)	51	P
	- measured deformation (cm/m)	0,1	P
	- no rotation		P
3.6.4 (-)	Adjustable lampholders		N/A
3.6.5 (-)	Luminaires installed above 5 m, glass covers shall be:		
	a) glass that fractures into small pieces (test according to 3.6.5.1), or		N/A
	b) glass having a high impact shock resistance (test according to 3.6.5.2), or		N/A
	c) protected by any means to retain glass fragments		N/A
	For tunnel luminaires 3.6.5.1 apply		N/A
	Method of protection declared by the manufacturer		N/A
3.6.5.1 (-)	Protection by the use of glass that fractures into small pieces		
	- number of particles is more than 40		N/A
3.6.5.2 (-)	Protection by the use of high impact resistant glass		
3.6.5.2.1 (-)	Glass covers have high mechanical strength		N/A
	Test according IEC 62262 with test apparatus according IEC 60068-2-75 with impact energy of 5J on preconditioned sample		N/A
3.6.5.2.2 (-)	Glass covers not break into large pieces		N/A
	- test according 3.6.5.1, number of particles is more than 20		N/A
3.6.6 (-)	Connection compartment of column-integrated luminaire		
	- provides adequate space		N/A
	- means for attachment		N/A
	- means for attachment of metal corrosion-resistant		N/A
3.6.7 (-)	Compliance with ISO standard or other		N/A
3.6.8 (-)	Doors of column-integrated luminaires:		
	- corrosion-resistant		N/A
	- opening only possible for an authorized person		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- impact test 5 Nm		N/A
	- sample show no damage		N/A
3.6.9 (-)	Column-integrated luminaire:		
	- dimension of the cable entry slot (mm)		N/A
	- cable path from the slot to the connection compartment (mm)		N/A
	- cable path free from obstruction that might cause abrasion of the cable		N/A

3.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		
3.7 (11.2)	Creepage distances and clearances	See Table 3.7 (11.2)	
	Working voltage (V)	230	—
	Rated pulse voltage (kV)		—
	Voltage form	Sinusoidal ☒ Non-sinusoidal ☐	—
	PTI	< 600 ☒ ≥ 600 ☐	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☐ Category III ☐	—

3.8 (7)	PROVISION FOR EARTHING		
3.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω	0,07	P
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a groove		N/A
	Earth makes contact first		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		N/A
3.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N/A
3.8 (7.2.4)	Locking of clamping means		N/A
	Compliance with 4.7.3		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
3.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
3.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
3.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
3.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		N/A
3.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
3.8 (7.2.11)	Earthing core coloured green-yellow		N/A
	Length of earth conductor		N/A
3.8.1 (-)	Attachment prevented from rotation		P

3.9 (14)	SCREW TERMINALS		
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 3)	N/A

3.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 4)	N/A

3.10 (5)	EXTERNAL AND INTERNAL WIRING		
3.10 (5.2)	Supply connection and external wiring		
3.10 (5.2.1)	Means of connection	Prepared wires	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		P
3.10 (5.2.2)	Type of cable	H03VV-F	P
	Nominal cross-sectional area (mm ²)	0,75	P
	Cables equal to IEC 60227 or IEC 60245		P
3.10 (5.2.3)	Type of attachment, X, Y or Z	X	P
3.10 (5.2.5)	Type Z not connected to screws		N/A
3.10 (5.2.6)	Cable entries:		
	- suitable for introduction		N/A
	- adequate degree of protection		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
3.10 (5.2.8)	Insulating bushings:		
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
3.10 (5.2.9)	Locking of screwed bushings		N/A
3.10 (5.2.10)	Cord anchorage:		
	- covering protected from abrasion		N/A
	- clear how to be effective		N/A
	- no mechanical or thermal stress		N/A
	- no tying of cables into knots etc.		N/A
	- insulating material or lining		N/A
3.10 (5.2.10.1)	Cord anchorage for type X attachment:		
	a) at least one part fixed		P
	b) types of cable		P
	c) no damaging of the cable		P
	d) whole cable can be mounted		P
	e) no touching of clamping screws		P
	f) metal screw not directly on cable		P
	g) replacement without special tool		P
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
3.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
3.10 (5.2.10.3)	Tests:		
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N)	30	P
	- torque test: torque (Nm)	0,08	P
	- displacement ≤ 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- function independent of electrical connection		N/A
3.10 (5.2.11)	External wiring passing into luminaire		N/A
3.10 (5.2.12)	Looping-in terminals		N/A
3.10 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
3.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
3.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Other appliance inlet or connector according relevant IEC standard		N/A
3.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
3.10 (5.2.18)	Used plug in accordance with		
	- IEC 60083		N/A
	- other standard		N/A
3.10 (5.3)	Internal wiring		
3.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		
	- not delivered/ mounting instruction		N/A
	- factory assembled		P
	- socket outlet loaded (A).....:		N/A
	- temperatures:	(see Annex 2)	N/A
	Green-yellow for earth only		N/A
3.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		
	Cross-sectional area (mm ²):	0,5	P
	Insulation thickness		P
	Extra insulation added where necessary		N/A
3.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Adequate cross-sectional area and insulation thickness		N/A
3.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
3.10 (5.3.1.4)	Conductors without insulation		N/A
3.10 (5.3.1.5)	SELV current-carrying parts		N/A
3.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
3.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		N/A
3.10 (5.3.3)	Insulating bushings:		
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
3.10 (5.3.4)	Joints and junctions effectively insulated		N/A
3.10 (5.3.5)	Strain on internal wiring		N/A
3.10 (5.3.6)	Wire carriers		P
3.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
3.10.1 (-)	Cord anchorage if applicable		N/A
	- pull test: 25 times; pull (N) :		N/A
	- torque test: torque (Nm) :		N/A

3.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		
3.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		P

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		N/A
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
3.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
3.11 (8.2.3.a)	Class II luminaire:		
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
3.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
3.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		
	Ordinary luminaire:		
	- touch current		N/A
	- no-load voltage		N/A
	Other than ordinary luminaire:		
	- nominal voltage		N/A
3.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		N/A
3.11 (8.2.5)	Compliance with the standard test finger or relevant probe		N/A
3.11 (8.2.6)	Covers reliably secured		P
3.11 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		N/A
	Portable plug connected luminaire with capacitor		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Other plug connected luminaire with capacitor		N/A
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		N/A

3.12 (12)	ENDURANCE TEST AND THERMAL TEST		
3.12.2 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 3.13		—
3.12 (12.3)	Endurance test:		
	- mounting-position	On pipe	—
	- test temperature (°C)	45	—
	- total duration (h)	240	—
	- supply voltage: Un factor; calculated voltage (V)	253	—
	- lamp used	LED module	—
3.12 (12.3.2)	After endurance test:		
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
3.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
3.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
3.12 (12.6)	Thermal test (failed lamp control gear condition):		
3.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions.....		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un		—
	- measured mounting surface temperature (°C) at 1,1 Un		N/A
	- calculated mounting surface temperature (°C)		N/A
	- track-mounted luminaires		N/A
3.12 (12.6.2)	Temperature sensing control		
	- case of abnormal conditions.....		—

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C).....:		N/A
	- track-mounted luminaires		N/A
3.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		
3.12 (12.7.1)	Luminaire without temperature sensing control		N/A
3.12 (12.7.1.1)	Luminaire with fluorescent lamp $\leq 70W$		N/A
	Test method 12.7.1.1 or Annex W		—
	Test according to 12.7.1.1:		
	- case of abnormal conditions.....:		—
	- Ballast failure at supply voltage (V)		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C)		—
	Ball-pressure test.....:		N/A
3.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp $> 70W$, transformer $> 10 VA$		
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C)		—
	Ball-pressure test.....:		N/A
3.12 (12.7.1.3)	Luminaire with short circuit proof transformers $\leq 10 VA$		N/A
	- case of abnormal conditions.....:		—

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
3.12 (12.7.2)	Luminaire with temperature sensing control		
	- thermal link	Yes ☐ No ☐	—
	- manual reset cut-out.....	Yes ☐ No ☐	—
	- auto reset cut-out	Yes ☐ No ☐	—
	- case of abnormal conditions.....		—
	- highest measured temperature of fixing point/ exposed part (°C):		—
	Ball-pressure test:.....		N/A
3.12.1 (-)	Temperature reduction if for outdoor use only		N/A
3.12.2 (-)	(See above)		—
3.12.3 (-)	Glass covers used within the thermal limits declared by the glass manufacturer		N/A

3.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		
3.13.1 (-)	If IP > IP 20 the order of tests as specified in clause 3.12		
3.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		—
	- classification according to IP	IP66	—
	- mounting position during test	On pipe	—
	- fixing screws tightened; torque (Nm).....		—
	- tests according to clauses	9.2.2, 9.2.7	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		N/A
	d) i) For luminaires without drain holes – no water entry		N/A
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		P
	f) no contact with live parts (IP 2X)		N/A
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	g) no trace of water on part of lamp requiring protection from splashing water		P
	h) no damage of protective shield or glass envelope		P
3.13 (9.3)	Humidity test 48 h		P

3.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
3.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		—
	Insulation resistance (MΩ).....		—
	SELV		
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface	>110 MΩ	P
	- between current-carrying parts and metal parts of the luminaire	>110 MΩ	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		
	- between live parts of different polarity.....		N/A
	- between live parts and mounting surface.....	>550 MΩ	P
	- between live parts and metal parts	>550 MΩ	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts	>550 MΩ	P
	- Insulation bushings as described in Section 5		N/A
3.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V)		N/A
	SELV		

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface	500 V	P
	- between current-carrying parts and metal parts of the luminaire	500 V	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		
	- between live parts of different polarity		N/A
	- between live parts and mounting surface	1460 V	P
	- between live parts and metal parts	1460 V	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts	1460 V	P
	- Insulation bushings as described in Section 5		N/A
3.14 (10.3)	Touch current (mA)	0,0025	P
	Protective conductor current (mA)	0,036	P

3.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		
3.15 (13.2.1)	Ball-pressure test		N/A
3.15 (13.3.1)	Needle-flame test (10 s)		N/A
3.15 (13.3.2)	Glow-wire test (650°C)		N/A
3.15 (13.4)	Proof tracking test (IEC 60112)		N/A

