



TEST REPORT

Test Report No.: 801442-01/02

Issued: 27. 7. 2018

Name of product: Fixed general purpose luminaires, street lighting

Type of product: URBINO PREMIUM LED variants: class II
130252.6L14X.0X1 (99 W, Ta +55°C, IP 66, IK 09)
130252.6L17X.0X1 (128 W, Ta +40°C, IP 66, IK 09)
130252.6L20X.0X1 (157 W, Ta +35°C, IP 66, IK 09)

Ratings: 220-240 V, 50/60 Hz

Serial number: -

Manufacturer: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra,
the Republic of Poland

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,
the Republic of Poland

Number of tested samples: 1

Samples submitted on: 4. 7. 2018

Location of testing: Elektrotechnický zkušební ústav, s. p.

Tests performed from 17. 7. 2018 through 24. 7. 2018

Other data: Type representative: 130252.6L202.031

Tested according to: ČSN EN 55015 ed. 4:14 (idt EN 55015:13)
ČSN EN 61547 ed. 2:10 (idt EN 61547:09)
ČSN EN 61000-3-3 ed. 3:14 (idt EN 61000-3-3:13)
ČSN EN 61000-3-2 ed. 4:15 (idt EN 61000-3-2:14)

Compiled by: David Nádherný



Approved by: Miroslav Vondra
Testing laboratory technical manager

No. of pages: 34

No. of annexes: 0

No. of annexes pages: 0

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

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

Product: Fixed general purpose luminaires, street lighting

Type: URBINO PREMIUM LED (variants: class II)

Type representative: 130252.6L202.031

Requirements at tests:


Standard	Frequency band	Allowed values	Note
EN 55015 Art. 4.3.3	f [MHz] 0.15 - 0.5 0.05 - 30	QP / AV [dB(μ V)] 84 - 74 / 74 - 64 74 / 64	Pass
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(μ V)] 110 / --- 90-80 / --- 66-56 / 56-46 56 / 46 60 / 50	Pass
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(μ A)] 88 88-58 58-22 22	Pass
EN 55015 Art. 4.4.2	f [MHz] 30 - 230 230 - 300	QP [dB(μ V/m)] 30 d=10m 37	Pass
EN 61000-3-2 Art. 7.3	0 - 2 kHz	Class C	Pass
EN 61000-3-3	50 Hz	---	Not applicable *1)

Notes:

The results of the tests specified in the protocol relating to device with electronic ballasts:
130252.6L202.031: TRIDONIC LCA 160W 350-1050mA one4all C PRE OTD

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

Test result: Pass

Compiled by: Nádherný 

Measured at: Elektrotechnický zkušební ústav, s.p.

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

Product: Fixed general purpose luminaires, street lighting

Type: URBINO PREMIUM LED (variants: class II)

Operating conditions:

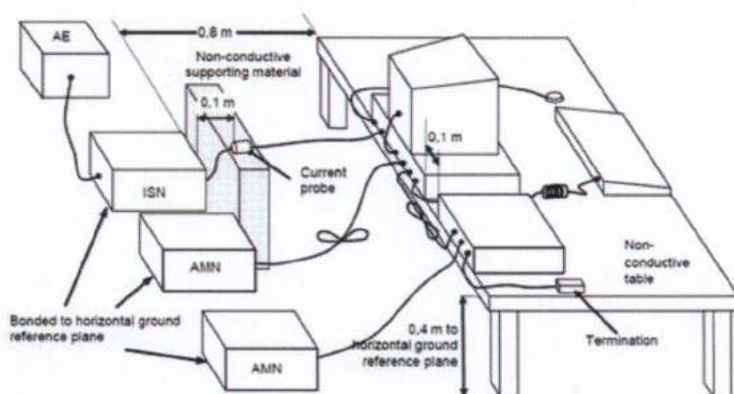
230V, 50Hz, minimally 15 minutes in operation

Temperature: 24°C Rel. humidity: 35 – 45 %

Applied limits:

