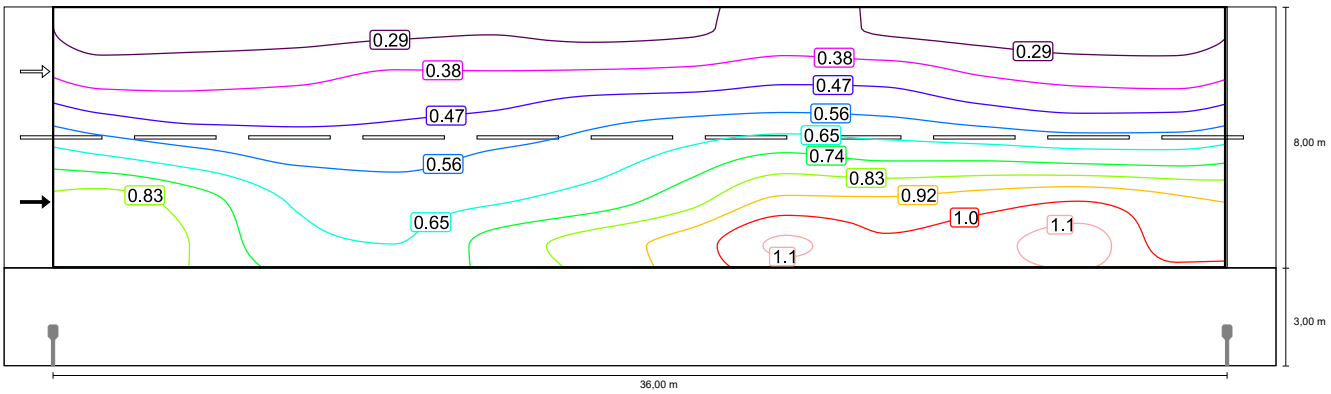
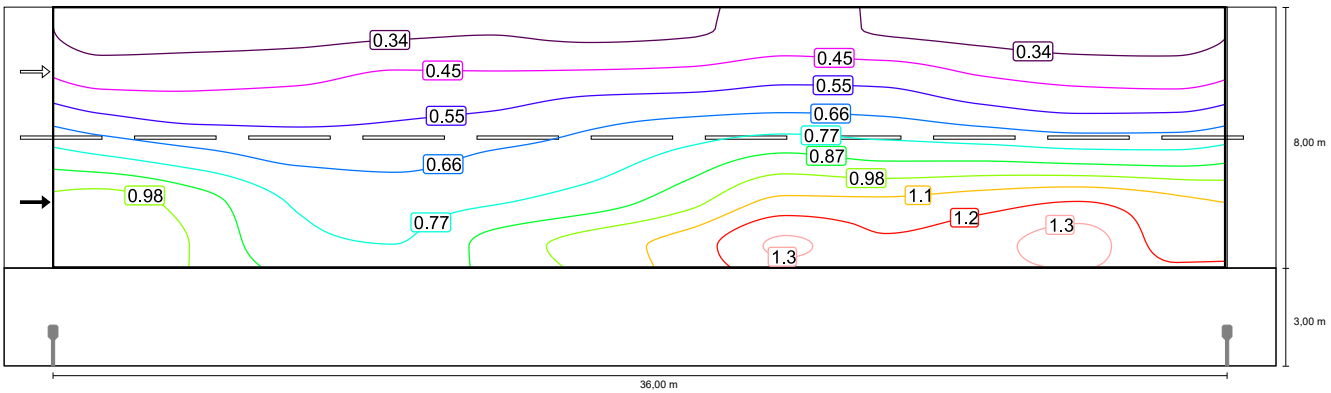
Observator 1

Densitate a luminii cu carosabil uscat

Digitally signed by Galciuc Igor
Date: 2019.01.11 16:02:32 EET
Reason: MoldSign Signature
Location: Moldova

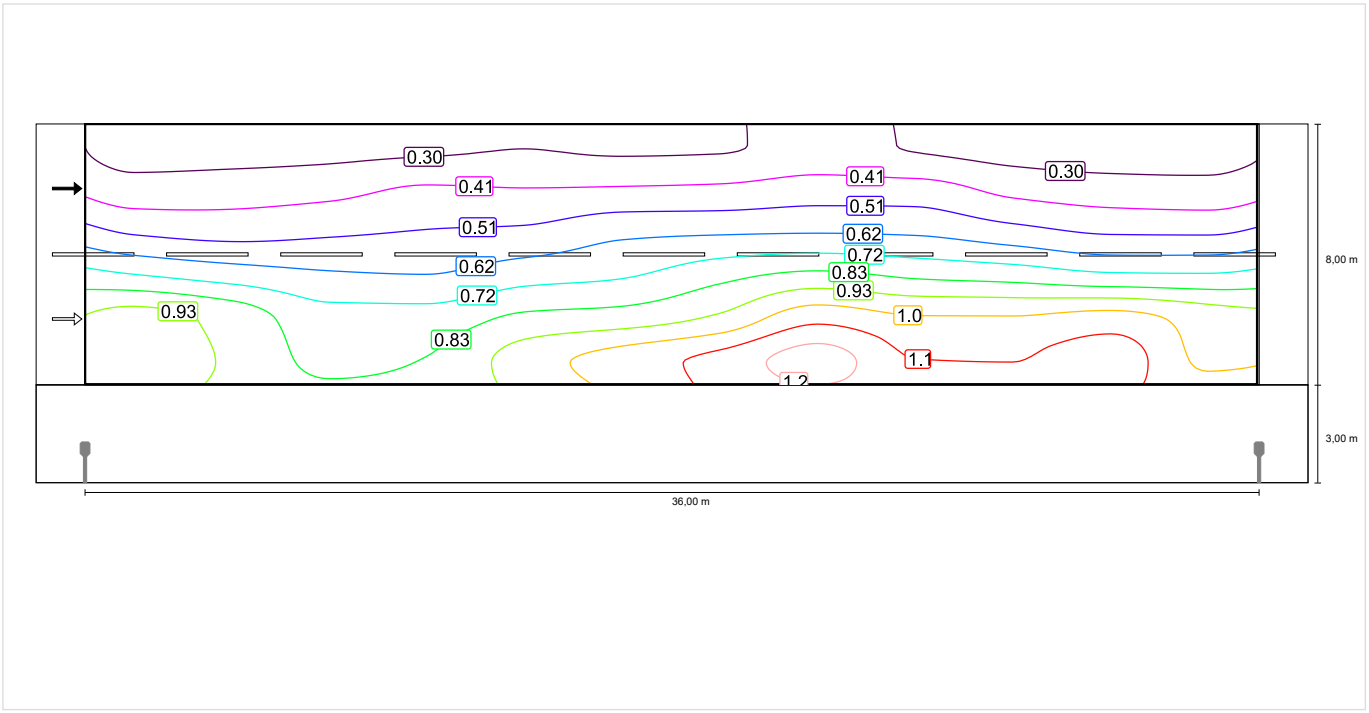


Densitate a luminii cu lampă nouă

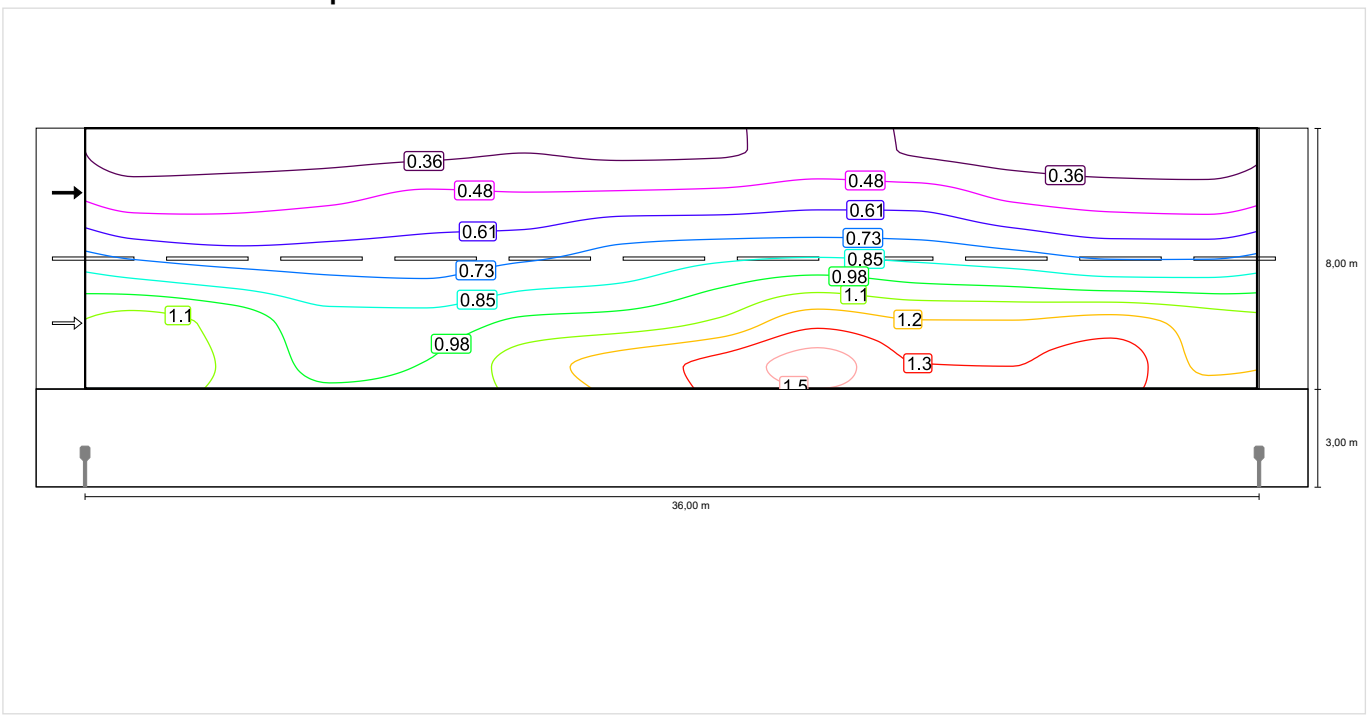


Observator 2

Densitate a luminii cu carosabil uscat



Densitate a luminii cu lampă nouă

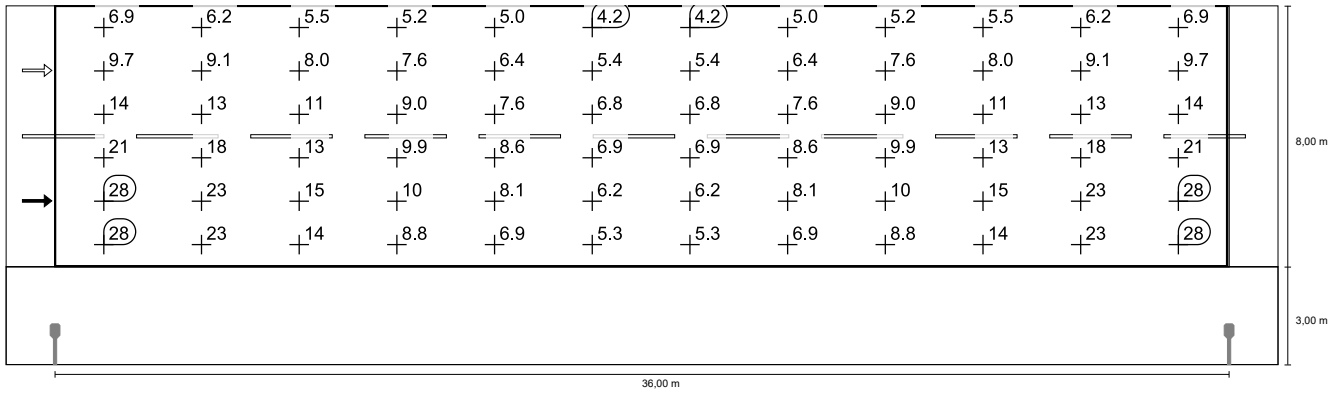


Stradă Centrala sec. 1 (M5)

Factorul de menţinere: 0.85
Raster: 12 x 6 Puncte

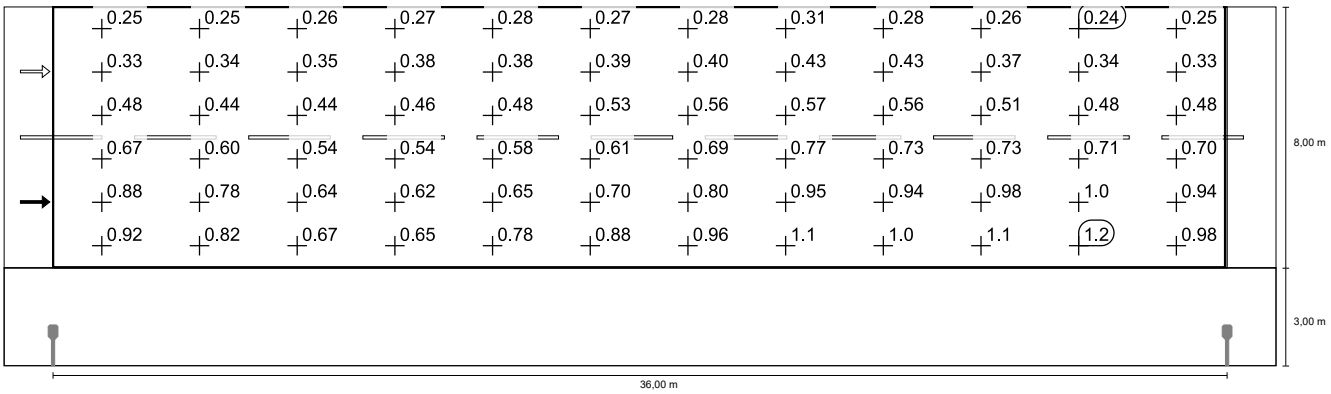
Lm [cd/m²] ≥ 0.50	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 15	EIR ≥ 0.30
✓ 0.59	✓ 0.38	✓ 0.60	✓ 13	✓ 0.34

Iluminare orizontală

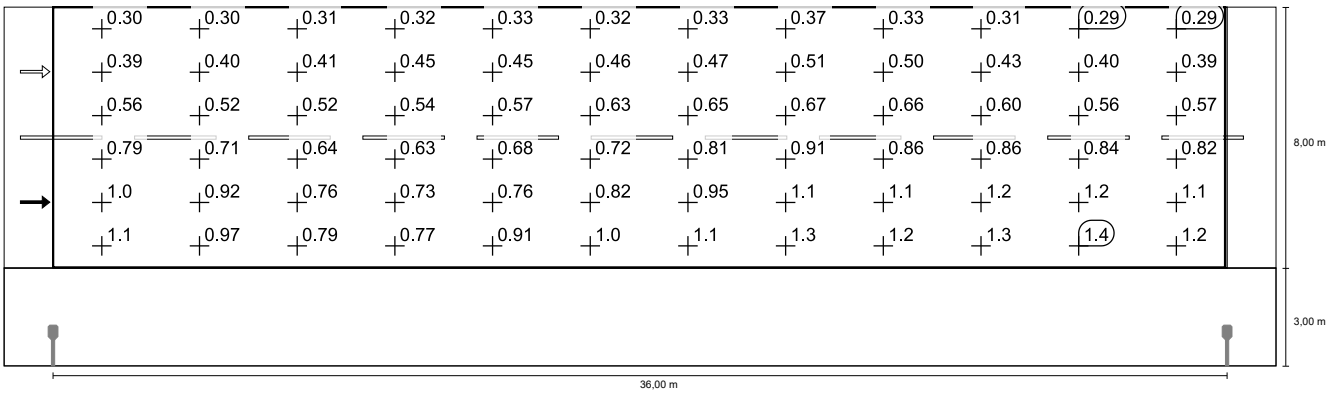


Observator 1

Densitate a luminii cu carosabil uscat

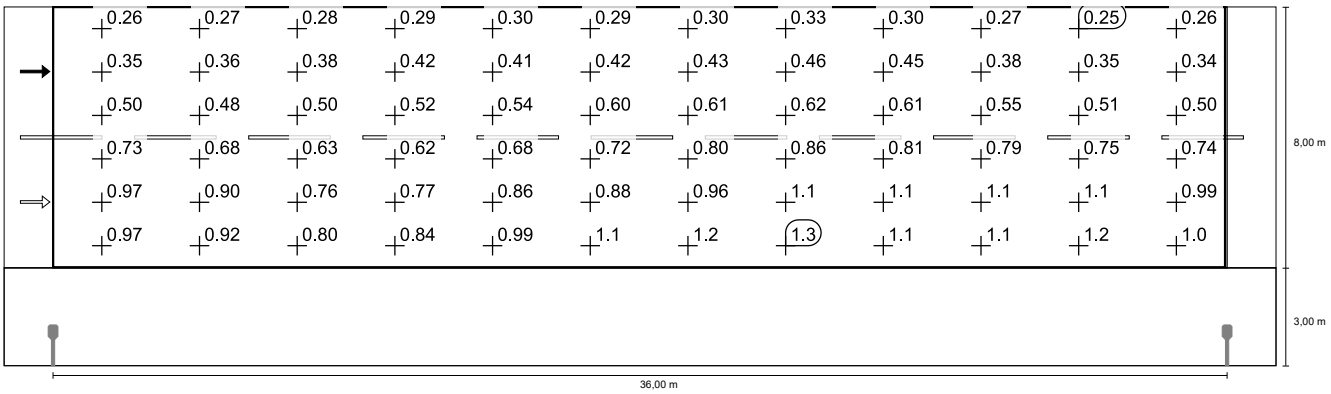


Densitate a luminii cu lampă nouă

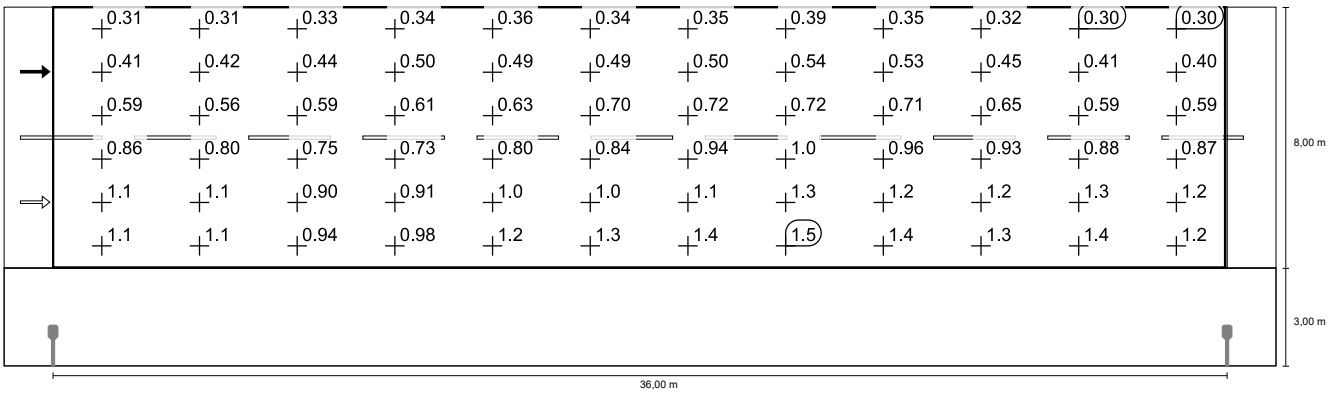


Observator 2

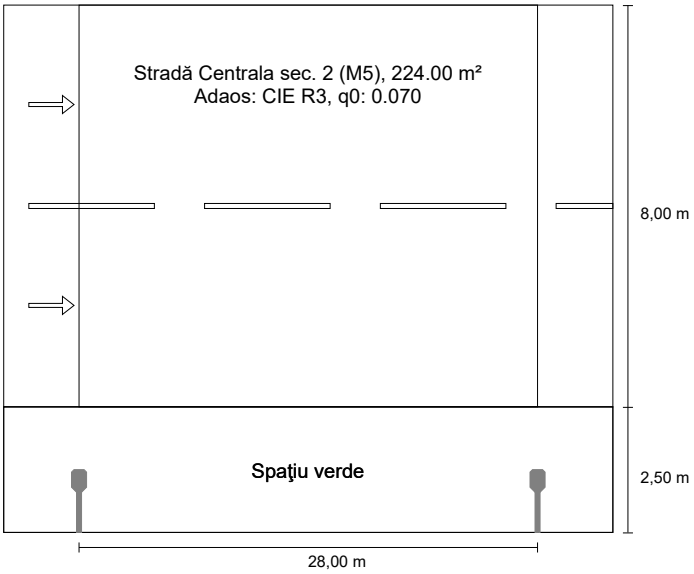
Densitate a luminii cu carosabil uscat



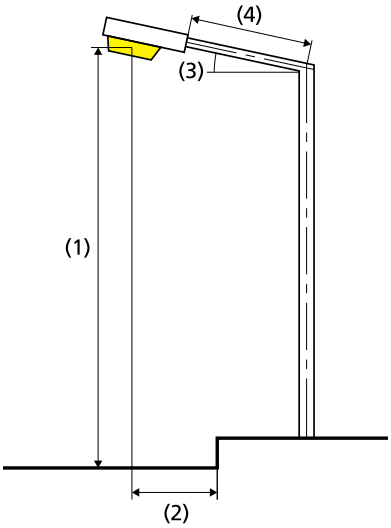
Densitate a luminii cu lampă nouă



Stradă Centrala sec. 2 până la EN 13201:2015



LUG LIGHT FACTORY 130222.5L131.041 4399_1 URBINO 16 LED 740 O5



Lampă:	1xMODUL LED 4000K
Flux luminos (corp de iluminat):	4100.03 lm
Flux luminos (lampă):	4100.00 lm
Ore de lucru	
4000 h:	100.0 %, 37.0 W
W/km:	1332.0
Aranjament:	Pe o parte Jos
Distanţă stâlp:	28.000 m
Înclinare consolă (3):	10.0°
Lungime consolă (4):	1.000 m
Înălţimea deasupra planului util (1):	8.000 m
Ieşirea în consolă a punctului de lumină (2):	-1.498 m

Rezultate pentru câmpurile de evaluare

Factorul de menţinere: 0.85

Stradă Centrala sec. 2 (M5)

Lm [cd/m²] ≥ 0.50	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 15	EIR ≥ 0.30
✓ 0.53	✓ 0.43	✓ 0.79	✓ 10	✓ 0.35

Rezultate pentru indicatorii de eficienţă energetică

Indicatorul densităţii de putere (Dp)	0.017 W/lxm²
Densitatea consumului de energie	
Aranjament: 4399_1 URBINO 16 LED 740 O5 (148.0 kWh/an)	0.7 kWh/m² an

ULR:	0.00
ULOR:	0.00
Valori maxime ale intensităţii luminoase	
La 70°:	747 cd/klm
La 80°:	266 cd/klm
La 90°:	12.5 cd/klm
Clasă intensitate luminoasă:	/

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

Aranjamentul respectă clasa cu indici de orbire D.2

Stradă Centrala sec. 2 (M5)

Factorul de menţinere: 0.85
Raster: 10 x 6 Puncte

Lm [cd/m²] ≥ 0.50	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 15	EIR ≥ 0.30
✓ 0.53	✓ 0.43	✓ 0.79	✓ 10	✓ 0.35

Observatori ataşaţi (2):

Observator	Poziţie [m]	Lm [cd/m²] ≥ 0.50	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 15
Observator 1	(-60.000, 4.500, 1.500)	0.53	0.46	0.80	10
Observator 2	(-60.000, 8.500, 1.500)	0.60	0.43	0.79	6

Stradă Centrala sec. 2 (M5)

Iluminare orizontală [lx]

9.833	6.09	5.71	5.42	**5.33**	5.64	5.64	**5.33**	5.42	5.71	6.09
8.500	8.35	8.10	7.50	7.29	6.76	6.76	7.29	7.50	8.10	8.35
7.167	12.1	11.0	9.47	8.47	7.93	7.93	8.47	9.47	11.0	12.1
5.833	16.4	14.4	11.0	8.65	8.61	8.61	8.65	11.0	14.4	16.4
4.500	**20.4**	16.6	11.9	8.19	7.68	7.68	8.19	11.9	16.6	**20.4**
3.167	16.2	13.5	9.75	6.76	6.42	6.42	6.76	9.75	13.5	16.2
m	**1.400**	**4.200**	**7.000**	**9.800**	**12.600**	**15.400**	**18.200**	**21.000**	**23.800**	**26.600**

Raster: 10 x 6 Puncte

Em [lx]	Emin [lx]	Emax [lx]	g1	g2
9.72	5.33	20.4	0.548	0.262

Observator 1

Densitate a luminii cu carosabil uscat [cd/m²]

9.833	0.26	0.26	0.27	0.29	0.32	0.32	0.27	0.26	**0.25**	**0.25**
8.500	0.33	0.35	0.38	0.41	0.41	0.40	0.38	0.35	0.33	0.33
7.167	0.46	0.45	0.47	0.51	0.52	0.51	0.50	0.46	0.46	0.46
5.833	0.60	0.59	0.55	0.57	0.64	0.66	0.61	0.62	0.63	0.61
4.500	0.76	0.71	0.65	0.64	0.73	0.76	0.70	0.78	0.80	0.78
3.167	0.70	0.70	0.71	0.74	0.82	**0.85**	0.74	0.76	0.76	0.69
m	**1.400**	**4.200**	**7.000**	**9.800**	**12.600**	**15.400**	**18.200**	**21.000**	**23.800**	**26.600**

Raster: 10 x 6 Puncte

Lm [cd/m²]	Lmin [cd/m²]	Lmax [cd/m²]	g1	g2
0.53	0.25	0.85	0.460	0.289

Densitate a luminii cu lampă nouă [cd/m²]

9.833	0.30	0.30	0.32	0.34	0.37	0.37	0.32	0.31	**0.29**	0.30
8.500	0.38	0.41	0.45	0.48	0.48	0.48	0.45	0.41	0.39	0.38
7.167	0.54	0.53	0.55	0.60	0.61	0.60	0.59	0.54	0.54	0.54
5.833	0.71	0.69	0.65	0.67	0.75	0.78	0.71	0.73	0.74	0.72
4.500	0.89	0.84	0.77	0.76	0.86	0.90	0.82	0.92	0.94	0.91
3.167	0.82	0.83	0.84	0.87	0.96	**1.00**	0.87	0.89	0.89	0.81
m	**1.400**	**4.200**	**7.000**	**9.800**	**12.600**	**15.400**	**18.200**	**21.000**	**23.800**	**26.600**

Raster: 10 x 6 Puncte

Lm [cd/m²]	Lmin [cd/m²]	Lmax [cd/m²]	g1	g2
0.63	0.29	1.00	0.460	0.289

Observator 2

Densitate a luminii cu carosabil uscat [cd/m²]

9.833	0.27	0.27	0.29	0.31	0.34	0.34	0.29	0.27	**0.26**	0.27
8.500	0.35	0.38	0.41	0.44	0.43	0.43	0.42	0.37	0.36	0.34
7.167	0.51	0.51	0.52	0.57	0.57	0.55	0.55	0.51	0.49	0.49
5.833	0.69	0.68	0.64	0.67	0.74	0.75	0.68	0.68	0.68	0.67
4.500	0.88	0.86	0.83	0.81	0.87	0.89	0.79	0.87	0.89	0.85
3.167	0.77	0.81	0.84	0.87	0.94	**0.96**	0.81	0.82	0.81	0.75
m	**1.400**	**4.200**	**7.000**	**9.800**	**12.600**	**15.400**	**18.200**	**21.000**	**23.800**	**26.600**

Raster: 10 x 6 Puncte

Lm [cd/m²]	Lmin [cd/m²]	Lmax [cd/m²]	g1	g2
0.60	0.26	0.96	0.429	0.268

Densitate a luminii cu lampă nouă [cd/m²]

9.833	0.31	0.32	0.34	0.36	0.40	0.40	0.34	0.32	**0.30**	0.31
8.500	0.41	0.45	0.48	0.52	0.51	0.50	0.49	0.44	0.42	0.41
7.167	0.60	0.60	0.61	0.68	0.67	0.65	0.65	0.60	0.57	0.58
5.833	0.82	0.81	0.76	0.79	0.87	0.89	0.80	0.80	0.80	0.79
4.500	1.04	1.01	0.97	0.95	1.02	1.05	0.93	1.02	1.05	1.00
3.167	0.90	0.95	0.99	1.02	1.11	**1.13**	0.96	0.97	0.95	0.88
m	**1.400**	**4.200**	**7.000**	**9.800**	**12.600**	**15.400**	**18.200**	**21.000**	**23.800**	**26.600**

Raster: 10 x 6 Puncte

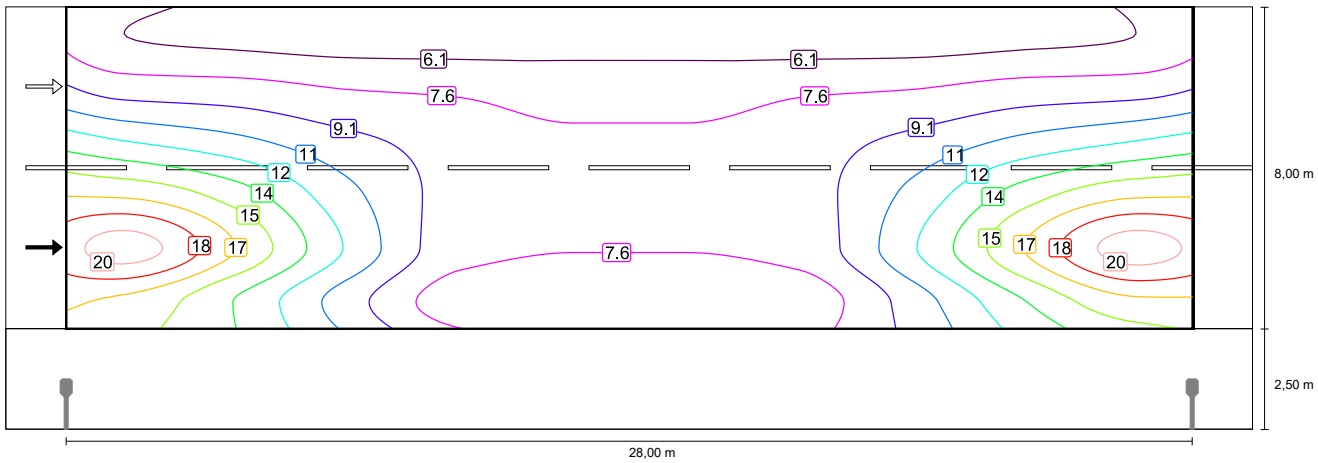
Lm [cd/m²]	Lmin [cd/m²]	Lmax [cd/m²]	g1	g2
0.70	0.30	1.13	0.429	0.268

Stradă Centrala sec. 2 (M5)

Factorul de menţinere: 0.85
Raster: 10 x 6 Puncte

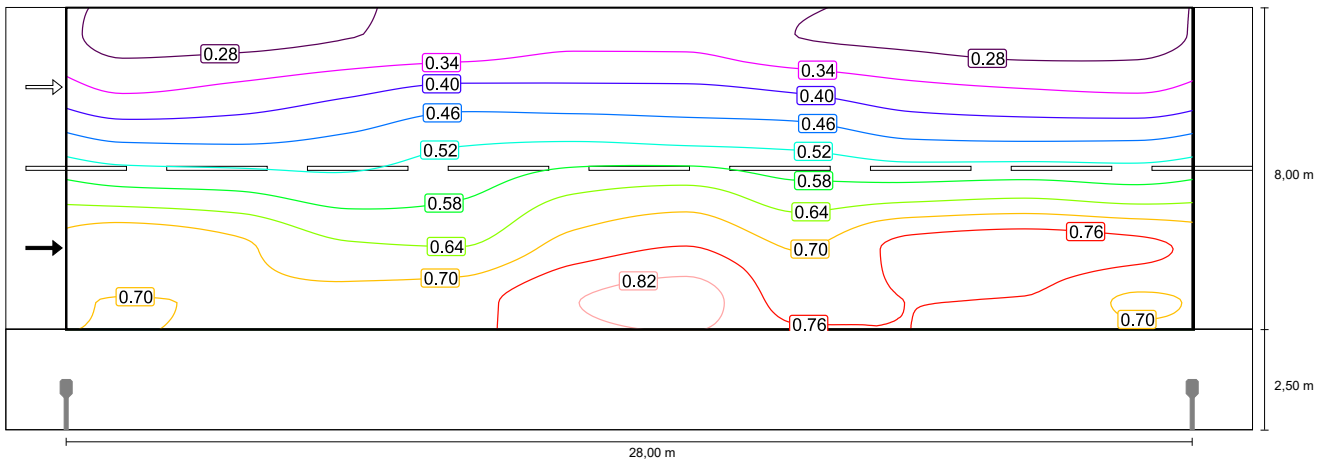
Lm [cd/m²] ≥ 0.50	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 15	EIR ≥ 0.30
✓ 0.53	✓ 0.43	✓ 0.79	✓ 10	✓ 0.35