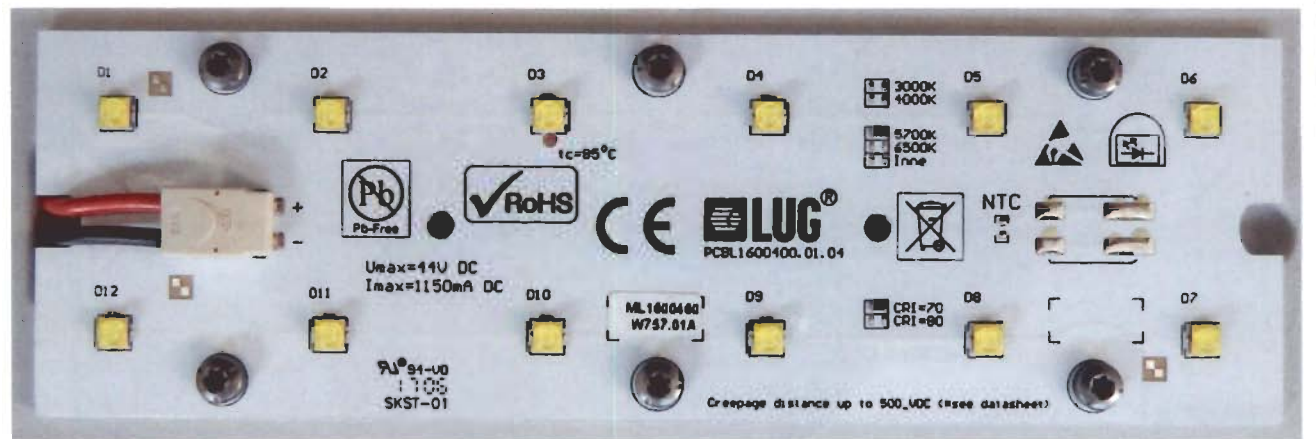
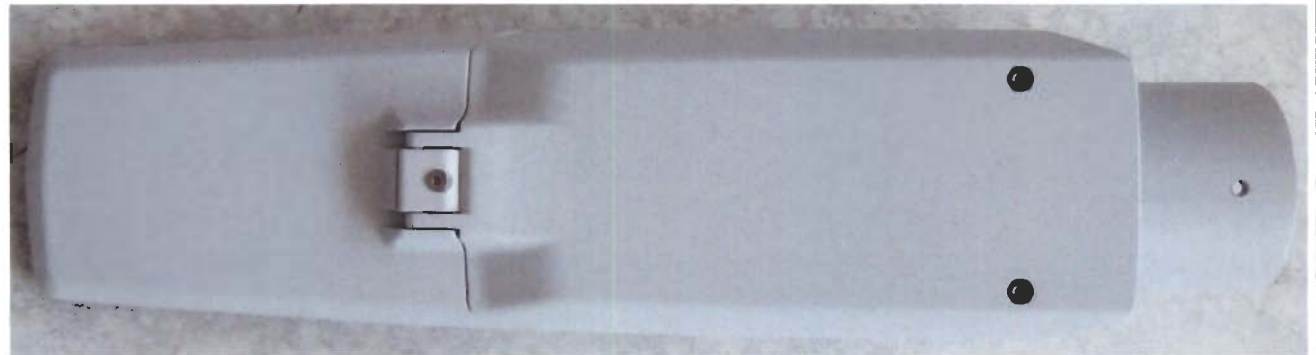
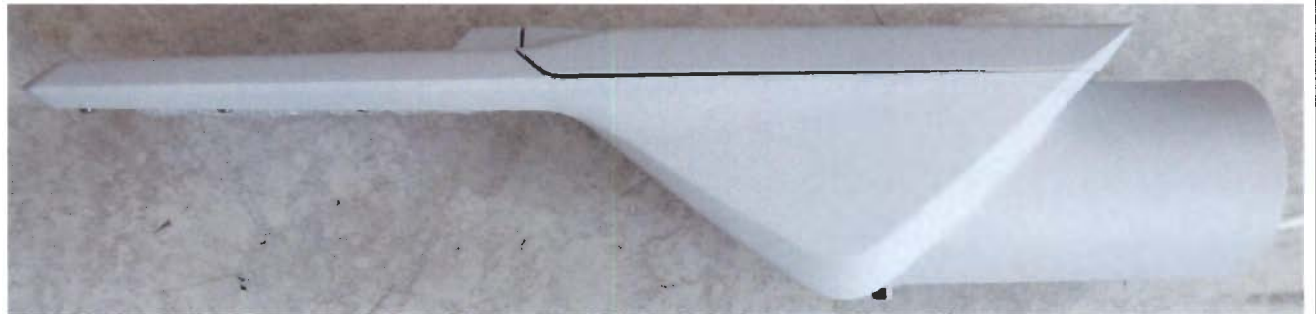
IEC / EN 60598-2-3							
Clause	Requirement + Test			Result - Remark			Verdict
3.7 (11.2)	TABLES: Creepage distances and clearances						
Table 11.1	Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages						
RMS working voltage (V) not exceeding		50	150	250	500	750	1000
Creepage distances: see critical component							
Required basic insulation, PTI ≥ 600		0,6	0,8	1,5	3	4	5,5
Measured		-	-	≥ 1,5	-	-	-
Required basic insulation, PTI < 600		1,2	1,6	2,5	5	8	10
Measured		-	-	-	-	-	-
Required supplementary insulation PTI ≥ 600		-	0,8	1,5	3	4	5,5
Measured			-	-	-	-	-
Required supplementary insulation PTI < 600		-	1,6	2,5	5	8	10
Measured			-	≥ 2,5	-	-	-
Required reinforced insulation		-	3,2	5	6	8	11
Measured			-	-	-	-	-
Clearances							
Required basic insulation		0,2	0,8	1,5	3	4	5,5
Measured		-	-	-	-	-	-
Required supplementary insulation		-	0,8	1,5	3	4	5,5
Measured			-	≥ 1,5	-	-	-
Required reinforced insulation		-	1,6	3	6	8	11
Measured			-	-	-	-	-
Table 11.2	Minimum distances (mm) for non-sinusoidal pulse voltages						
Rated pulse voltage (peak kV)		2,0	2,5	3,0	4,0	5,0	8,0
Required clearances		1,0	1,5	2	3	4	5,5
Measured		-	-	-	-	-	-
Rated pulse voltage (peak kV)		10	12	15	20	25	30
Required clearances		11	14	18	25	33	40
Measured		-	-	-	-	-	-
Rated pulse voltage (peak kV)		50	60	80	100	-	-
Required clearances		75	90	130	170	-	-
Measured		-	-	-	-		

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.15 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics		N/A
3.15 (13.3.1)	TABLE: Needle-flame test (IEC 60695-11-5)		N/A
3.15 (13.3.2)	TABLE: Glow-wire test (IEC 60695-2-11)		N/A
3.15 (13.4)	TABLE: Proof tracking test (IEC 60112)		N/A

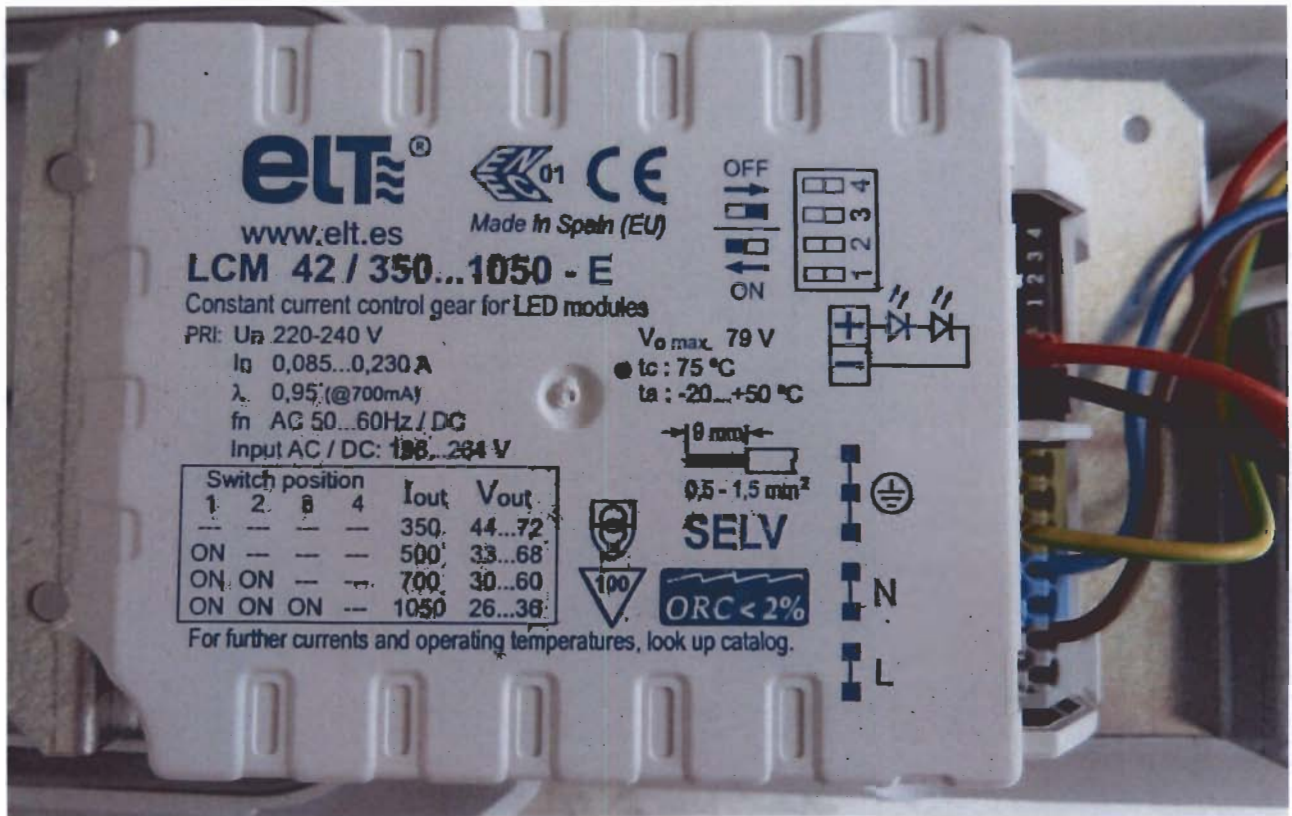
ANNEX 1		TABLE: Critical components information					
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Description:		LUG URBINI LED 130232.5L111.101					
LED module	B	LUG	ML180400 W757.01A	U _{max} 44 V, t _c 85 °C, I _{max} 1150 mA	62031	Tested in equipment	
Driver	B	ELT	LCM 42 / 350...1050 - E	220-240 V, 50/60 Hz, t _c 75 °C		ENEC 01	
Wires LED	B		LGY	300/500 V, 0,5 mm ²	IEC227		
Ext. wires	B	Nkt cable	H03VV-F	3G0,75	IEC227		
Supplementary information:							
¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.							
The codes above have the following meaning:							
A - The component is replaceable with another one, also certified, with equivalent characteristics							
B - The component is replaceable if authorised by the test house							
C - Integrated component tested together with the appliance							
D - Alternative component							

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12						
	Type reference.....:	LUG URBINI LED 130232.5L111.101	—				
	Lamp used	LED module LUG	—				
	Lamp control gear used	ELT LCM 42 / 350...1050 - E	—				
	Mounting position of luminaire.....:	On pipe	—				
	Supply wattage (W)	36,9	—				
	Supply current (A).....:	---	—				
	Calculated power factor	---	—				
	Table: measured temperatures corrected for ta = 35 °C:						
	- abnormal operating mode	Not used; see supplementary information	—				
	- test 1: rated voltage	230 V	—				
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage	243,8 V	—				
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....:	---	—				
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage	---	—				
	Through wiring or looping-in wiring loaded by a current of A during the test	---	—				
Temperature measurements, (°C)							
Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module tc	35	65	---	---	85	---	---
Driver tc	35	75	---	---	75	---	---
LED wires	35	---	59	---	90	---	---
Internal wires	35	---	54	---	90	---	---
Terminal block	35	---	35	---	85	---	---
External wires	35	---	35	---	90	---	---
Supplementary information: Temperature marked control gear 100 °C.							

ANNEX 3 Photo



ANNEX 3 Photo



WAŻNE INFORMACJE | IMPORTANT INFORMATION | IMPORTANTES INFORMAÇÕES ÚTEIS | ВАЖНАЯ ИНФОРМАЦИЯ | WICHTIGE INFORMATIONEN

 Unikaj bezpośredniego patrzenia na źródła światła.
Avoid direct looking at light source.
Il faut éviter un regard direct sur les sources de lumière.
Evite olhar direto para a fonte de luz.
Не смотрите напрямую на источники света.
Den direkten augenkontakt in die Licht vermeiden.

 Wymień uszkodzoną szybę.
Replace broken glass.
Remplacer du verre cassé.
Substitua o vidro quebrado.
Заменя поврежденное стекло.
Austausch zerbrochenes Glas.

 Należy instrukcję należy zachować do przyszłego wykorzystania.
Keep this instruction leaflet for any further reference.
Conserver cette notice jusqu'à un emploi prochain.
Este manual deve ser mantido para futuro uso.
Настоящую инструкцию следует сохранять для будущего использования.
Das vorliegende Bedienungsanleitung für zukünftigen Bedarf aufbewahren.

AKCESORIA | ACCESSORIES | ACCESSOIRES | ACESSÓRIOS | АКЦЕССУАРЫ | ZUBEHÖR

 **150170.00817**
Reduktor 60/76mm
Reducer 60/76mm
Réducteur 60/76mm
Redutor 60/76mm
Редуктор 60/76mm
Minderer 60/76mm



LUG Light Factory Sp. z o.o.
65-127 Zielona Góra, ul. Gorzowska 11
e-mail: handlowy@lug.pl
tel. +48 68 411 72 68 | 69 | 70 | 71 | 79 |
fax +48 68 411 72 88 | 89

www.lug.com.pl

INFORMACJA RGD
W tym celu należy wykonać następujące czynności:
1. Odczytać i zapisać dane techniczne i dane konstrukcyjne
2. Wykonać montaż zgodnie z instrukcją
3. Wykonać testy elektryczne i mechaniczne
4. Wykonać testy eksploatacyjne
5. Wykonać testy trwałości
6. Wykonać testy bezpieczeństwa
7. Wykonać testy kompatybilności elektromagnetycznej
8. Wykonać testy kompatybilności termicznej
9. Wykonać testy kompatybilności wibracyjnej
10. Wykonać testy kompatybilności mechanicznej
11. Wykonać testy kompatybilności chemicznej
12. Wykonać testy kompatybilności biologicznej
13. Wykonać testy kompatybilności radiacyjnej
14. Wykonać testy kompatybilności elektromagnetycznej
15. Wykonać testy kompatybilności termicznej
16. Wykonać testy kompatybilności wibracyjnej
17. Wykonać testy kompatybilności mechanicznej
18. Wykonać testy kompatybilności chemicznej
19. Wykonać testy kompatybilności biologicznej
20. Wykonać testy kompatybilności radiacyjnej

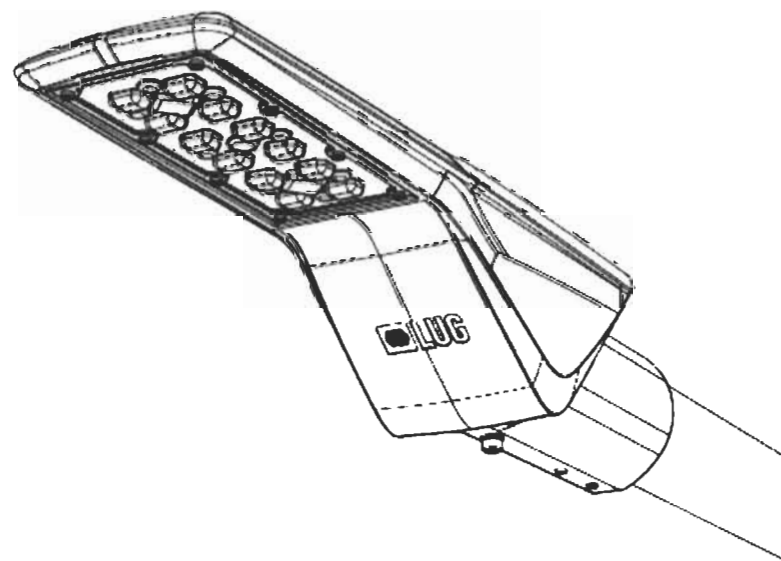
4/4

LUG
INSTALLATION INSTRUCTION
Version 07/2017/008

URBINI LED

INSTRUCIA MONTAŻU | ИНСТРУКЦИЯ ПО МОНТАЖУ | MONTAGEANLEITUNG | INSTRUCTIONS DE MONTAGE | NÁVOD K MONTÁŽI | SEBİLEŞTİRME KURALLARI | INSTRUÇÕES DE MONTAGEM | MONTAGEANLEITUNG | INSTRUCCIONES DE MONTAJE | KOKO ÖRNEKİ | JA KINNET YOSHSET MONTAGE INSTRUCTIONS | INSTRUCCIONES DE MONTAJE | ИНСТРУКЦИЯ ПО МОНТАЖУ | MONTAJ VON BÜGEN