Pásmo - 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 pages

Test result: Pass

Measured by: Nádherný Date: 17. 7. 2018

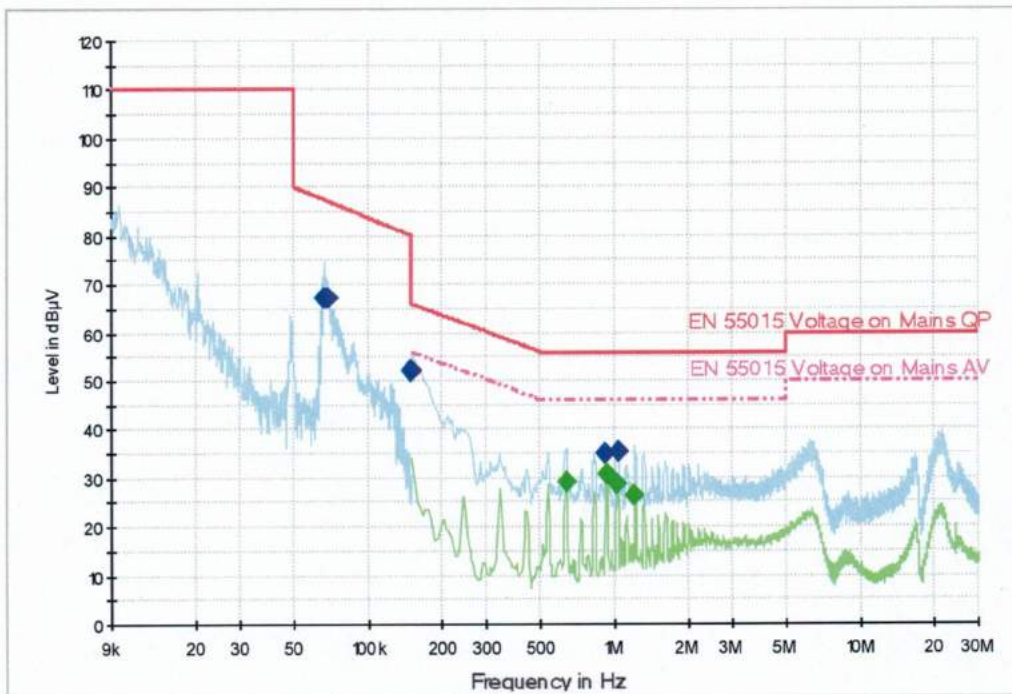
Measured at: Elektrotechnický zkušební ústav, s.p.

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, street lighting
Type	URBINO PREMIUM LED (130252.6L202.031)
Test Description	EN 55015
Operating Conditions	230V, 50Hz, Pmax
Operator Name:	Nadhery
Comment:	Mains L, N

Voltage EN 55015tab2a



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.066460	67.1	1000.0	0.200	FL	L1	10.3	20.3	87.4
0.068500	67.4	1000.0	0.200	FL	N	10.3	19.7	87.1
0.150000	52.1	1000.0	9.000	FL	L1	10.3	13.9	66.0
0.150000	52.2	1000.0	9.000	FL	L1	10.3	13.8	66.0
0.921500	35.1	1000.0	9.000	FL	N	10.4	20.9	56.0
1.029500	35.4	1000.0	9.000	FL	N	10.4	20.6	56.0

Final Result 2

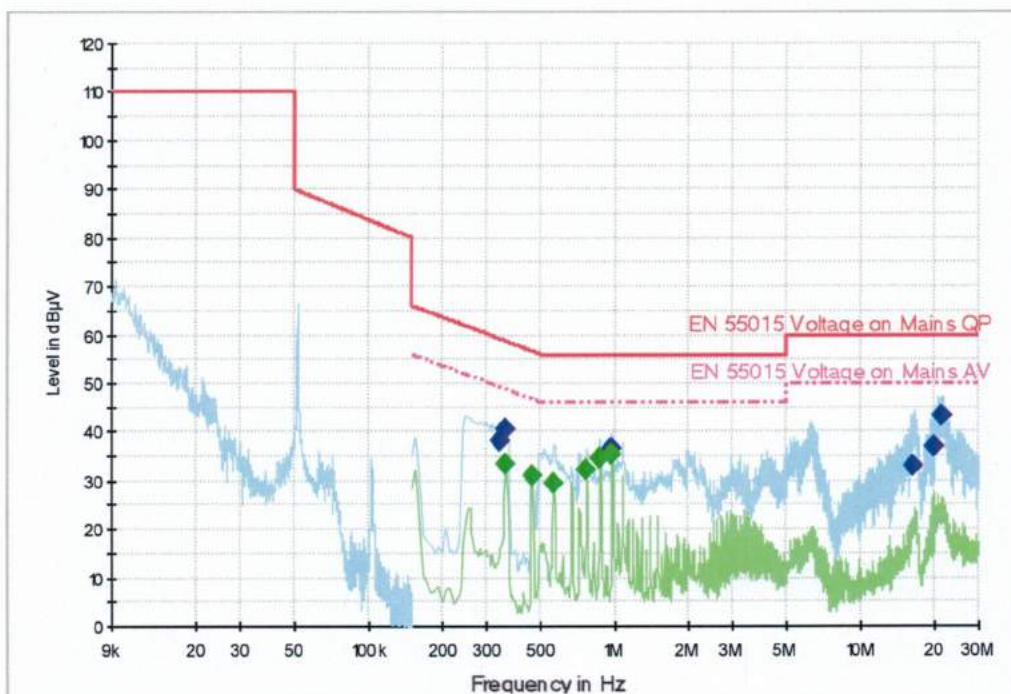
Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.633500	29.3	1000.0	9.000	FL	L1	10.4	16.7	46.0
0.926500	30.5	1000.0	9.000	FL	L1	10.4	15.5	46.0
1.025500	28.7	1000.0	9.000	FL	N	10.4	17.3	46.0
1.209500	26.4	1000.0	9.000	FL	L1	10.5	19.6	46.0