Iluminare orizontală

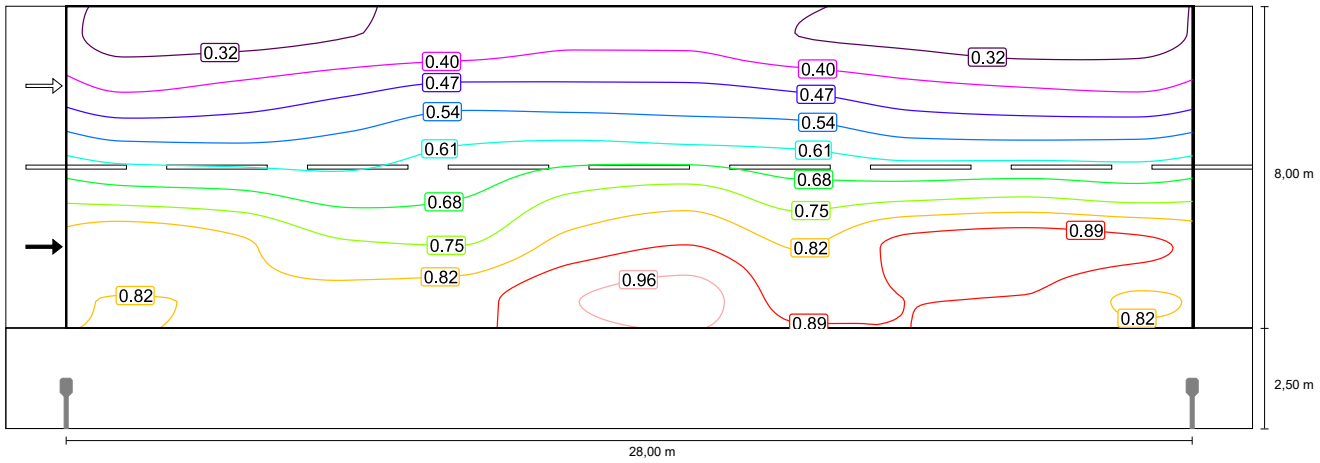


Observator 1

Densitate a luminii cu carosabil uscat

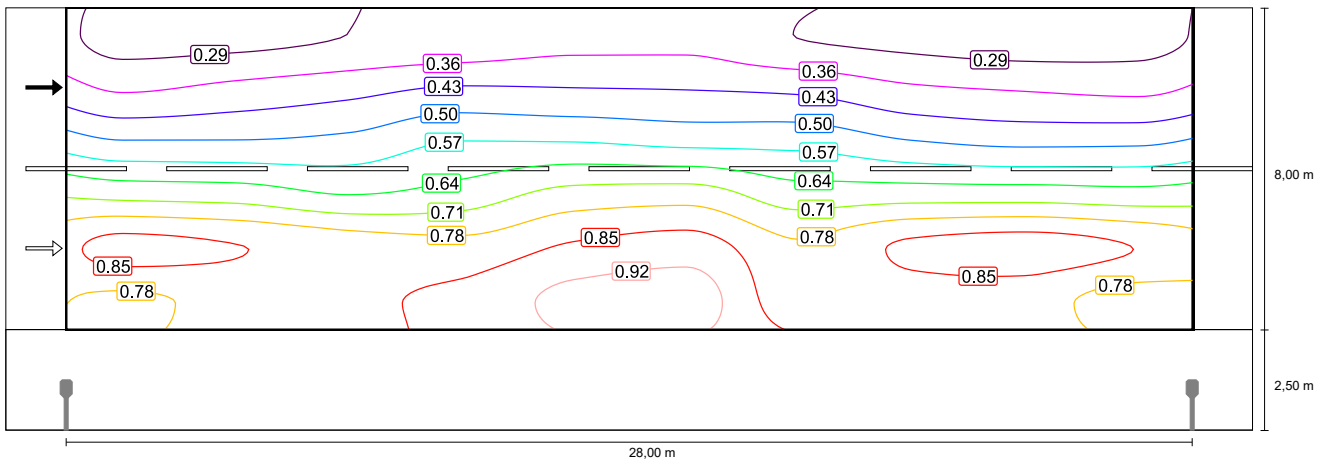


Densitate a luminii cu lampă nouă

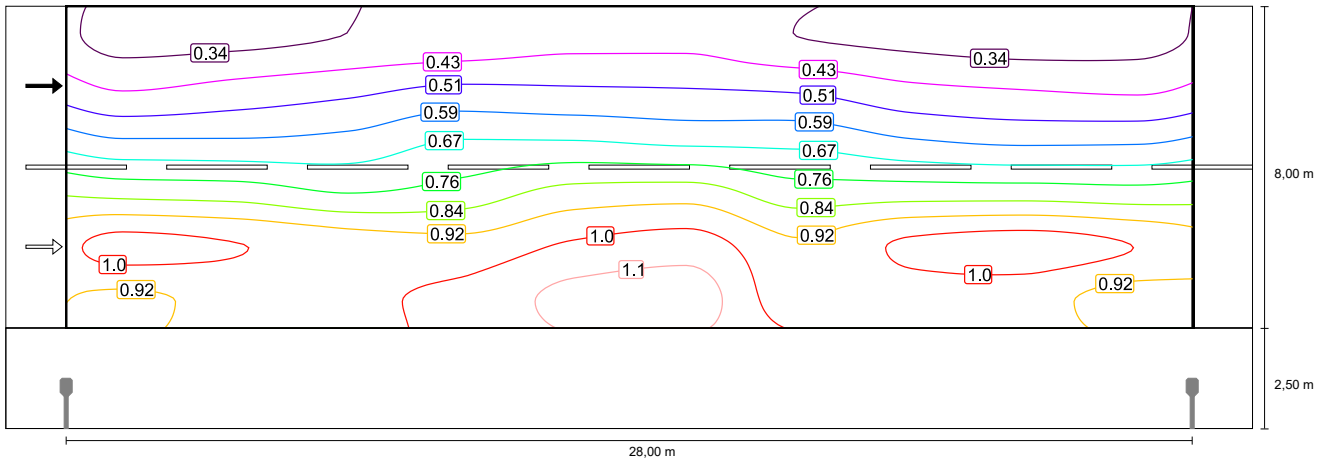


Observator 2

Densitate a luminii cu carosabil uscat



Densitate a luminii cu lampă nouă

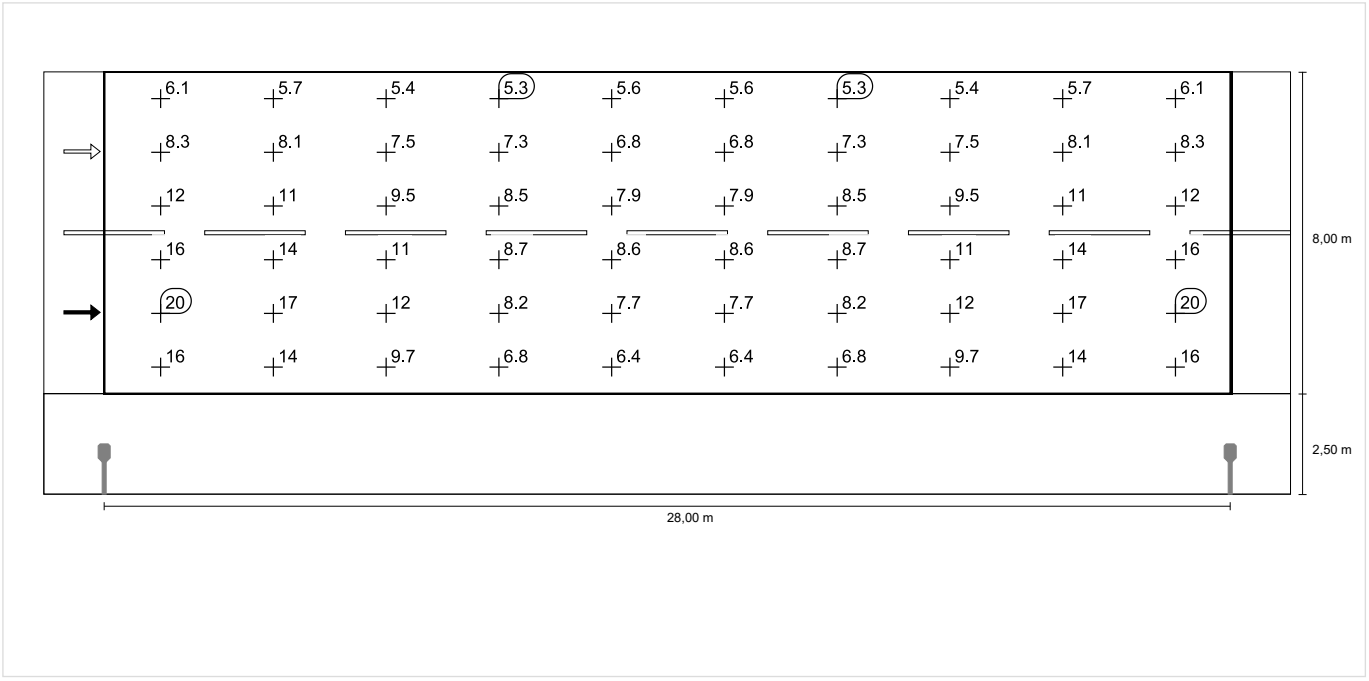


Stradă Centrala sec. 2 (M5)

Factorul de menţinere: 0.85
Raster: 10 x 6 Puncte

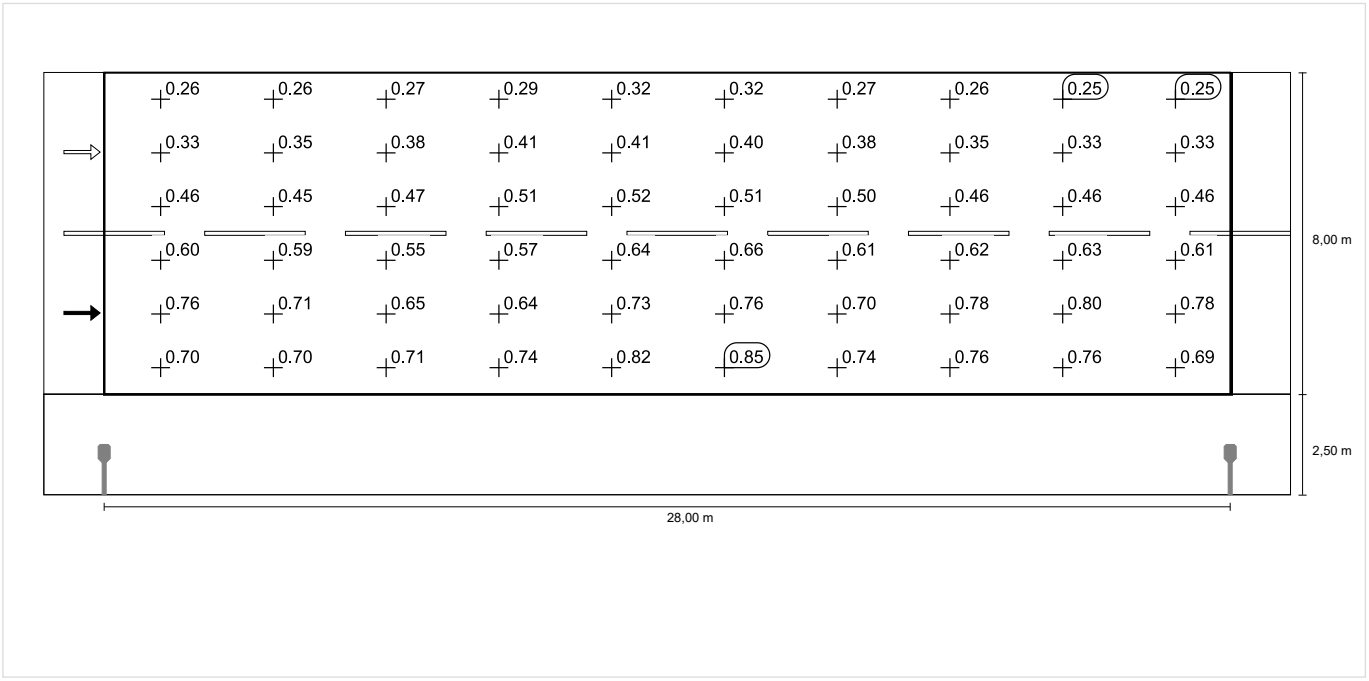
Lm [cd/m²] ≥ 0.50	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 15	EIR ≥ 0.30
✓ 0.53	✓ 0.43	✓ 0.79	✓ 10	✓ 0.35

Iluminare orizontală

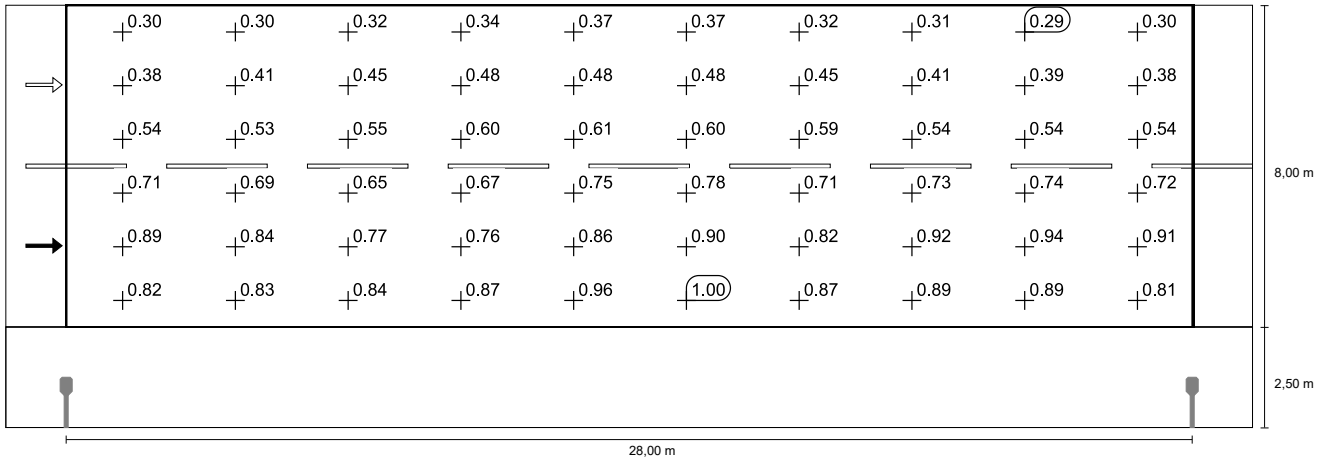


Observator 1

Densitate a luminii cu carosabil uscat

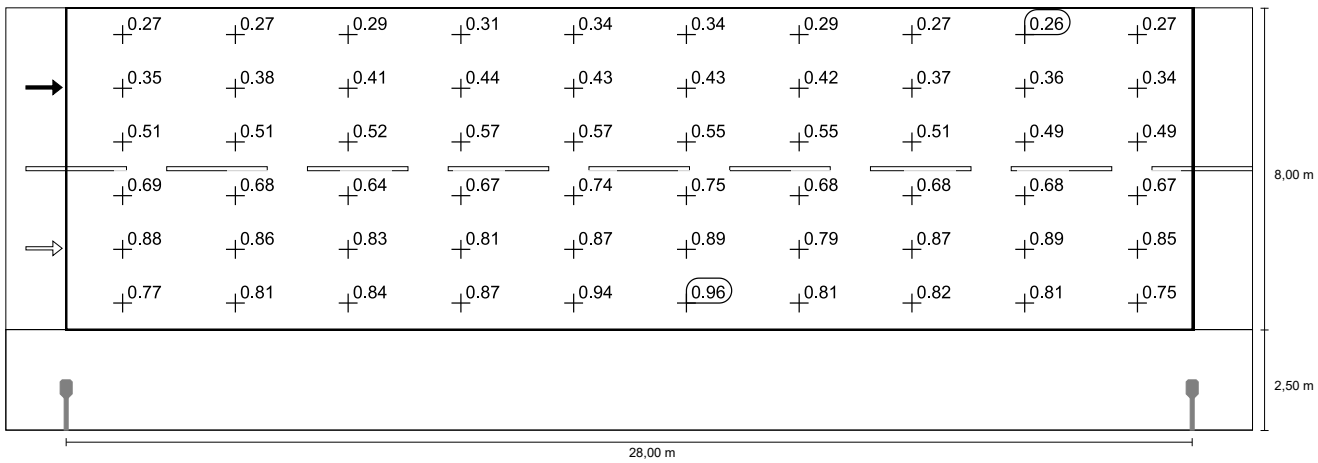


Densitate a luminii cu lampă nouă

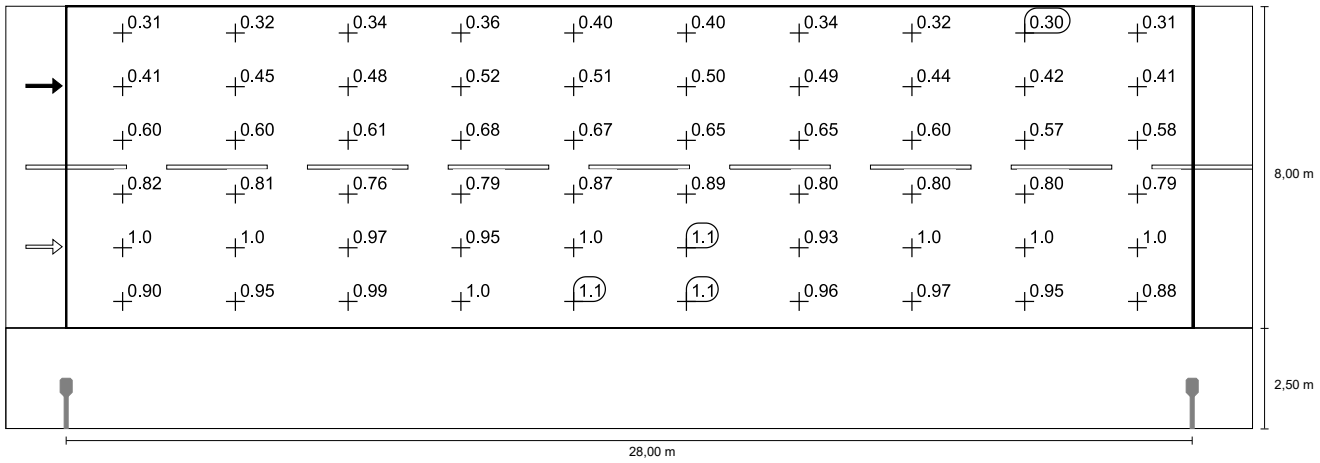


Observator 2

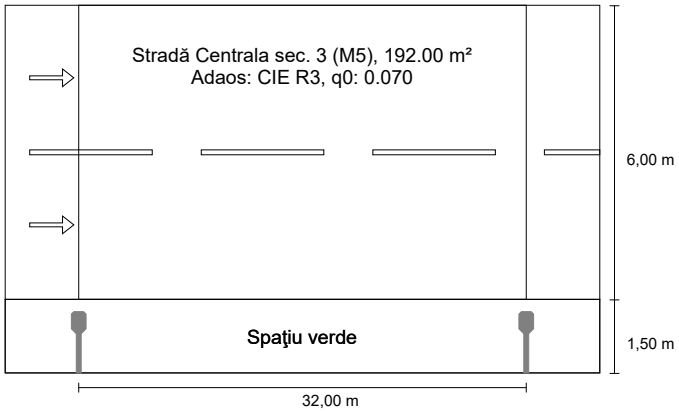
Densitate a luminii cu carosabil uscat



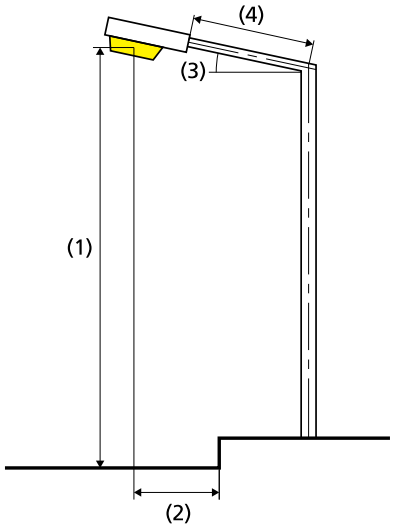
Densitate a luminii cu lampă nouă



Stradă Centrala sec. 3 până la EN 13201:2015



LUG LIGHT FACTORY 130222.5L131.041 4399_1 URBINO 16 LED 740 O5



Rezultate pentru câmpurile de evaluare

Factorul de menţinere: 0.85

Stradă Centrala sec. 3 (M5)

Lm [cd/m²] ≥ 0.50	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 15	EIR ≥ 0.30
✓ 0.54	✓ 0.60	✓ 0.64	✓ 9	✓ 0.33

Rezultate pentru indicatorii de eficienţă energetică

Indicatorul densităţii de putere (Dp)	0.021 W/lxm²
Densitatea consumului de energie	
Aranjament: 4399_1 URBINO 16 LED 740 O5 (148.0 kWh/an)	0.8 kWh/m² an

Lampă:	1xMODUL LED 4000K
Flux luminos (corp de iluminat):	4100.03 lm
Flux luminos (lampă):	4100.00 lm
Ore de lucru	
4000 h:	100.0 %, 37.0 W
W/km:	1147.0
Aranjament:	Pe o parte Jos
Distanţă stâlp:	32.000 m
Înclinare consolă (3):	10.0°
Lungime consolă (4):	1.000 m
Înălţimea deasupra planului util (1):	8.000 m
Ieşirea în consolă a punctului de lumină (2):	-0.498 m

ULR:	0.00
ULOR:	0.00
Valori maxime ale intensităţii luminoase	
La 70°:	747 cd/klm
La 80°:	266 cd/klm
La 90°:	12.5 cd/klm
Clasă intensitate luminoasă:	/

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

Aranjamentul respectă clasa cu indici de orbire D.2

Stradă Centrala sec. 3 (M5)

Factorul de menţinere: 0.85
Raster: 11 x 6 Puncte

Lm [cd/m²] ≥ 0.50	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 15	EIR ≥ 0.30
✓ 0.54	✓ 0.60	✓ 0.64	✓ 9	✓ 0.33

Observatori ataşaţi (2):

Observator	Poziţie [m]	Lm [cd/m²] ≥ 0.50	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 15
Observator 1	(-60.000, 3.000, 1.500)	0.54	0.67	0.64	9
Observator 2	(-60.000, 6.000, 1.500)	0.59	0.60	0.78	9

Stradă Centrala sec. 3 (M5)

Iluminare orizontală [lx]

7.000	12.2	10.7	8.76	7.11	6.47	6.46	6.47	7.11	8.76	10.7	12.2
6.000	15.4	13.2	9.78	7.30	6.82	6.31	6.82	7.30	9.78	13.2	15.4
5.000	19.1	15.9	10.5	7.28	6.33	5.74	6.33	7.28	10.5	15.9	19.1
4.000	**19.4**	15.3	10.3	6.54	5.71	5.04	5.71	6.54	10.3	15.3	**19.4**
3.000	14.9	12.2	8.46	5.61	4.95	4.24	4.95	5.61	8.46	12.2	14.9
2.000	7.92	7.77	6.25	4.52	4.05	**3.44**	4.05	4.52	6.25	7.77	7.92
m	**1.455**	**4.364**	**7.273**	**10.182**	**13.091**	**16.000**	**18.909**	**21.818**	**24.727**	**27.636**	**30.545**

Raster: 11 x 6 Puncte

Em [lx]	Emin [lx]	Emax [lx]	g1	g2
9.29	3.44	19.4	0.370	0.177

Observator 1

Densitate a luminii cu carosabil uscat [cd/m²]

7.000	0.41	0.38	0.38	0.39	0.43	0.48	0.46	0.44	0.42	0.42	0.42
6.000	0.51	0.47	0.42	0.42	0.48	0.52	0.55	0.52	0.53	0.54	0.53
5.000	0.62	0.55	0.46	0.46	0.51	0.56	0.62	0.60	0.64	0.70	0.66
4.000	0.64	0.57	0.50	0.50	0.55	0.62	0.71	0.63	0.70	0.74	0.69
3.000	0.54	0.52	0.49	0.54	0.63	0.68	**0.77**	0.66	0.65	0.65	0.57
2.000	0.37	0.42	0.46	0.55	0.65	0.68	0.75	0.64	0.57	0.46	**0.36**
m	**1.455**	**4.364**	**7.273**	**10.182**	**13.091**	**16.000**	**18.909**	**21.818**	**24.727**	**27.636**	**30.545**

Raster: 11 x 6 Puncte

Lm [cd/m²]	Lmin [cd/m²]	Lmax [cd/m²]	g1	g2
0.54	0.36	0.77	0.667	0.473

Densitate a luminii cu lampă nouă [cd/m²]

7.000	0.49	0.45	0.44	0.46	0.50	0.56	0.54	0.51	0.50	0.50	0.50
6.000	0.60	0.56	0.50	0.49	0.56	0.61	0.65	0.61	0.62	0.64	0.62
5.000	0.73	0.65	0.54	0.54	0.60	0.66	0.73	0.70	0.75	0.82	0.78
4.000	0.76	0.67	0.59	0.59	0.65	0.72	0.83	0.74	0.83	0.87	0.81
3.000	0.64	0.61	0.57	0.63	0.74	0.80	**0.90**	0.77	0.77	0.76	0.67
2.000	**0.43**	0.49	0.54	0.64	0.76	0.80	0.89	0.75	0.67	0.54	**0.43**
m	**1.455**	**4.364**	**7.273**	**10.182**	**13.091**	**16.000**	**18.909**	**21.818**	**24.727**	**27.636**	**30.545**

Raster: 11 x 6 Puncte

Lm [cd/m²]	Lmin [cd/m²]	Lmax [cd/m²]	g1	g2
0.64	0.43	0.90	0.667	0.473

Observator 2

Densitate a luminii cu carosabil uscat [cd/m²]

7.000	0.44	0.41	0.41	0.42	0.46	0.51	0.49	0.47	0.45	0.43	0.44
6.000	0.54	0.51	0.46	0.47	0.52	0.58	0.60	0.56	0.56	0.57	0.55
5.000	0.66	0.62	0.53	0.53	0.58	0.64	0.70	0.65	0.68	0.73	0.69
4.000	0.70	0.64	0.58	0.60	0.67	0.71	0.79	0.68	0.74	0.78	0.72
3.000	0.60	0.59	0.59	0.64	0.73	0.78	**0.85**	0.72	0.70	0.67	0.60
2.000	**0.36**	0.41	0.46	0.55	0.67	0.71	0.78	0.64	0.58	0.46	0.37
m	**1.455**	**4.364**	**7.273**	**10.182**	**13.091**	**16.000**	**18.909**	**21.818**	**24.727**	**27.636**	**30.545**

Raster: 11 x 6 Puncte

Lm [cd/m²]	Lmin [cd/m²]	Lmax [cd/m²]	g1	g2
0.59	0.36	0.85	0.602	0.418

Densitate a luminii cu lampă nouă [cd/m²]

7.000	0.51	0.49	0.48	0.50	0.54	0.60	0.57	0.55	0.53	0.51	0.51
6.000	0.63	0.59	0.55	0.56	0.61	0.68	0.70	0.66	0.66	0.67	0.65
5.000	0.78	0.73	0.63	0.62	0.68	0.76	0.82	0.76	0.80	0.86	0.81
4.000	0.83	0.75	0.68	0.71	0.79	0.84	0.93	0.80	0.88	0.92	0.85
3.000	0.70	0.69	0.69	0.75	0.86	0.92	**1.00**	0.84	0.82	0.79	0.71
2.000	**0.42**	0.48	0.54	0.65	0.78	0.83	0.92	0.76	0.68	0.54	0.43
m	**1.455**	**4.364**	**7.273**	**10.182**	**13.091**	**16.000**	**18.909**	**21.818**	**24.727**	**27.636**	**30.545**

Raster: 11 x 6 Puncte

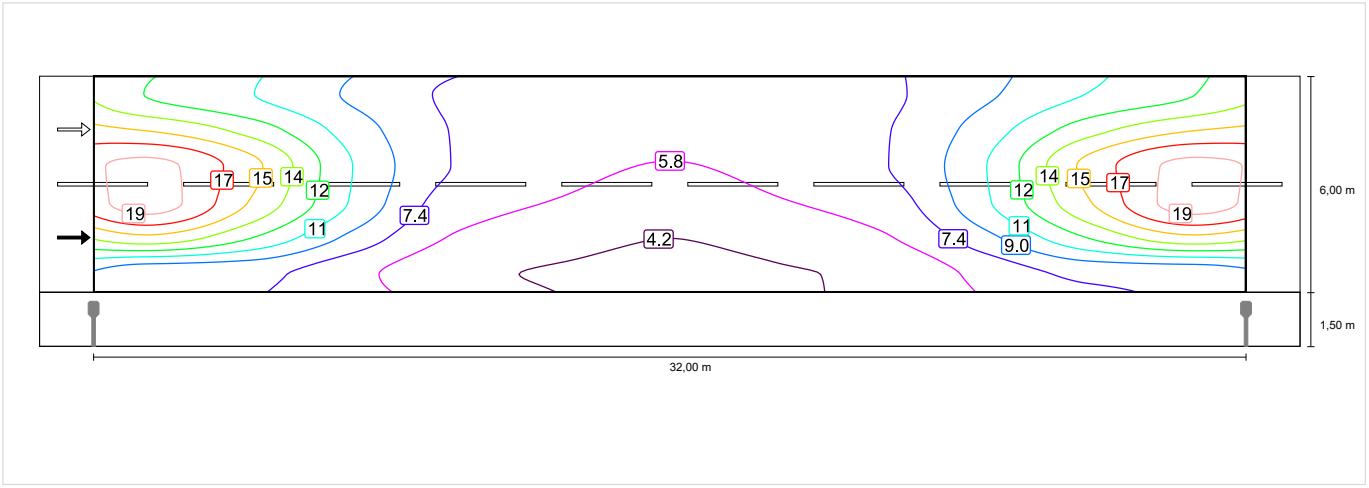
Lm [cd/m²]	Lmin [cd/m²]	Lmax [cd/m²]	g1	g2
0.69	0.42	1.00	0.602	0.418

Stradă Centrala sec. 3 (M5)

Factorul de menţinere: 0.85
Raster: 11 x 6 Puncte

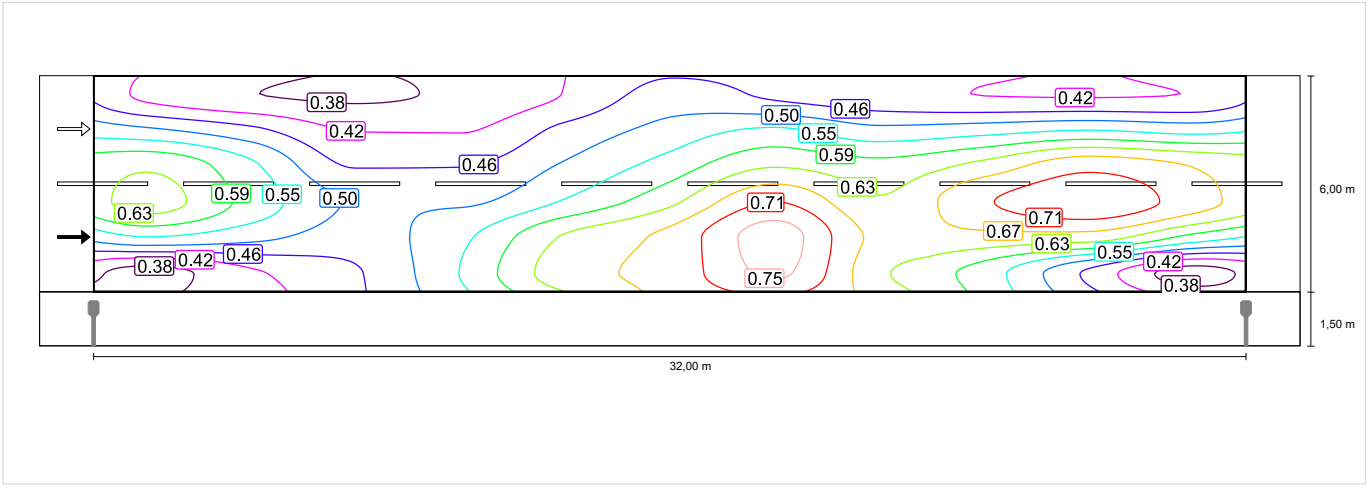
Lm [cd/m²] ≥ 0.50	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 15	EIR ≥ 0.30
✓ 0.54	✓ 0.60	✓ 0.64	✓ 9	✓ 0.33