1. MONTAJU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPowiedzALNOŚĆ PRACOWNICZĄ
2. MONTAJU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPowiedzALNOŚĆ PRACOWNICZĄ
3. MONTAJU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPowiedzALNOŚĆ PRACOWNICZĄ
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12. MONTAJU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPowiedzALNOŚĆ PRACOWNICZĄ
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14. MONTAJU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPowiedzALNOŚĆ PRACOWNICZĄ
15. MONTAJU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPowiedzALNOŚĆ PRACOWNICZĄ
16. MONTAJU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPowiedzALNOŚĆ PRACOWNICZĄ
17. MONTAJU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPowiedzALNOŚĆ PRACOWNICZĄ
18. MONTAJU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPowiedzALNOŚĆ PRACOWNICZĄ
19. MONTAJU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPowiedzALNOŚĆ PRACOWNICZĄ
20. MONTAJU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPowiedzALNOŚĆ PRACOWNICZĄ



1/4

INSTRUCTION BODY IA 1308

EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60598-2-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
 LUMINAIRES
 PART 2: PARTICULAR REQUIREMENTS
 SECTION 1: LUMINAIRES FOR ROAD AND STREET LIGHTING

Differences according to : EN 60598-2-3:1989 used in conjunction with
 EN 60598-1:2015

Annex Form No. : EU_GD_IEC60598_2_3J

Annex Form Originator : OVE

Master Annex Form : 2015-04

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	CENELEC COMMON MODIFICATIONS (EN)	
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1.5 (3)	MARKING	
1.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package	---

1.6 (4)	CONSTRUCTION	
1.6 (4.11.6)	Electro-mechanical contact systems	---

1.10 (5)	EXTERNAL AND INTERNAL WIRING	
1.10 (5.2.1)	Connecting leads	---
	- without a means for connection to the supply	---
	- terminal block specified	---
	- relevant information provided	---
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1	---
1.10 (5.2.2)	Cables equal to EN 50525	---
	Replace table 5.1 – Supply cord	---

1.12 (12)	ENDURANCE TESTS AND THERMAL TESTS	
1.12 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring	---

EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		
(3.3)	DK: power supply cords of class I luminaires with label		---
(4.5.1)	DK: socket-outlets		---
(5.2.1)	CY, DK, FI, GB: type of plug		---
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		
(4 & 5)	FR: Shuttered socket-outlets 10/16A		---
	FR: Safety requirements for high buildings (Arrêté du 30 décembre 2011 portant règlement de sécurité pour la construction des immeubles de grande hauteur et leur protection contre les risques d'incendie et de panique; Section VIII; Article GH 48, Eclairage) Glow-wire test for outer parts of luminaires:		---
	- 850°C for luminaires in stairways and horizontal travel paths		---
	- 650°C for indoor luminaires		---
	GB: Requirements according to United Kingdom Building Regulation		---

ČSN EN 62471			
Clause	Requirement + Test	Result - Remark	Verdict

Measured values

Risk	Symbol	Measured value	Group
Blue light	L_B	$103 \text{ W}\cdot\text{m}^{-2}\cdot\text{sr}^{-1}$	RG1

Measured with supply voltage 230 V. Ambient temperature 25 °C.

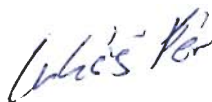
Measured at 500 lx distance.

Conclusion

Light source can be considered as light source in Risk Group 1 (RG 1).

Emission limits for risk groups of continuous wave lamps						
Risk	Action spectrum	Symbol	Units	Emission Measurement		
				Exempt	Low risk	Mod risk
				Limit	Limit	Limit
Blue light	$B(\lambda)$	L_B	$\text{W}\cdot\text{m}^{-2}\cdot\text{sr}^{-1}$	100	10000	4000000

Measured by: Lukáš Fér





ELECTROTECHNICAL TESTING INSTITUTE
Pod Lisem 129
171 02 Praha 8 - Troja

No. of pages: 26
No. of annexes/No. of an. pages: 0/0

No. of the Test Report: 701588-01/02

Issued: 4. 8. 2017



TEST REPORT

Name of product: Fixed general purpose luminaires, recessed luminaires
Type of product: URBINI LED, class I
Ratings: 220-240 V, 50/60Hz, 21 W, 29 W, 38 W, IK 09, IP 66 Class I
Serial number: --
Manufacturer: LUG Light Factory Sp. z o.o., ul. Gorzowska 11, 65-127 Zielona Góra, Polsko
Production site: LUG Light Factory Sp. z o.o., ul. Gorzowska 11, 65-127 Zielona Góra, Poland
Ordering firm: LUG Light Factory Sp. z o.o., ul. Gorzowska 11, 65-127 Zielona Góra, Polsko
Number of tested samples: 1, type representative: 130232.5L111.1X1
Samples submitted on: 3. 7. 2017
Location of testing: EZÚ
Tested from 27. 7. 2017 **through** 31. 7. 2017
Other data: -
The product was tested according to: ČSN EN 55015 ed. 4:14,
ČSN EN 61547: ed. 2:10,
ČSN EN 61000-3-3 ed. 3 :14,
ČSN EN 61000-3-2 ed. 4:15.

Compiled by: David Nádherný



Approved by: Miroslav Vondra
Testing laboratory technical manager

Test results stated in the test report apply only to the tested subject and unless specified otherwise in the test report, the tests were performed using the method and under the conditions determined in the test regulations, technical norm, instructions for use and information provided by the manufacturer on the tested subject and using accessories required by the manufacturer.
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1. Emission

- (ČSN) EN 55015:2013 *Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment*
- (ČSN) EN 61000-3-2:2014 *Electromagnetic compatibility (EMC) - Limits - Limits for harmonic current emission*
- (ČSN) EN 61000-3-3 :2013 *Electromagnetic compatibility (EMC) -Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current $\leq 16A$ per phase and not subject to conditional connection*

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

Type representative: 130232.5L111.1X1

Requirements at tests:

Standard	Frequency band	Allowed values	Note
(ČSN) EN 55015 Art. 4.3.3	f [MHz] 0.15 - 0.5 0.05 - 30	QP / AV [dB(μV)] 84 - 74 / 74 - 64 74 / 64	Not applicable *1)
(ČSN) EN 55015 Art. 4.3.1	f [MHz] 0.009 - 0.05 0.05 - 0.15 0.15 - 0.5 0.5 - 5 5 - 30	QP / AV [dB(μV)] 110 / --- 90-80 / --- 66-56 / 56-46 56 / 46 60 / 50	Pass
(ČSN) EN 55015 Art. 4.4.1 (d=2m)	f [MHz] 0.009 - 0.07 0.07 - 0.15 0.15 - 3 3 - 30	QP [dB(μA)] 88 88-58 58-22 22	Pass
(ČSN) EN 55015 Art. 4.4.2	f [MHz] 30 - 230 230 - 300	QP [dB(μV/m)] 30 d=10m 37	Pass
(ČSN) EN 6100-3-2 Art. 7.3	0 - 2 kHz	Class C	Pass
(ČSN) EN 6100-3-3	50 Hz	---	Not applicable *2)

Notes:

The results of the tests specified in the protocol relating to device with electronic ballast:
130232.5L111.1X1: ELT LCM 42 / 350 ... 1050 - E

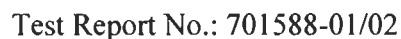
*1) The luminaire does not contains relevant terminals.

*2) According to EN 61000-3-3, Art. A2 (LED luminaires with power input $\leq 200W$)

Test result: Pass

Compiled by: Nádherný

Measured at: EZÚ



Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

Operating conditions:

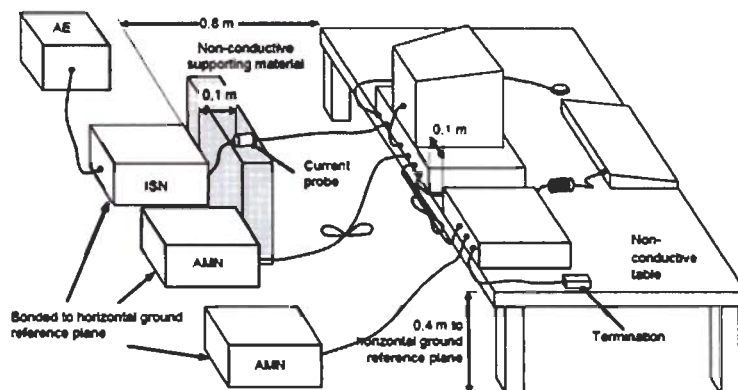
230V, 50Hz, minimally 15 minutes in operation

Temperature: 23°C Rel. humidity: 30 – 45 %

Applied limits:

Band	Limits dB(μV), quasi-peak/average
9kHz - 50kHz	110 /--
50kHz - 150kHz	90 - 80 /--
150kHz - 0,5MHz	66 - 56 / 56 - 46
0,5MHz - 5,0MHz	56 / 46
5,0MHz - 30MHz	60 / 50

Measuring arrangement:



Notes:

For measured values see next page.

Test result: Pass

Measured by: Nádherný

Date: 27.7. 2017

Measured at: EZÚ

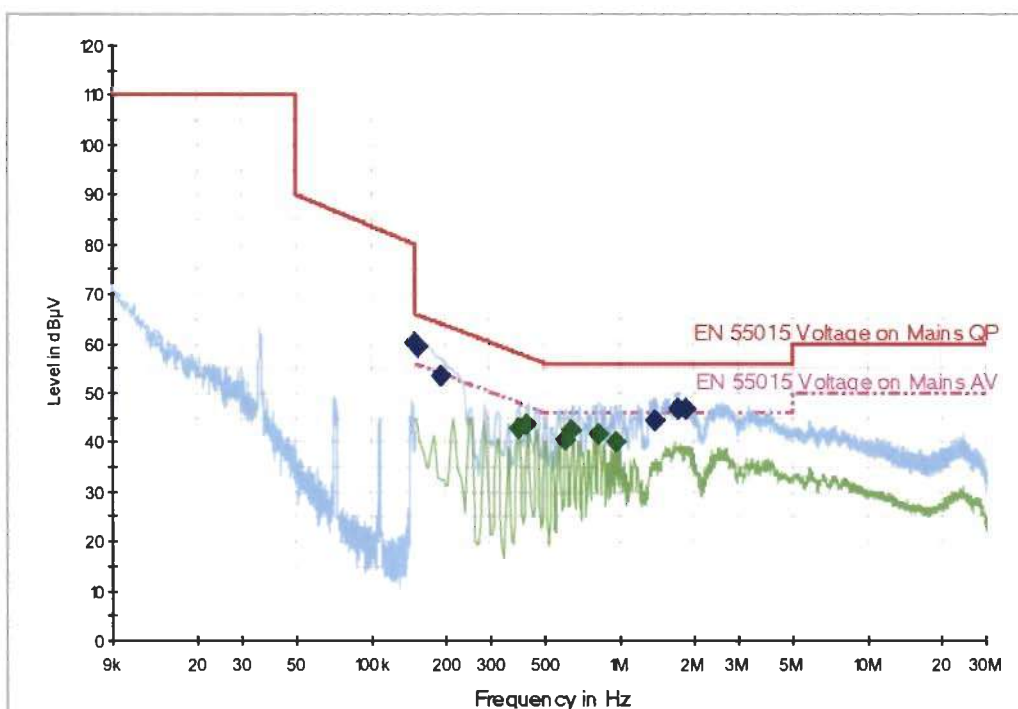


EMI Measurement

Common Information

EUT Name: Fixed general purpose luminares, recessed luminares
Type: URBINI LED, class I (130232.5L111.1X1)
Test Description: EN 55015
Operation Conditions: 230 V, 50 Hz
Operator Name: Nadherny
Comment 1: L, N - Mains

Voltage EN 55015 tab2a



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	60.3	1000.0	9.000	GN	N	10.2	5.7	66.0
0.154000	59.5	1000.0	9.000	GN	N	10.2	6.3	65.8
0.190000	53.5	1000.0	9.000	GN	N	10.2	10.5	64.0
1.394000	44.4	1000.0	9.000	GN	L1	10.5	11.6	56.0
1.706000	46.7	1000.0	9.000	GN	N	10.6	9.3	56.0
1.850000	46.9	1000.0	9.000	GN	N	10.6	9.1	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.390000	42.7	1000.0	9.000	GN	L1	10.4	5.4	48.1
0.426000	43.8	1000.0	9.000	GN	L1	10.4	3.5	47.3
0.602000	40.6	1000.0	9.000	GN	L1	10.4	5.4	46.0
0.642000	42.3	1000.0	9.000	GN	N	10.4	3.7	46.0
0.822000	41.5	1000.0	9.000	GN	N	10.4	4.5	46.0
0.958000	40.1	1000.0	9.000	GN	N	10.4	5.9	46.0