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, street lighting
Type	URBINO PREMIUM LED (130252.6L202.031)
Test Description	EN 55015
Operating Conditions	230V, 50Hz, Pmin
Operator Name:	Nadherny
Comment:	Mains L, N

Vo ltage EN 55015tab2a



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.341500	38.1	1000.0	9.000	FL	N	10.3	21.1	59.2
0.357500	40.7	1000.0	9.000	FL	N	10.3	18.1	58.8
0.973500	36.4	1000.0	9.000	FL	L1	10.4	19.6	56.0
16.269500	33.0	1000.0	9.000	FL	L1	11.8	27.0	60.0
19.890500	36.8	1000.0	9.000	FL	N	11.9	23.2	60.0
21.461500	43.2	1000.0	9.000	FL	N	12.0	16.8	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.361500	33.3	1000.0	9.000	FL	N	10.3	15.4	48.7
0.461500	31.1	1000.0	9.000	FL	L1	10.4	15.6	46.7
0.565500	29.7	1000.0	9.000	FL	L1	10.4	16.3	46.0
0.769500	32.4	1000.0	9.000	FL	L1	10.4	13.6	46.0
0.869500	34.6	1000.0	9.000	FL	L1	10.4	11.4	46.0
0.973500	35.4	1000.0	9.000	FL	L1	10.4	10.6	46.0

*Measurement of interference voltages on the control terminals
According to: EN 55015 art. 4.3.3*

Product: Fixed general purpose luminaires, street lighting

Type: URBINO PREMIUM LED (variants: class II)

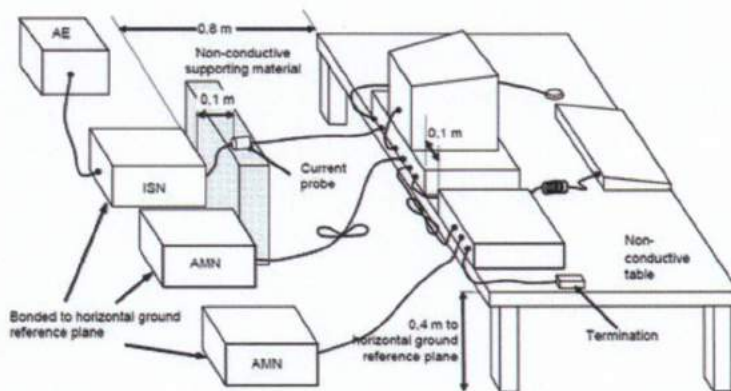
Operating conditions:

230V, 50Hz, minimally 15 minutes in operation

Temperature: 24°C Rel. humidity: 35 – 45 %

Applied limits:

Band	Limits dB(μV), quasi-peak/average
150kHz - 0,5MHz	84 - 74 / 74 - 64
0,5MHz - 30,0MHz	74 / 64



Notes:

For measured values see next pages.