Iluminare orizontală

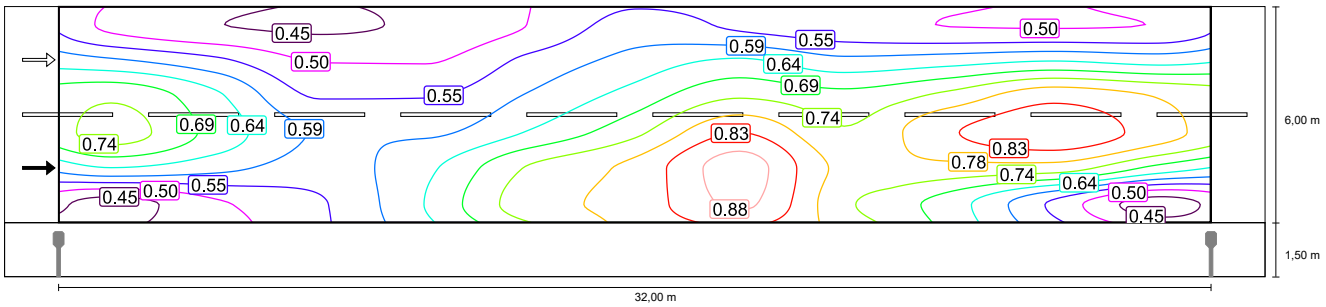


Observator 1

Densitate a luminii cu carosabil uscat

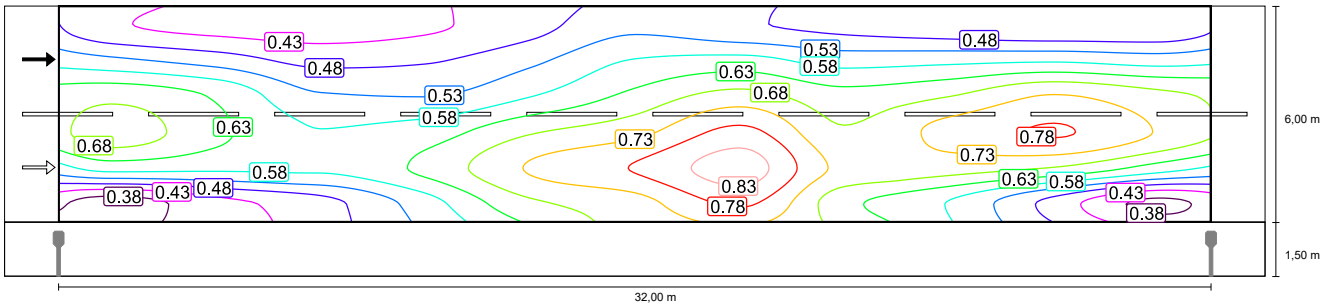


Densitate a luminii cu lampă nouă

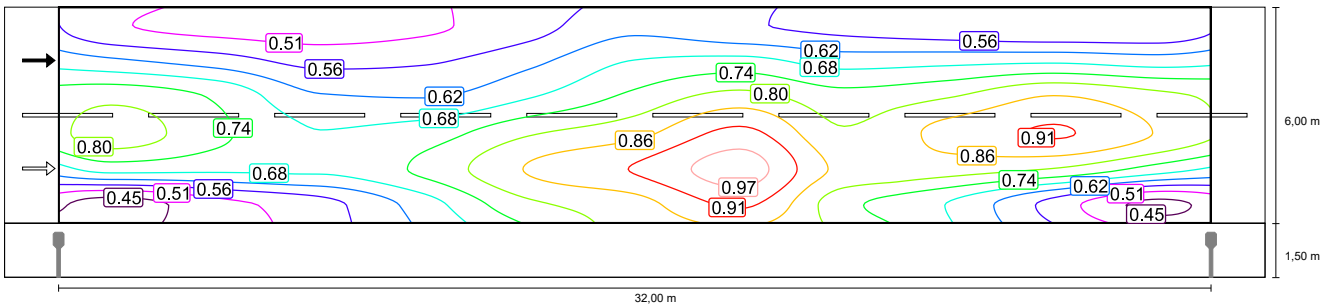


Observator 2

Densitate a luminii cu carosabil uscat



Densitate a luminii cu lampă nouă

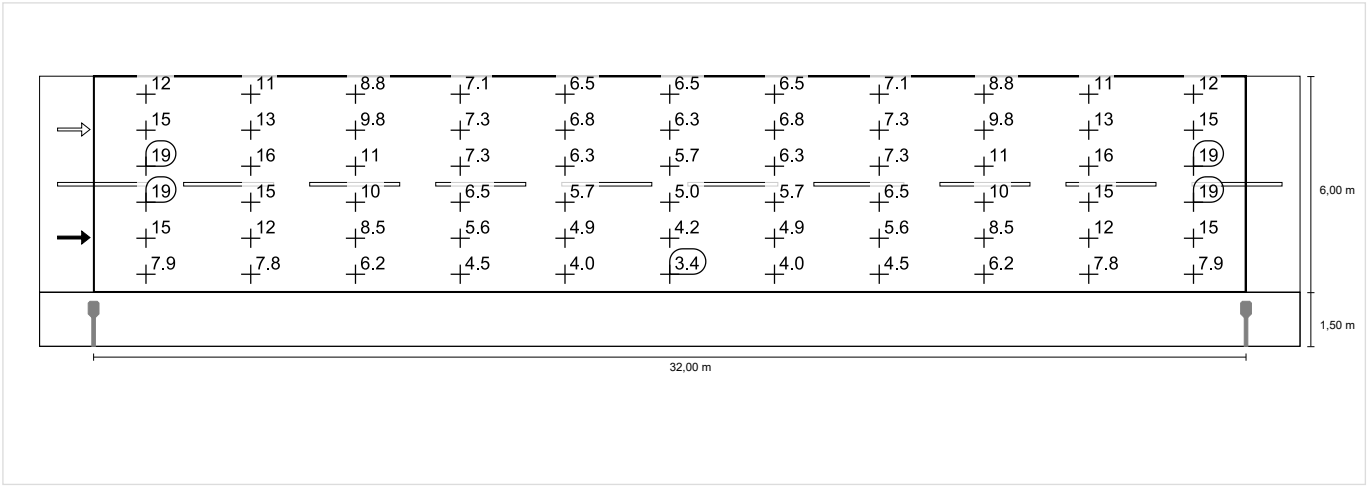


Stradă Centrala sec. 3 (M5)

Factorul de menţinere: 0.85
Raster: 11 x 6 Puncte

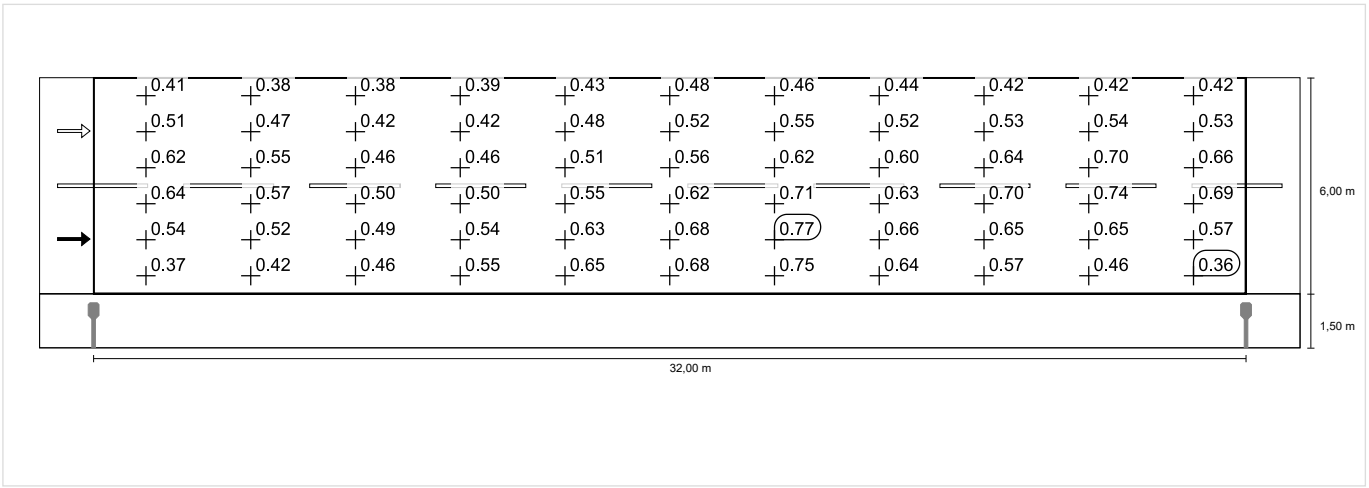
Lm [cd/m²] ≥ 0.50	Uo ≥ 0.35	UI ≥ 0.40	TI [%] ≤ 15	EIR ≥ 0.30
✓ 0.54	✓ 0.60	✓ 0.64	✓ 9	✓ 0.33

Iluminare orizontală

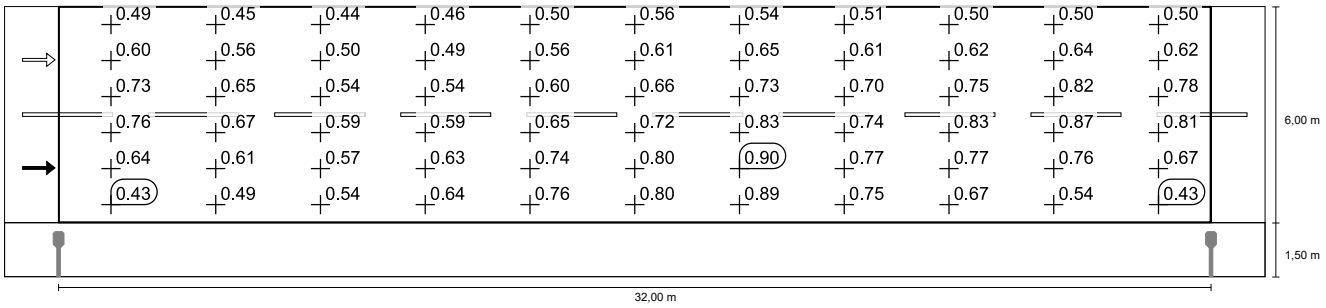


Observator 1

Densitate a luminii cu carosabil uscat

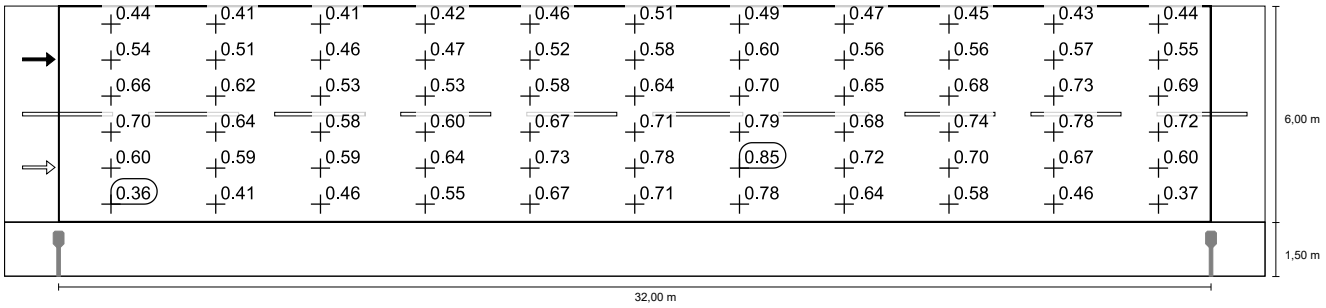


Densitate a luminii cu lampă nouă

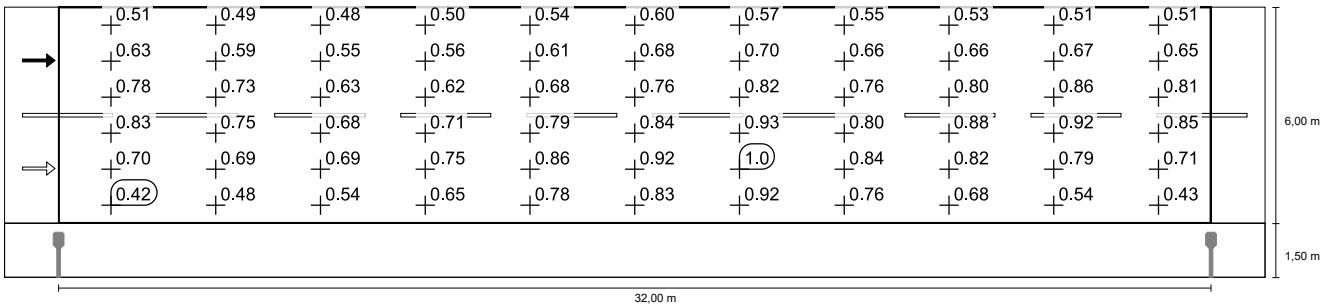


Observator 2

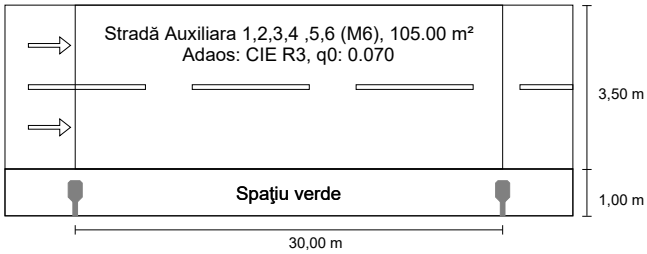
Densitate a luminii cu carosabil uscat



Densitate a luminii cu lampă nouă



Stradă Auxiliara 1,2,3,4 ,5,6 până la EN 13201:2015



Rezultate pentru câmpurile de evaluare
Factorul de menţinere: 0.85

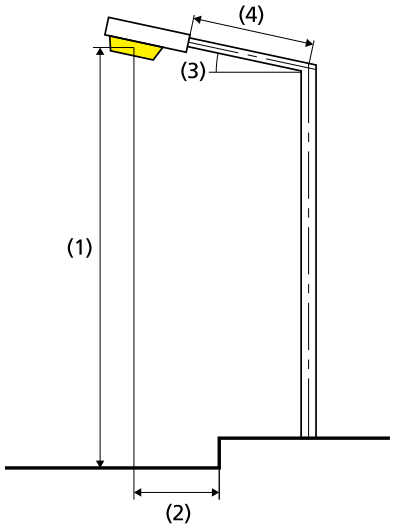
Stradă Auxiliara 1,2,3,4 ,5,6 (M6)

Lm [cd/m²] ≥ 0.30	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 20	EIR ≥ 0.30
✓ 0.45	✓ 0.72	✓ 0.75	✓ 10	✓ 0.49

Rezultate pentru indicatorii de eficienţă energetică

Indicatorul densităţii de putere (Dp)	0.035 W/lxm²
Densitatea consumului de energie	
Aranjament: 4768 URBINI LED 740 O10 500 (80.0 kWh/an)	0.8 kWh/m² an

LUG LIGHT FACTORY 130232.5L041.111 4768 URBINI LED 740 O10 500



Lampă:	1xLED 4000K
Flux luminos (corp de iluminat):	2400.56 lm
Flux luminos (lampă):	2400.00 lm
Ore de lucru	
4000 h:	100.0 %, 20.0 W
W/km:	660.0
Aranjament:	Pe o parte Jos
Distanţă stâlp:	30.000 m
Înclinare consolă (3):	10.0°
Lungime consolă (4):	0.489 m
Înălţimea deasupra planului util (1):	8.000 m
Ieşirea în consolă a punctului de lumină (2):	-0.498 m
ULR:	0.00
ULOR:	0.00
Valori maxime ale intensităţii luminoase	
La 70°:	1130 cd/klm
La 80°:	610 cd/klm
La 90°:	33.1 cd/klm
Clasă intensitate luminoasă:	/

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

Aranjamentul respectă clasa cu indici de orbire D.0

Stradă Auxiliara 1,2,3,4 ,5,6 (M6)

Factorul de menţinere: 0.85
Raster: 10 x 6 Puncte

Lm [cd/m²] ≥ 0.30	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 20	EIR ≥ 0.30
✓ 0.45	✓ 0.72	✓ 0.75	✓ 10	✓ 0.49

Observatori ataşaţi (2):

Observator	Poziţie [m]	Lm [cd/m²] ≥ 0.30	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 20
Observator 1	(-60.000, 1.875, 1.500)	0.45	0.76	0.75	9
Observator 2	(-60.000, 3.625, 1.500)	0.48	0.72	0.84	10

Stradă Auxiliara 1,2,3,4 ,5,6 (M6)

Iluminare orizontală [lx]

4.208	10.1	8.35	6.64	5.68	4.61	4.61	5.68	6.64	8.35	10.1
3.625	**10.2**	8.20	6.25	5.22	4.25	4.25	5.22	6.25	8.20	**10.2**
3.042	9.46	7.73	5.44	4.71	3.86	3.86	4.71	5.44	7.73	9.46
2.458	7.63	6.17	4.52	4.16	3.45	3.45	4.16	4.52	6.17	7.63
1.875	5.15	4.46	3.53	3.57	3.01	3.01	3.57	3.53	4.46	5.15
1.292	3.28	3.31	2.92	3.10	**2.64**	**2.64**	3.10	2.92	3.31	3.28
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
5.39	2.64	10.2	0.490	0.258

Observator 1

Densitate a luminii cu carosabil uscat [cd/m²]

4.208	0.42	0.39	0.39	0.40	0.41	0.46	0.51	0.46	0.44	0.44
3.625	0.45	0.43	0.41	0.41	0.43	0.48	**0.52**	0.47	0.47	0.46
3.042	0.45	0.45	0.43	0.45	0.45	0.50	**0.52**	0.45	0.47	0.45
2.458	0.43	0.44	0.45	0.48	0.48	0.51	**0.52**	0.42	0.44	0.43
1.875	0.41	0.44	0.46	0.49	0.49	0.51	0.51	0.39	0.38	0.39
1.292	0.38	0.44	0.47	0.50	0.49	0.49	0.48	0.36	**0.34**	**0.34**
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

Lm [cd/m²]	Lmin [cd/m²]	Lmax [cd/m²]	g1	g2
0.45	0.34	0.52	0.763	0.653

Densitate a luminii cu lampă nouă [cd/m²]

4.208	0.49	0.46	0.46	0.48	0.48	0.54	0.60	0.54	0.52	0.51
3.625	0.53	0.50	0.48	0.48	0.51	0.57	0.61	0.55	0.55	0.54
3.042	0.53	0.54	0.51	0.53	0.53	0.59	0.61	0.52	0.56	0.53
2.458	0.51	0.52	0.53	0.56	0.57	0.60	**0.62**	0.50	0.51	0.50
1.875	0.48	0.52	0.54	0.57	0.58	0.60	0.59	0.46	0.45	0.46
1.292	0.45	0.52	0.55	0.58	0.58	0.58	0.57	0.42	**0.40**	**0.40**
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

Lm [cd/m²]	Lmin [cd/m²]	Lmax [cd/m²]	g1	g2
0.53	0.40	0.62	0.763	0.653

Observator 2

Densitate a luminii cu carosabil uscat [cd/m²]

4.208	0.46	0.44	0.42	0.43	0.45	0.49	0.54	0.48	0.47	0.46
3.625	0.49	0.48	0.46	0.46	0.47	0.53	0.55	0.49	0.49	0.48
3.042	0.50	0.50	0.49	0.50	0.50	0.55	**0.56**	0.48	0.51	0.49
2.458	0.50	0.52	0.51	0.53	0.53	**0.56**	**0.56**	0.46	0.47	0.47
1.875	0.46	0.50	0.52	0.54	0.53	0.54	0.54	0.42	0.41	0.42
1.292	0.38	0.45	0.48	0.50	0.50	0.50	0.49	0.37	**0.35**	0.36
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

Lm [cd/m²]	Lmin [cd/m²]	Lmax [cd/m²]	g1	g2
0.48	0.35	0.56	0.723	0.622

Densitate a luminii cu lampă nouă [cd/m²]

4.208	0.54	0.52	0.49	0.51	0.52	0.58	0.63	0.57	0.55	0.54
3.625	0.58	0.57	0.55	0.54	0.55	0.62	0.65	0.58	0.58	0.56
3.042	0.59	0.59	0.57	0.59	0.59	0.64	**0.66**	0.57	0.60	0.57
2.458	0.59	0.61	0.60	0.62	0.62	0.65	**0.66**	0.54	0.56	0.56
1.875	0.54	0.59	0.61	0.63	0.62	0.64	0.63	0.49	0.48	0.49
1.292	0.45	0.53	0.57	0.59	0.58	0.59	0.57	0.43	**0.41**	0.42
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

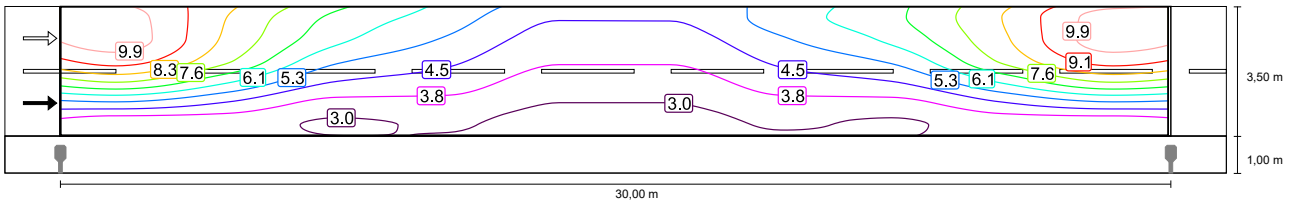
Lm [cd/m²]	Lmin [cd/m²]	Lmax [cd/m²]	g1	g2
0.57	0.41	0.66	0.723	0.622

Stradă Auxiliara 1,2,3,4 ,5,6 (M6)

Factorul de menţinere: 0.85
Raster: 10 x 6 Puncte

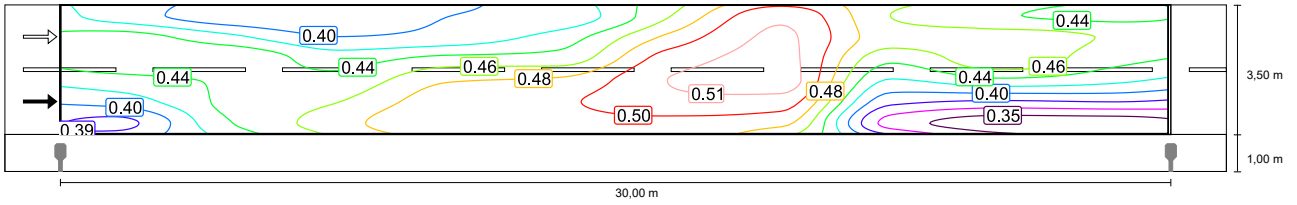
Lm [cd/m²] ≥ 0.30	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 20	EIR ≥ 0.30
✔ 0.45	✔ 0.72	✔ 0.75	✔ 10	✔ 0.49

Iluminare orizontală

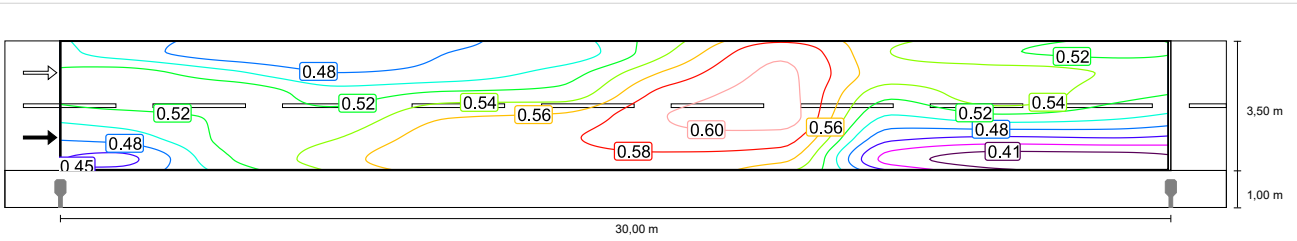


Observator 1

Densitate a luminii cu carosabil uscat

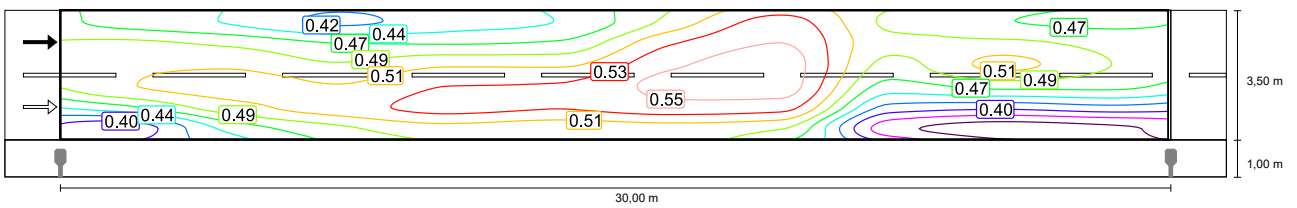


Densitate a luminii cu lampă nouă

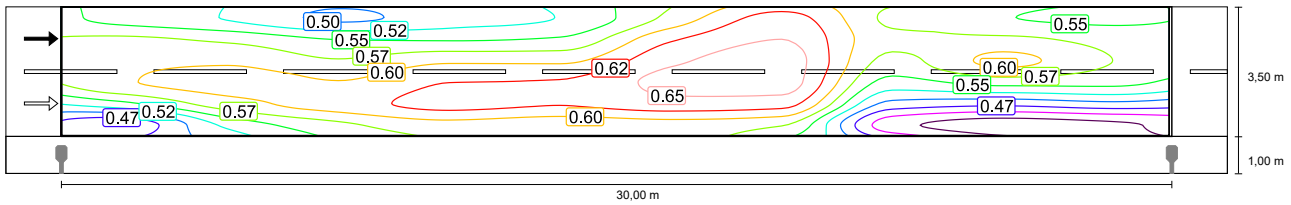


Observator 2

Densitate a luminii cu carosabil uscat



Densitate a luminii cu lampă nouă

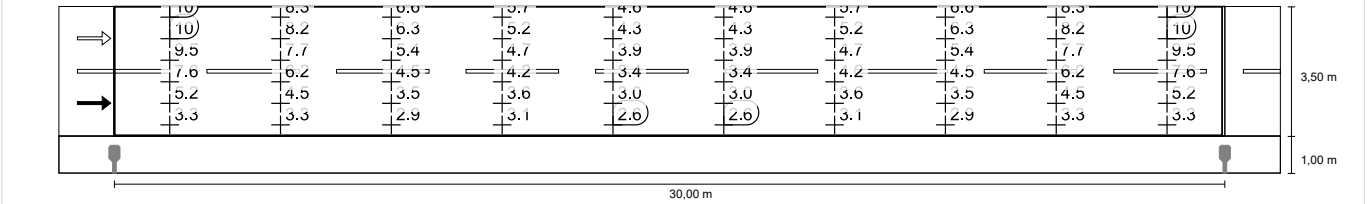


Stradă Auxiliara 1,2,3,4 ,5,6 (M6)

Factorul de menţinere: 0.85
Raster: 10 x 6 Puncte

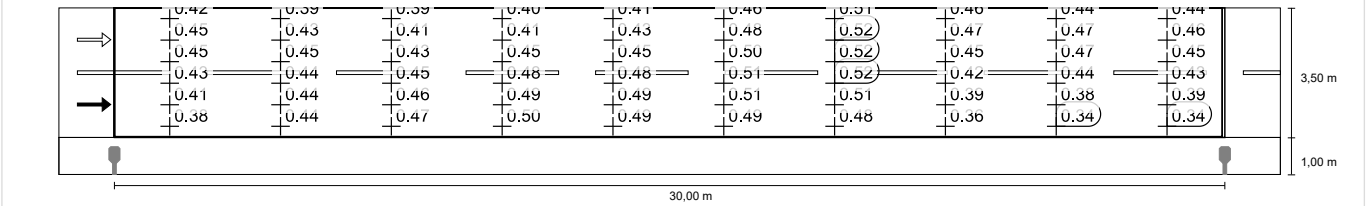
Lm [cd/m²] ≥ 0.30	Uo ≥ 0.35	Ul ≥ 0.40	TI [%] ≤ 20	EIR ≥ 0.30
✓ 0.45	✓ 0.72	✓ 0.75	✓ 10	✓ 0.49

Iluminare orizontală

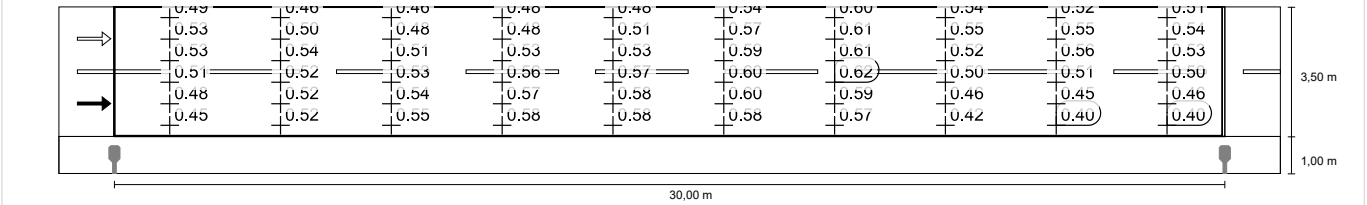


Observator 1

Densitate a luminii cu carosabil uscat

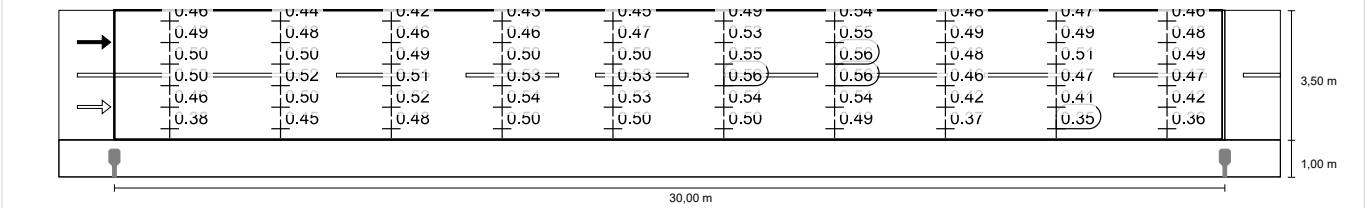


Densitate a luminii cu lampă nouă

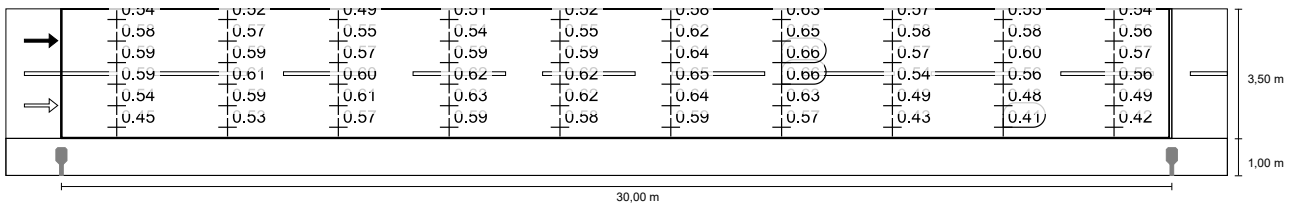


Observator 2

Densitate a luminii cu carosabil uscat



Densitate a luminii cu lampă nouă



LUG Light Factory Ltd.
Producer of Professional Lighting Fittings

PHOTOMETRIC TEST REPORT

Test Report according to LM-79 / EN13032

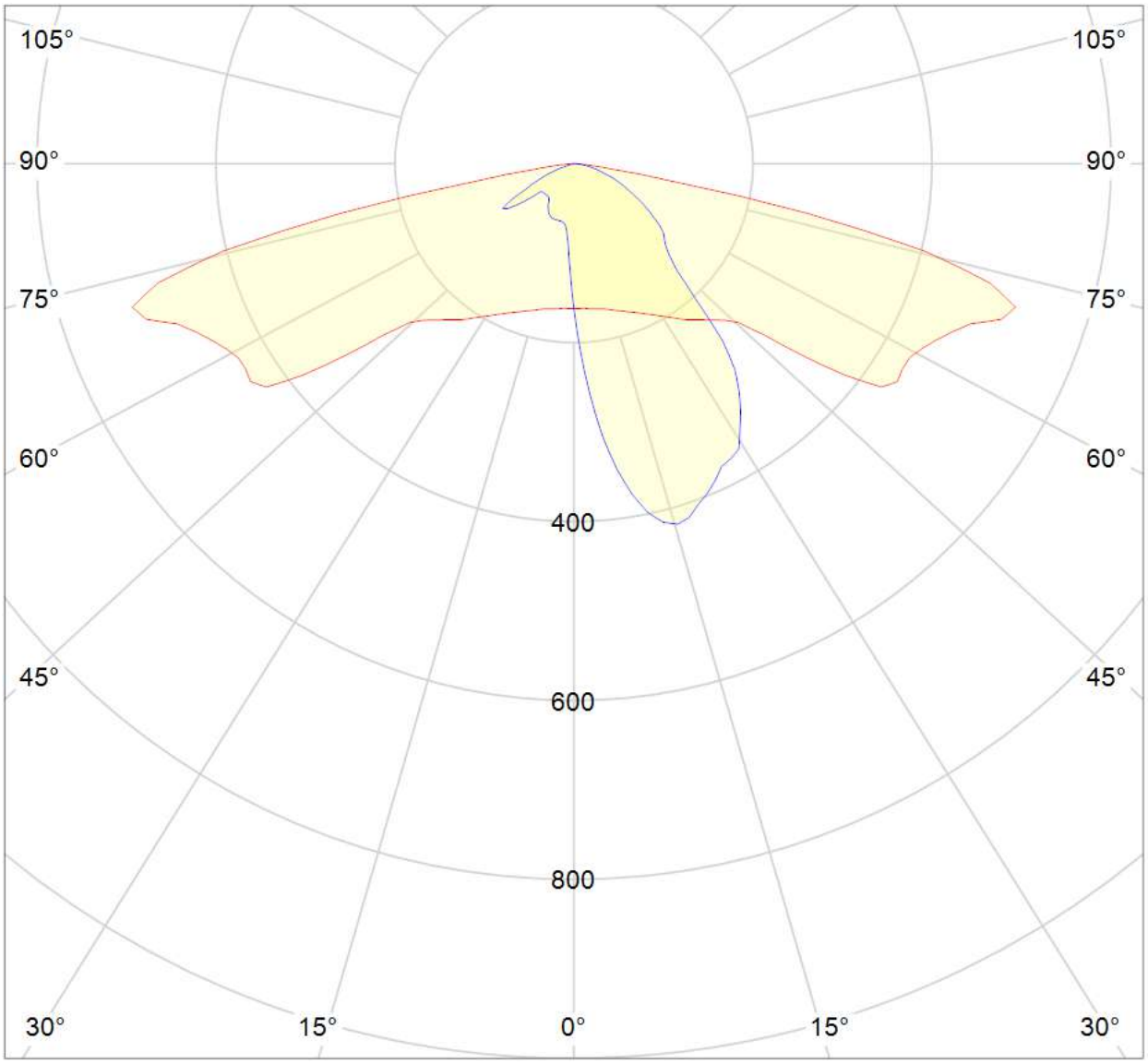
1. Device Under Test specification:

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 ^{o}C ± 1 ^{o}C

3. LIGHT DISTRIBUTION (POLAR) CURVE:



cd/klm

η = 100%

C0 - C180 C90 - C270

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

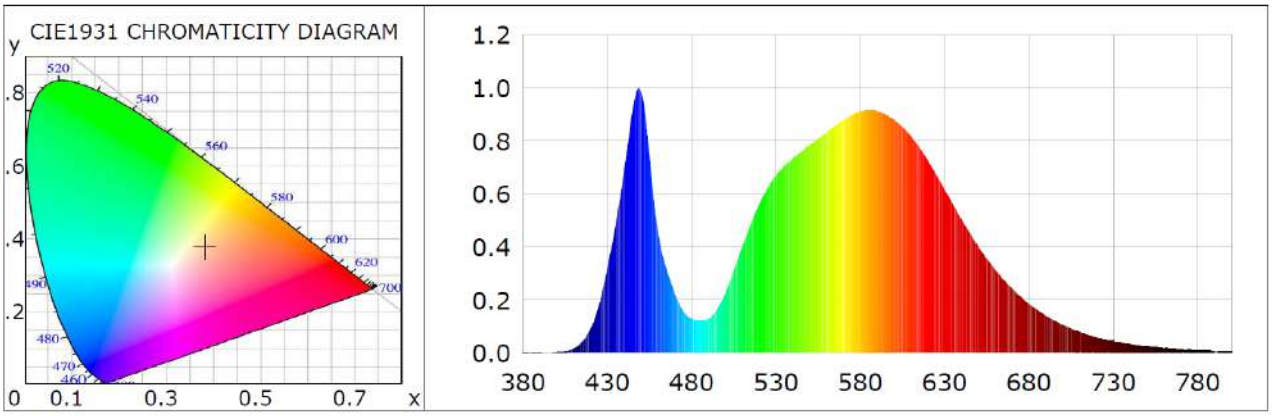
74	7,1	31,4	31,1	26,9	17,1	28,7	483,4	998,5	64,4	47,6	42,9	32,2	31,1
76	0,0	33,6	27,4	26,1	16,5	23,1	404,5	787,1	47,4	43,2	35,6	27,0	25,7
78	0,0	33,0	26,1	24,4	16,3	18,1	266,8	502,8	36,4	42,3	30,5	22,3	20,6
80	0,0	28,4	27,2	20,9	15,8	12,8	107,1	216,5	26,7	41,5	25,4	17,9	16,3
82	0,0	21,7	27,2	17,0	14,6	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: Tc=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: Ri: Ra= 73.1

R1 =71	R2 =79	R3 =84	R4 =73	R5 =70	R6 =70	R7 =81	R8 =56
R9 =0	R10=49	R11=68	R12=43	R13=72	R14=91	R15=66	



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 MEASURNING 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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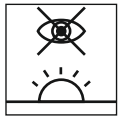
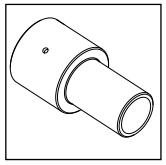


Unikać bezpośredniego patrzenia na źródła led.
Avoid direct looking at led source light.
Il faut eviter un regard direct sur les sources led.
Evite olhar direto para a fonte de luz led.
Не следует смотреть непосредственно на светодиодные источники света.
Den direkten augenkontakt in die led vermeiden.