Measurement of interfering radiation in the 9 kHz - 30 MHz band
According to: (ČSN) EN 55015 - art 4.4.1

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

Operating conditions:

230V, 50Hz, minimally 15 minutes in operation

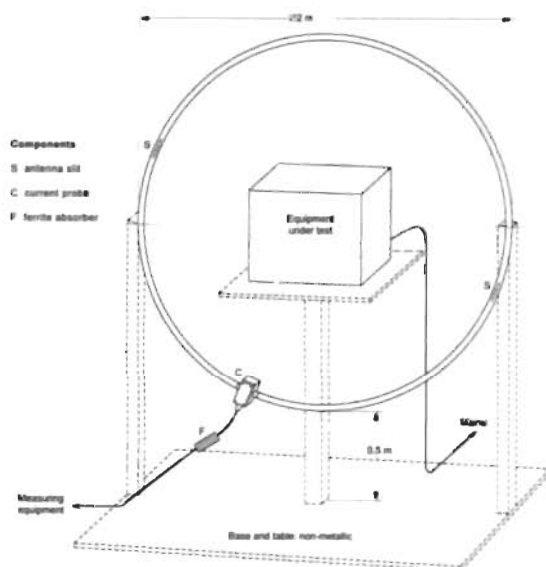
Temperature: 23°C

Rel. humidity: 30 – 45 %

Applied limits:

Band	Limits dB(μA), quasi-peak
9 - 70 kHz	88
70 - 150 kHz	88 - 58
150 kHz - 3 MHz	58 - 22
3 - 30 MHz	22

Measuring arrangement:



Notes:

For measured values see next pages

Test result: Pass

Measured by: Nádherný

Date: 31.7. 2017

Measured at: EZÚ

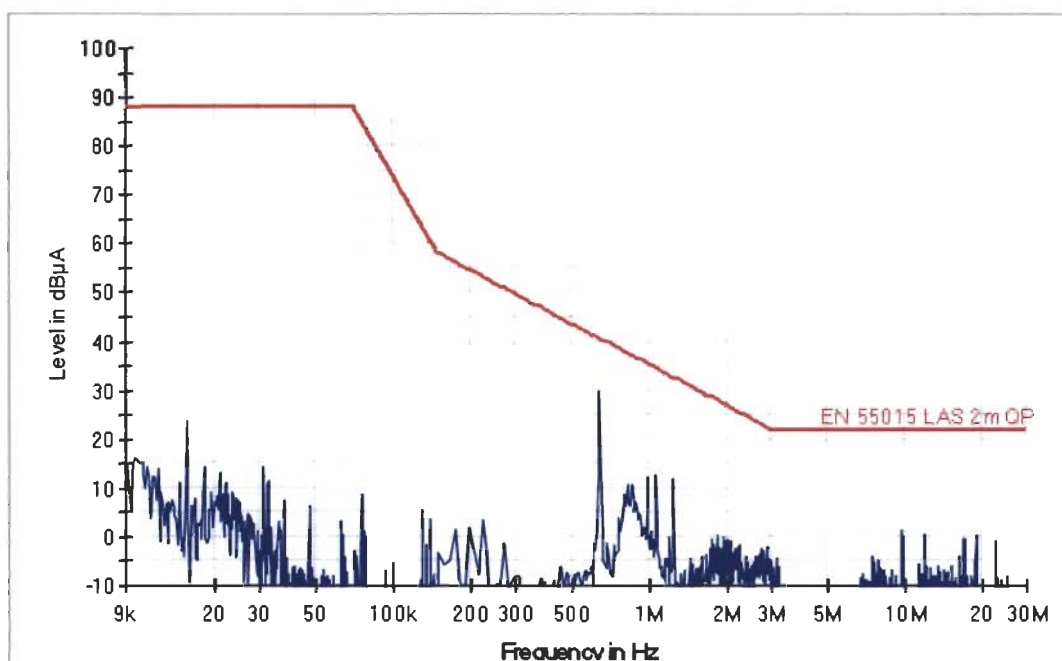


EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, recessed luminaires
Type	URBINI LED, class I (130232.5L111.1X1)
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Nadherny
Comment:	Axis X

EFS with Scans EZU KRUH2M2



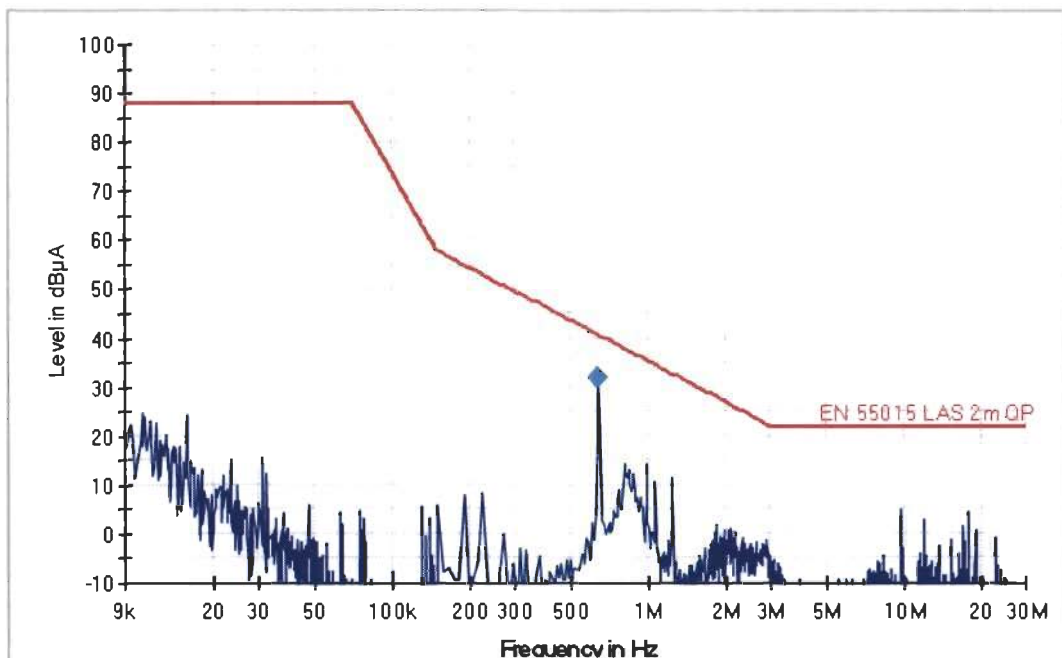


EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, recessed luminaires
Type	URBINI LED, class I (130232.5L111.1X1)
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Nadherny
Comment:	Axis Y

EFS with Scans EZU KRUH2M2



Final Result 1

Frequency (MHz)	QuasiPeak (dBμA)	Meas. Time (ms)	Bandwidth (kHz)	Corr. (dB)	Margin (dB)	Limit (dBμA)
0.638000	31.7	1000.00	9.000	1.0	8.9	40.6

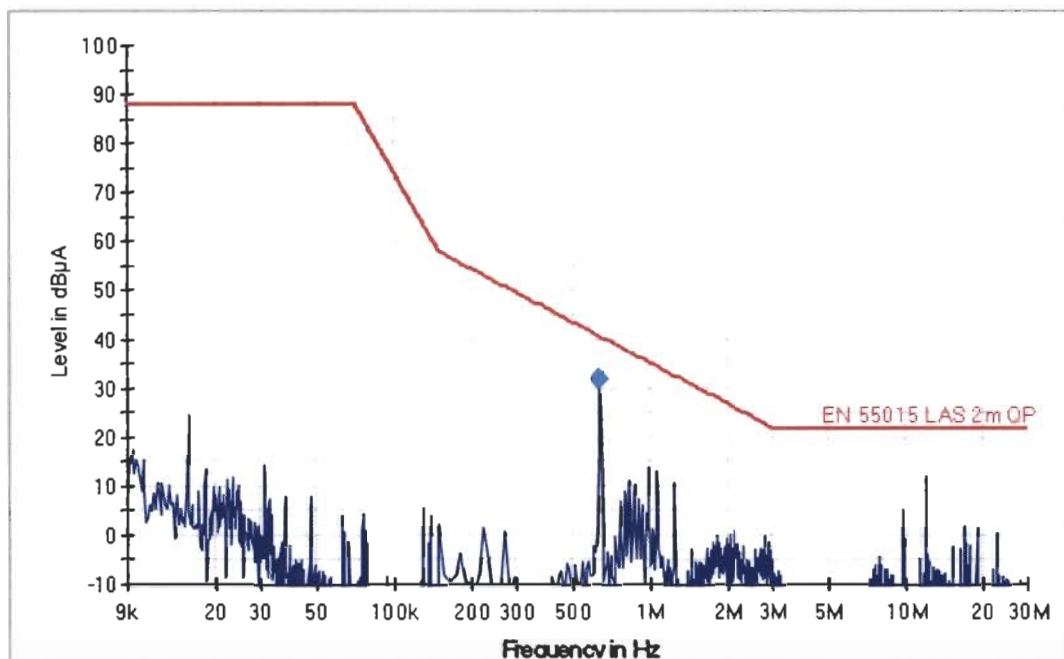


EMI Measurement

Common Information

EUT Name: Fixed general purpose luminares, recessed luminares
Type: URBINI LED, class I (130232.5L111.1X1)
Test Description: EN 55015
Operating Conditions: 230V, 50Hz
Operator Name: Nadherny
Comment: Axis Z

EFS with Scans EZU KRUH2M2



Final Result 1

Frequency (MHz)	QuasiPeak (dBµA)	Meas. Time (ms)	Bandwidth (kHz)	Corr. (dB)	Margin (dB)	Limit (dBµA)
0.638000	31.7	1000.00	9.000	1.0	8.9	40.6



Measurement of interfering radiation in the 30 - 300 MHz band
According to: (ČSN) EN 55015 Art. 4.4.2

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

Operating conditions:

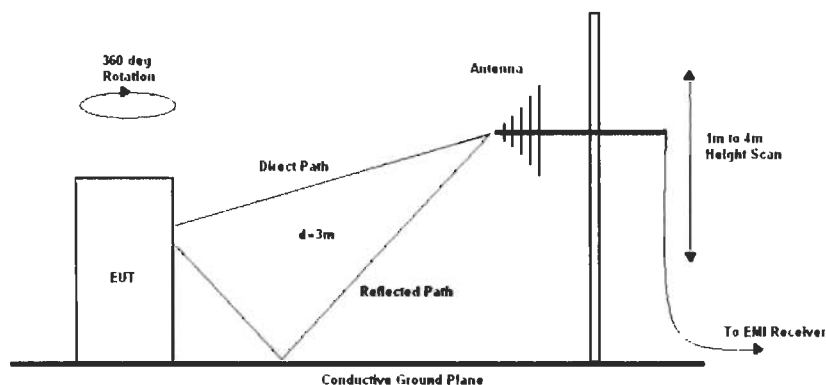
230V, 50Hz, minimally 15 minutes in operation

Temperature: 22°C Rel. humidity: 30 – 45 %

Applied limits:

Band (MHz)	Limits dB(μV/m), quasi-peak		
30 - 300	*)	30	(d=10m)
230 - 300	*)	37	(d=10m)

Measuring arrangement:

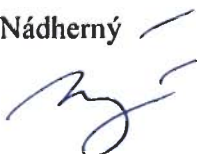


Notes:

For measured values see next pages

*) Limits and values converted to 3 m measuring distance

Test result: Pass

Measured by: Nádherný 

Date: 28.7. 2017

Measured at: EZÚ

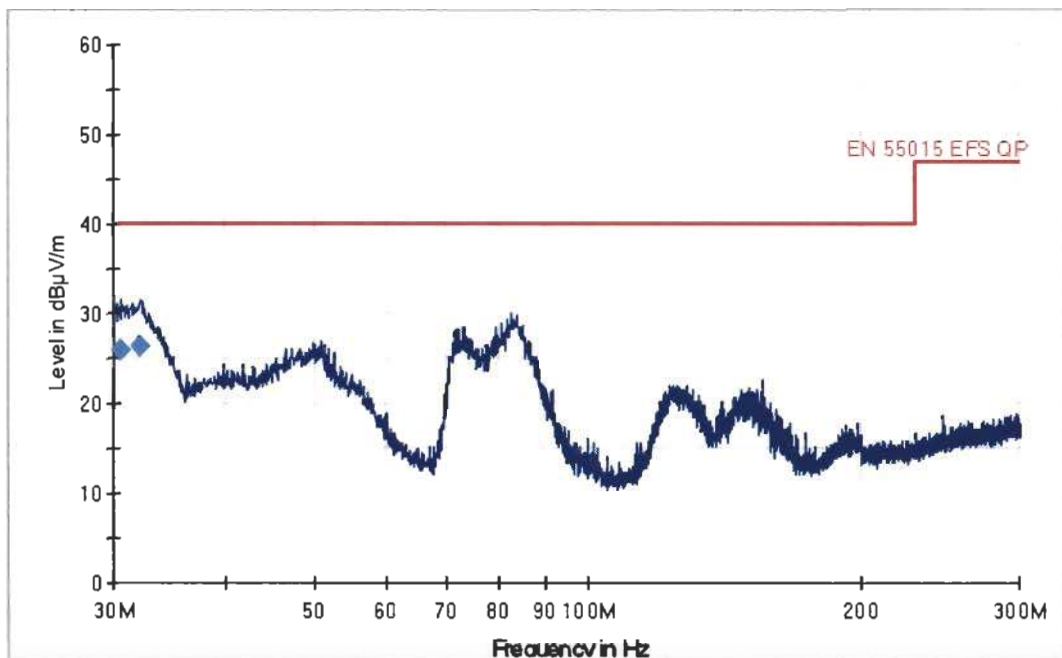


EMI Measurement

Common Information

EUT Name: Fixed general purpose luminaires, recessed luminaires
Type: URBINI LED, class I (130232.5L111.1X1)
Test Description: EN 55015
Operating Conditions: 230V, 50Hz
Operator Name: Nadherny
Comment: V, H polarization