Test result: Pass

Measured by: Nádherný Date: 17. 7. 2018

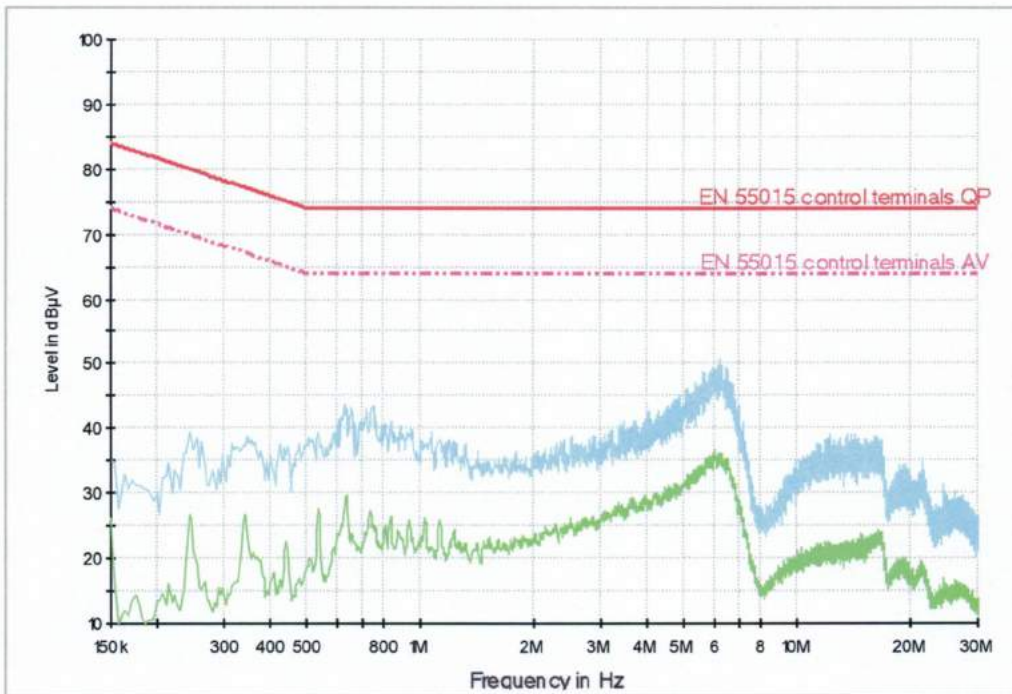
Measured at: Elektrotechnický zkušební ústav, s.p.

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, street lighting
Type	URBINO PREMIUM LED (130252.6L202.031)
Test Description	EN 55015
Operating Conditions	230V, 50Hz, Pmax
Operator Name:	Nadhery
Comment:	DALI terminals

EN 55022 VoltageA EMC O

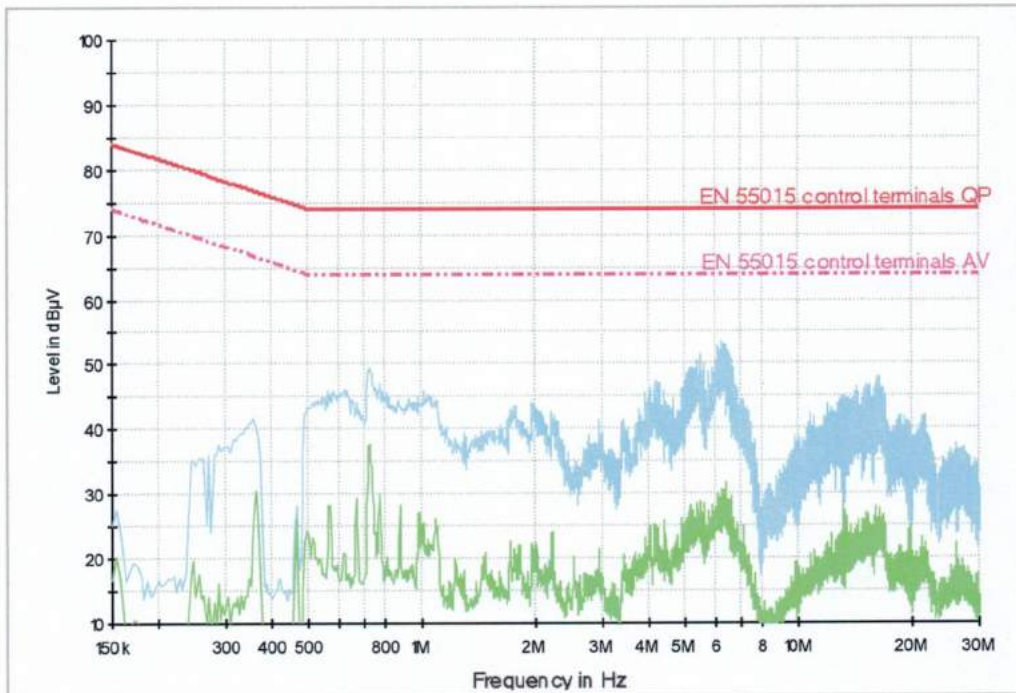


EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, street lighting
Type	URBINO PREMIUM LED (130252.6L202.031)
Test Description	EN 55015
Operating Conditions	230V, 50Hz, Pmin
Operator Name:	Nadhery
Comment:	DALI terminals