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 | АКСЕССУАРЫ | 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 E0000628S
www.bioelektro.pl, www.biosystem.pl
Biuro@bioelektro.pl

INSTALLATION INSTRUCTION

Version 02/2017/002

URBINI LED

INSTRUKCJA MONTAŻU | ИНСТРУКЦИЯ ПО МОНТЖАУ | MONTAGEANLEITUNG | INSTRUCTIONS DE MONTAGE | NÁVOD K MONTÁZI | SZERELÉSI UTASÍTÁSOK MONTERINGSVEJLEDNING | INSTRUÇÕES DE MONTAGEM | MONTERINGSVEJLEDNING | INSTRUCCIONES DE MONTAJE | KOKOONPANO - JA KIINNITYSOHJEET MONTAGE INSTRUKTIE | INSTRUZIONI DI MONTAGGIO | ІНСТРУКЦІЯ З МОНТАЖУ | MONTAJ YÖNERGESI

(PL) MONTAŻU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPOWIEDNIE UPRAWNIENIA.

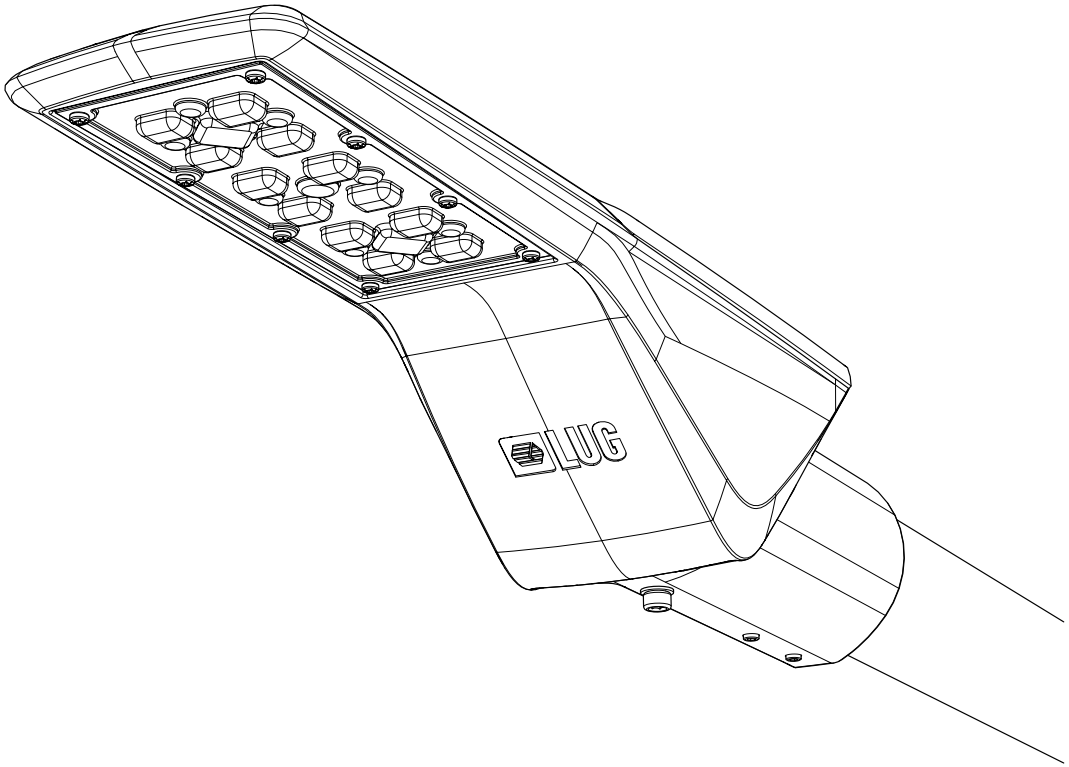
(GB) INSTALLATION MUST BE PERFORMED BY AN AUTHORIZED TECHNICIAN.

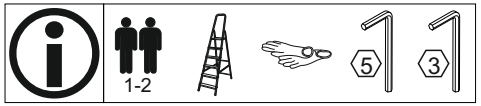
(RU) МОНТАЖ НУЖЕН БЫТЬ СОВЕРШЕН ЧЕРЕЗ ЛИЦО ИМЕЮЩЕ СООТВЕТСТВЕННЫЕ ПРАВА.

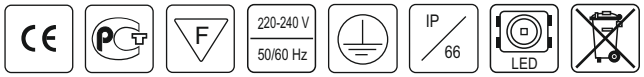
(UA) МОНТАЖ ПОВИННА ЗРОБИТИ ОСОБА, ЩО МАЄ ВІДПОВІДНІ УПОВНОВАЖЕННЯ.

(D) DIE MONTAGE VON EINER PERSONE, DIE UBER ERFORDRELICHE KENNTNISE VERFUGT GEMACHT WERDEN.

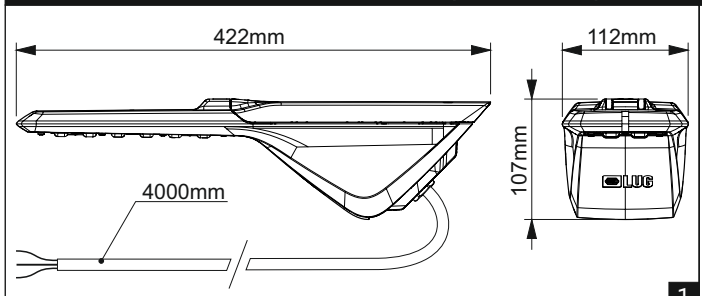
(F) LA MONTAGE DOIT FAIRE UNE PERSONNE QUI POSSEDER LES EXPERIENCES COMPETENTES.







WYMIARY | DIMENSIONS | DIMENSIONS
DIMENSIONES | РАЗМЕРЫ | ABMESSUNGEN



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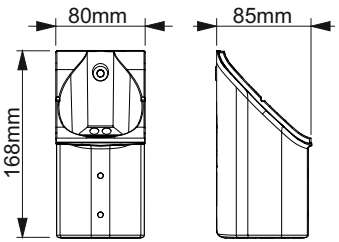
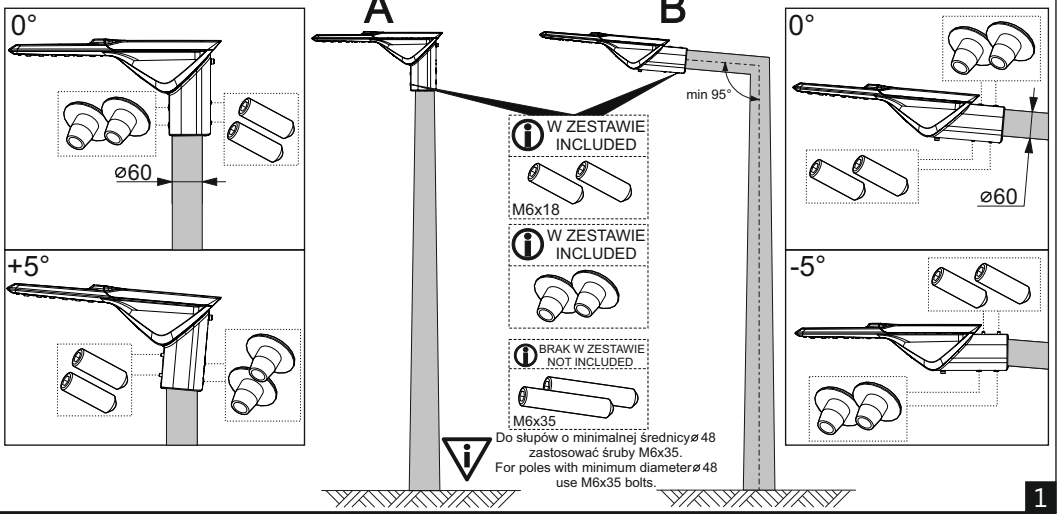


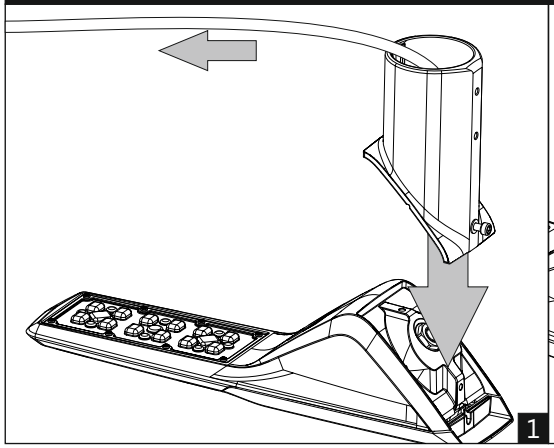
2

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



1

MONTAŻ | MONTAGE | MONTAGE | MONTAGEM | МОНТАЖ | MONTAGE



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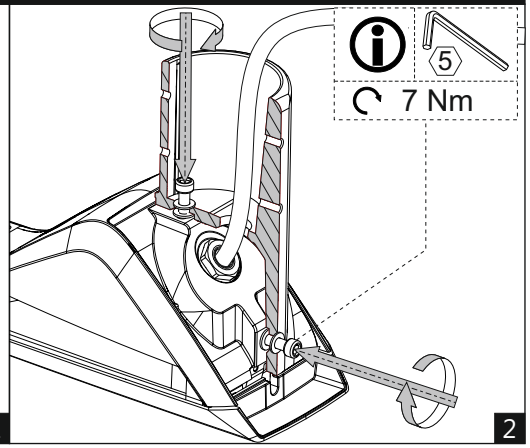

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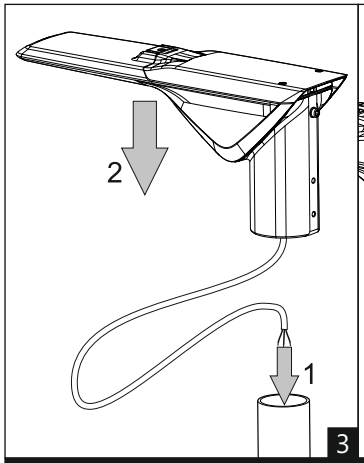

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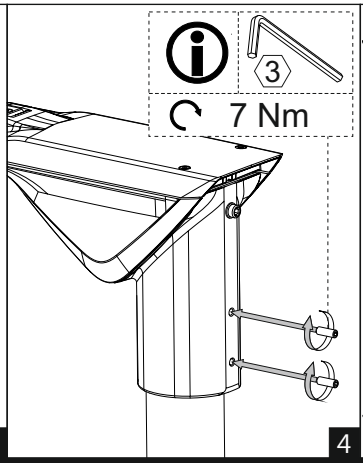

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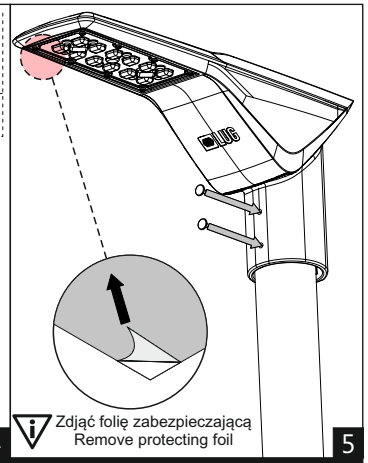
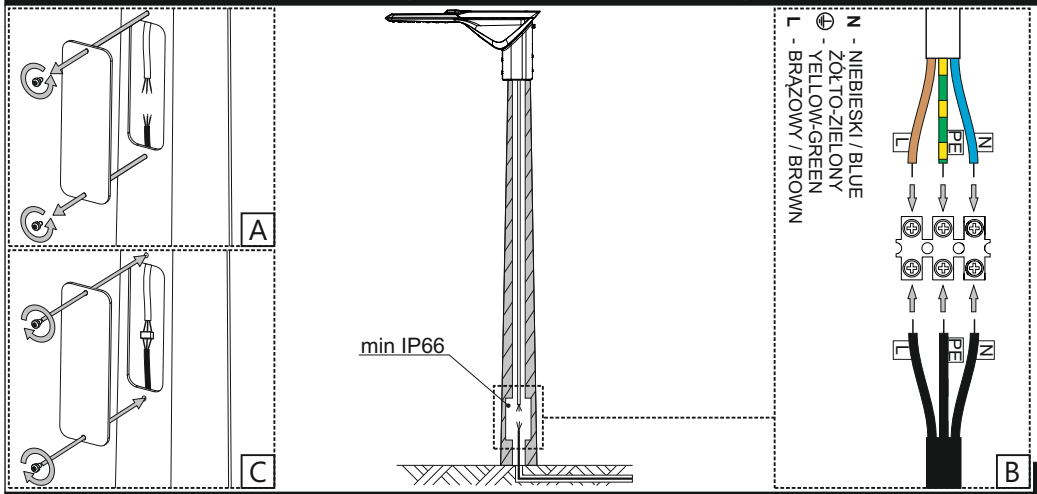


5

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



1

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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 microfibry.
Remove the dirt & dust with microfiber wipes.
La poussiere et les autres saletes il faut enlever en utilisant un tissu en microfibre.
Remove a sujeira e poeira com microfibra limpa.
Пыль или другие загрязнения должны быть удалены салфеткой из микрофибры.
Staub und schmutz bitte mit einem microfasertuch 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 electriques, ils sont sensibles aux decharges electrostatiques.
Não toque os aparelhos elétricos. Dispositivo sensível eletrostático (dse).
Не трогать электрических компонентов, чувствительные к esd.
Die elektronischen komponenten wegen einer möglichen elektrostatischen aufladung nicht anfassen.

ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЯМ ЕС

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
mar inż. Marcin Białas

Опубликовано

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Mariusz Ejsmont

Уполномоченное лицо подписи

ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЯМ CE

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

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 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

elektrotechnický zkušební ústav ezú -4- zkušební laboratoř

Approved by: Zdeněk Dvořák
Testing laboratory technical manager

Test Report issued under the responsibility of:

ezú electrotechnical testing institute

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 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

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	Luminaires for road and street lighting
Trade Mark ..... :	LUG
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	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 - 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 IECEE 02:

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/mm²) .....:		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

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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 ≤ 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

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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 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

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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 (mm²) .....:	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 (mm²)..... :	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 ≥ 0,5 μF		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).....:	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.....:		—

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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.....:	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

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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	6,0	8,0
Required clearances	1,0	1,5	2	3	4	5,5	8
Measured	-	-	-	-	-	-	-
Rated pulse voltage (peak kV)	10	12	15	20	25	30	40
Required clearances	11	14	18	25	33	40	60
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	Umax 44 V, tc 85 °C, Imax 1150 mA	62031	Tested in equipment
Driver	B	ELT	LCM 42 / 350...1050 - E	220-240 V, 50/60 Hz, tc 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

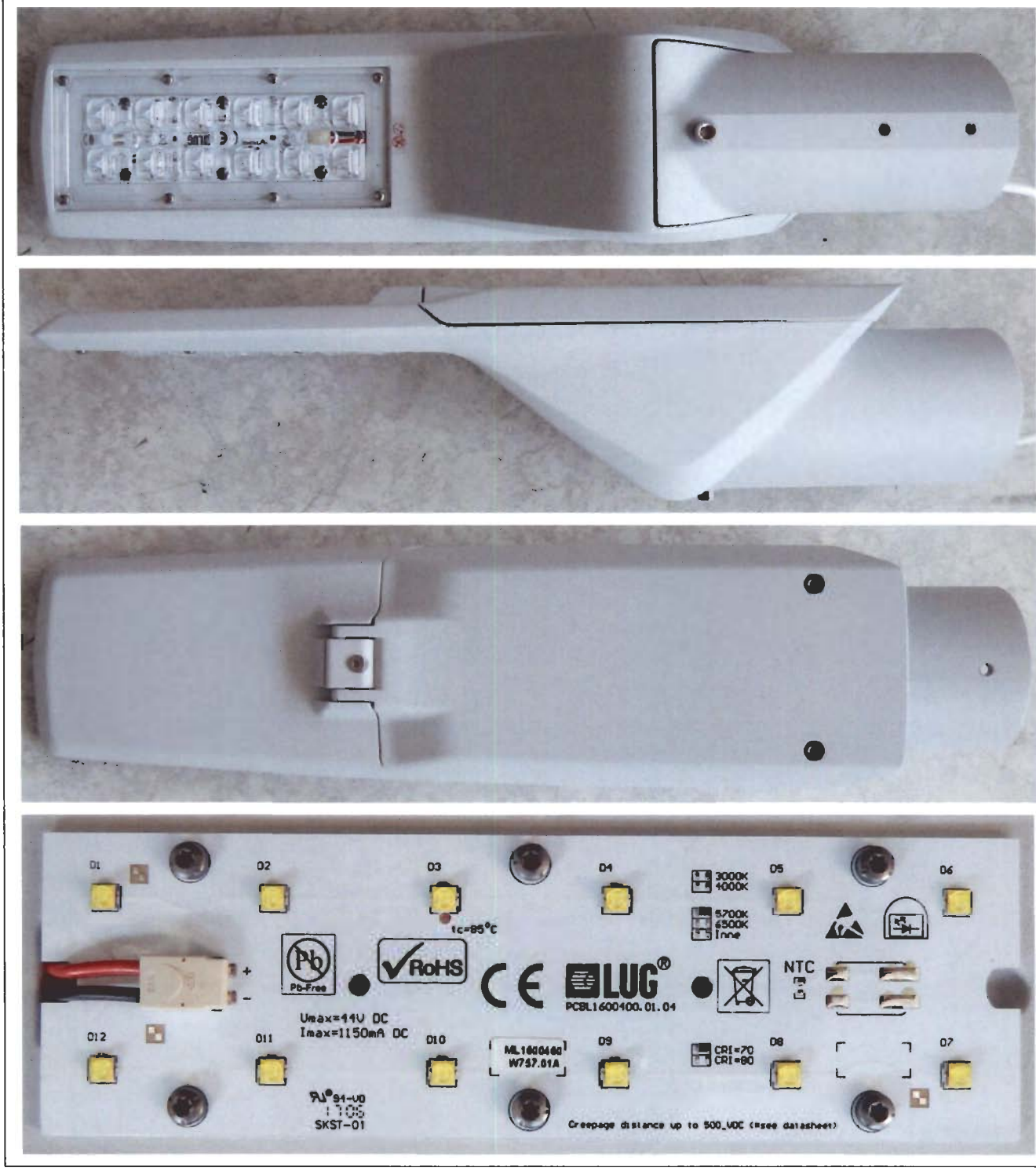
D - Alternative component

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 ..... :	---	—

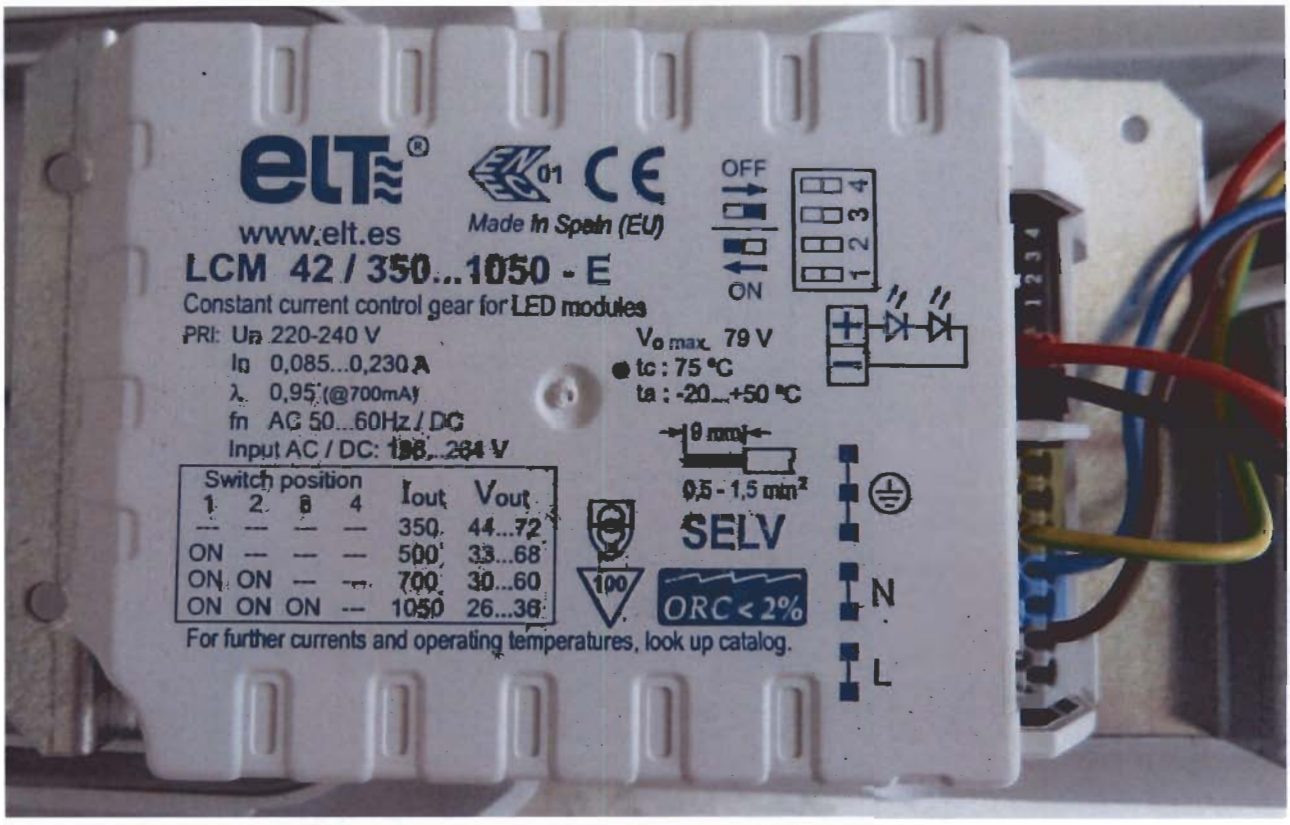
Temperature measurements, (°C)

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	



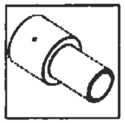
WAŻNE INFORMACJE | IMPORTANT INFORMATIONS | IMPORTANTES INFORMAÇÕES ÚTEIS | ВАЖНАЯ ИНФОРМАЦИЯ | WICHTIGE INFORMATIONEN

Unikać bezpośredniego patrzenia na źródła led.
Avoid direct looking at led source light.
Il faut eviter 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 | АКСЕССУАРЫ | ZUBEHÖR



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

LUG

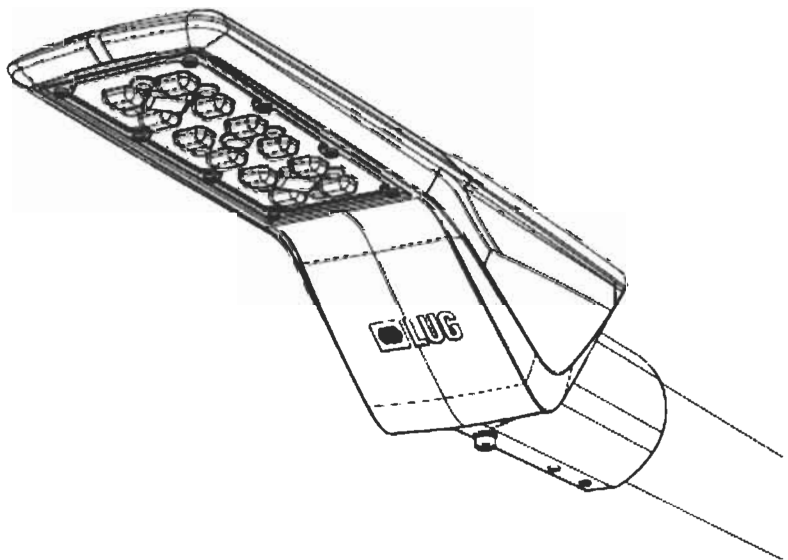
LUG Light Factory Sp. z o.o.
65-127 Zielona Góra, ul. Gorzowska 11
e-mail: handlowy@lug.pl
tel. +48 68 411 72 68 | 69 | 70 | 71 | 79 |
fax +48 68 411 72 88 | 89

LUG INSTALLATION INSTRUCTION

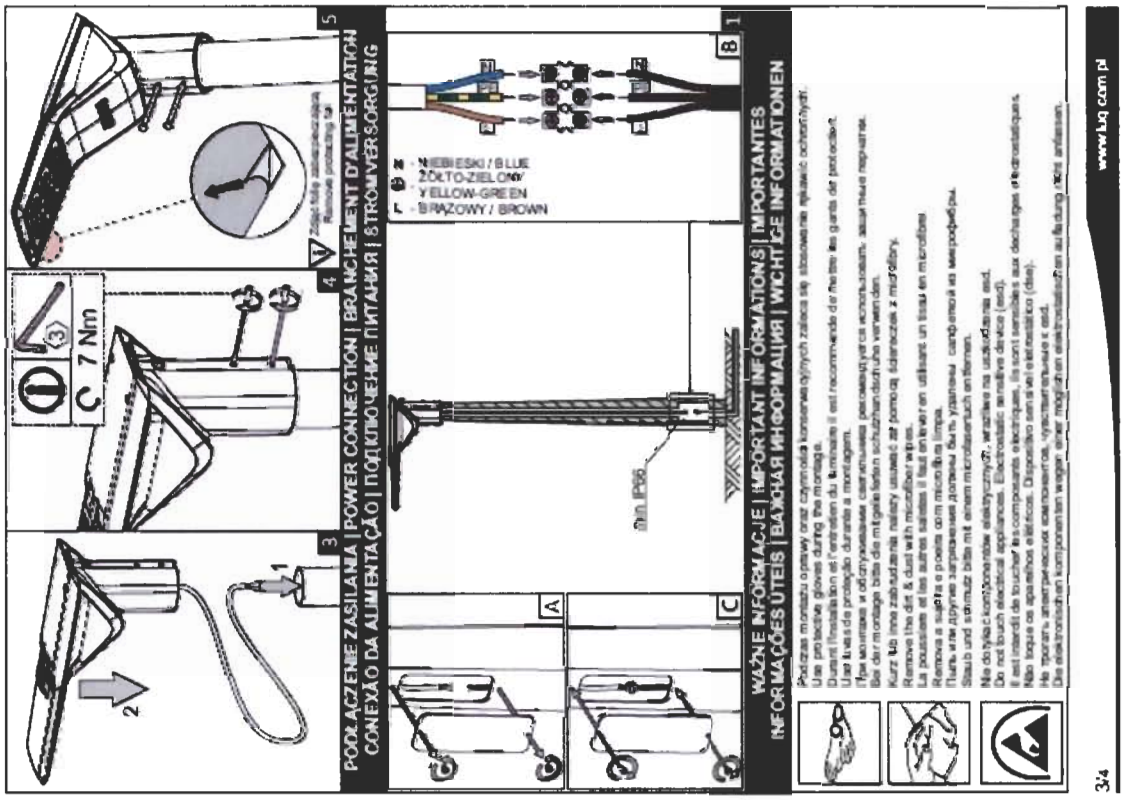
Version 07/2017/001

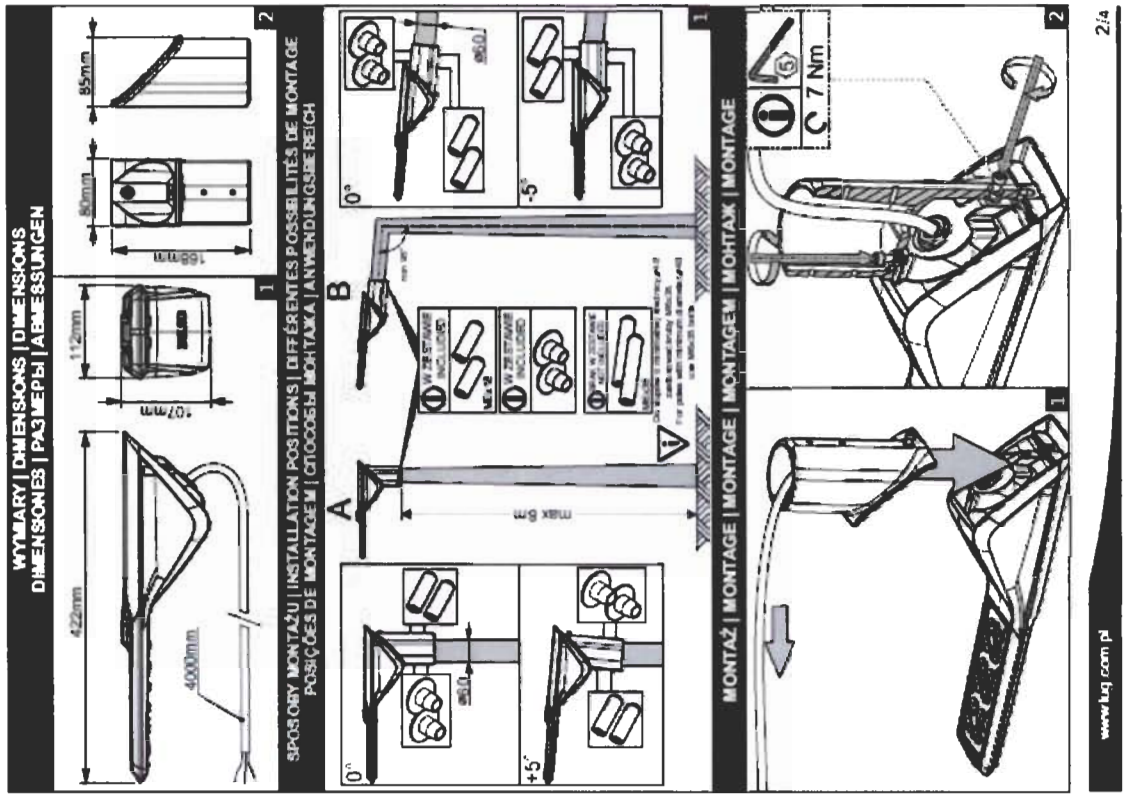
URBINI LED

INSTALLATION MUST BE PERFORMED BY AN AUTHORIZED TECHNICIAN



ANNEX 4	Instructions	





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

	CENELEC COMMON MODIFICATIONS (EN)		
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 $W.m^{-2}.sr^{-1}$	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 Limit	Low risk Limit	Mod risk Limit
Blue light	B(λ)	L_B	$W•m^{-2}•sr^{-1}$	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

elektrotechnický zkušební ústav ezú -7- zkušební laboratoř

Approved by: Miroslav Vondra,
Testing laboratory technical manager

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 ≤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 ≤ 200W)

Test result: Pass

Compiled by: Nádherný

Measured at: EZÚ

Measurement of interference voltages introduced into the mains
According to: (ČSN) EN 55015 - art. 4.3.1

Product: Fixed general purpose luminaires, recessed luminaires

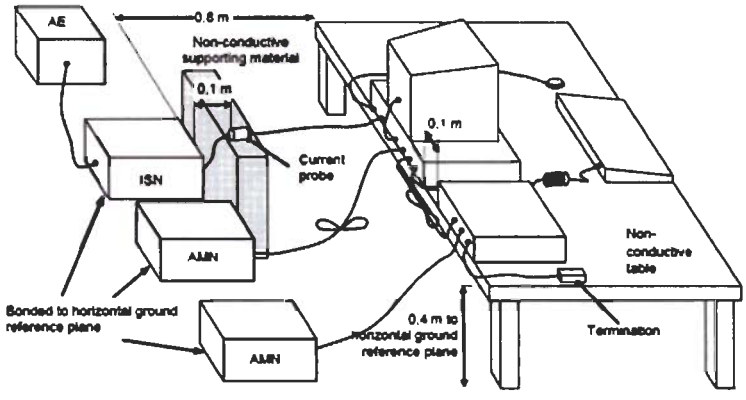
Type: URBINI LED, class I

Operating conditions:
230V, 50Hz, minimally 15 minutes in operation
Temperature: 23°C Rel. humidity: 30 – 45 %

Applied limits:

Band	Limits dB(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

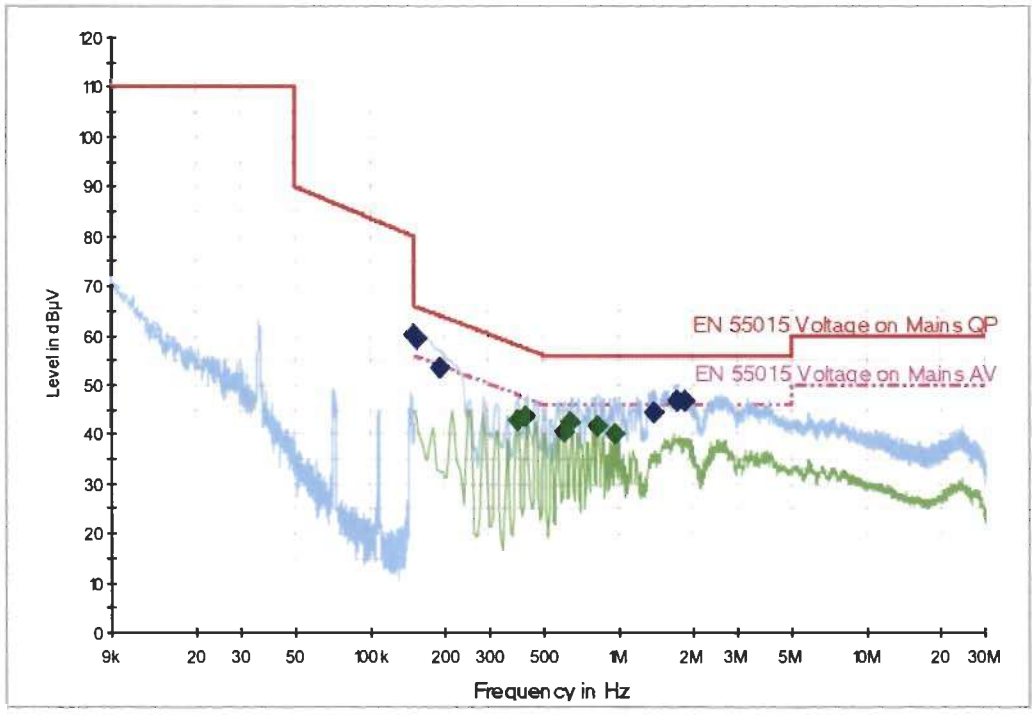
Measured by: Nádherný Date: 27.7. 2017 Measured at: EZÚ

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, recessed luminaires
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 55015tab2a



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

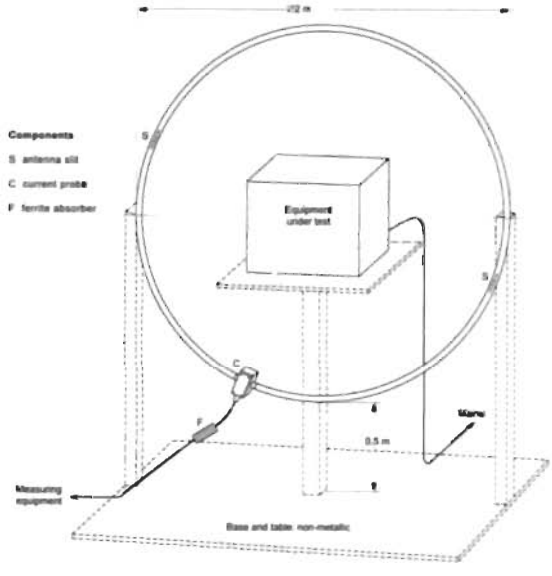
Type: URBINI LED, class I

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

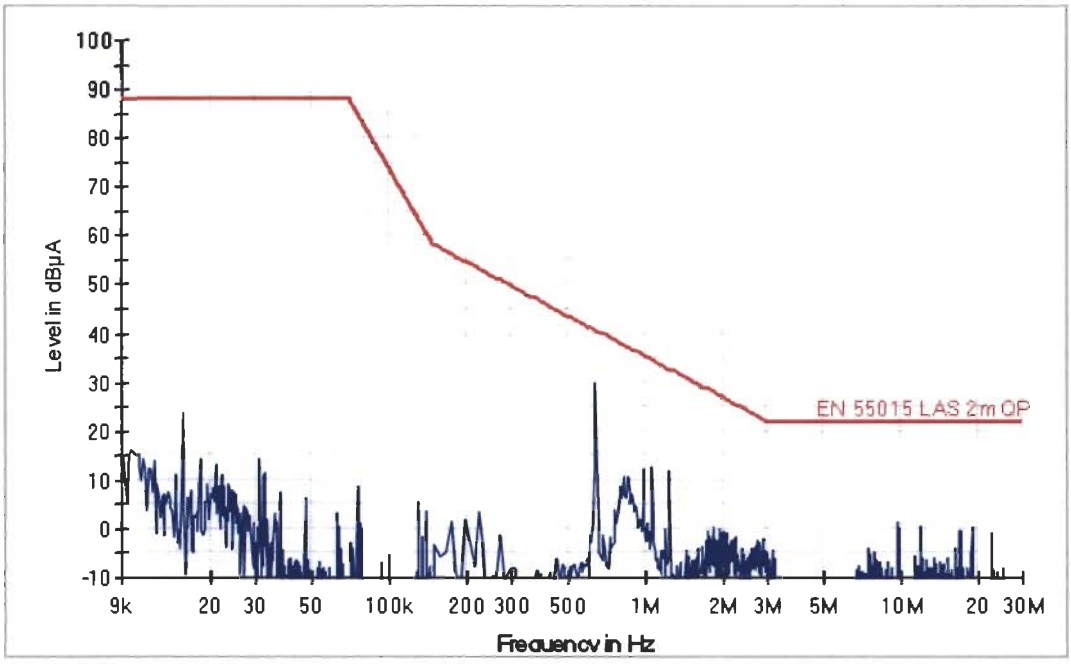
Measured by: Nádherný Date: 31.7. 2017 Measured at: EZÚ

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

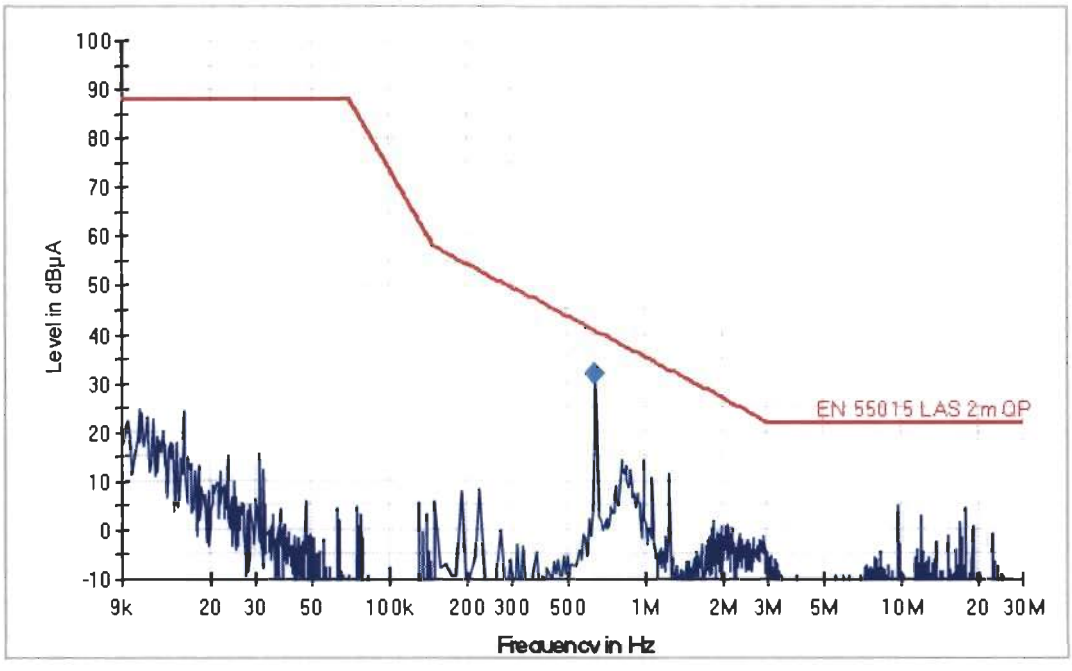


EMI Measurement

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

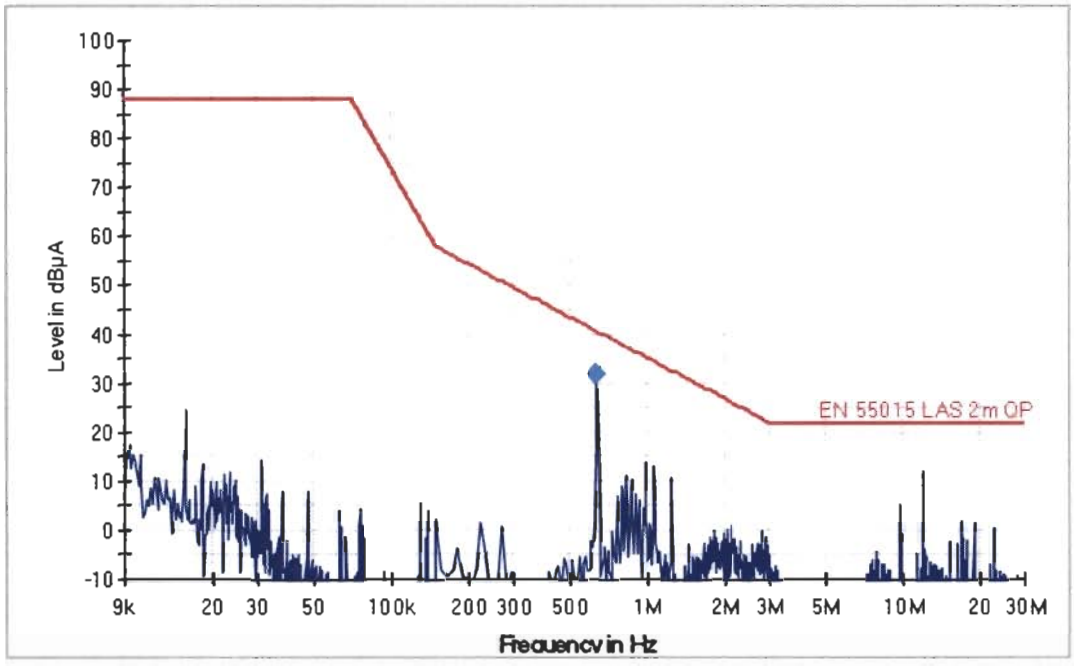
Frequency (MHz)	QuasiPeak (dBµA)	Meas. Time (ms)	Bandwidth (kHz)	Corr. (dB)	Margin (dB)	Limit (dBµA)
0.638000	31.7	1000.00	9.000	1.0	8.9	40.6

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, recessed luminaires
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

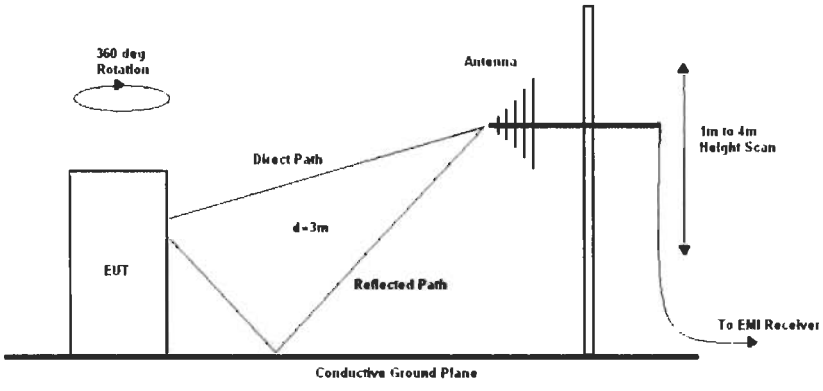
Type: URBINI LED, class I

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

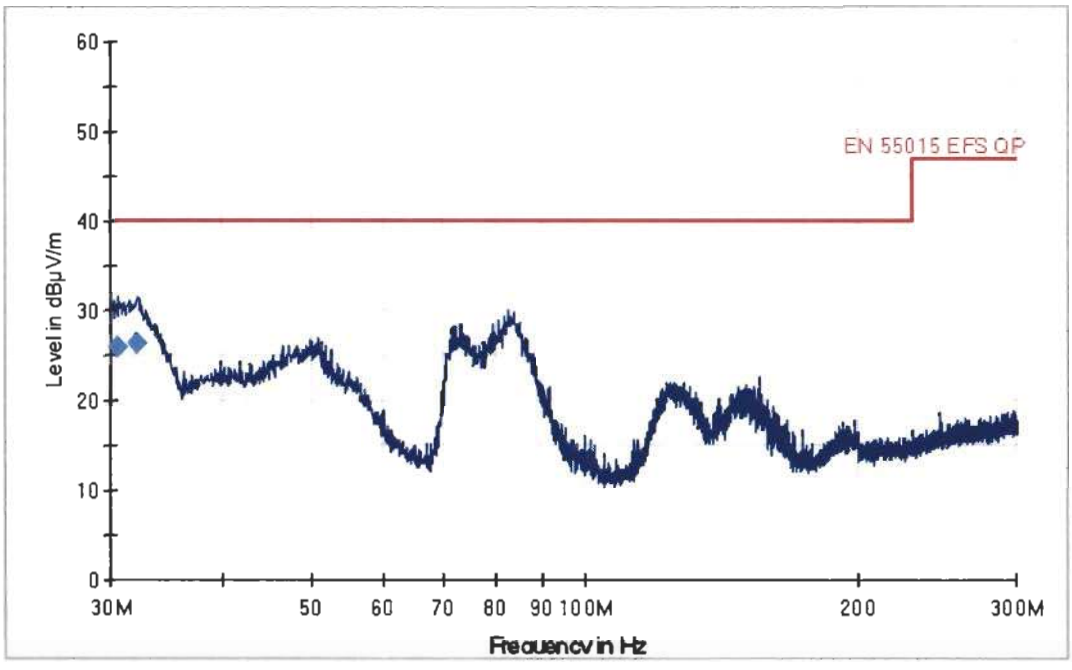
Measured by: **Nádherný** Date: 28.7. 2017 Measured at: EZÚ

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

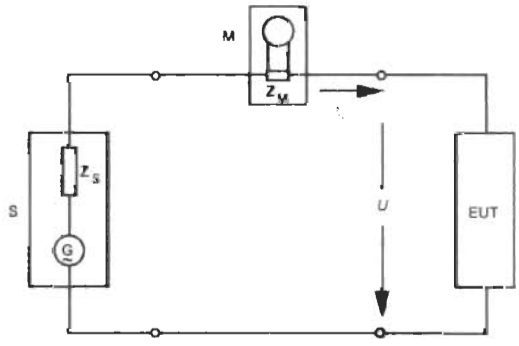
Electromagnetic compatibility (EMC) - Limits -
Limits for harmonic current emission
According to: (ČSN) EN 61000-3-2 - art. 7.3

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	30.λ
5	10
7	7
9	5
n 11 - 39 (only odd)	3

λ= účiník - power factor

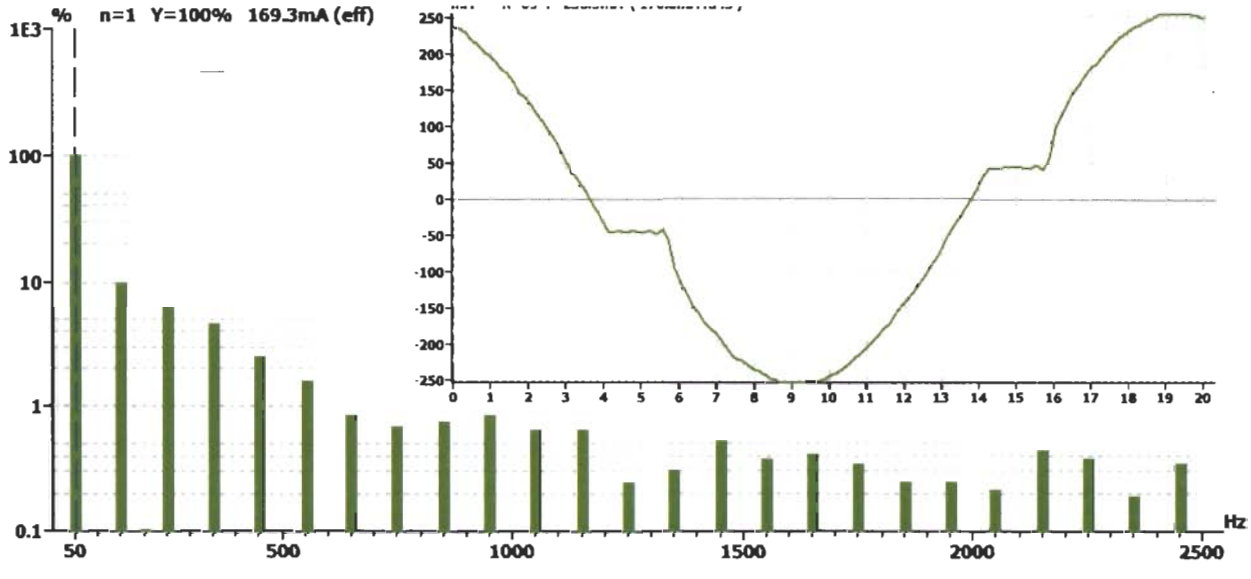
Notes:
Equipment class C
For measured values see next pages

Test result: Pass

Measured by: Nádherný Date: 28.7. 2017 Measured at: EZÚ

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	Ieff [A]	Ieff [%]	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	Ieff [A]	Ieff [%]	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** **10 ms / 0% U_T**	**C** **B**	**Pass**

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

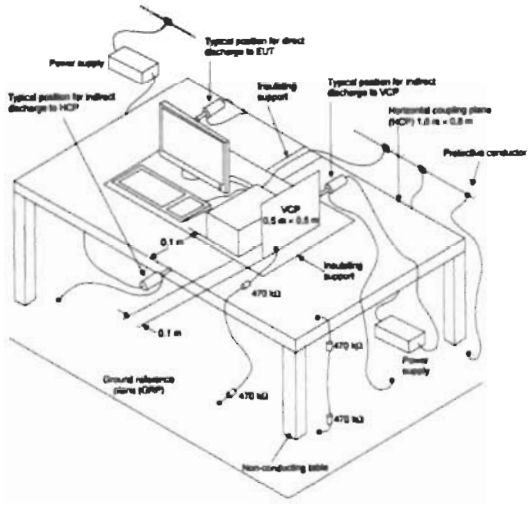
Number of testing discharges: 10/10 contact/air discharge to every test-places in each polarity, besides indirect contact discharges into a vertical and horizontal coupling plane

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

Immunity test - radiated electromagnetic field requirements
According to: (ČSN) EN 61000-4-3

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

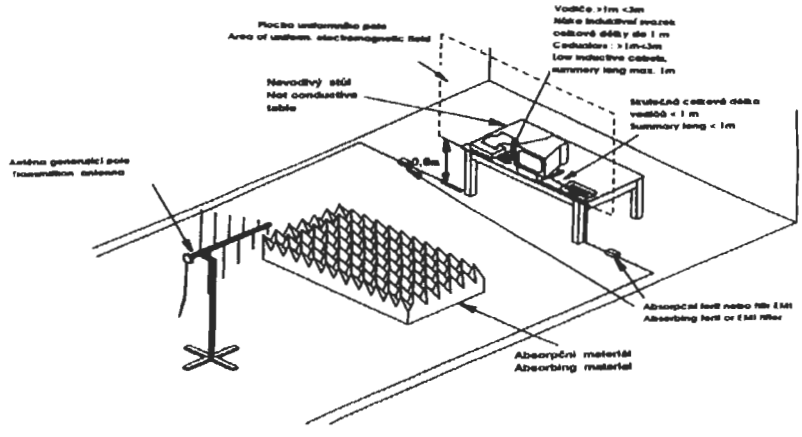
Operating conditions:
230V, 50Hz, minimally 15 minutes in operation
Temperature: 23°C Rel. humidity: 30 – 45 %

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

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

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

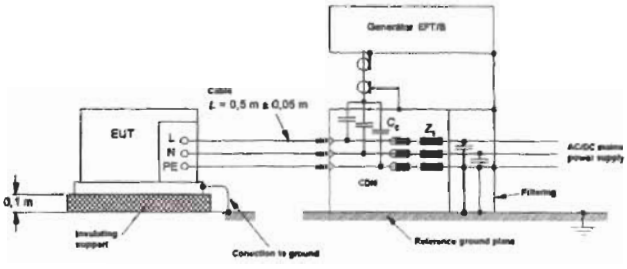
Operating conditions:
230V, 50Hz, minimally 15 minutes in operation
Temperature: 23°C Rel. humidity: 30 – 45 %

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

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

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class I

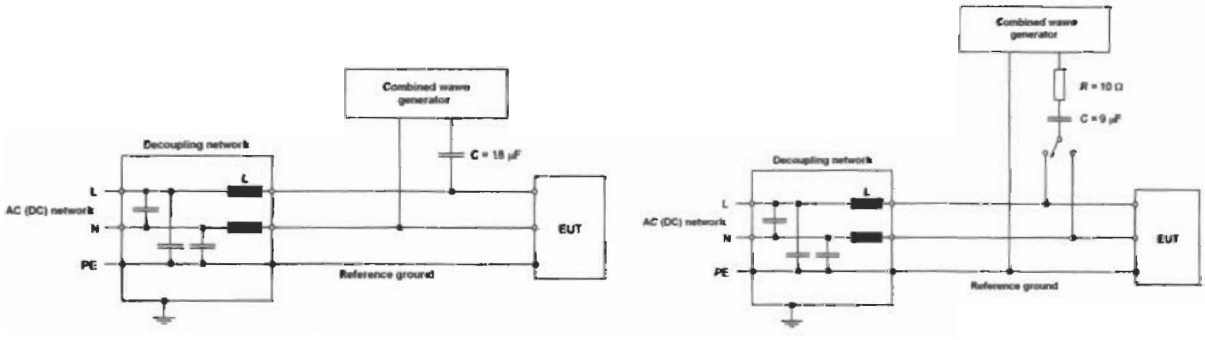
Operating conditions:
230V, 50Hz, minimally 15 minutes in operation
Temperature: 23°C Rel. humidity: 30 – 45 %

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

Immunity test - conducted disturbances induced by radio-frequency fields
According to: (ČSN) EN 61000-4-6

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 %

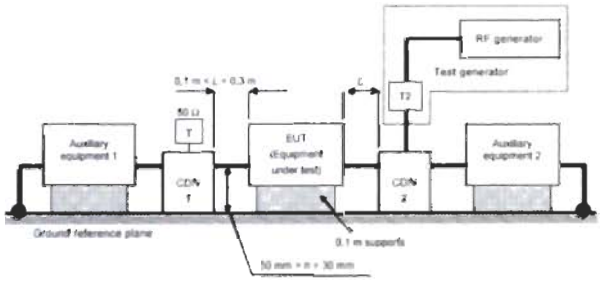
Allowed criterion: A

Testing voltage applied:

Frequency band	Testing voltage level	Note
150kHz - 80MHz	**3V (mod. 80% AM / 1 kHz)**	**Applied by coupling network to mains**

Achieved criterion: A

Measuring arrangement:



Notes:--

Test result: Pass

Measured by: Nádherný Date: 31.7. 2017 Measured at: EZÚ

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
☒ Continuos wawe simulátor 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 generátor 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

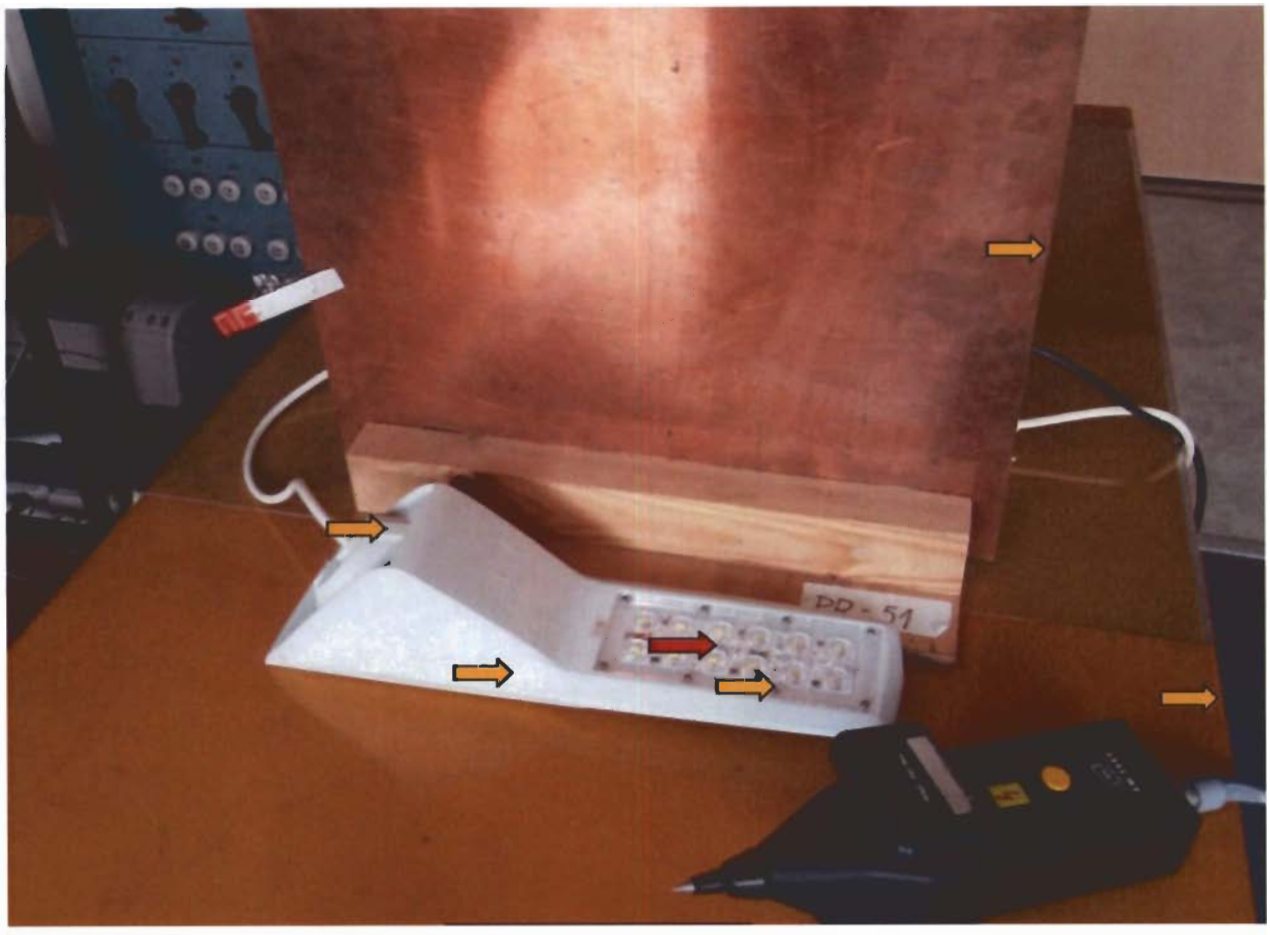
Type: URBINI LED, class I

Overview: 130232.5L111.1X1

Source and LED controller: 130232.5L111.1X1

Name plate 130232.5L111.1X1

Electrostatic discharges – tested points (contact discharge air discharge)



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

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 Report issued under the responsibility of:

ezú electrotechnical testing institute

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

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	Luminaires for road and street lighting
Trade Mark ..... :	LUG
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	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 IECEE 02:

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

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/mm²) .....:		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 ≤ 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 (mm²) .....:	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 (mm²)....:	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 ≥ 0,5 µF		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) ..... :	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 ..... :		—

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 ≤ 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.....:		—

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.....:	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

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		-	-	-	-	-	-
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			-	-	-	-	-
Required reinforced insulation		-	3,2	5	6	8	11
Measured			-	≥ 5	-	-	-
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			-	-	-	-	-
Required reinforced insulation		-	1,6	3	6	8	11
Measured			-	≥ 3	-	-	-

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	6,0	8,0
Required clearances	1,0	1,5	2	3	4	5,5	8
Measured	-	-	-	-	-	-	-
Rated pulse voltage (peak kV)	10	12	15	20	25	30	40
Required clearances	11	14	18	25	33	40	60
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 130232.5L232.101					
LED module	B	LUG	ML180400 W757.01A	Umax 44 V, tc 85 °C, Imax 1150 mA	62031	Tested in equipment
Driver	B	PHILIPS	Xitanium Lite Prog 40W 0.3-1.0A sXt	220-240 V, 50/60 Hz, tc 85 °C		ENEC 05
Wires LED	B		LGY	300/500 V, 0,5 mm^2	IEC227	
Insulating sleeve	B	Isolcavi	GVES 1500	1,5 kV, 250 °C		UL
Ext. wires	B	Nkt cable	H03VV-F	2 x 0,75 mm^2	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

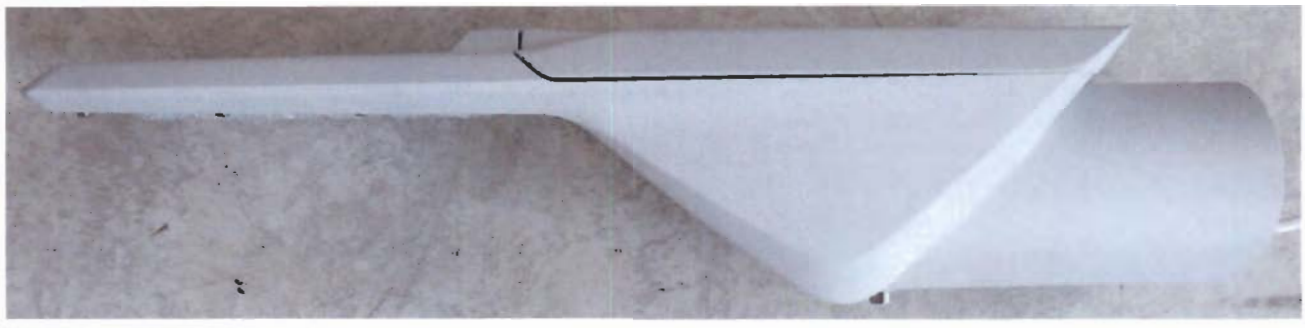
ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		
	Type reference ..... :	LUG URBINI LED 130232.5L232.101	—
	Lamp used ..... :	LED module LUG	—
	Lamp control gear used ..... :	Philips Xitanium	—
	Mounting position of luminaire ..... :	On pipe	—
	Supply wattage (W) ..... :	26,9	—
	Supply current (A) ..... :	---	—
	Calculated power factor ..... :	---	—
	Table: measured temperatures corrected for ta = 45 °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 ..... :	---	—

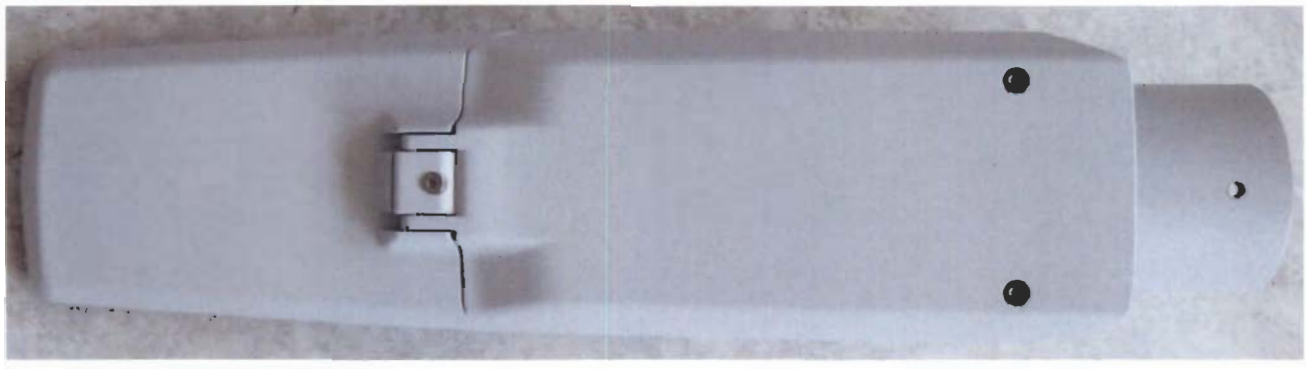
Temperature measurements, (°C)

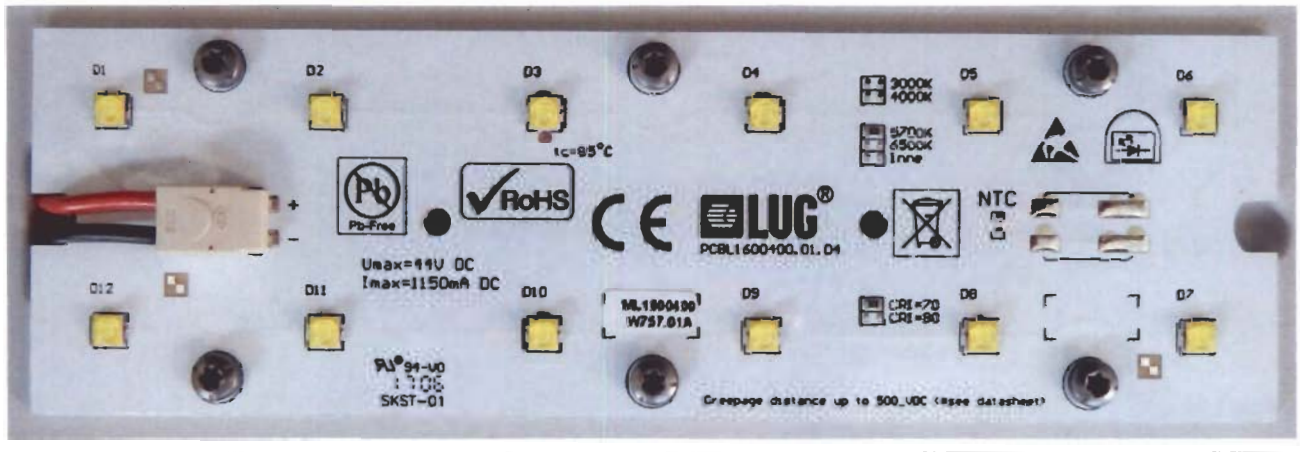
Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module tc	45	69	---	---	85	---	---
Driver tc	45	71	---	---	85	---	---
LED wires	45	---	65	---	90	---	---
Internal wires	45	---	57	---	90	---	---
Terminal block	45	---	45	---	85	---	---
External wires	45	---	45	---	90	---	---

Supplementary information: Temperature marked control gear 120 °C.