EFS EZU Luminaire



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
30.600000	25.8	337.0	V	188.0	30.0	14.2	40.0
32.160000	26.2	115.0	V	114.0	30.4	13.8	40.0



**Electromagnetic compatibility (EMC) - Limits -
Limits for harmonic current emission
According to: (ČSN) EN 61000-3-2 - art. 7.3**

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

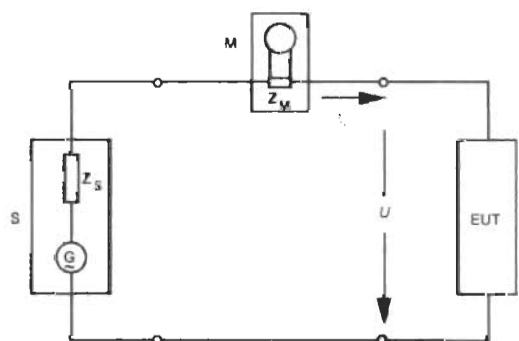
Operating conditions:

230V, 50Hz, minimally 15 minutes in operation

Teplota - Temperature: 24°C

Rel. vlhkost - Rel. humidity: 30 – 45 %

Measuring arrangement:



- S napájecí zdroj - source
EUT zkoušené zařízení - tested equipment
M analyzátor harmonických - harmonic analyser
 Z_M měřicí bočník - measuring shunt
 Z_S vnitřní impedance napájecího zdroje - internal impedance of source
 I_n n-té harmonické proudu ve fázovém/středním vodiči - n^{th} harmonic component of current in the phase/neutral line

Applied limits:

Order of harmonics	Limit (%I1) P > 25W
2	2
3	30λ
5	10
7	7
9	5
n 11 - 39 (only odd)	3

λ = účinník - power factor

Notes:

Equipment class C

For measured values see next pages

Test result: Pass

Measured by: Nádherný

Date: 28.7. 2017

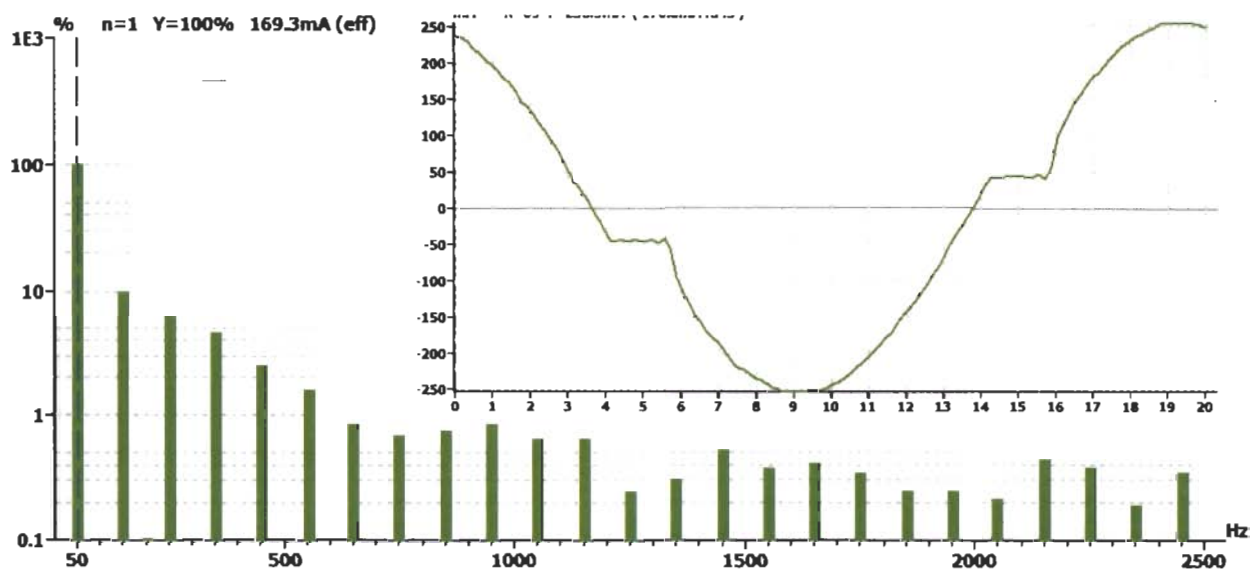
Measured at: EZÚ



Test Report No.: 701588-01/02

Report title:	701588-01/02
Company Name:	EZU
Date of test:	15:52 28.Jul 2017
Measurement file name:	Harmonics_3_2_Ed4.rsd
Tester:	Nadherny
Standard used:	EN/IEC 61000-3-2 Ed.4 Quasi-stationary Equipment class C
Observation time:	30s
Windows width:	10 periods - (EN/IEC 61000-4-7 Edition 2002 + A1:2008)
Customer:	LUG
E. U. T.:	URBINI LED, class I (130232.5L111.1X1)
Temperature :	24
Humidity :	40
Comment:	230 V, 50 Hz, 38W
Measurement smoothed data:	Fund. Current: 0.169A Power Factor: 0.948

Test Result	
E. U. T.:	PASS
Power Source:	PASS





E. U. T. Result

Check harmonics 2..40 [exception odd 21..39]:

Harmonic(s) > 150%:		
Order (n):	None	
Harmonic(s) with average > 100%:		
Order (n):	None	

Check odd harmonics 21..39:

All Partial Odd Harmonics below partial limits.		
Harmonic(s) > 150%:		
Order (n):	None	
Harmonic(s) with average > 150%:		
Order (n):	None	

Power Source Result

First dataset out of limit:		
DS (time):	None	
Harmonic(s) out of limit:		
Order (n):	None	

**Average harmonic current results**

Hn	I _{eff} [A]	I _{eff} [%]	Limit [%]	Result
1	169.303E-3	99.960		
2	339.355E-6	0.200		PASS
3	16.521E-3	9.754	28.45	PASS
4	420.270E-6	0.248		PASS
5	10.508E-3	6.204	10.00	PASS
6	541.243E-6	0.320		PASS
7	7.601E-3	4.488	7.00	PASS
8	429.171E-6	0.253		PASS
9	4.524E-3	2.671		PASS
10	310.508E-6	0.183		PASS
11	2.588E-3	1.528		PASS
12	283.192E-6	0.167		PASS
13	1.591E-3	0.939		PASS
14	309.386E-6	0.183		PASS
15	1.264E-3	0.746		PASS
16	363.008E-6	0.214		PASS
17	1.467E-3	0.866		PASS
18	304.477E-6	0.180		PASS
19	1.496E-3	0.884		PASS
20	294.158E-6	0.174		PASS
21	1.216E-3	0.718		PASS
22	327.701E-6	0.193		PASS
23	995.151E-6	0.588		PASS
24	312.142E-6	0.184		PASS
25	559.805E-6	0.331		PASS
26	299.131E-6	0.177		PASS
27	600.090E-6	0.354		PASS
28	295.850E-6	0.175		PASS
29	831.721E-6	0.491		PASS
30	278.860E-6	0.165		PASS
31	830.709E-6	0.490		PASS
32	348.079E-6	0.206		PASS
33	830.055E-6	0.490		PASS
34	280.221E-6	0.165		PASS
35	625.285E-6	0.369		PASS
36	281.892E-6	0.166		PASS
37	588.608E-6	0.348		PASS
38	360.058E-6	0.213		PASS
39	480.404E-6	0.284		PASS
40	340.761E-6	0.201		PASS

Harmonic currents less than 0.6% of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.

**Maximum harmonic current results**

Hn	I _{eff} [A]	I _{eff} [%]	Limit [%]	Result
1	169.371E-3	100.000		
2	386.269E-6	0.228		PASS
3	16.645E-3	9.828	42.67	PASS
4	494.412E-6	0.292		PASS
5	10.635E-3	6.279	15.00	PASS
6	610.004E-6	0.360		PASS
7	7.704E-3	4.548	10.50	PASS
8	470.280E-6	0.278		PASS
9	4.699E-3	2.774		PASS
10	350.128E-6	0.207		PASS
11	2.705E-3	1.597		PASS
12	317.727E-6	0.188		PASS
13	1.720E-3	1.016		PASS
14	349.905E-6	0.207		PASS
15	1.358E-3	0.802		PASS
16	414.600E-6	0.245		PASS
17	1.628E-3	0.961		PASS
18	333.133E-6	0.197		PASS
19	1.563E-3	0.923		PASS
20	325.734E-6	0.192		PASS
21	1.383E-3	0.817		PASS
22	368.640E-6	0.218		PASS
23	1.112E-3	0.656		PASS
24	345.614E-6	0.204		PASS
25	690.098E-6	0.407		PASS
26	330.815E-6	0.195		PASS
27	629.178E-6	0.371		PASS
28	318.527E-6	0.188		PASS
29	920.187E-6	0.543		PASS
30	299.504E-6	0.177		PASS
31	1.040E-3	0.614		PASS
32	413.468E-6	0.244		PASS
33	1.000E-3	0.591		PASS
34	304.299E-6	0.180		PASS
35	668.211E-6	0.395		PASS
36	305.878E-6	0.181		PASS
37	688.436E-6	0.406		PASS
38	410.076E-6	0.242		PASS
39	517.514E-6	0.306		PASS
40	402.388E-6	0.238		PASS

Harmonic currents less than 0.6% of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.

**Maximum harmonic voltage results**

Hn	Ueff [V]	Ueff [%]	Limit [%]	Result
1	229.85	99.933		
2	88.00E-3	0.038	0.2	PASS
3	541.86E-3	0.236	0.9	PASS
4	53.87E-3	0.023	0.2	PASS
5	59.36E-3	0.026	0.4	PASS
6	46.65E-3	0.020	0.2	PASS
7	51.09E-3	0.022	0.3	PASS
8	35.91E-3	0.016	0.2	PASS
9	29.02E-3	0.013	0.2	PASS
10	23.98E-3	0.010	0.2	PASS
11	22.52E-3	0.010	0.1	PASS
12	17.87E-3	0.008	0.1	PASS
13	23.40E-3	0.010	0.1	PASS
14	20.17E-3	0.009	0.1	PASS
15	10.96E-3	0.005	0.1	PASS
16	14.52E-3	0.006	0.1	PASS
17	14.83E-3	0.006	0.1	PASS
18	13.67E-3	0.006	0.1	PASS
19	10.62E-3	0.005	0.1	PASS
20	19.72E-3	0.009	0.1	PASS
21	11.23E-3	0.005	0.1	PASS
22	12.87E-3	0.006	0.1	PASS
23	8.61E-3	0.004	0.1	PASS
24	10.19E-3	0.004	0.1	PASS
25	13.05E-3	0.006	0.1	PASS
26	10.86E-3	0.005	0.1	PASS
27	9.23E-3	0.004	0.1	PASS
28	10.68E-3	0.005	0.1	PASS
29	10.02E-3	0.004	0.1	PASS
30	9.55E-3	0.004	0.1	PASS
31	9.84E-3	0.004	0.1	PASS
32	9.82E-3	0.004	0.1	PASS
33	8.29E-3	0.004	0.1	PASS
34	6.36E-3	0.003	0.1	PASS
35	7.75E-3	0.003	0.1	PASS
36	8.83E-3	0.004	0.1	PASS
37	9.09E-3	0.004	0.1	PASS
38	5.98E-3	0.003	0.1	PASS
39	7.80E-3	0.003	0.1	PASS
40	12.43E-3	0.005	0.1	PASS



2. Immunity

(ČSN) EN 61547 *Equipment for general lighting purposes - EMC - immunity requirements*

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

Type representative: 130232.5L111.1X1

Requirements at tests:

Generic standard	Level	Allowed error *1)	Note
EN61000-4-2	±4kV / ±8 kV	B	Pass
EN61000-4-3	3V/m 80 - 1000 MHz	A	Pass
EN61000-4-4	±1kV AC power, ±0,5kV signal lines	B	Pass
EN61000-4-5	±1kV / ±2kV	C	Pass
EN61000-4-6	3 V 0,15 - 80 MHz	A	Pass
EN61000-4-8	3 A/m	A	*2) Pass
EN61000-4-11	200 ms / 70% U _T	C	Pass
	10 ms / 0% U _T	B	

Notes:

The results of the tests specified in the protocol relating to device with electronic ballast:
130232.5L111.1X1: ELT LCM 42 / 350 ... 1050 - E

*1) Performance criteria according (ČSN) EN 61547, art. 4.2

*2) Devices do not contain parts sensitive to the magnetic field

Test result: Pass

Compiled by: Nádherný —

Measured at: EZÚ



*Test of electric discharge resistance
According to: (ČSN) EN 61000-4-2*

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

Operating conditions:

230V, 50Hz, minimally 15 minutes in operation

Temperature: 23°C Rel. humidity: 30 – 45 %

Allowed criterion: B

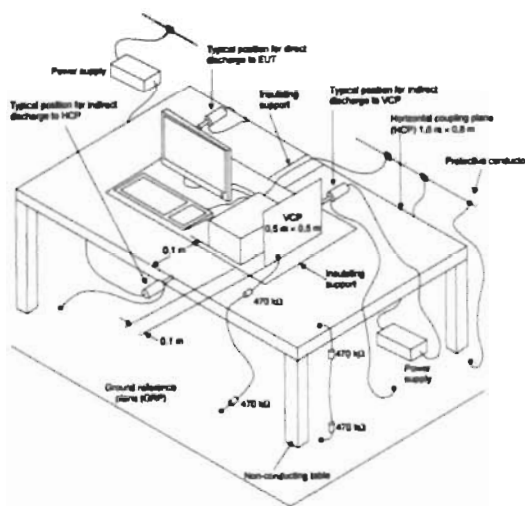
Number of testing discharges: 10/10 contact/air discharge to every test-places in each polarity, besides indirect contact discharges into a vertical and horizontal coupling plane

Tested points: Contact discharge into the metal parts and to the horizontal and vertical coupling plane. Air discharge into plastic parts. See photodocumentation.

Testing voltage [kV]: ± 4 – contact discharge / ± 8 - air discharge

Achieved criterion: A

Measuring arrangement:



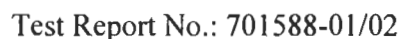
Notes:--

Test result: Pass

Measured by: Nádherný

Date: 31.7. 2017

Measured at: EZÚ



Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

Operating conditions:

230V, 50Hz, minimally 15 minutes in operation

Temperature: 23°C Rel. humidity: 30 – 45 %

Applied limits:

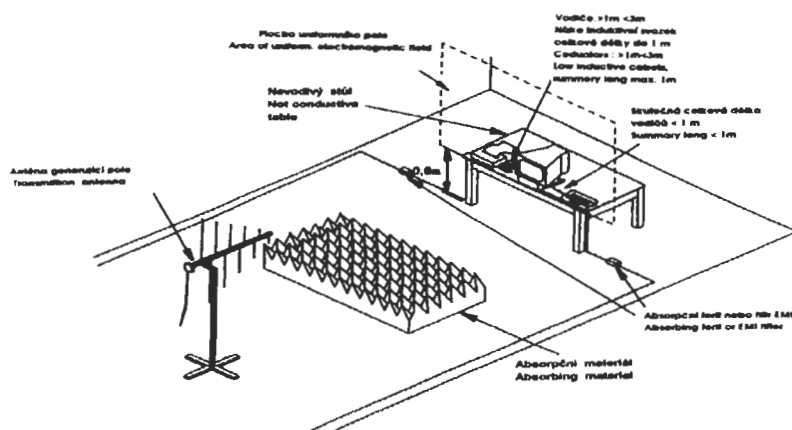
Scan spectrum: 80 - 1000 MHz

Intensity of field: 3 V/m (80% AM, 1kHz)

Allowed criterion: A

Achieved criterion: A

Measuring arrangement:



Notes: --

Test result: Pass

Measured by: Nádherný

Date: 31.7. 2017

Measured at: EZÚ

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Test by quick transient burst
According to: (ČSN) EN 61000-4-4

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

Operating conditions:

230V, 50Hz, minimally 15 minutes in operation

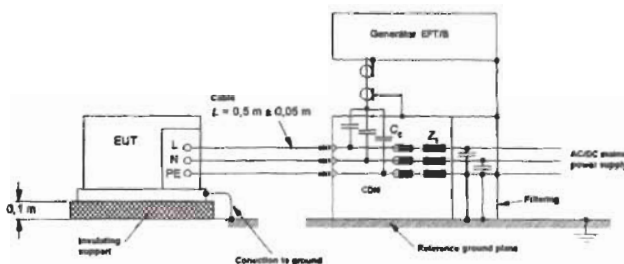
Temperature: 23°C Rel. humidity: 30 – 45 %

Allowed criterion: B

Testing voltage applied:

Applied to	Testing level	Performance criterion	Remark
L,N,L+N	±1kV	A	Coupling networks to power supply
L+PE	±1kV	A	
N+PE	±1kV	A	
L+N+PE	±1kV	A	

Measuring arrangement:



Notes: --

Test result: Pass

Measured by: Nádherný

Date: 31.7. 2017

Measured at: EZÚ



Test Report No.: 701588-01/02

Surge immunity test
According to: (ČSN) EN 61000-4-5

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

Operating conditions:

230V, 50Hz, minimally 15 minutes in operation

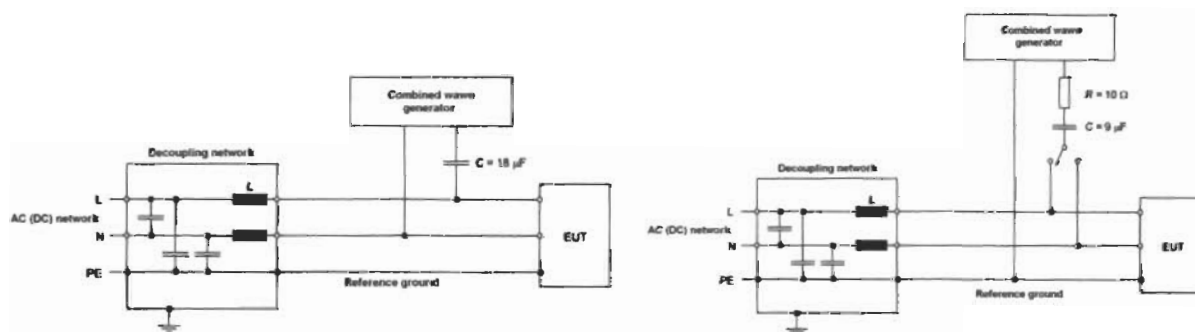
Temperature: 23°C Rel. humidity: 30 – 45 %

Allowed criterion: C

Testing voltage applied:

Applied voltage	Testing level	Performance criterion	Remark
L-N	±1kV	A	90°, 270°
L-PE, N-PE, L+N-PE	±2kV	A	90°, 270°

Uspořádání při měření - Measuring arrangement:



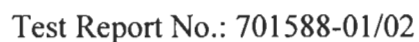
Poznámky - Notes:--

Test result: Pass

Measured by: Nádherný

Date: 31.7. 2017

Measured at: EZÚ



Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

Operating conditions:

230V, 50Hz, minimally 15 minutes in operation

Temperature: 24 °C Rel. humidity: 30 – 45 %

Allowed criterion: A

Testing voltage applied:

Achieved criterion: A

Measuring arrangement:



Test result: Pass

Measured by: Nádherný

Date: 31.7.2017

Measured at: EZÚ



Test Report No.: 701588-01/02

Voltage dips, short interruptions and voltage variations
According to: (ČSN) EN 61000-4-11

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

Operating conditions:

230V, 50/60Hz, minimally 15 minutes in operation

Temperature: 22°C Rel. humidity: 30 – 45 %

Allowed criterion: C, B

Tests requirements:

Test level % Ut	Duration 50 / 60Hz ms	Allowed criterion	Achieved criterion
0	10 / 8,3	B	A
70	200 / 167	C	A

Notes:--

Test result: Pass

Measured by: Nádherný

Date: 31.7. 2017

Measured at: EZÚ

**Measuring equipment used:**

☒ Test receiver RaS	ESCI	110213	11.2017
☒ Měřicí přijímač- Test receiver RaS	ESIB26	110097	11.2017
☒ Continuous wave simulator EM Test	CWS500N1	110232	03.2019
☒ Harmonic analyzer EM TEST	DPA503N	110272	02.2019
☒ Power fail simulator EM Test	PFS 500	98-6040	10.2017
☐ Ultra Compact Simulator EM Test	UCS 500N	110235	02.2019
☒ ESD generator	ESD30N	110196	03.2019
☐ ESD generátor	ESD30	110090	12.2018
☐ Artificial mains EMCO	3825/2	95-5852	07.2019
☐ Artificial mains Narda	PMM L3-32	110250	11.2019
☒ Artificial mains ESH	ESH4-Z5	5821/1	05.2020
☒ Antenna Frankonia	BTA-M	00-6321	10.2017
☐ Antenna Double Ridget	HF 907	110177	08.2017
☐ Antenna Double Ridget Advantest	TR17206	5878	10.2017
☒ Burst generator Haefely	PEFT Junior	5872	12.2018
☒ Surge generator	VCS500-M	110114	03.2018
☐ Měřič pole Narda – Field meter Narda	ELT-400	110130	11.2018
☒ Current Probe R&S	EZ-17	110098	05.2019

Pomocná zařízení – Auxiliary equipment:

☒ Supply source EM TEST	HFS300	98-6042	02.2019
☐ Ref. impedance SCHAFFNER	LR4	X71773	02.2019
☒ Electric Field Probe Narda	EP603	110273	01.2019
☒ Amplifier PRÁNA	AP32 LT225	07-110145	
☐ Amplifier MILMEGA	AS0822-100	98-6038	
☐ Amplifier MILMEGA	AS0204-125	110144	
☐ Amplifier MILMEGA (1.8-6GHz)	AS1860-100	110219	
☒ Signal generator RaS	SMF100A	110167	11.2018
☐ Signal generator RaS	SMT03	96-5874	02.2018
☐ Multimetr - Multimeter	FLUKE189	550049	01.2018
☐ Probe RFT	TK12	700044	06.2020
☒ Coupling/dec. EM TEST	CDN M3N	552097	06.2018
☒ Coupling/dec. EM TEST	CDN M2N	110233/2	11.2019
☐ Coupling/SCHAFFNER ISN T4xx	ISN T4xx	110032	
☐ Capacitive coupling clamp	Haefely		
☐ Current probe	P MP-120		
☐ Current probe	AM503	79-4221	
☒ Current probe RFT	SMZ 11	700459	06.2018
☒ Elektromag. kleště- Electromag. injection clamp	EM-101	110233	11.2019
☐ Ferite clamp 1-1000 MHz	EZ-24	10003	
☒ Anechoic chamber - Euroshield Oy	RFMSD-F/A	6341	02.2020
☒ Notebook Dell	Dell D351	551492	
☒ Multimeter Fluke	289	552550	06.2018
☒ Ocelové pásmo – Metal meter	5m	N400014	12.2020
☒ Pulse Limiter RaS	ESH3-Z2	5424	01.2019

Kabely - Cables:

- ☐ K1
- ☒ K22 , ESH3-Z2
- ☐ K14 , K15a , K16
- ☐ KB01, KB02, KB04
- ☒ KB06
- ☐ K4 , K19
- ☐ K23
- ☒ K27
- ☒ K25, K2, K4

EZU přípravky – EZU equipments:

- ☒ PR 51 – EN 61000-4-2 – Vertical coupling plane
- ☐ Dummy lamp: dle - according to EN55015
- ☒ Regulating transformer - ZPA RA20
- ☐ PR-21 - Stabilized power supply BS 525
- ☐ P10 - EN55015 - Spherical cover
- ☐ P11 - EN6100-4-8 - EZÚ test setup
- ☐ P13 – Třífázový přepínač - three-phase switch
- ☒ PR45 - Loop antenna 2m