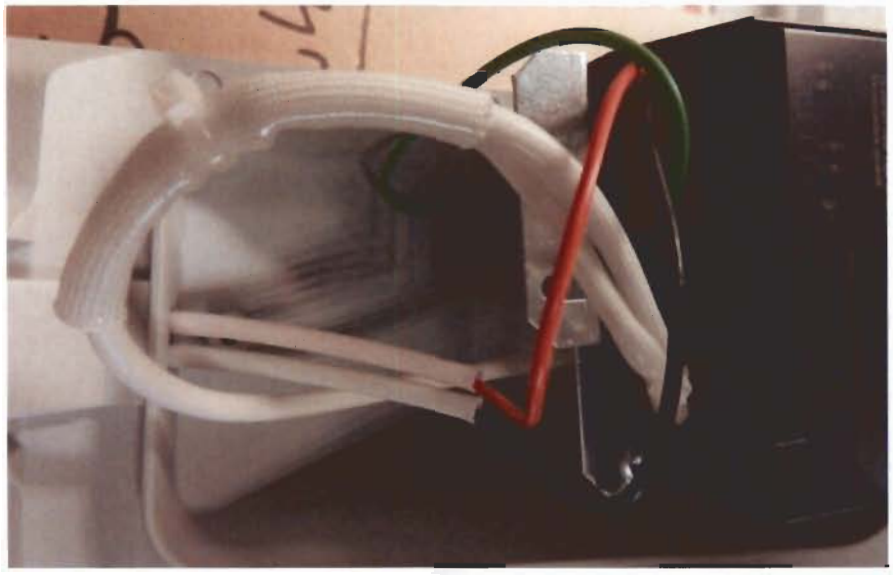
ANNEX 3	Photo	







ANNEX 3	Photo		



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Unikać bezpośredniego patrzenia na źródła led.
Avoid direct looking at led source light.
Il faut eviter 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.

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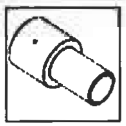


150170.00817
Reduktor 60/76mm
Reducer 60/76mm
Réducteur 60/76mm
Redutor 60/76mm
Редуктор 60/76mm
Minderer 60/76mm

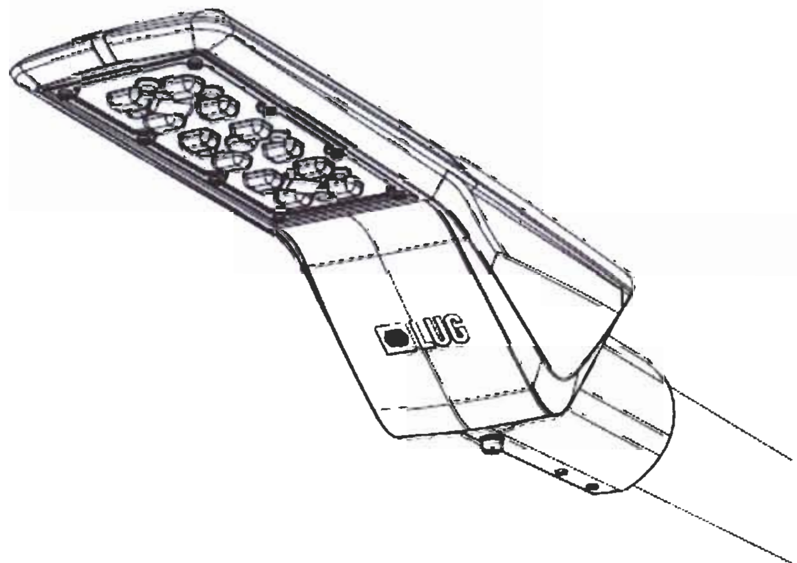
LUG

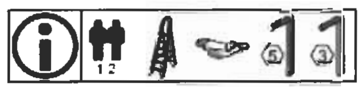
LUG Light Factory Sp. z o.o.
65-127 Zielona Góra, ul. Gorzowska 11
e-mail: handlowy@lug.pl
tel. +48 68 411 72 68 | 69 | 70 | 71 | 73 |
fax +48 68 411 72 88 | 89

LUG

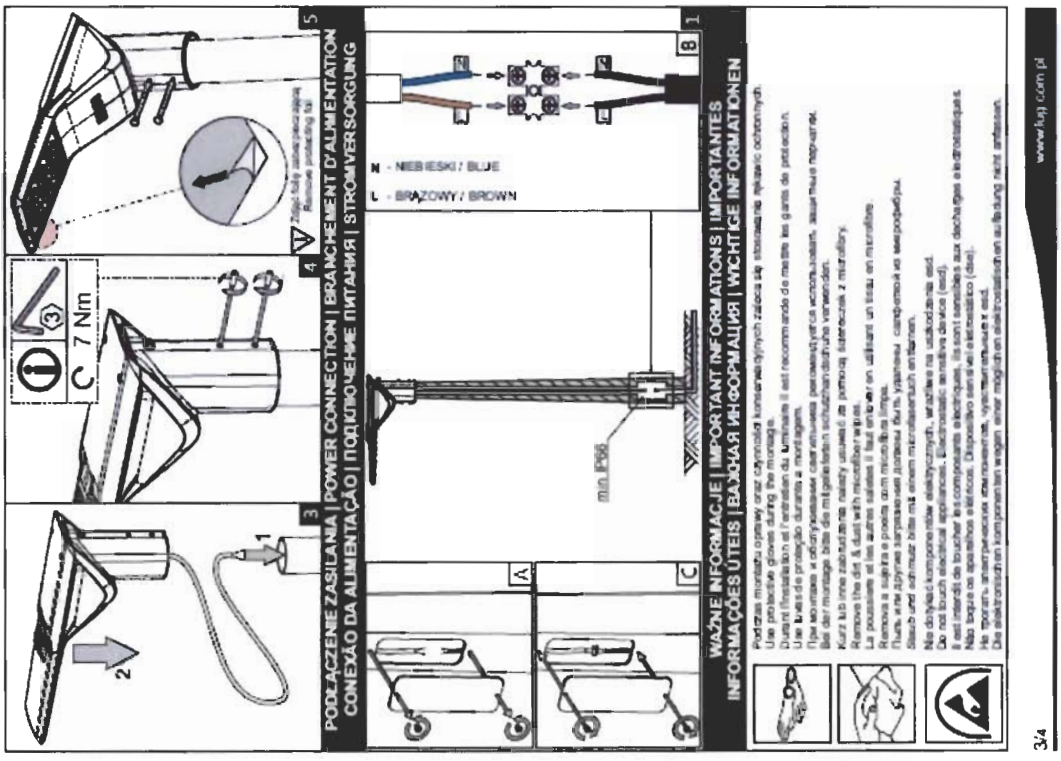
INSTALLATION INSTRUCTION

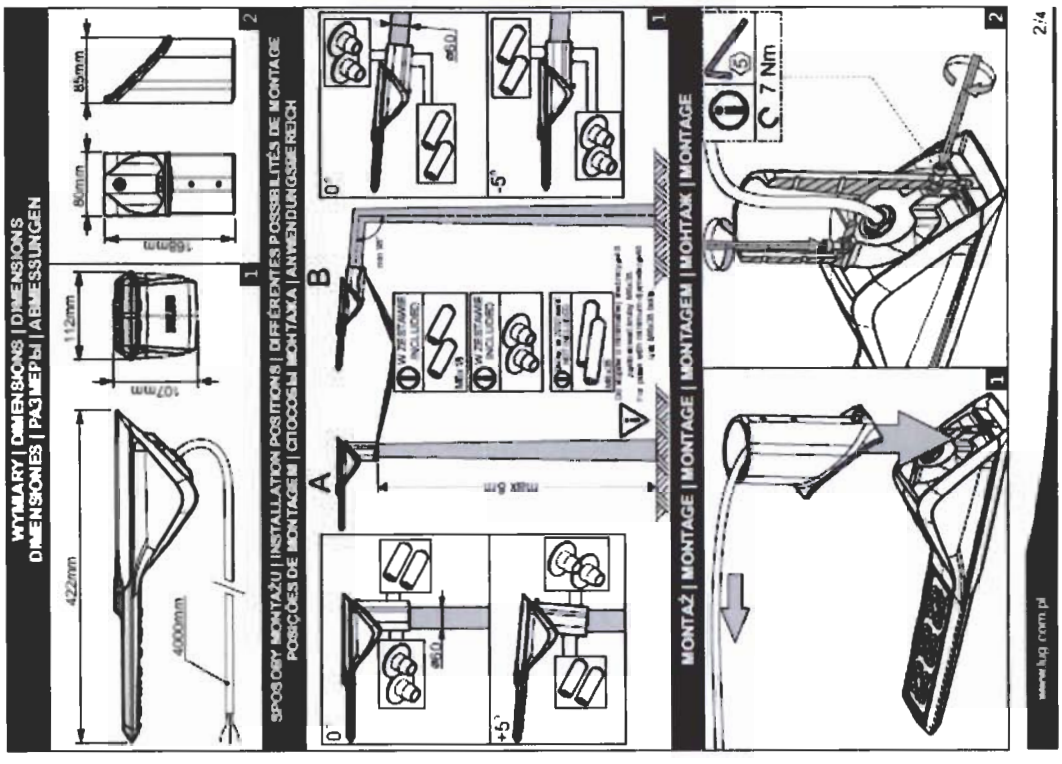
URBINI LED





ANNEX 4	Instructions





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

	CENELEC COMMON MODIFICATIONS (EN)		
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	104 $W.m^{-2}.sr^{-1}$	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(λ)	L_B	$W•m^{-2}•sr^{-1}$	100	10000	4000000

Measured by: Lukáš Fér

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: 701590-01/02

Issued: 4. 8. 2017

TEST REPORT

Name of product:	Fixed general purpose luminaires, recessed luminaires
Type of product:	URBINI LED class II
Ratings:	220-240 V, 50/60Hz, 14 W,20 W,28 W, 42 W, IK 09, IP 66 Class II
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: 130232.5L232.1X1
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

elektrotechnický zkušební ústav ezú -7- zkušební laboratoř

Approved by: Miroslav Vondra
Testing laboratory technical manager

---

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 ≤16A per phase and not subject to conditional connection***

Product: Fixed general purpose luminaires, recessed luminaires
Type: URBINI LED, class II
Type representative: 130232.5L232.1X1

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:
130232.5L232.1X1: PHILIPS Xi LP 40W 0.3-1.0A SI 230V C123 sXt

*1) The luminaire does not contains relevant terminals.
*2) According to EN 61000-3-3, Art. A2 (LED luminaires with power input ≤ 200W)

Test result: Pass

Compiled by: Nádherný

Measured at: EZÚ

Measurement of interference voltages introduced into the mains
According to: (ČSN) EN 55015 - art. 4.3.1

Product: Fixed general purpose luminaires, recessed luminaires

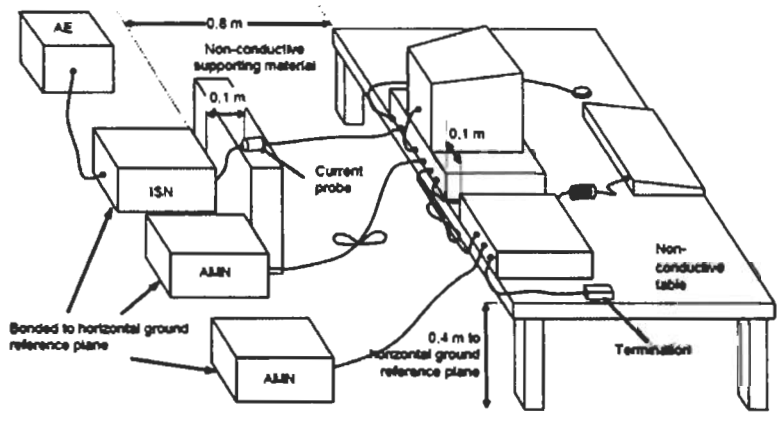
Type: URBINI LED, class II

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

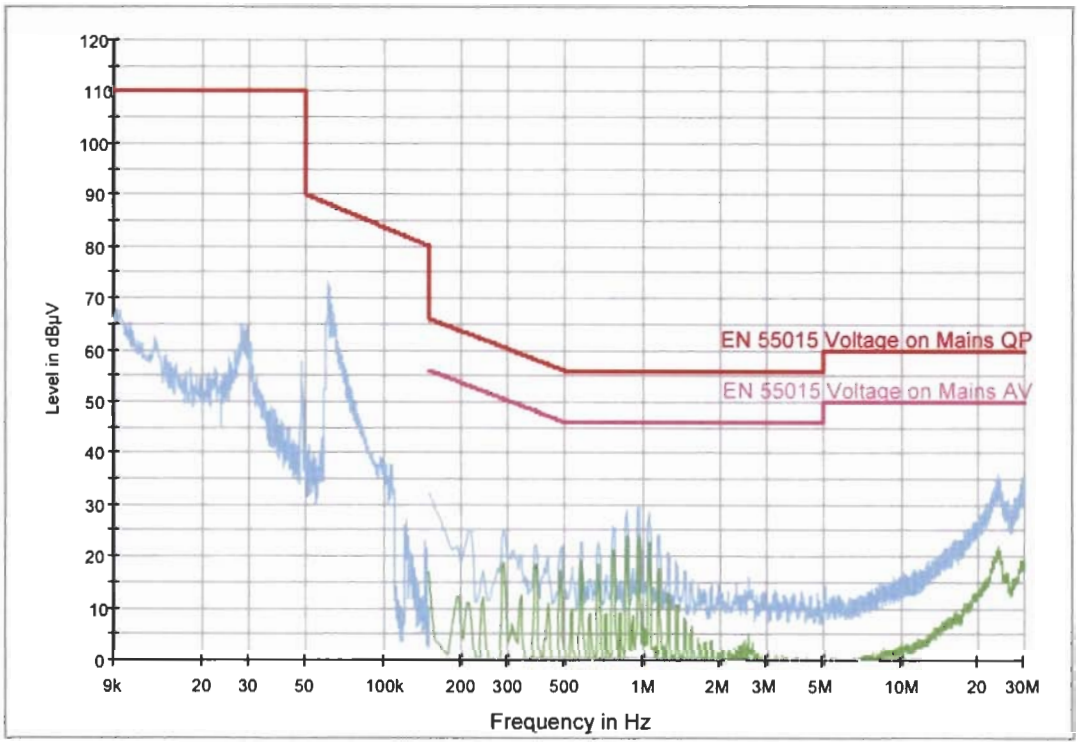
Measured by: Nádherný Date: 27.7. 2017 Measured at: EZÚ

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, recessed luminaires
Type:	URBINI LED, class II (130232.5L232.1X1)
Test Description:	EN 55015
Operation Conditions:	230 V, 50 Hz
Operator Name:	Nadherny
Comment 1:	L, N - Mains

Voltage EN 55015tab2a



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

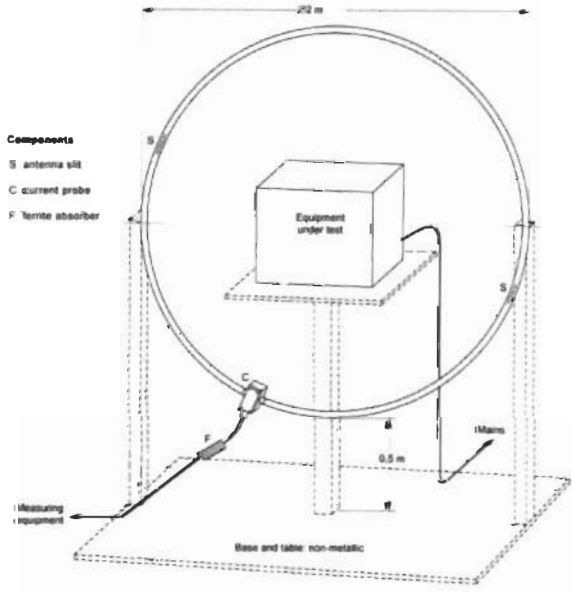
Type: URBINI LED, class II

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

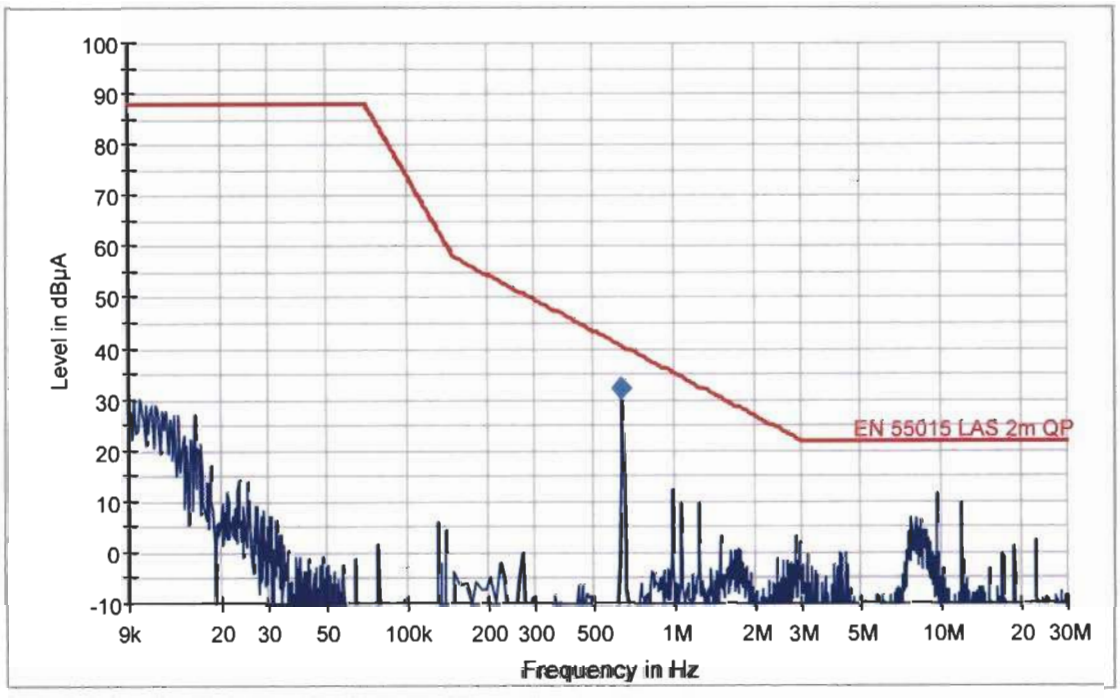
Measured by: Nádherný Date: 31.7. 2017 Measured at: EZÚ

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, recessed luminaires
Type	URBINI LED, class II (130232.5L232.1X1)
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Nadherny
Comment:	Axis X

EFS with Scans EZU KRUH2M2



Final Result 1

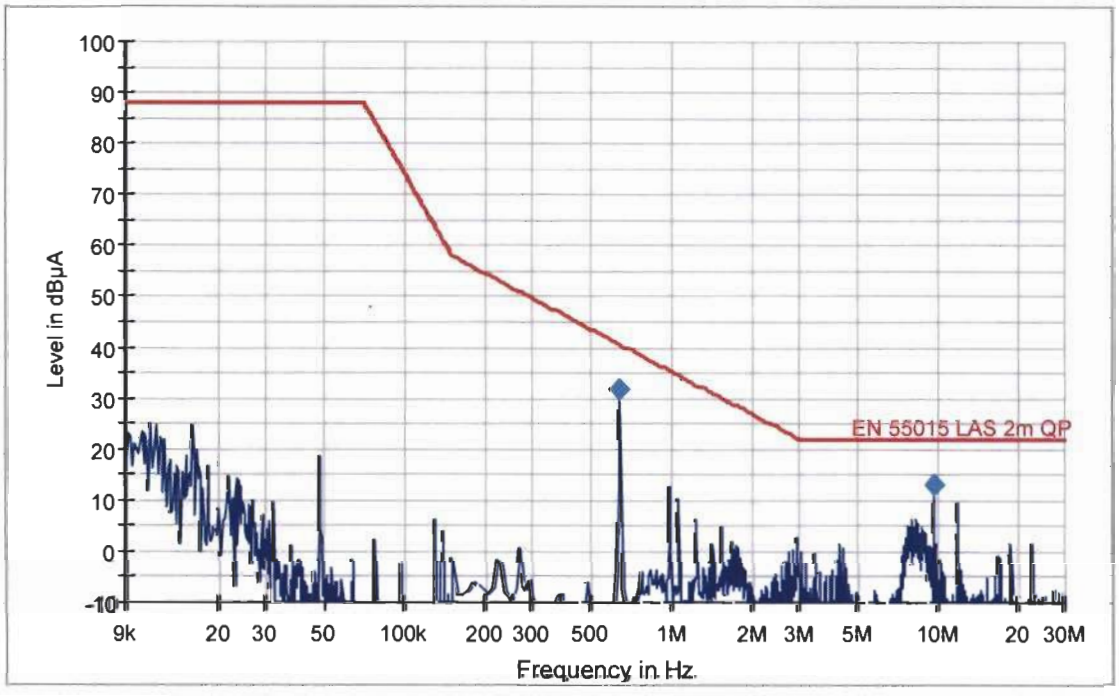
Frequency (MHz)	QuasiPeak (dBµA)	Meas. Time (ms)	Bandwidth (kHz)	Corr. (dB)	Margin (dB)	Limit (dBµA)
0.638000	32.2	1000.00	9.000	1.0	8.4	40.6

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, recessed luminaires
Type	URBINI LED, class II (130232.5L232.1X1)
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Nadherny
Comment:	Axis Y

EFS with Scans EZU KRUH2M2



Final Result 1

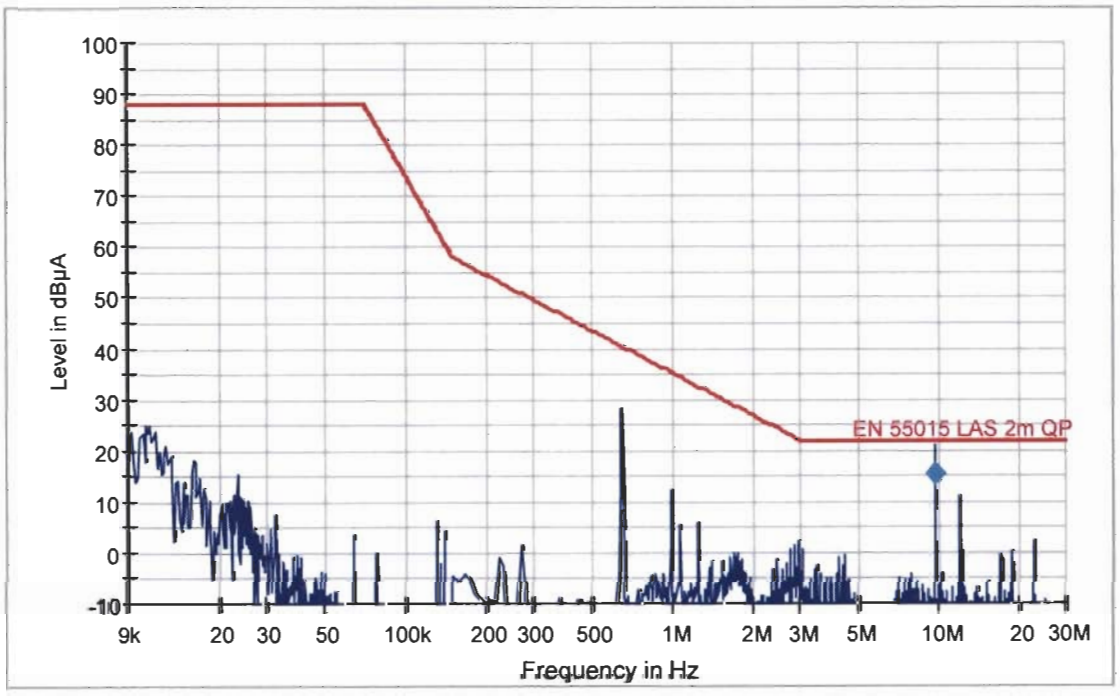
Frequency (MHz)	QuasiPeak (dBµA)	Meas. Time (ms)	Bandwidth (kHz)	Corr. (dB)	Margin (dB)	Limit (dBµA)
0.636000	31.9	1000.00	9.000	1.0	8.7	40.6
9.598000	13.1	1000.00	9.000	0.8	8.9	22.0

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, recessed luminaires
Type	URBINI LED, class II (130232.5L232.1X1)
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)
9.598000	15.4	1000.00	9.000	0.8	6.6	22.0

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

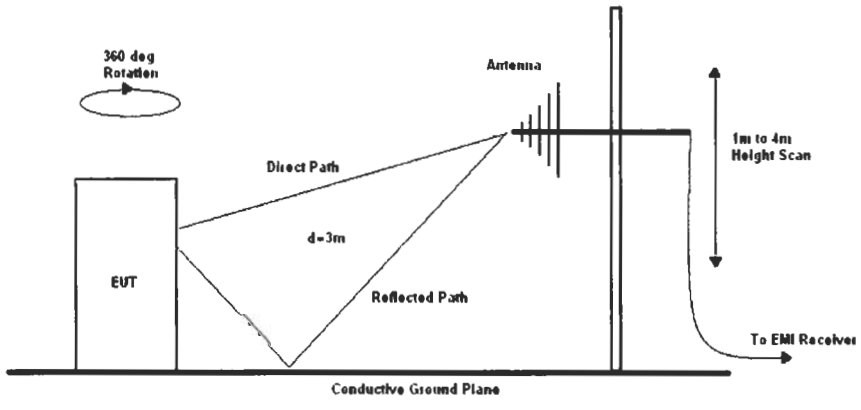
Type: URBINI LED, class II

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

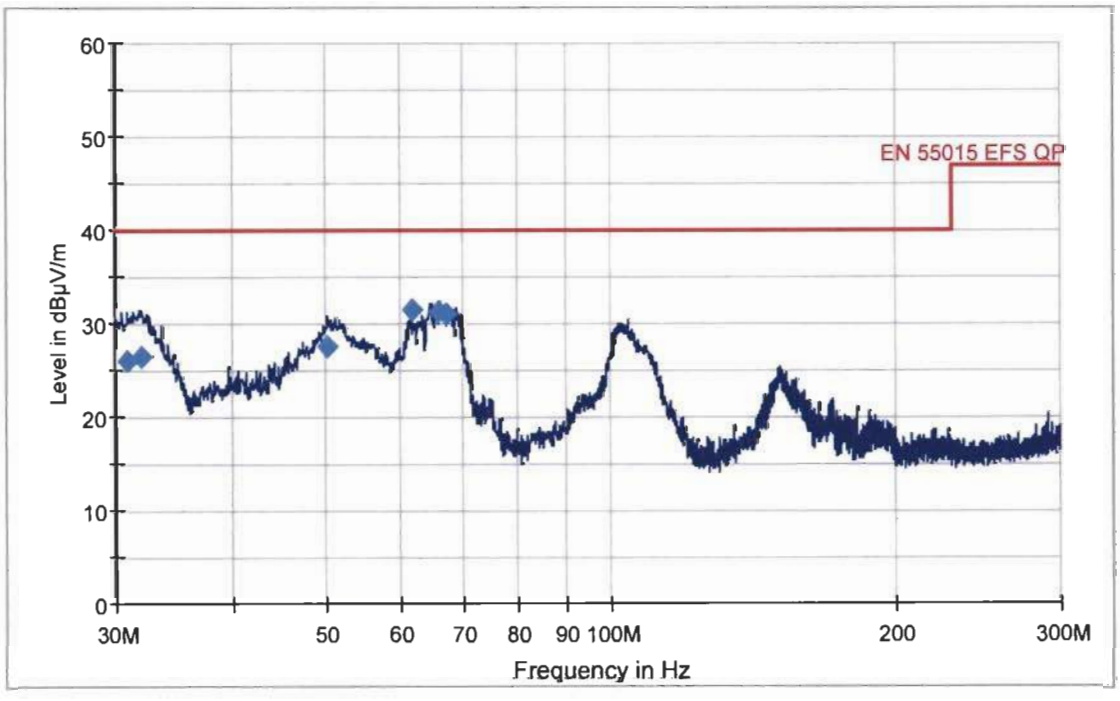
Measured by: Nádherný Date: 28.7. 2017 Measured at: EZÚ

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, recessed luminaires
Type	URBINI LED, class II (130232.5L232.1X1)
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)
30.900000	26.0	174.0	H	204.0	30.2	14.0	40.0
32.040000	26.5	390.0	H	149.0	30.6	13.5	40.0
50.400000	27.7	115.0	V	277.0	19.7	12.3	40.0
61.740000	31.6	215.0	V	33.0	13.7	8.4	40.0
66.000000	31.3	215.0	V	25.0	12.0	8.7	40.0
67.200000	31.0	110.0	V	33.0	11.6	9.0	40.0

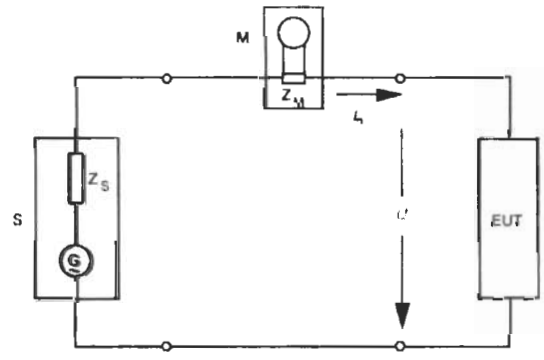
Electromagnetic compatibility (EMC) - Limits -
Limits for harmonic current emission
According to: (ČSN) EN 61000-3-2 - art. 7.3

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class II

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	30.λ
5	10
7	7
9	5
n 11 - 39 (only odd)	3

λ= účiník - power factor

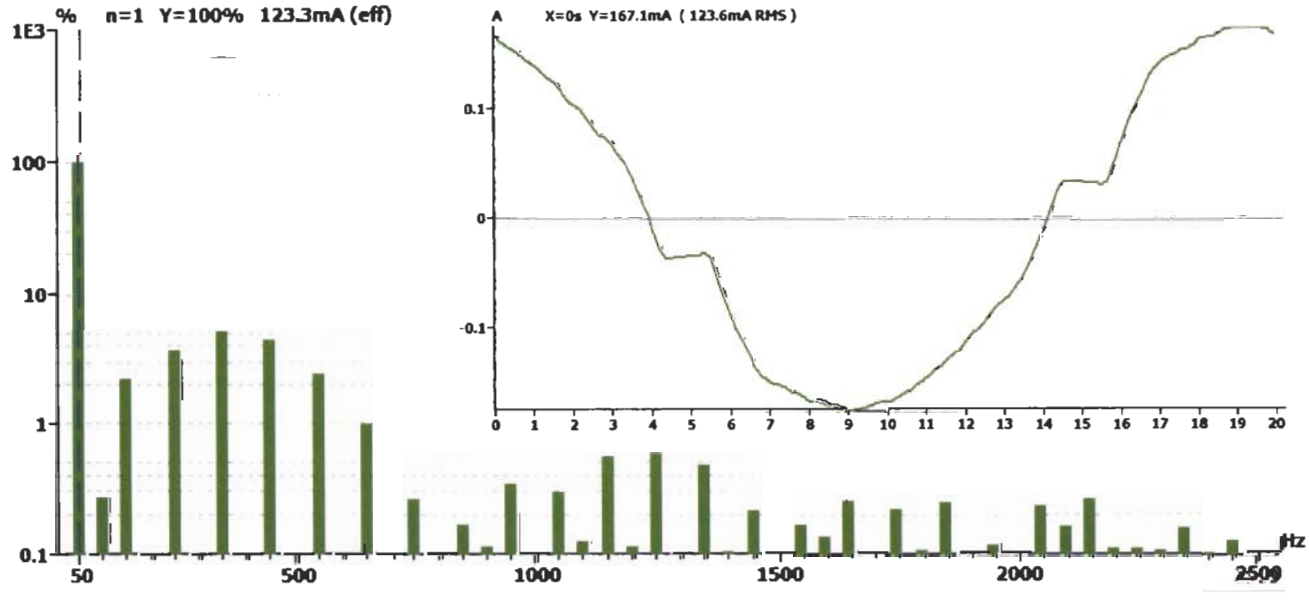
Notes:
Equipment class C, In version with rated power P=42W was measured P=28W.
For measured values see next pages

Test result: Pass

Measured by: Nádherný Date: 28.7. 2017 Measured at: EZÚ

Report title:	701590-01/02
Company Name:	EZU
Date of test:	11:04 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 II (130232.5L232.1X1)
Temperature :	24
Humidity :	40
Comment:	230 V, 50 Hz, 28W
Measurement smoothed data:	Fund. Current: 0.123A Power Factor: 0.967