Photo-documentation

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I



Overview: 130232.5L111.1X1



Source and LED controller: 130232.5L111.1X1



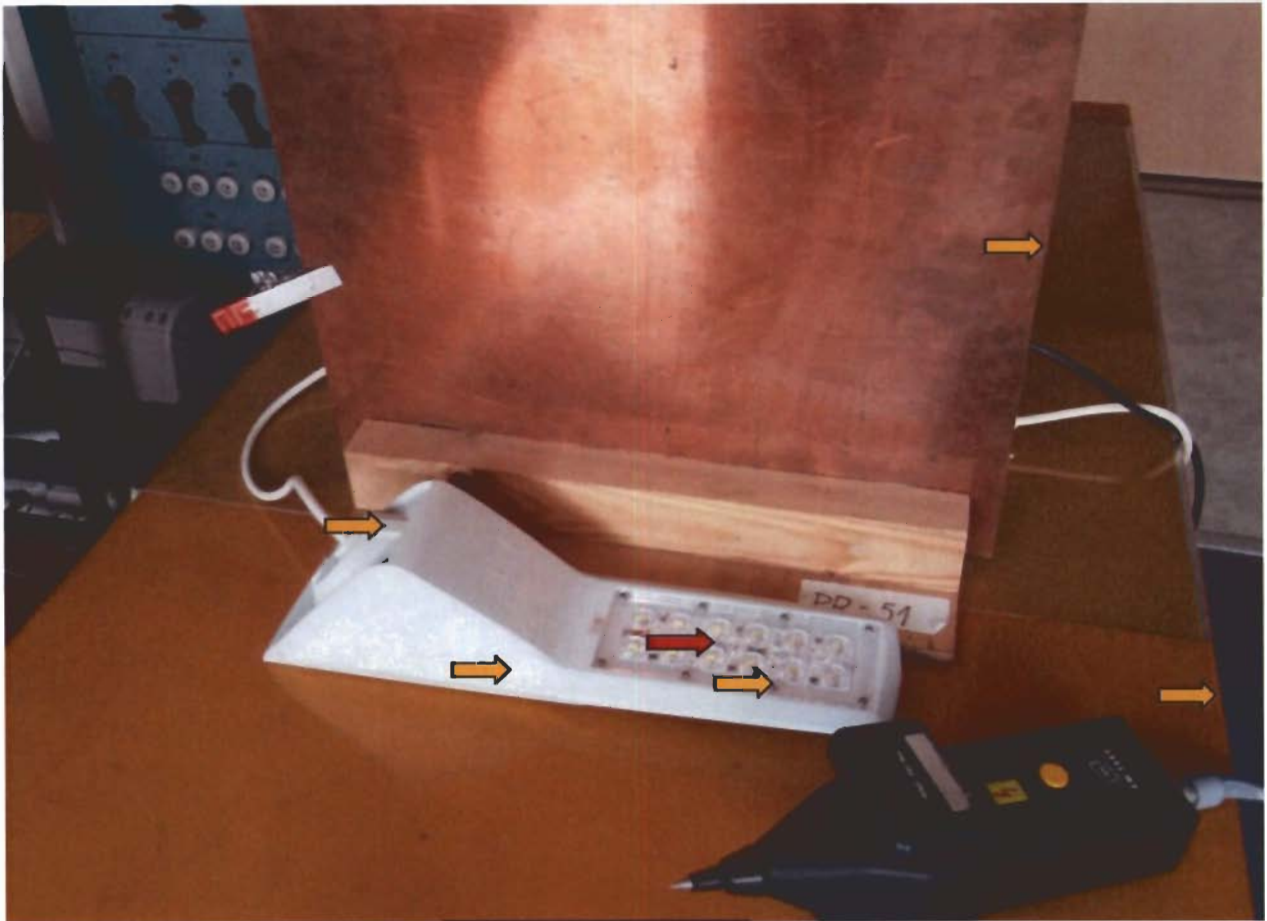
Name plate 130232.5L111.1X1

my



Test Report No.: 701588-01/02

Electrostatic discharges – tested points (→ contact discharge → air discharge)



Signature



ELECTROTECHNICAL TESTING INSTITUTE
Pod Lisem 129
171 02 Praha 8 - Troja

No. of pages: 1
No. of annexes/No. of an. pages: 2/38

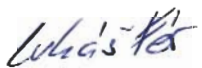
No. of the Test Report: 701590-01/01

Issued: 2. 8. 2017



TEST REPORT

Name of product: Luminaires for road and street lighting
Type of product: URBINI LED class II
Ratings: 220-240 V, 50/60 Hz, 14, 20, 28, 42 W, IK 08, IP 66, Class II
Serial number: -
Manufacturer: LUG Light Factory Sp. z o.o.,
ul. Gorzowska 11, 65-127 Zielona Góra,
Republic of Poland
Production site: LUG Light Factory Sp. z o.o.,
ul. Gorzowska 11, 65-127 Zielona Góra,
Republic of Poland
Ordering firm: LUG Light Factory Sp. z o.o.,
ul. Gorzowska 11, 65-127 Zielona Góra,
Republic of Poland
Number of tested samples: 1
Samples submitted on: 3. 7. 2017
Location of testing: EZÚ
Tested from 3. 7. 2017 **through** 2. 8. 2017
Other data: -
The product was tested according to: IEC 60598-1:2014,
IEC 60598-2-3:02,
EN 60598-1:15,
EN 60598-2-3:03+A1:11,
~~IEC 62471:2006~~ blue light hazard only


Compiled by: Lukáš Fér




Approved by: Zdeněk Dvořák
Testing laboratory technical manager

Test results stated in the test report apply only to the tested subject and unless specified otherwise in the test report, the tests were performed using the method and under the conditions determined in the test regulations, technical norm, instructions for use and information provided by the manufacturer on the tested subject and using accessories required by the manufacturer.
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Test Report issued under the responsibility of:



TEST REPORT
IEC / EN 60598-2-3
Luminaires
Part 2: Particular requirements
Section 3: Luminaires for road and street lighting

Report Number..... : 701590-01/01
Date of issue : 2. 08. 2017
Total number of pages : 37 + 1 Atachement (one page)

Name of Testing Laboratory preparing the Report : Elektrotechnický zkušební ústav (EZÚ)
Pod Lisem 129, 171 02 Praha 71 – Troja, Czech Republic

Applicant's name : LUG Light Factory Sp.z o.o.
Address : Ul. Grozowska 11, 65-127 Zilena Góra, Poland

Test specification:

Standard : IEC 60598-1:2014,
IEC 60598-2-3:2002 + A1:2011
EN 60598-1:2015,
EN 60598-2-3:2003+A1:2011

Test procedure..... : CB, ENEC Scheme

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

Test Report Form No..... : IEC60598_2_3J

Test Report Form(s) Originator : Intertek Semko AB

Master TRF : 2014-09

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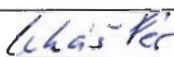
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General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description	Luminaires for road and street lighting	
Trade Mark		
Manufacturer.....	LUG Light Factory Sp.z o.o.	
Model/Type reference	URBINI LED see page 4	
Ratings	220-240 V, 50-60 Hz, 14, 20, 28, 42 W LED, IP 66, IK08, class II	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	CB Testing Laboratory:	
Testing location/ address	Elektrotechnický zkušební ústav (EZÚ) Pod Lisem 129, 171 02 Praha 71 – Troja, Czech Republic	
☐	Associated CB Testing Laboratory:	
Testing location/ address		
Tested by (name, function, signature)	Lukáš Fér	
Approved by (name, function, signature)....	Zdeněk Dvořák	
☐	Testing procedure: TMP/CTF Stage 1:	
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature)....		
☐	Testing procedure: WMT/CTF Stage 2:	
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name, function, signature)..:		
Approved by (name, function, signature)....		
☐	Testing procedure: SMT/CTF Stage 3 or 4:	
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature)..:		
Approved by (name, function, signature)....		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment):

Annex 1: components (one page)

Annex 2: temperature measurements, thermal tests of Section 12 (one page)

Annex 3: photo (two pages)

Annex 4: instruction (two pages)

Attachement 1: Photobiological hazard ČSN EN 62471 blue light hazard only (one page)

Summary of testing:**Tests performed (name of test and test clause): all required tests****Testing location: as above****Summary of compliance with National Differences: ---****List of countries addressed**

☐ The product fulfils the requirements of _____ (insert standard number and edition and delete the text in parenthesis, leave it blank or delete the whole sentence, if not applicable)

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.



Test item particulars	
Classification of installation and use : Luminaires for road and street lighting	
Supply Connection : Wires	
..... :	
Possible test case verdicts:	
- test case does not apply to the test object : N/A (Not applicable)	
- 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. 07. 2017	
Date (s) of performance of tests : 03. 07. 2017 - 02. 08. 2017	
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☒ comma / ☐ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60529:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : ---	
General product information:	
The tested sample was selected in accordance with Annex S of ČSN EN 60958-1. Tested type: LUG URBINI LED 130232.5L232.101 220-240 V, 50/60 Hz, IP 66, class II, ta 45 °C, IK 08	

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict

3.2 (0)	GENERAL TEST REQUIREMENTS		
3.2 (0.1)	Information for luminaire design considered	Standard Yes ☒ No ☐	—
3.2 (0.3)	More sections applicable	Yes ☐ No ☒	—

3.4 (2)	CLASSIFICATION		
3.4 (2.2)	Type of protection	Class II	—
3.4 (2.3)	Degree of protection	IP66	—
3.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes ☒ No ☐	—
3.4 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—
3.4 (-)	Modes of installation of road or street lighting		—
	a) on a pipe	Yes ☒ No ☐	—
	b) on a mast arm	Yes ☒ No ☐	—
	c) on a post top	Yes ☒ No ☐	—
	d) on span or suspension wires	Yes ☐ No ☒	—
	e) on a wall	Yes ☒ No ☐	—

3.5 (3)	MARKING		
3.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
3.5 (3.3)	Additional information		P
	Language of instructions		P
3.5 (3.3.1)	Combination luminaires		N/A
3.5 (3.3.2)	Nominal frequency in Hz		P
3.5 (3.3.3)	Operating temperature		N/A
3.5 (3.3.4)	Symbol or warning notice		N/A
3.5 (3.3.5)	Wiring diagram		P
3.5 (3.3.6)	Special conditions		N/A
3.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
3.5 (3.3.8)	Limitation for semi-luminaires		N/A
3.5 (3.3.9)	Power factor and supply current		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.5 (3.3.10)	Suitability for use indoors		N/A
3.5 (3.3.11)	Luminaires with remote control		N/A
3.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
3.5 (3.3.13)	Specifications of protective shields		N/A
3.5 (3.3.14)	Symbol for nature of supply		N/A
3.5 (3.3.15)	Rated current of socket outlet		N/A
3.5 (3.3.16)	Rough service luminaire		N/A
3.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
3.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
3.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
3.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
3.5 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided		N/A
	Cautionary symbol		N/A
3.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
3.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
3.5 (-)	Additional information in instruction leaflet		
	a) Design attitude		P
	b) Weight		P
	c) Overall dimensions		P
	d) Maximum projected area if applicable		P
	e) Cross-sectional area of wires if applicable		P
	f) Suitability for indoors use		N/A
	g) Dimensions of the compartment		N/A
	h) Torque setting to be applied to bolts or screws		P
	i) Maximum mounting height		P
3.6 (4)	CONSTRUCTION		
3.6 (4.2)	Components replaceable without difficulty		P

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Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.3)	Wireways smooth and free from sharp edges		P
3.6 (4.4)	Lampholders		
3.6 (4.4.1)	Integral lampholder		N/A
3.6 (4.4.2)	Wiring connection		N/A
3.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
3.6 (4.4.4)	Positioning		N/A
	- pressure test (N)		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N)		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
3.6 (4.4.5)	Peak pulse voltage		N/A
3.6 (4.4.6)	Centre contact		N/A
3.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
3.6 (4.4.8)	Lamp connectors		N/A
3.6 (4.4.9)	Caps and bases correctly used		N/A
3.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
3.6 (4.5)	Starter holders		
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
3.6 (4.6)	Terminal blocks		
	Tails		P
	Unsecured blocks		N/A
3.6 (4.7)	Terminals and supply connections		
3.6 (4.7.1)	Contact to metal parts		P
3.6 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
3.6 (4.7.3)	Terminals for supply conductors		N/A
3.6 (4.7.3.1)	Welded method and material		
	- stranded or solid conductor		N/A
	- spot welding		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.8.2		N/A
	- electrical test according to 15.9		N/A
	- heat test according to 15.9.2.3 and 15.9.2.4		N/A
3.6 (4.7.4)	Terminals other than supply connection		N/A
3.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
3.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
3.6 (4.8)	Switches		
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
3.6 (4.9)	Insulating lining and sleeves		
3.6 (4.9.1)	Retainment		N/A
	Method of fixing		—
3.6 (4.9.2)	Insulated linings and sleeves:		
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C)		N/A
3.6 (4.10)	Double or reinforced insulation		
3.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		P
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
3.6 (4.10.2)	Assembly gaps:		
	- not coincidental		N/A
	- no straight access with test probe		N/A
3.6 (4.10.3)	Retainment of insulation:		
	- fixed		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
3.6 (4.11)	Electrical connections and current-carrying parts		
3.6 (4.11.1)	Contact pressure		N/A
3.6 (4.11.2)	Screws:		
	- self-tapping screws		P
	- thread-cutting screws		N/A
3.6 (4.11.3)	Screw locking:		
	- spring washer		P
	- rivets		N/A
3.6 (4.11.4)	Material of current-carrying parts		P
3.6 (4.11.5)	No contact to wood or mounting surface		P
3.6 (4.11.6)	Electro-mechanical contact systems		N/A
3.6 (4.12)	Screws and connections (mechanical) and glands		
3.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:	1,2; Driver cover	P
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
3.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
3.6 (4.12.4)	Locked connections:		
	- fixed arms; torque (Nm).....:		N/A
	- lampholder; torque (Nm)		N/A
	- push-button switches; torque 0,8 Nm.....:		N/A
3.6 (4.12.5)	Screwed glands; force (Nm).....:	2,5	P
3.6 (4.13)	Mechanical strength		
3.6 (4.13.1)	Impact tests:		
	- fragile parts; energy (Nm).....:	Optical part; 5 (IK 08)	P
	- other parts; energy (Nm)	Body, covers; 5 (IK 08)	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.13.3)	Straight test finger		P
3.6 (4.13.4)	Rough service luminaires		
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
3.6 (4.13.6)	Tumbling barrel		N/A
3.6 (4.14)	Suspensions, fixings and means of adjusting		
3.6 (4.14.1)	Mechanical load:		
	A) four times the weight		N/A
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N/A
	Metal rod. diameter (mm)		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
3.6 (4.14.2)	Load to flexible cables		
	Mass (kg)		—
	Stress in conductors (N/mm ²)		N/A
	Mass (kg) of semi-luminaire		—
	Bending moment (Nm) of semi-luminaire		N/A
3.6 (4.14.3)	Adjusting devices:		
	- flexing test; number of cycles		N/A
	- strands broken.....		N/A
	- electric strength test afterwards		N/A
3.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
3.6 (4.14.5)	Guide pulleys		N/A
3.6 (4.14.6)	Strain on socket-outlets		N/A
3.6 (4.15)	Flammable materials		
	- glow-wire test 650°C		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- spacing ≥ 30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		N/A
	- thermal protection		N/A
	- electronic circuits exempted		N/A
3.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
3.6 (4.16)	Luminaires for mounting on normally flammable surfaces		
	No lamp control gear:	(compliance with Section 12)	N/A
3.6 (4.16.1)	Lamp control gear spacing:		
	- spacing 35 mm		P
	- spacing 10 mm		N/A
3.6 (4.16.2)	Thermal protection:		
	- in lamp control gear		P
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		P
3.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
3.6 (4.17)	Drain holes		
	Clearance at least 5 mm		N/A
3.6 (4.18)	Resistance to corrosion		
3.6 (4.18.1)	- rust-resistance		N/A
3.6 (4.18.2)	- season cracking in copper		N/A
3.6 (4.18.3)	- corrosion of aluminium		N/A
3.6 (4.19)	Igniters compatible with ballast		N/A
3.6 (4.20)	Rough service vibration		N/A
3.6 (4.21)	Protective shield		
3.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
3.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.21.3)	No direct path		N/A
3.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment.....:		N/A
3.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
3.6 (4.23)	Semi-luminaires comply Class II		N/A
3.6 (4.24)	Photobiological hazards		
3.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
3.6 (4.24.2)	Retinal blue light hazard	Risk Group 1	
	Luminaires with E_{thr} :		
	a) Fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2....:		N/A
	- marking and instruction according 3.2.23		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
3.6 (4.25)	Mechanical hazard		
	No sharp point or edges		P
3.6 (4.26)	Short-circuit protection		
3.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
3.6 (4.26.2)	Short-circuit test with test chain according 4.26.3		
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
3.6 (4.27)	Terminal blocks with integrated screwless earthing contacts		
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.28)	Fixing of thermal sensing control		
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		
	Max. temperature on adhesive material (°C).....:		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
3.6 (4.29)	Luminaires with non-replaceable light source		
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
3.6 (4.30)	Luminaires with non-user replaceable light source		
	If protective cover provide protection against electric shock and marked with "caution, electric shock risk" symbol:		
	Minimum two fixing means		N/A
3.6 (4.31)	Insulation between circuits		
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		P
3.6 (4.31.1)	SELV circuits		
	Used SELV source		P
	Voltage ≤ ELV		P
	Insulating of SELV circuits from LV supply		P
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		P
	Plugs not able to enter socket-outlets of other voltage systems		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
3.6 (4.31.2)	FELV circuits		
	Used FELV source		N/A
	Voltage $\leq$ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets does not have protective conductor contact		N/A
3.6 (4.31.3)	Other circuits		
	Other circuits insulated from accessible parts according Table X.1		P
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		
	- conductive parts are connected together		N/A
	- test according 7.2.3 of above		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
3.6 (4.32)	Overvoltage protective devices		
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
3.6.1 (-)	At least IP X3 or X5 respectively. IP :		N/A
	Column-integrated luminaires:		
	- parts below 2,5 m. IP :		N/A
	- parts above 2,5 m. IP :	IP66	P