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	Ieff [A]	Ieff [%]	Limit [%]	Result
1	123.280E-3	99.907		
2	324.091E-6	0.263		PASS
3	2.813E-3	2.280		PASS
4	351.411E-6	0.285		PASS
5	4.428E-3	3.588		PASS
6	330.102E-6	0.268		PASS
7	6.121E-3	4.960	7.00	PASS
8	296.798E-6	0.241		PASS
9	5.347E-3	4.333	5.00	PASS
10	270.946E-6	0.220		PASS
11	2.903E-3	2.352		PASS
12	313.741E-6	0.254		PASS
13	1.257E-3	1.019		PASS
14	286.977E-6	0.233		PASS
15	400.349E-6	0.324		PASS
16	300.614E-6	0.244		PASS
17	301.497E-6	0.244		PASS
18	301.786E-6	0.245		PASS
19	456.361E-6	0.370		PASS
20	287.852E-6	0.233		PASS
21	469.269E-6	0.380		PASS
22	293.163E-6	0.238		PASS
23	717.341E-6	0.581		PASS
24	351.525E-6	0.285		PASS
25	729.527E-6	0.591		PASS
26	317.073E-6	0.257		PASS
27	635.536E-6	0.515		PASS
28	301.578E-6	0.244		PASS
29	404.126E-6	0.328		PASS
30	282.523E-6	0.229		PASS
31	295.819E-6	0.240		PASS
32	373.165E-6	0.302		PASS
33	415.038E-6	0.336		PASS
34	312.305E-6	0.253		PASS
35	391.554E-6	0.317		PASS
36	332.212E-6	0.269		PASS
37	390.578E-6	0.317		PASS
38	310.746E-6	0.252		PASS
39	326.989E-6	0.265		PASS
40	264.810E-6	0.215		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	Ieff [A]	Ieff [%]	Limit [%]	Result
1	123.395E-3	100.000		
2	354.338E-6	0.287		PASS
3	2.850E-3	2.310		PASS
4	393.317E-6	0.319		PASS
5	4.474E-3	3.625		PASS
6	360.713E-6	0.292		PASS
7	6.177E-3	5.006	10.50	PASS
8	329.867E-6	0.267		PASS
9	5.398E-3	4.375	7.50	PASS
10	307.491E-6	0.249		PASS
11	2.963E-3	2.401		PASS
12	349.753E-6	0.283		PASS
13	1.310E-3	1.062		PASS
14	322.444E-6	0.261		PASS
15	424.791E-6	0.344		PASS
16	327.203E-6	0.265		PASS
17	323.249E-6	0.262		PASS
18	324.346E-6	0.263		PASS
19	486.265E-6	0.394		PASS
20	313.761E-6	0.254		PASS
21	502.098E-6	0.407		PASS
22	315.339E-6	0.256		PASS
23	754.783E-6	0.612		PASS
24	388.131E-6	0.315		PASS
25	753.366E-6	0.611		PASS
26	335.611E-6	0.272		PASS
27	672.644E-6	0.545		PASS
28	316.449E-6	0.256		PASS
29	429.470E-6	0.348		PASS
30	298.605E-6	0.242		PASS
31	327.914E-6	0.266		PASS
32	402.187E-6	0.326		PASS
33	448.208E-6	0.363		PASS
34	332.428E-6	0.269		PASS
35	418.871E-6	0.339		PASS
36	363.314E-6	0.294		PASS
37	426.836E-6	0.346		PASS
38	343.540E-6	0.278		PASS
39	350.165E-6	0.284		PASS
40	286.667E-6	0.232		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	229.87	99.945		
2	92.78E-3	0.040	0.2	PASS
3	534.39E-3	0.232	0.9	PASS
4	61.35E-3	0.027	0.2	PASS
5	56.17E-3	0.024	0.4	PASS
6	42.54E-3	0.018	0.2	PASS
7	51.58E-3	0.022	0.3	PASS
8	34.45E-3	0.015	0.2	PASS
9	24.85E-3	0.011	0.2	PASS
10	25.33E-3	0.011	0.2	PASS
11	18.24E-3	0.008	0.1	PASS
12	16.92E-3	0.007	0.1	PASS
13	22.04E-3	0.010	0.1	PASS
14	20.04E-3	0.009	0.1	PASS
15	12.02E-3	0.005	0.1	PASS
16	14.85E-3	0.006	0.1	PASS
17	13.63E-3	0.006	0.1	PASS
18	14.49E-3	0.006	0.1	PASS
19	9.76E-3	0.004	0.1	PASS
20	16.78E-3	0.007	0.1	PASS
21	10.99E-3	0.005	0.1	PASS
22	11.70E-3	0.005	0.1	PASS
23	9.43E-3	0.004	0.1	PASS
24	9.37E-3	0.004	0.1	PASS
25	9.53E-3	0.004	0.1	PASS
26	10.33E-3	0.004	0.1	PASS
27	8.86E-3	0.004	0.1	PASS
28	8.98E-3	0.004	0.1	PASS
29	9.78E-3	0.004	0.1	PASS
30	8.52E-3	0.004	0.1	PASS
31	7.32E-3	0.003	0.1	PASS
32	10.83E-3	0.005	0.1	PASS
33	7.74E-3	0.003	0.1	PASS
34	6.01E-3	0.003	0.1	PASS
35	6.88E-3	0.003	0.1	PASS
36	6.98E-3	0.003	0.1	PASS
37	6.83E-3	0.003	0.1	PASS
38	6.66E-3	0.003	0.1	PASS
39	7.24E-3	0.003	0.1	PASS
40	13.87E-3	0.006	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 II
Type representative: 130232.5L232.1X1

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 10 ms / 0% U_T	C B	Pass

Notes:
The results of the tests specified in the protocol relating to device with electronic ballast:
130232.5L232.1X1: PHILIPS Xi LP 40W 0.3-1.0A SI 230V C123 sXt

*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 II

Operating conditions:
230V, 50Hz, minimally 15 minutes in operation
Temperature: 23°C Rel. humidity: 30 – 45 %

Allowed criterion: B

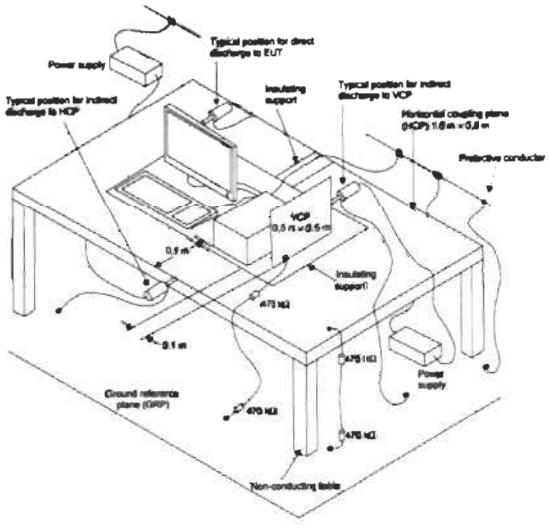
Number of testing discharges: 10/10 contact/air discharge to every test-places in each polarity, besides indirect contact discharges into a vertical and horizontal coupling plane

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

Immunity test - radiated electromagnetic field requirements
According to: (ČSN) EN 61000-4-3

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class II

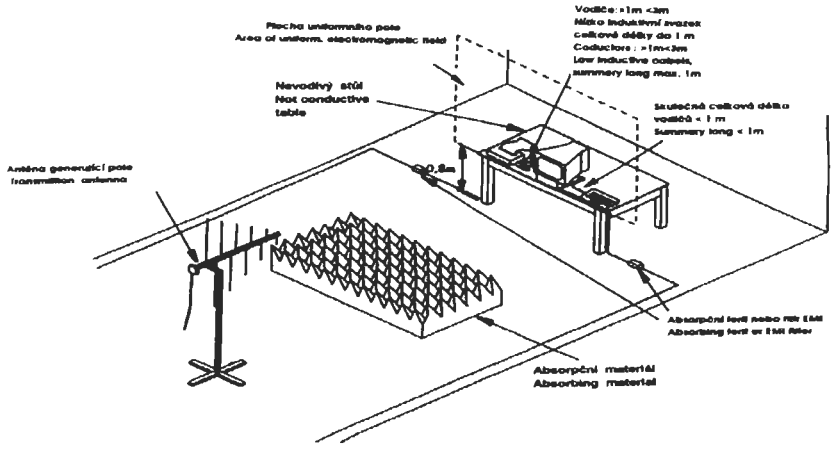
Operating conditions:
230V, 50Hz, minimally 15 minutes in operation
Temperature: 23°C Rel. humidity: 30 – 45 %

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

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

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class II

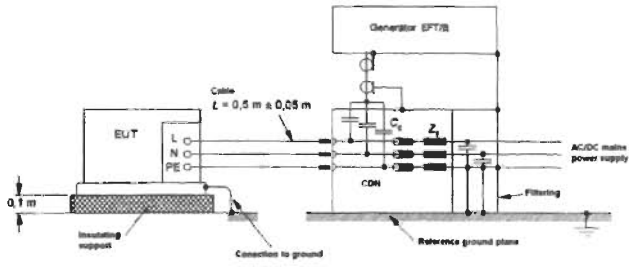
Operating conditions:
230V, 50Hz, minimally 15 minutes in operation
Temperature: 23°C Rel. humidity: 30 – 45 %

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	--	
N+PE	±1kV	--	
L+N+PE	±1kV	--	

Measuring arrangement:



Notes: --

Test result: Pass

Measured by: Nádherný Date: 31.7. 2017 Measured at: EZÚ

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

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class II

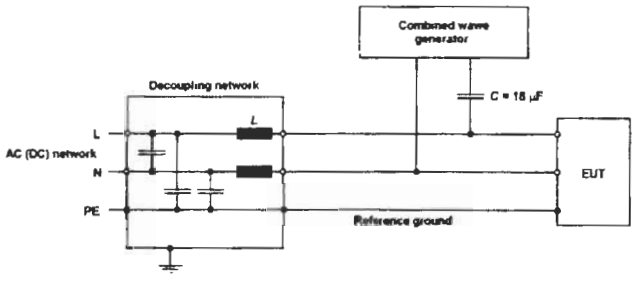
Operating conditions:
230V, 50Hz, minimally 15 minutes in operation
Temperature: 23°C Rel. humidity: 30 – 45 %

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	--	Not applied

Uspořádání při měření - Measuring arrangement:



Poznámky - Notes:--

Test result: Pass

Measured by: Nádherný Date: 31.7. 2017 Measured at: EZÚ

Immunity test - conducted disturbances induced by radio-frequency fields
According to: (ČSN) EN 61000-4-6

Product: Fixed general purpose luminaires, recessed luminaires

Type: URBINI LED, class II

Operating conditions:
230V, 50Hz, minimally 15 minutes in operation
Temperature: 24 °C Rel. humidity: 30 – 45 %

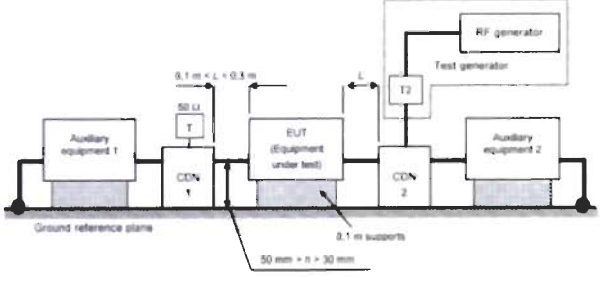
Allowed criterion: A

Testing voltage applied:

Frequency band	Testing voltage level	Note
150kHz - 80MHz	3V (mod. 80% AM / 1 kHz)	Applied by coupling network to mains

Achieved criterion: A

Measuring arrangement:



Notes:--

Test result: Pass

Measured by: Nádherný Date: 31.7. 2017 Measured at: EZÚ

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 II

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
☒ Continuos wawe simulátor 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 generátor 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

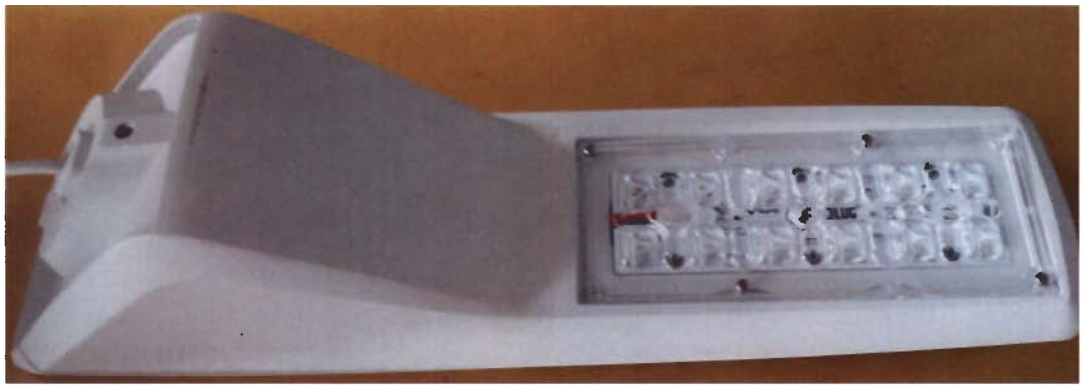
EZU přípravky – EZU equipments:

- ☒ 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 II

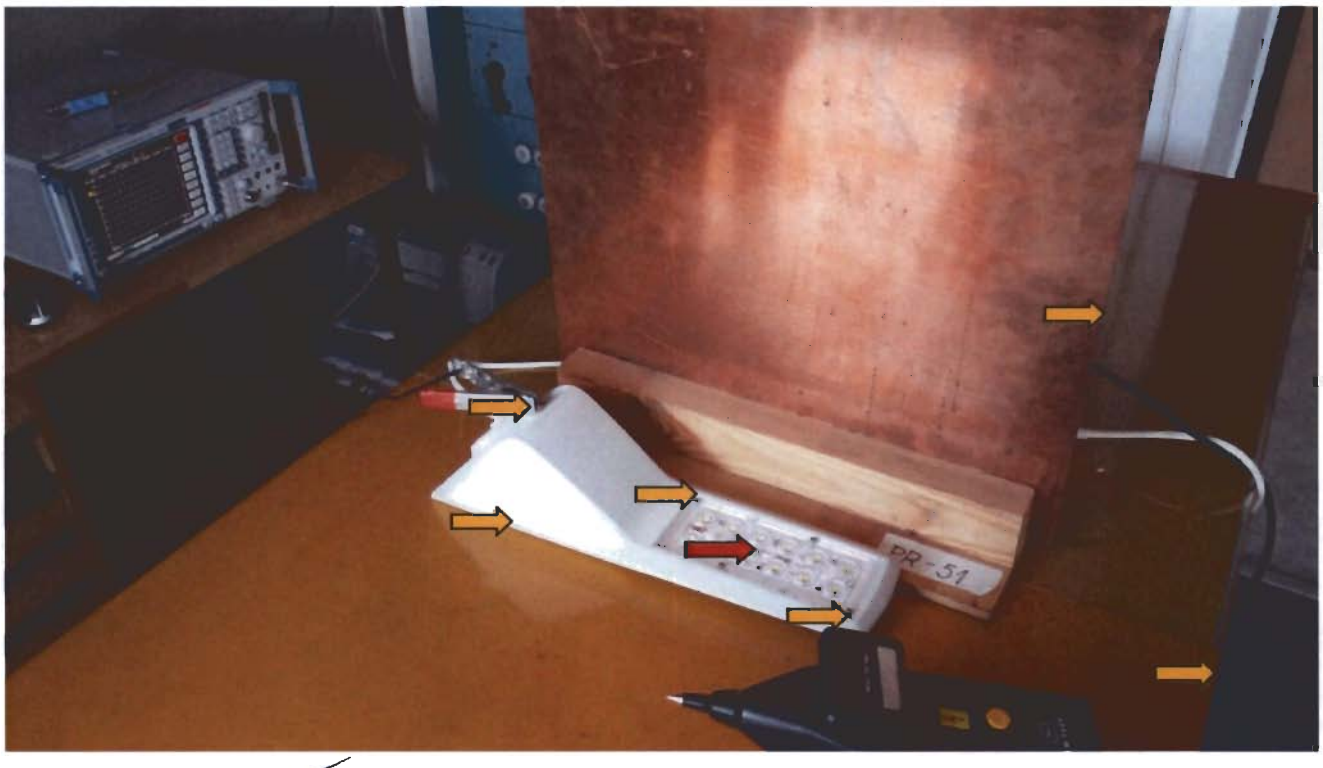


Overview: 130232.5L232.1X1

Source and LED controller: 130232.5L232.1X1

Name plate 130232.5L232.1X1

Electrostatic discharges – tested points (contact discharge air discharge)



Zakłady Badań i Atestacji "ZETOM"
im. Prof. F. Stauba w Katowicach sp. z o.o.
Institutions for Research and Certification "ZETOM" Ltd.
ul. Ks. Bpa H. Bednorza 17, 40-384 Katowice; tel. 032 2569257 e-mail: zetom@zetomkatowice.com.pl
Laboratorium Badawcze i Wzorcujące
Laboratorium badawcze akredytowane przez
Polskie Centrum Akredytacji, sygnatariusza porozumień EA MLA i ILAC MRA
dotyczących wzajemnego uznawania świadectw wzorcowania.
Nr akredytacji AB 024

PRZEDSIĘBIORSTWO FAIR PLAY

AB 024

TEST REPORT

Ref. no. B/2017/158 dated 12/06/2017

Subject: Examination of the degree of protection IK09 for the URBINO street lighting fixture.

Tested for:	LUG Light Factory Sp. z o.o.		
	ul. Gorzowska 11		
	65-127 Zielona Góra		
Tested at:	Institutes for Research and Certification "ZETOM" Katowice		
	Testing and Calibration Laboratory "ZETOM" Katowice.		
Customer Order Index:	Order (e-mail)	dated:	26/05/2017
Laboratory Log Reference No. of Order: B/2017/144			
Test start date:	06/06/2017	**Test end date:**	08/06/2017
This Test Report contains:	5 pages		
3 copies hereof are issued to the following recipients:			
	1. LUG Light Factory Sp. z o.o.		
	2. LUG Light Factory Sp. z o.o.		
	3. LT		
Test supervisor:	Katarzyna Hadam Ph.D.		
Tested and measured by:	Piotr Jureczko, MSc Eng.	Lab Section: WE	
	Kamil Długajczyk	Lab Section: WE	

Test Report prepared by: Kamil Długajczyk

Authorised by:

Z-ca Kierownika Zespołu ds. Badań
mgr inż. Piotr Jureczko

Approved by:

p.o. Z-ca Dyrektora ds. Badań Wzorcujących Kierownik Laboratorium Badawczego Wzorcującego
dr Katarzyna Hadam

Zakłady Badań i Atestacji „ZETOM”

im. Prof. F. Stauba w Katowicach sp. z o.o.

Institutions for Research and Certification “ZETOM” Ltd.

EU Notified Body no. 1436,

for the following Directives: Construction, Low Voltage & Machinery

ul. Ks. Bpa H. Bednorza 17; 40-384 Katowice, Poland

Phone: 0048(032) 2569-257, 0048(032) 2569-273, 0048(032) 2569-353

PROVISIONS

A. Obligatory:

1. The Test Report shall be property of the Customer who has ordered to have the test done.
2. The Test Report and all information contained therein shall only be used with the consent of the Test Report owner.
3. This Test Report shall only be used in full.
4. All test and measurement reports listed herein refer to the test objects only and shall not be construed as a quality approval thereof.
5. The work covered herein has been carried out according to its Work Plan and in line with the Management System requirements specified in the Testing and Calibration Laboratory Quality Manual.
6. All reference to this Test Report shall be made with the following statement (or its equivalent in meaning):

Tested by the Testing and Calibration Laboratory "ZETOM" in Katowice, a unit accredited by the Polish Centre for Accreditation seated in Warsaw within the scope of the Certificate No. AB 024 Annex.

B. Complementary (listed in this Test Report) Section

C. Anomalies (listed in this Test Report) Section

When using the contents of this Test Report, the owner hereof shall state that they use the results produced by the Testing and Calibration Laboratory at the Institutes for Research and Certification "ZETOM" in Katowice, accredited by the Polish Centre for Accreditation in Warsaw.

1. BASIS OF TESTING

1.1. Customer's document title: Order LUG Light Factory Sp. z o.o. to do the research in the Research and Calibration Laboratory "ZETOM" Katowice

1.2. Customer's document identification: Order (e-mail) dated: 26/05/2017

1.3. Subject: Performance test IK09 degree for lighting fixture

2. TESTING OBJECTIVE Verification of properties and characteristics according to PN-EN 50102:2001

3. TEST OBJECT

3.1. Nazwa przedmiotu: URBINO street lighting luminaire

3.2. Customer: LUG Light Factory Sp. z o.o.

3.3. Supplier/Manufacturer: LUG Light Factory Sp. z o.o.

3.4. Place of production: ul. Gorzowska 11; 65-127 Zielona Góra

3.5. Method of object delivery for testing: delivered by the Customer

3.6. Objects collected at: LUG Light Factory Sp. z o.o.

3.7. Collect Report: -

3.8. Date of receiving the test objects: 31/05/2017

3.9. Collector's additional labelling applied: -

3.10. Object packaging: cardboard box

3.11. In-laboratory labelling of objects:

Object labelling in prior of delivery to the Lab	Labelling of objects made at the Lab[1)]	Notes
-	2017/144	-
[1)] Remains the Sample Index		

4. TESTING PROGRAM

The Testing Program includes the testing's cope of the following reference standards:

- PN-EN 50102:2001 "Degree of protection against external mechanical impacts provided by enclosures of electrical equipment (IK code)".

5. Results

5.1 Results of the IK degree of protection provided by the URBINO street lighting fixture

Degree of protection IK09
The test was done by hitting a 5.0 kg hammer with an energy equivalent to 10 J impact on the outside of the luminaire. Three hits in different lighting fixtures (total with a translucent glass shade) did not cause distortion of the housing body or cracks in the glass cover. **Proper protection provided by the luminaire is ensured.**

Photos of the lighting fixture tested:

RU

URBINI LED

Каталожная группа: ИНФРАСТРУКТУРНОЕ ОСВЕЩЕНИЕ

220-240V 50/60 Hz | IK 08 | IP 66 | LED

130232.5L041.111
URBINI LED 20W 2400lm 4000K IP66 O10 - для пешеходных зон серый I

Светодиодный светильник для уличного освещения, выполненный в современном дизайне.

МЕХАНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

Монтаж: на столбе ø60 мм, на горизонтальных и вертикальных столбах, на кронштейне ø60 мм, при помощи держателя (в комплекте)
Корпус: литий под давлением алюминий
Боковая площадь, подверженная воздействию ветра: 0,029 m^2
Цвет: серый
RAL: 7035
Диапазон рабочих температур [°C]: -20 ... +50

ЭЛЕКТРИЧЕСКИЕ ХАРАКТЕРИСТИКИ

Эффективность драйвера: >89%
Напряжение питания: 220-240V 50/60Hz
Источник света в комплекте: Да
Выходной ток [mA]: 500
Тип оснащения: ED
Источник света: LED
Электрическое подключение: светильник оборудован 3x0,75 mm^2 кабелем длиной 4 м (Класс I)

ОПТИЧЕСКИЕ ХАРАКТЕРИСТИКИ

Распределение света: круговой
Тип освещения: прямой
Тип оптики: O10 - для пешеходных зон
CRI/Ra: >70
Световой поток LED [лм]: 2750
Световой поток светильника [лм]: 2400
Цветовая температура [K]: 4000

ОБЩИЕ ДАННЫЕ

Расчетный срок службы (L80B10): 100 000 h
Доступно под заказ: DALI, термозащита, NTC, LLOC, защита от перенапряжения 10kV
Дополнительная информация: -
Примечания: полюс и стрела не являются частью светильника
Гарантия: 5 лет
Применение: велосипедные дорожки, прогулочные аллеи, тротуары, парки, стоянки, жилые кварталы, общественные места, игровые площадки, прогулочные зоны, дороги в границах жилых районов

Код	Класс защиты	Мощность светильника [Вт]	Световой поток светильника [лм]	Эффективность [lm/W]	Цветовая температура [K]	CRI/Ra	Диапазон рабочих температур [°C]	Вес нетто [кг]
130232.5L041.111	Класс защиты: I	20	2400	120	4000	>70	-20 ... +50	2,9

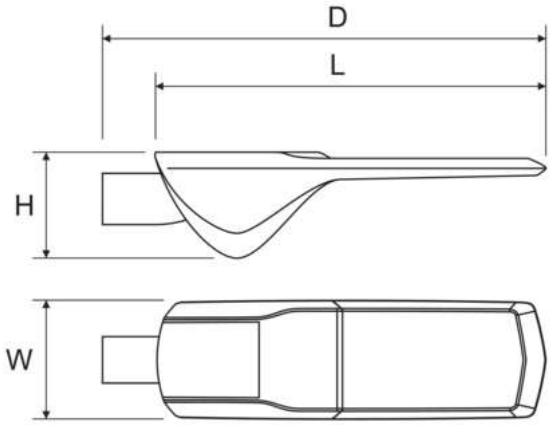
Толерантность светового потока +/- 10%.
Допуск мощности +/- 5%.
Световой поток, распределение силы света и эффективность светоотдачи были исследованы согласно нормы EN ISO 17025:2005 для серии норм EN13032, а так же нормы LM-79.
Обратите внимание, что стандартный светильник не предназначен для использования в среде с высокой степенью солености. В случае необходимости адаптировать светильник для работы в таких условиях, обратитесь в наш отдел продаж, чтобы подтвердить возможность использования дополнительного защитного покрытия.
Актуальная информация о продукте, а так же Общие условия гарантии доступны на нашем сайте www.luglightfactory.ru

RU

URBINI LED

Каталожная группа: ИНФРАСТРУКТУРНОЕ ОСВЕЩЕНИЕ

Код	Тип оптики	Вырежьте размеры [mm] L W H D	ØS	Количество на паллете
130232.5L041.111	010 - для пешеходных зон	407 110 120 490	60	156



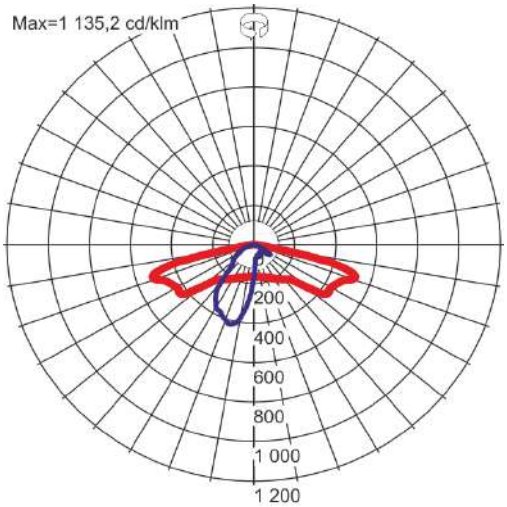
ACCESSORIES

150170.00817 Переходник 60 / 76мм

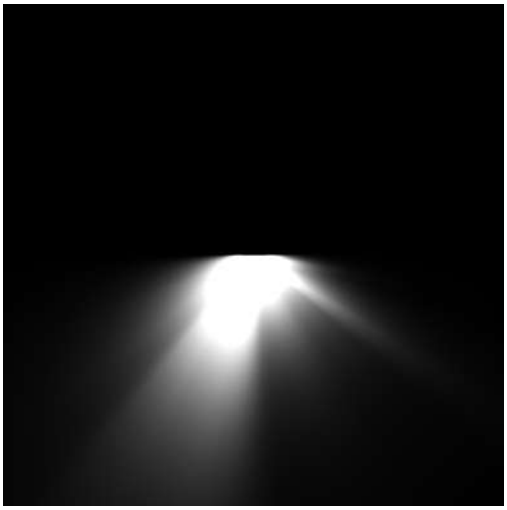
150170.00818
150173.00906

Настенный кронштейн ø60мм

КРИВЫЕ СВЕТОВОГО ПУЧКА



СПОСОБ ОСВЕЩЕНИЯ



Толерантность светового потока +/- 10%.
Допуск мощности +/- 5%.
Световой поток, распределение силы света и эффективность светоотдачи были исследованы согласно нормы EN ISO 17025:2005 для серии норм EN13032, а так же нормы LM-79.
Обратите внимание, что стандартный светильник не предназначен для использования в среде с высокой степенью солености. В случае необходимости адаптировать светильник для работы в таких условиях, обратитесь в наш отдел продаж, чтобы подтвердить возможность использования дополнительного защитного покрытия.
Актуальная информация о продукте, а так же Общие условия гарантии доступны на нашем сайте www.luglightfactory.ru

ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV

ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC
ELEKTROTECHNISCHE PRÜFANSTALT - TSCHECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - RÉPUBLIQUE TCHÈQUE
ЭЛЕКТРОТЕХНИЧЕСКИЙ ИСПЫТАТЕЛЬНЫЙ ИНСТИТУТ - ЧЕШСКАЯ РЕСПУБЛИКА

Pod Lisem 129, 171 02 Praha 8 - Troja

CERTIFIKÁT/CERTIFICATE

č./No.: 5170011

Objednatel/Ordering firm: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobce/Držitel licence//Manufacturer/Licence holder: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobní místo/Factory: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobek/Name of product: Svítidlo pro osvětlení veřejných komunikací/Luminaire for road and street lighting

Obchodní značka/Trade mark:

Typ/Type of product: URBINI LED, class I

Přesná specifikace výrobku je uvedena v příloze 1, která tvoří nedílnou součást tohoto certifikátu./Specification of the product is in the annex 1 that forms an integral part of this certificate.

Elektrotechnický zkušební ústav na základě splnění požadavků certifikačního schématu „ENEC" uděluje licenci na užívání značky/Electrotechnical Testing Institute is granting according to the certification scheme „ENEC" a licence for using the following mark

Touto značkou může být označován výrobek specifikovaný v tomto certifikátu po dobu platnosti níže uvedené smlouvy na užívání značky ENEC, při dodržení všech pravidel uvedených v této smlouvě./This mark may be used for the product specified in this certificate within validity of the Agreement on the use of the ENEC Mark by implementing all the rules stated in the Agreement.

Právo označovat výrobek výše uvedenou značkou je založeno na/The right to use the above mentioned mark for the product is based on:

- protokolu o zkouškách č./Test report No.: 701588-01/01 ze dne/of: 31.07.2017

Vzorek zkoušeného výrobku je ve shodě s požadavky/A sample of the product was tested and found to be in conformity with:
EN 60598-1:15,
EN 60598-2-3:03+A1:11

- provedení inspekce v místě výroby – viz inspekční zpráva č./inspection in the place of manufacture – see inspection report No.: 602766-01 ze dne/of 12.07.2016
- smlouvě na užívání značky ENEC mezi objednavatelem a Elektrotechnickým zkušebním ústavem č./the Agreement on the use of the ENEC Mark concluded between the ordering firm and the Electrotechnical Testing Institute No.: 701588

03.10.2017

V Praze dne/Prague

Mgr. Miroslav Sedláček
Vedoucí certifikačního orgánu/
Head of Certification Body

razítko/Stamp

• C E R / 5 1 7 0 0 1 1 •

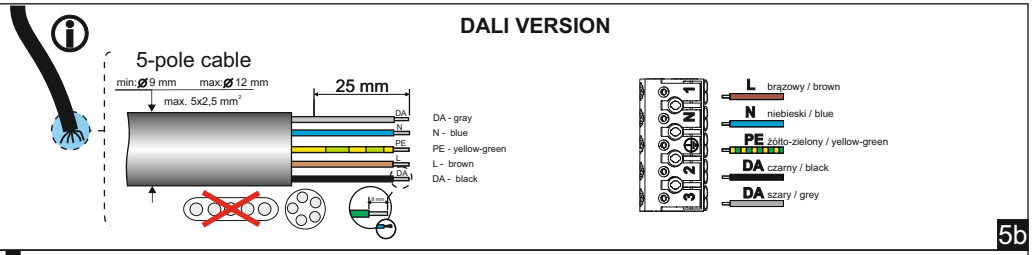
701588-01

Příloha 1 licence č. 5170011 **Annex 1 to Licence No. 5170011**	
Držitel licence Licensee	LUG Light Factory Sp.z o.o. Ul. Grozowska 11, 65-127 Zilena Góra, Poland
Výrobce Manufacturer	LUG Light Factory Sp.z o.o. Ul. Grozowska 11, 65-127 Zilena Góra, Poland
Druh svítidla Kind of luminaire	**Svítidlo pro osvětlení cest a ulic** **Luminaire for road and street lightning**
Typ svítidla Type reference	URBINI LED
Obchodní značka Trade mark	LUG Light Factory Sp.z o.o.
Protokol o zkoušce Test report	604040-01/01
Národní normy National standard(s)	EN 60598-2-3:2003 + A1:2011 ČSN EN 60598-1:2015
Evropské normy European standard(s)	EN 60598-2-3:2003 + A1:2011 EN 60598-1:2015
Jmenovité napětí Rated voltage	220 - 240 V
Jmenovitý příkon a počet zdrojů Rated wattage and number of lamps	21, 29, 38 W
Typ světelného zdroje Lamp identification	LED modul LED module
Stupeň krytí Degree of protection	IP 66
Připojení napájení Supply connection	Vodiče Wires
Podkladová plocha Supporting surface	Normálně hořlavý povrch Normally flammable surface
Druh ochrany Protection against electric shock	Cl.I.

Příloha 1 licence č. 5170011 Annex 1 to Licence No. 5170011			
EN 60598-2-3:2003			
Clause	Requirement – Test	Result – Remark	Verdict
	ANNEX ZB, SPECIAL NATIONAL CONDITIONS ENEC-301 – AMENDMENT B RESTRICTIONS		
(2.2)	Class 0 not accepted		OK
(3.3)	DK: power supply cord with label		—
	IT: warning label on Class 0 luminaire		—
(4.5.1)	DK, FR: socket-outlets		—
(5.2.1)	DK, FI, SE, GB: type of plug		—
ZC	**ANNEX ZC, NATIONAL CONDITIONS ENEC-301 – AMENDMENT B RESTRICTIONS**		
(13.3)	DK: needle-flame or glow-wire test		—
(13.3.2 + 13.3.3)	FR: glow-wire test		—
IEC 598-1	**COMMON MODIFICATIONS**		
3.2.12	NL - cable without mains plug		—
3.3.3.c	fixed wiring		—
4.11.6	Electro-mechanical contact systems		—
5.2.2	Type of cable .....:		—
5.2.15	Colour code low voltage		—

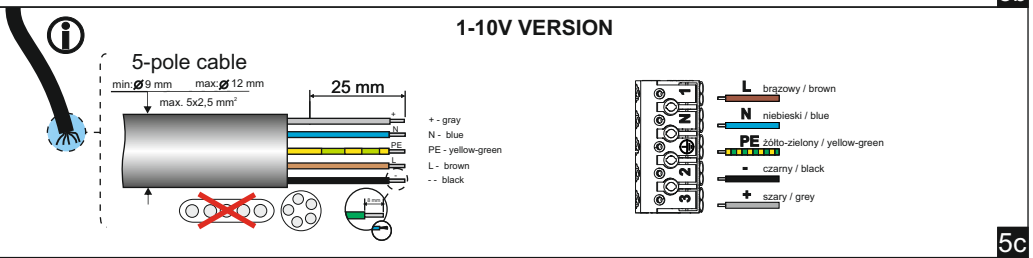
elektrotechnický zkušební ústav
ezú
Pod Lisem 129, 171 02 Praha 8-Troja
-1-

DALI VERSION



5b

1-10V VERSION



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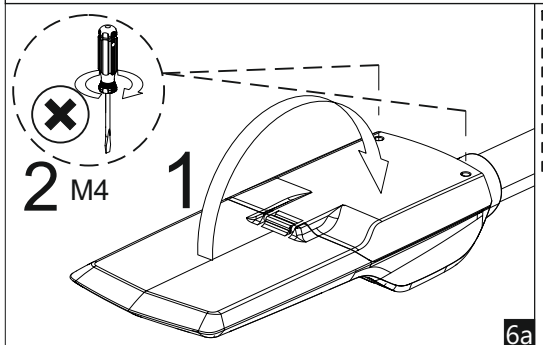

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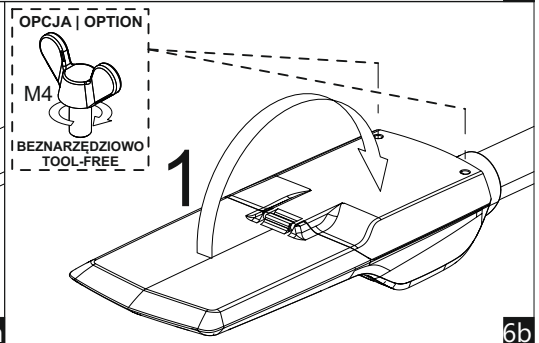
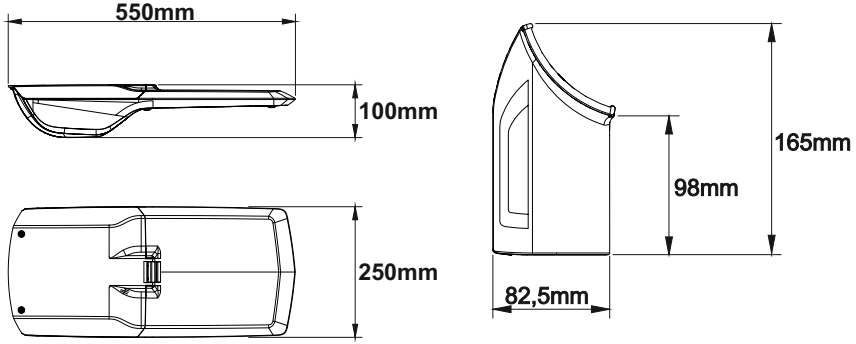


6b

WYMIARY | DIMENSIONS | DIMENSIONS | DIMENSIONES | РАЗМЕРЫ | ABMESSUNGEN



1

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 E0000628S
www.bioelektro.pl, www.biosystem.pl
Biuro@bioelektro.pl

INSTALLATION INSTRUCTION

Version 08/2017/006

URBINO LED

INSTRUKCJA MONTAŻU | ИНСТРУКЦИЯ ПО МОНТЖАУ | MONTAGEANLEITUNG | INSTRUCTIONS DE MONTAGE | NÁVOD K MONTÁZI | SZERELÉSI UTASÍTÁSOK
MONTERINGSVEJLEDNING | INSTRUÇÕES DE MONTAGEM | MONTERINGSVEJLEDNING | INSTRUCCIONES DE MONTAJE | KOKOONPANO - JA KIINNITYSOHJEET
MONTAGE INSTRUKTIE | INSTRUZIONI DI MONTAGGIO | ІНСТРУКЦІЯ З МОНТАЖУ | MONTAJ YÖNERGESI

(PL) MONTAŻU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPOWIEDNIE UPRAWNIENIA.

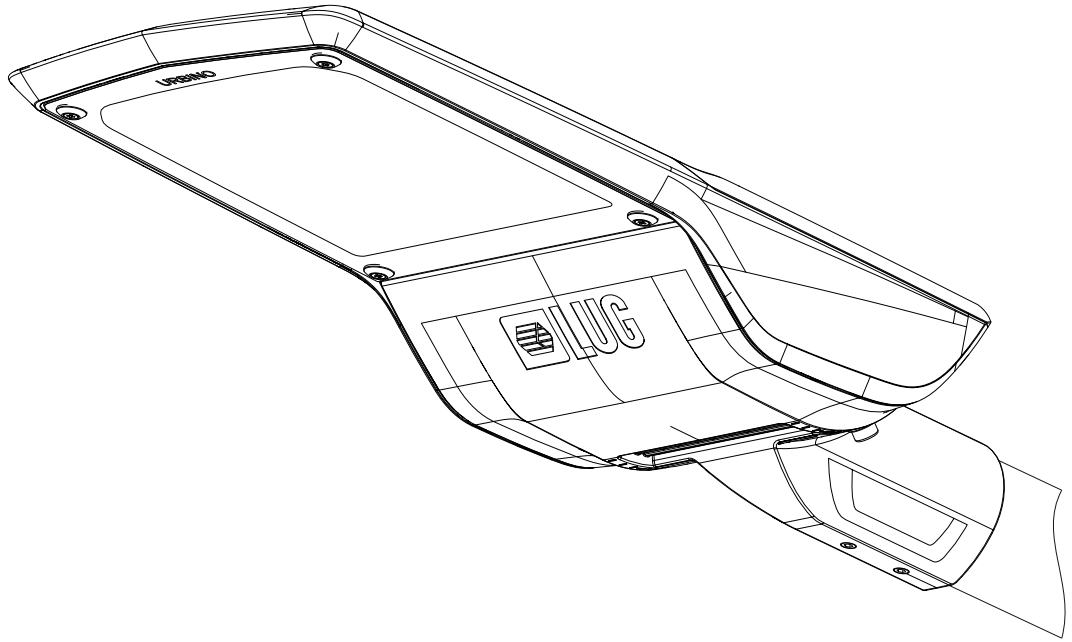
(GB) INSTALLATION MUST BE PERFORMED BY AN AUTHORIZED TECHNICIAN.

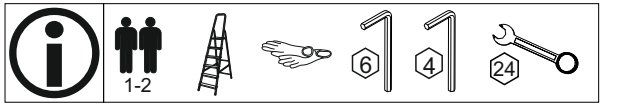
(RU) МОНТАЖ НУЖЕН БЫТЬ СОВЕРШЕН ЧЕРЕЗ ЛИЦО ИМЕЮЩЕ СООТВЕТСТВЕННЫЕ ПРАВА.

(UA) МОНТАЖ ПОВИННА ЗРОБИТИ ОСОБА, ЩО МАЄ ВІДПОВІДНІ УПОВНОВАЖЕННЯ.

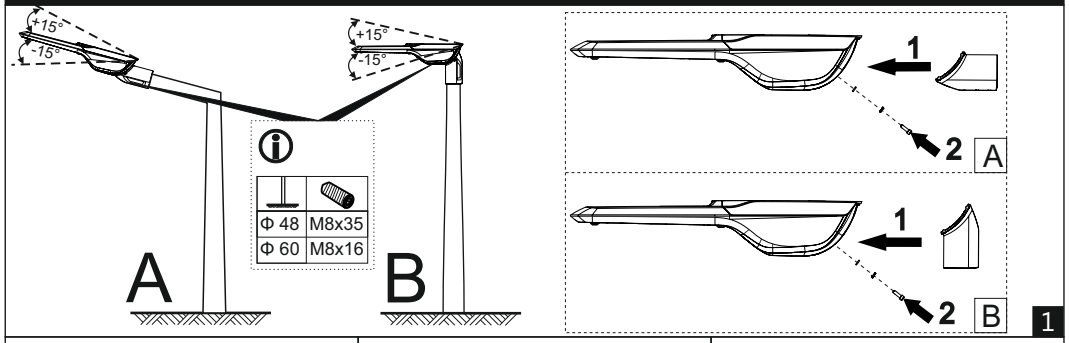
(D) DIE MONTAGE VON EINER PERSONE, DIE UBER ERFORDRELICHE KENNTNISE VERFUGT GEMACHT WERDEN.

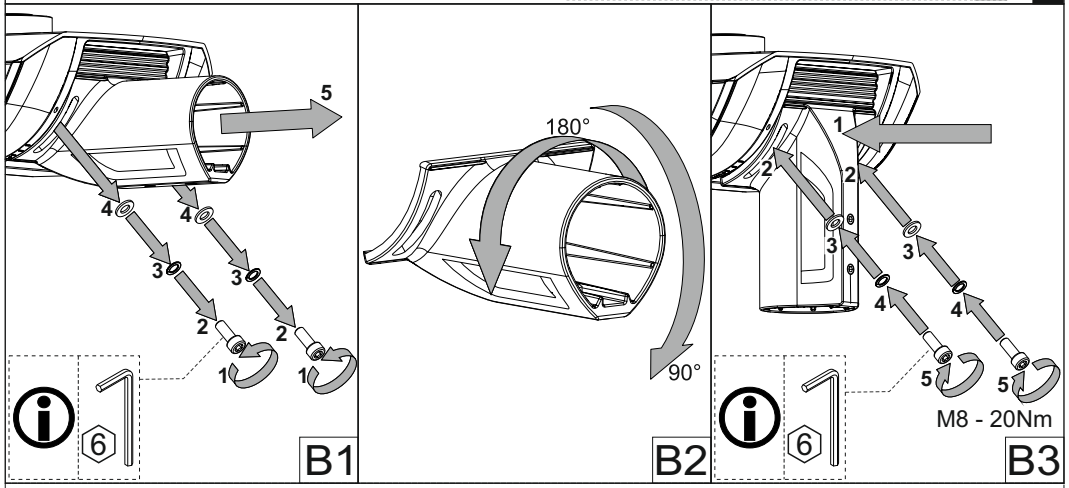
(F) LA MONTAGE DOIT FAIRE UNE PERSONNE QUI POSSEDER LES EXPERIENCES COMPETENTES.

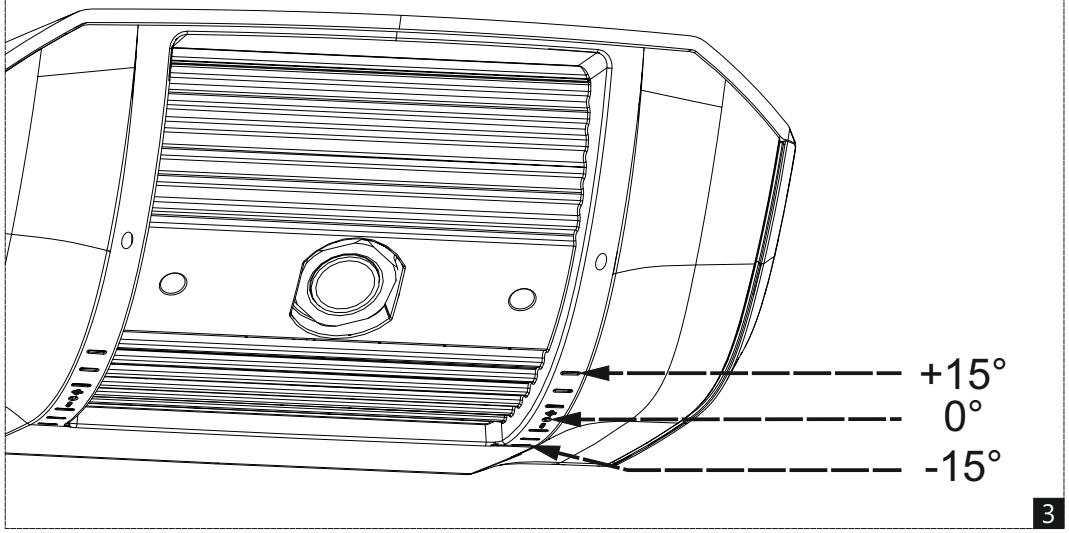




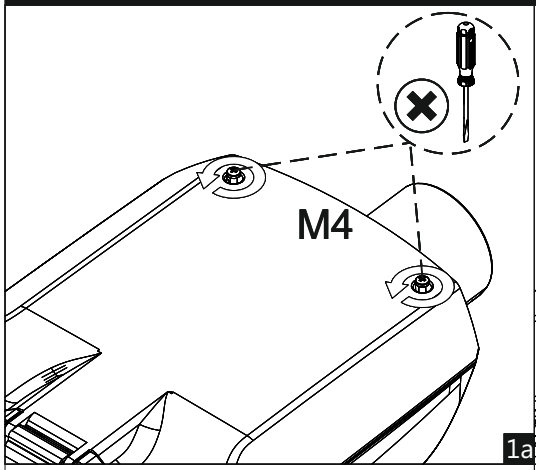
SPOSOBY MONTAŻU | INSTALLATION POSITIONS | DIFFÉRENTES POSSIBILITÉS DE MONTAGE POSIÇÕES DE MONTAGEM | СПОСОБЫ МОНТАЖА | ANWENDUNGSBEREICH

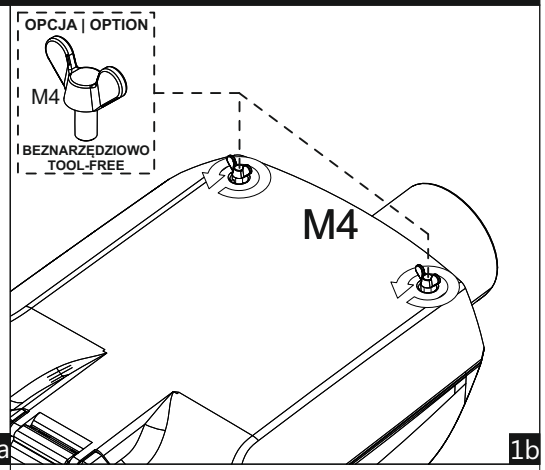


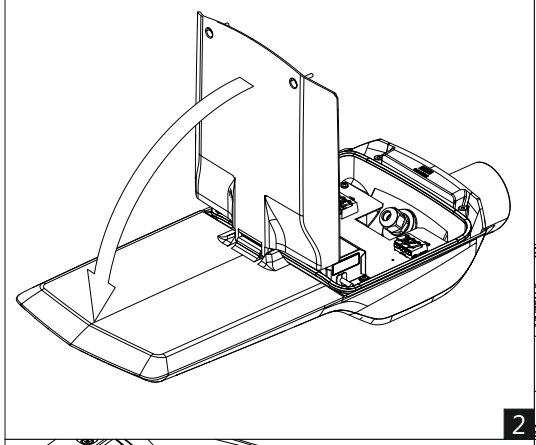


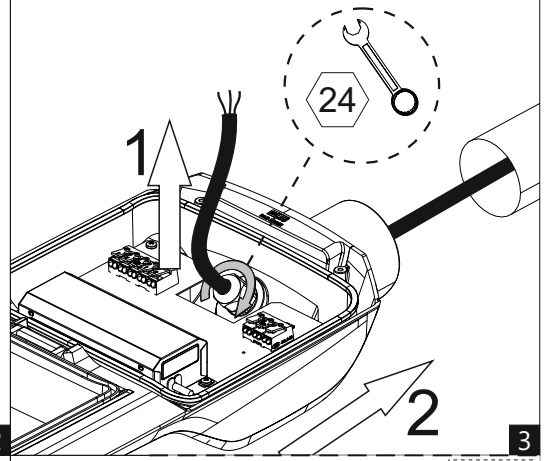


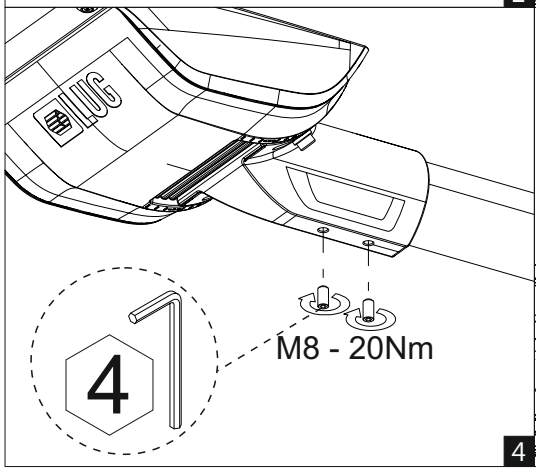
MONTAŻ | MONTAGE | MONTAGE | MONTAGEM | МОНТАЖ | MONTAGE

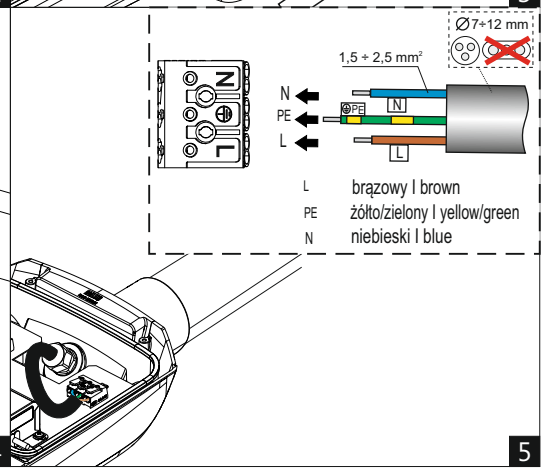












ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЯМ CE

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**

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
PN-EN 62262:2003

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

Опубликовано

DYREKTOR
DS. TECHNICZNYCH
mgr inż. Mariusz Ejsmont

Уполномоченное лицо подписи

ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЯМ ЕС

LG/2016/03/288

ПРИКРЕПЛЕНИЕ

Заводская

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ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЯМ ЕС

LG/2016/03/288

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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.

LUG Light Factory Sp. z o.o.
ul. Gorzowska 11
65-127 Zielona Góra
tel. +48 68 411 72 68

NIP: PL 929-17-85-452, REGON 080212116
WEE E0001382WZ, KRS 0000290498
Окружной суд в Зелена-Гура

RU

URBINO LED

Каталожная группа: ИНФРАСТРУКТУРНОЕ ОСВЕЩЕНИЕ

130222.5L131.041
URBINO LED 37W 4100lm 4000K IP66 O5 - для внутриквартальных дорог серый I

Светодиодный светильник для уличного освещения, выполненный в современном дизайне.

МЕХАНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

Монтаж: на столбе ø60/48 мм, на столбе ø76 мм - модификация .829, на кронштейне ø60/48 мм, на кронштейне ø76 мм - модификация .829
Корпус: литий под давлением алюминий
Боковая площадь, подверженная воздействию ветра: 0.039 m^2
Цвет: серый
RAL: 7035
Диапазон рабочих температур [°C]: -40 ... +55

ЭЛЕКТРИЧЕСКИЕ ХАРАКТЕРИСТИКИ

Эффективность драйвера: >95%
Напряжение питания: 220-240V 50/60Hz
Источник света в комплекте: Да
Выходной ток [mA]: 700
Тип оснащения: ED
Источник света: LED
Электрическое подключение: кабель max 3x2,5 mm^2

ОПТИЧЕСКИЕ ХАРАКТЕРИСТИКИ

Тип освещения: прямой
Тип оптики: O5 - для внутриквартальных дорог
Плафон: закаленное стекло
CRI/Ra: >70
Световой поток LED [лм]: 4850
Световой поток светильника [лм]: 4100
Цветовая температура [K]: 4000
ULOR / DLOR: 0% / 100%

ОБЩИЕ ДАННЫЕ

Расчетный срок службы (L80B10): 100 000 h
Доступно под заказ: DALI, DIM 1..10V, LLOC, сумеречный датчик, ножевой разъем, защита от перенапряжения 10kV, термозащита, NTC
Дополнительная информация: Регулировка угла наклона скачка: от -15° до +15° (каждые 5°)
Дополнительное оборудование: дополнительная защита от коррозии (расширение индекса: .985), доступ к ячейке драйвера без использования инструментов (расширение индекса: .825), светильник с держателем для крепления на колонке ø76мм (расширение индекса: .829)
Примечания: полюс и стрела не являются частью светильника
Гарантия: 5 лет
Применение: скоростные дороги, муниципальные дороги, городские дороги, дороги в границах жилых районов, пешеходные переходы, освещение территорий, прогулочные аллеи, прогулочные зоны, велосипедные дорожки

Код	Класс защиты	Тип оптики	Мощность светильника [Вт]	Световой поток светильника [лм]	Эффективность [lm/W]	Цветовая температура [K]	CRI/Ra	Диапазон рабочих температур [°C]

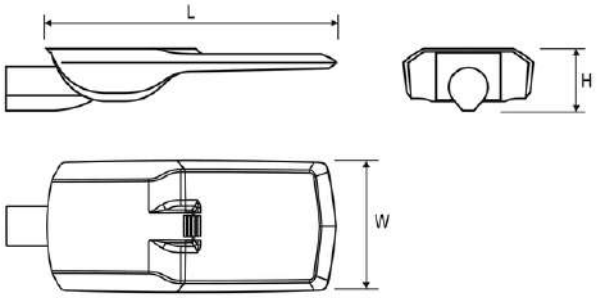
Обратите внимание, что стандартный светильник не предназначен для использования в среде с повышенной коррозионной категорией. Использование светильника для работы в среде, для которой требуется дополнительная защита от коррозии, требует использования индекса с расширением .985 (по запросу).
Чтобы применить светильник в агрессивной среде, например, с повышенной концентрацией серы, соли или других агрессивных веществ, необходима консультация с Технической подготовкой филиала LUG.
Толерантность светового потока +/- 10%.
Допуск мощности +/- 5%.
Световой поток, распределение силы света и эффективность светоотдачи были исследованы согласно нормы EN ISO 17025:2005 для серии норм EN13032, а так же нормы LM-79.
Актуальная информация о продукте, а так же Общие условия гарантии доступны на нашем сайте www.luglightfactory.ru

URBINO LED

Каталожная группа: ИНФРАСТРУКТУРНОЕ ОСВЕЩЕНИЕ

130222.5L131.041	I	05 - для внутриквартальных дорог	37	4100	111	4000	>70	-40 ... +55

Код	Размеры [mm] L W H	Количество на паллете	Количество в упаковке	Вес нетто [кг]
130222.5L131.041	550 250 100	20	1	6,8



ACCESSORIES

□ 150170.00818
■ 150173.00906

Настенный кронштейн ø60мм

Обратите внимание, что стандартный светильник не предназначен для использования в среде с повышенной коррозионной категорией. Использование светильника для работы в среде, для которой требуется дополнительная защита от коррозии, требует использования индекса с расширением .985 (по запросу).
Чтобы применить светильник в агрессивной среде, например, с повышенной концентрацией серы, соли или других агрессивных веществ, необходима консультация с Технической подготовкой филиала LUG.
Толерантность светового потока +/- 10%.
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Актуальная информация о продукте, а так же Общие условия гарантии доступны на нашем сайте www.luglightfactory.ru

RU

URBINO LED

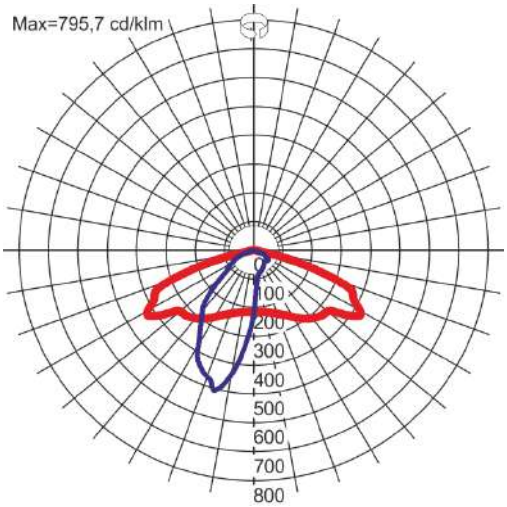
Каталожная группа: ИНФРАСТРУКТУРНОЕ ОСВЕЩЕНИЕ

ДРУГИЕ ФОТОГРАФИИ

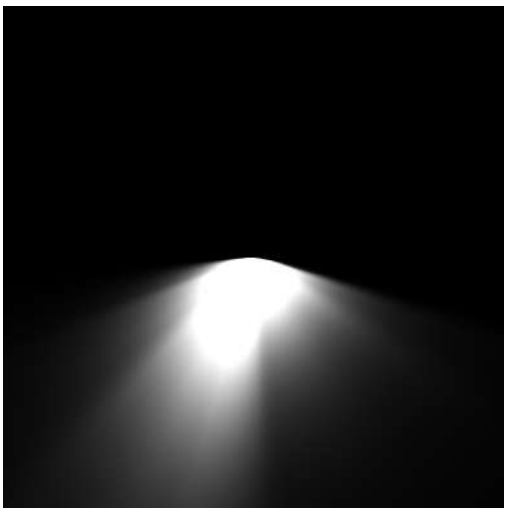





КРИВЫЕ СВЕТОВОГО ПУЧКА



СПОСОБ ОСВЕЩЕНИЯ



Обратите внимание, что стандартный светильник не предназначен для использования в среде с повышенной коррозионной категорией. Использование светильника для работы в среде, для которой требуется дополнительная защита от коррозии, требует использования индекса с расширением .985 (по запросу).
Чтобы применить светильник в агрессивной среде, например, с повышенной концентрацией серы, соли или других агрессивных веществ, необходима консультация с Технической подготовкой филиала LUG.
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Актуальная информация о продукте, а так же Общие условия гарантии доступны на нашем сайте www.luglightfactory.ru

ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV

ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC
ELEKTROTECHNISCHE PRÜFANSTALT - TSCHECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - RÉPUBLIQUE TCHÈQUE
ЭЛЕКТРОТЕХНИЧЕСКИЙ ИСПЫТАТЕЛЬНЫЙ ИНСТИТУТ - ЧЕШСКАЯ РЕСПУБЛИКА

Pod Lisem 129, 171 02 Praha 8 - Troja

CERTIFIKÁT/CERTIFICATE

č./No.: 5160010

Objednatel/Ordering firm: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobce/Držitel licence//Manufacturer/Licence holder: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobek/Name of product: Fixed general purpose luminaires, road and street lighting

Obchodní značka/Trade mark:

Typ/Type of product: URBINO LED

Přesná specifikace výrobku je uvedena v příloze 1, která tvoří nedílnou součást tohoto certifikátu./Specification of the product is in the annex 1 that forms an integral part of this certificate.

Elektrotechnický zkušební ústav na základě splnění požadavku certifikačního schématu „ENEC" uděluje licenci na užívání značky/Electrotechnical Testing Institute is granting according to the certification scheme „ENEC" a licence for using the following mark

Touto značkou může být označován výrobek specifikovaný v tomto certifikátu po dobu platnosti níže uvedené smlouvy na užívání značky ENEC, při dodržení všech pravidel uvedených v této smlouvě./This mark may be used for the product specified in this certificate within validity of the Agreement on the use of the ENEC Mark by implementing all the rules stated in the Agreement.

Právo označovat výrobek výše uvedenou značkou je založeno na/The right to use the above mentioned mark for the product is based on:

- protokolu o zkouškách č./Test report No.: 601205-01/01 ze dne/of 13.06.2016

Vzorek zkoušeného výrobku je ve shodě s požadavky/A sample of the product was tested and found to be in conformity with:
EN 60598-1:15, EN 60598-2-3:03+A1:11

- provedení inspekce v místě výroby – viz inspekční zpráva č./inspection in the place of manufacture – see inspection report No.: 602766-01
- smlouvě na užívání značky ENEC mezi objednavatelem a Elektrotechnickým zkušebním ústavem č./the Agreement on the use of the ENEC Mark concluded between the ordering firm and the Electrotechnical Testing Institute No.: 601205

16.06.2016

V Praze dne/Prague

Mgr. Miroslav Sedláček
Vedoucí certifikačního orgánu/
Head of Certification Body

elektrotechnický zkušební ústav ezú Pod Lisem 129, 171 02 Praha 8 - Troja -1-

razítko/Stamp

CER/5160010

601205-01

Příloha č. 1 licence č. 5160010 **Annex No. 1 to Licence No. 5160010**	
Držitel licence Licensee	**LUG Light Factory Sp. Z o.o.** Ul. Gorzowska 11, 65-127 Zielona Góra, Poland
Výrobce Manufacturer	**LUG Light Factory Sp. Z o.o.** Ul. Gorzowska 11, 65-127 Zielona Góra, Poland
Druh svítidla Kind of luminaire	**Luminaires for road and street lighting** Svítidla pro osvětlení cest a ulic
Typ svítidla Type reference	URBINO LED IP66
Obchodní značka Trade mark	LUG
Protokol o zkoušce Test report	601205-01/01
Národní normy National standard(s)	ČSN EN 60598-1:2015 ČSN EN 60598-2-3:2003 +A1:2011
Evropské normy European standard(s)	EN 60598-1:2015 EN 60598-2-3:2003 +A1:2011
Jmenovité napětí Rated voltage	220÷240 V
Jmenovitý příkon a počet zdrojů Rated wattage and number of lamps	28, 37, 55, 84, 110 W
Typ světelného zdroje Lamp identification	LED modul LED module
Stupeň krytí Degree of protection	IP 66
Připojení napájení Supply connection	Svorkovnice Terminal block
Podkladová plocha Supporting surface	normálně hořlavý podklad normally flammable surface
Druh ochrany Protection against electric shock	Cl. I

Příloha č. 1 licence č. 5160010 Annex No. 1 to Licence No. 5160010			
EN 60 598-2-1			
Clause	Requirement – Test	Result – Remark	Verdict
	ANNEX ZB, SPECIAL NATIONAL CONDITIONS ENEC-301 – AMENDMENT B RESTRICTIONS		
(2.2)	Class 0 not accepted		OK
(3.3)	DK: power supply cord with label		---
	IT: warning label on Class 0 luminaire		---
(4.5.1)	DK, FR: socket-outlets		---
(5.2.1)	DK, FI, SE, GB: type of plug		---
ZC	**ANNEX ZC, NATIONAL CONDITIONS ENEC-301 – AMENDMENT B RESTRICTIONS**		
(13.3)	DK: needle-flame or glow-wire test		---
(13.3.2 + 13.3.3)	FR: glow-wire test		---
IEC 598-1	**COMMON MODIFICATIONS**		
3.2.12	NL - cable without mains plug		---
3.3.3.c	fixed wiring		---
4.11.6	Electro-mechanical contact systems		---
5.2.2	Type of cable .....:		---
5.2.15	Colour code low voltage		---

elektrotechnický zkušební ústav
ezú
Pod Lisem 129, 171 02 Praha 8 - Trója
-1-

ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV

ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC
ELEKTROTECHNISCHE PRÜFANSTALT - TSCHECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - RÉPUBLIQUE TCHÈQUE
ЭЛЕКТРОТЕХНИЧЕСКИЙ ИСПЫТАТЕЛЬНЫЙ ИНСТИТУТ - ЧЕШСКАЯ РЕСПУБЛИКА

Pod Lisem 129, 171 02 Praha 8 - Troja

CERTIFIKÁT/CERTIFICATE

č./No.: 5160011

Objednatel/Ordering firm: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobce/Držitel licence//Manufacturer/Licence holder: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobek/Name of product: Fixed general purpose luminaires, road and street lighting

Obchodní značka/Trade mark:

Typ/Type of product: URBINO LED

Přesná specifikace výrobku je uvedena v příloze 1, která tvoří nedílnou součást tohoto certifikátu./Specification of the product is in the annex 1 that forms an integral part of this certificate.

Elektrotechnický zkušební ústav na základě splnění požadavků certifikačního schématu „ENEC" uděluje licenci na užívání značky/Electrotechnical Testing Institute is granting according to the certification scheme „ENEC" a licence for using the following mark

Touto značkou může být označován výrobek specifikovaný v tomto certifikátu po dobu platnosti níže uvedené smlouvy na užívání značky ENEC, při dodržení všech pravidel uvedených v této smlouvě./This mark may be used for the product specified in this certificate within validity of the Agreement on the use of the ENEC Mark by implementing all the rules stated in the Agreement.

Právo označovat výrobek výše uvedenou značkou je založeno na/The right to use the above mentioned mark for the product is based on:

- protokolu o zkouškách č./Test report No.: 601209-01/01 ze dne/of: 13.06.2016

Vzorek zkoušeného výrobku je ve shodě s požadavky/A sample of the product was tested and found to be in conformity with:
EN 60598-1:15, EN 60598-2-3:03+A1:11

- provedení inspekce v místě výroby - viz inspekční zpráva č./inspection in the place of manufacture – see inspection report No.: 602766-01
- smlouvě na užívání značky ENEC mezi objednavatelem a Elektrotechnickým zkušebním ústavem č./the Agreement on the use of the ENEC Mark concluded between the ordering firm and the Electrotechnical Testing Institute No.: 601209

elektrotechnický zkušební ústav ezú -1- Pod Lisem 129, 171 02 Praha 8 - Troja

16.06.2016

V Praze dne/Prague

Mgr. Miroslav Sedláček
Vedoucí certifikačního orgánu/
Head of Certification Body

razítko/Stamp

Příloha č.1 licence č. 5160011 **Annex No. 5160011 to Licence No. 5160011**	
Držitel licence Licensee	**LUG Light Factory Sp. Z o.o.** Ul. Gorzowska 11, 65-127 Zielona Góra, Poland
Výrobce Manufacturer	**LUG Light Factory Sp. Z o.o.** Ul. Gorzowska 11, 65-127 Zielona Góra, Poland
Druh svítidla Kind of luminaire	**Luminaires for road and street lighting** Svítidla pro osvětlení cest a ulic
Typ svítidla Type reference	URBINO LED IP66
Obchodní značka Trade mark	LUG
Protokol o zkoušce Test report	601209-01/01
Národní normy National standard(s)	ČSN EN 60598-1:2015 ČSN EN 60598-2-3:2003 +A1:2011
Evropské normy European standard(s)	EN 60598-1:2015 EN 60598-2-3:2003 +A1:2011
Jmenovité napětí Rated voltage	220÷240 V
Jmenovitý příkon a počet zdrojů Rated wattage and number of lamps	28, 37, 55, 84, 110 W
Typ světelného zdroje Lamp identification	LED modul LED module
Stupeň krytí Degree of protection	IP 66
Připojení napájení Supply connection	Svorkovnice Terminal block
Podkladová plocha Supporting surface	normálně hořlavý podklad normally flammable surface
Druh ochrany Protection against electric shock	Cl. II

Příloha č.1 licence č. 5160011 Annex No. 5160011 to Licence No. 5160011			
EN 60 598-2-1			
Clause	Requirement – Test	Result – Remark	Verdict
	ANNEX ZB, SPECIAL NATIONAL CONDITIONS ENEC-301 – AMENDMENT B RESTRICTIONS		
(2.2)	Class 0 not accepted		OK
(3.3)	DK: power supply cord with label		---
	IT: warning label on Class 0 luminaire		---
(4.5.1)	DK, FR: socket-outlets		---
(5.2.1)	DK, FI, SE, GB: type of plug		---
ZC	**ANNEX ZC, NATIONAL CONDITIONS ENEC-301 – AMENDMENT B RESTRICTIONS**		
(13.3)	DK: needle-flame or glow-wire test		---
(13.3.2 + 13.3.3)	FR: glow-wire test		---
IEC 598-1	**COMMON MODIFICATIONS**		
3.2.12	NL - cable without mains plug		---
3.3.3.c	fixed wiring		---
4.11.6	Electro-mechanical contact systems		---
5.2.2	Type of cable .....:		---
5.2.15	Colour code low voltage		---

elektrotechnický zkušební ústav ezú -1- Pod Lisem 129, 171 02 Praha 8 - Troja