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6.2 (-)	Suspension on span wires		N/A
3.6.3 (-)	Means for attaching the luminaire or external parts to its support appropriate to the weight		N/A
3.6.3.1 (-)	Static load test		
	- drag coefficient	1,2	P
	- loaded area (m ²)	0,03489	P
	- used load (N)	51	P
	- measured deformation (cm/m)	0,1	P
	- no rotation		P
3.6.4 (-)	Adjustable lampholders		N/A
3.6.5 (-)	Luminaires installed above 5 m, glass covers shall be:		
	a) glass that fractures into small pieces (test according to 3.6.5.1), or		N/A
	b) glass having a high impact shock resistance (test according to 3.6.5.2), or		N/A
	c) protected by any means to retain glass fragments		N/A
	For tunnel luminaires 3.6.5.1 apply		N/A
	Method of protection declared by the manufacturer		N/A
3.6.5.1 (-)	Protection by the use of glass that fractures into small pieces		
	- number of particles is more than 40		N/A
3.6.5.2 (-)	Protection by the use of high impact resistant glass		
3.6.5.2.1 (-)	Glass covers have high mechanical strength		N/A
	Test according IEC 62262 with test apparatus according IEC 60068-2-75 with impact energy of 5J on preconditioned sample		N/A
3.6.5.2.2 (-)	Glass covers not break into large pieces		N/A
	- test according 3.6.5.1, number of particles is more than 20		N/A
3.6.6 (-)	Connection compartment of column-integrated luminaire		
	- provides adequate space		N/A
	- means for attachment		N/A
	- means for attachment of metal corrosion-resistant		N/A
3.6.7 (-)	Compliance with ISO standard or other		N/A
3.6.8 (-)	Doors of column-integrated luminaires:		
	- corrosion-resistant		N/A
	- opening only possible for an authorized person		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- impact test 5 Nm		N/A
	- sample show no damage		N/A
3.6.9 (-)	Column-integrated luminaire:		
	- dimension of the cable entry slot (mm)		N/A
	- cable path from the slot to the connection compartment (mm)		N/A
	- cable path free from obstruction that might cause abrasion of the cable		N/A

3.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		
3.7 (11.2)	Creepage distances and clearances	See Table 3.7 (11.2)	
	Working voltage (V)	230	—
	Rated pulse voltage (kV)		—
	Voltage form	Sinusoidal ☒ Non-sinusoidal ☐	—
	PTI	< 600 ☒ ≥ 600 ☐	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☐ Category III ☐	—

3.8 (7)	PROVISION FOR EARTHING		
3.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω		N/A
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a grove		N/A
	Earth makes contact first		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		N/A
3.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N/A
3.8 (7.2.4)	Locking of clamping means		N/A
	Compliance with 4.7.3		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
3.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
3.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
3.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
3.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		N/A
3.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
3.8 (7.2.11)	Earthing core coloured green-yellow		N/A
	Length of earth conductor		N/A
3.8.1 (-)	Attachment prevented from rotation		P

3.9 (14)	SCREW TERMINALS		
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 3)	N/A

3.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 4)	N/A

3.10 (5)	EXTERNAL AND INTERNAL WIRING		
3.10 (5.2)	Supply connection and external wiring		
3.10 (5.2.1)	Means of connection	Prepared wires	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		P
3.10 (5.2.2)	Type of cable	H03VV-F	P
	Nominal cross-sectional area (mm ²)	0,75	P
	Cables equal to IEC 60227 or IEC 60245		P
3.10 (5.2.3)	Type of attachment, X, Y or Z	X	P
3.10 (5.2.5)	Type Z not connected to screws		N/A
3.10 (5.2.6)	Cable entries:		
	- suitable for introduction		N/A
	- adequate degree of protection		N/A

IEC / EN 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
3.10 (5.2.8)	Insulating bushings:		
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
3.10 (5.2.9)	Locking of screwed bushings		N/A
3.10 (5.2.10)	Cord anchorage:		
	- covering protected from abrasion		N/A
	- clear how to be effective		N/A
	- no mechanical or thermal stress		N/A
	- no tying of cables into knots etc.		N/A
	- insulating material or lining		N/A
3.10 (5.2.10.1)	Cord anchorage for type X attachment:		
	a) at least one part fixed		P
	b) types of cable		P
	c) no damaging of the cable		P
	d) whole cable can be mounted		P
	e) no touching of clamping screws		P
	f) metal screw not directly on cable		P
	g) replacement without special tool		P
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
3.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
3.10 (5.2.10.3)	Tests:		
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N).....: 30		P
	- torque test: torque (Nm): 0,08		P
	- displacement ≤ 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- function independent of electrical connection		N/A
3.10 (5.2.11)	External wiring passing into luminaire		N/A
3.10 (5.2.12)	Looping-in terminals		N/A
3.10 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
3.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
3.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Other appliance inlet or connector according relevant IEC standard		N/A
3.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
3.10 (5.2.18)	Used plug in accordance with		
	- IEC 60083		N/A
	- other standard		N/A
3.10 (5.3)	Internal wiring		
3.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		
	- not delivered/ mounting instruction		N/A
	- factory assembled		P
	- socket outlet loaded (A).....:		N/A
	- temperatures:	(see Annex 2)	N/A
	Green-yellow for earth only		N/A
3.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		
	Cross-sectional area (mm ²).....:	0,5	P
	Insulation thickness		P
	Extra insulation added where necessary		N/A
3.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Adequate cross-sectional area and insulation thickness		N/A
3.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
3.10 (5.3.1.4)	Conductors without insulation		N/A
3.10 (5.3.1.5)	SELV current-carrying parts		N/A
3.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
3.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		N/A
3.10 (5.3.3)	Insulating bushings:		
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
3.10 (5.3.4)	Joints and junctions effectively insulated		N/A
3.10 (5.3.5)	Strain on internal wiring		N/A
3.10 (5.3.6)	Wire carriers		P
3.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
3.10.1 (-)	Cord anchorage if applicable		N/A
	- pull test: 25 times; pull (N)..... :		N/A
	- torque test: torque (Nm) :		N/A

3.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		
3.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		N/A
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
3.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
3.11 (8.2.3.a)	Class II luminaire:		
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
3.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
3.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		
	Ordinary luminaire:		
	- touch current		N/A
	- no-load voltage		N/A
	Other than ordinary luminaire:		
	- nominal voltage		N/A
3.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		N/A
3.11 (8.2.5)	Compliance with the standard test finger or relevant probe		N/A
3.11 (8.2.6)	Covers reliably secured		P
3.11 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		N/A
	Portable plug connected luminaire with capacitor		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Other plug connected luminaire with capacitor		N/A
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		N/A

3.12 (12)	ENDURANCE TEST AND THERMAL TEST		
3.12.2 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 3.13		—
3.12 (12.3)	Endurance test:		
	- mounting-position	On pipe	—
	- test temperature (°C)	55	—
	- total duration (h)	240	—
	- supply voltage: Un factor; calculated voltage (V)	253	—
	- lamp used	LED module	—
3.12 (12.3.2)	After endurance test:		
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
3.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
3.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
3.12 (12.6)	Thermal test (failed lamp control gear condition):		
3.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un		—
	- measured mounting surface temperature (°C) at 1,1 Un		N/A
	- calculated mounting surface temperature (°C)		N/A
	- track-mounted luminaires		N/A
3.12 (12.6.2)	Temperature sensing control		
	- case of abnormal conditions		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C).....:		N/A
	- track-mounted luminaires		N/A
3.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		
3.12 (12.7.1)	Luminaire without temperature sensing control		N/A
3.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W		—
	Test according to 12.7.1.1:		
	- case of abnormal conditions.....:		—
	- Ballast failure at supply voltage (V)		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C)		—
	Ball-pressure test.....:		N/A
3.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C)		—
	Ball-pressure test.....:		N/A
3.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions.....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
3.12 (12.7.2)	Luminaire with temperature sensing control		
	- thermal link	Yes ☐ No ☐	—
	- manual reset cut-out.....	Yes ☐ No ☐	—
	- auto reset cut-out	Yes ☐ No ☐	—
	- case of abnormal conditions.....		—
	- highest measured temperature of fixing point/ exposed part (°C):		—
	Ball-pressure test:.....		N/A
3.12.1 (-)	Temperature reduction if for outdoor use only		N/A
3.12.2 (-)	(See above)		—
3.12.3 (-)	Glass covers used within the thermal limits declared by the glass manufacturer		N/A

3.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		
3.13.1 (-)	If IP > IP 20 the order of tests as specified in clause 3.12		
3.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		—
	- classification according to IP	IP66	—
	- mounting position during test	On pipe	—
	- fixing screws tightened; torque (Nm).....		—
	- tests according to clauses	9.2.2, 9.2.7	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		N/A
	d) i) For luminaires without drain holes – no water entry		N/A
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		P
	f) no contact with live parts (IP 2X)		N/A
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	g) no trace of water on part of lamp requiring protection from splashing water		P
	h) no damage of protective shield or glass envelope		P
3.13 (9.3)	Humidity test 48 h		P

3.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
3.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		—
	Insulation resistance (MΩ).....		—
	SELV		
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface	>110 MΩ	P
	- between current-carrying parts and metal parts of the luminaire	>110 MΩ	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		
	- between live parts of different polarity		N/A
	- between live parts and mounting surface	>550 MΩ	P
	- between live parts and metal parts	>550 MΩ	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts	>550 MΩ	P
	- Insulation bushings as described in Section 5		N/A
3.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V)		N/A
	SELV		

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Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface	500 V	P
	- between current-carrying parts and metal parts of the luminaire	500 V	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		
	- between live parts of different polarity		N/A
	- between live parts and mounting surface	2920 V	P
	- between live parts and metal parts	2920 V	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts	2920 V	P
	- Insulation bushings as described in Section 5		N/A
3.14 (10.3)	Touch current (mA)	0,025	P
	Protective conductor current (mA)		N/A

3.15 (13) RESISTANCE TO HEAT, FIRE AND TRACKING			
3.15 (13.2.1)	Ball-pressure test		N/A
3.15 (13.3.1)	Needle-flame test (10 s)		N/A
3.15 (13.3.2)	Glow-wire test (650°C)		N/A
3.15 (13.4)	Proof tracking test (IEC 60112)		N/A