EN 55022 VoltageA EMC O



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

Product: Fixed general purpose luminaires, street lighting

Type: URBINO PREMIUM LED (variants: class II)

Operating conditions:

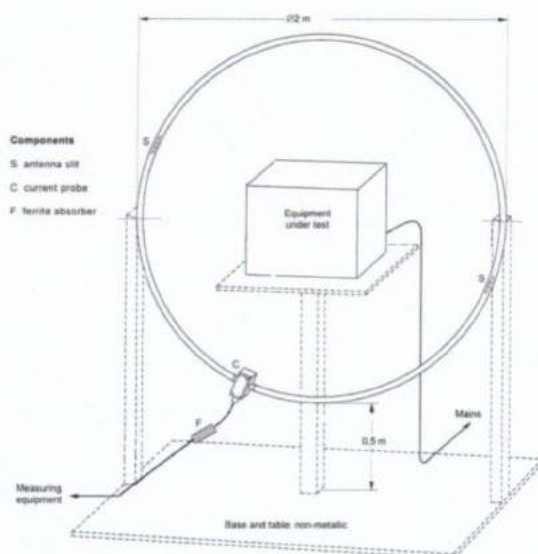
230V, 50Hz, minimally 15 minutes in operation

Temperature: 25°C Rel. humidity: 35 – 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 page – the worst case is introduced.

Test result: Pass

Measured by: Nádherný Date: 20. 7. 2018

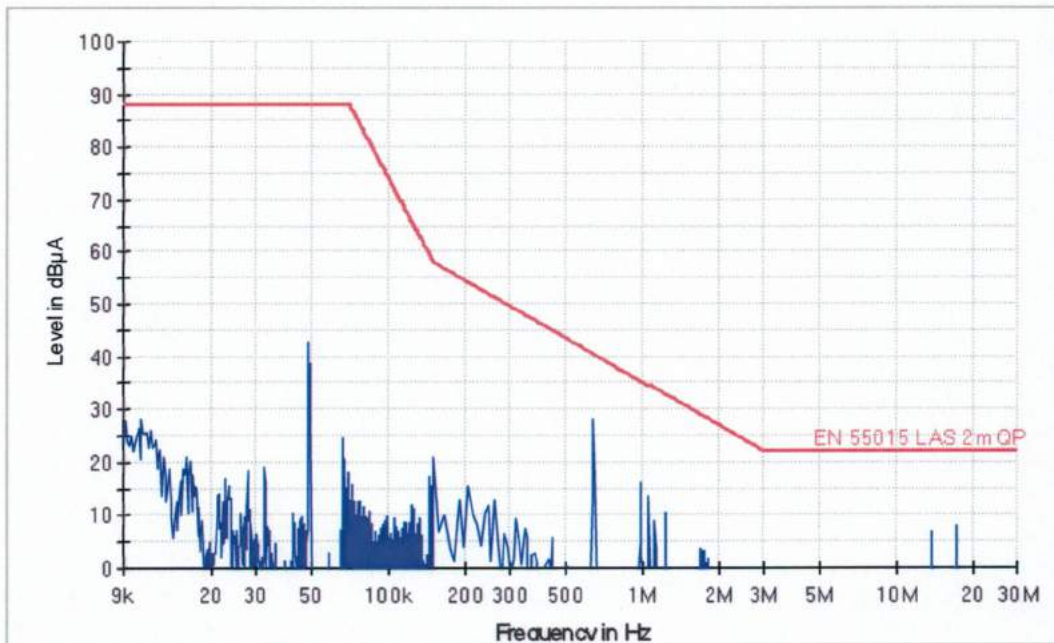
Measured at: Elektrotechnický zkušební ústav, s.p.

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, street lighting
Type	URBINO PREMIUM LED (130252.6L202.031)
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Nadhery
Comment:	Axis X

EFS with Scans EZU KRUH2M2

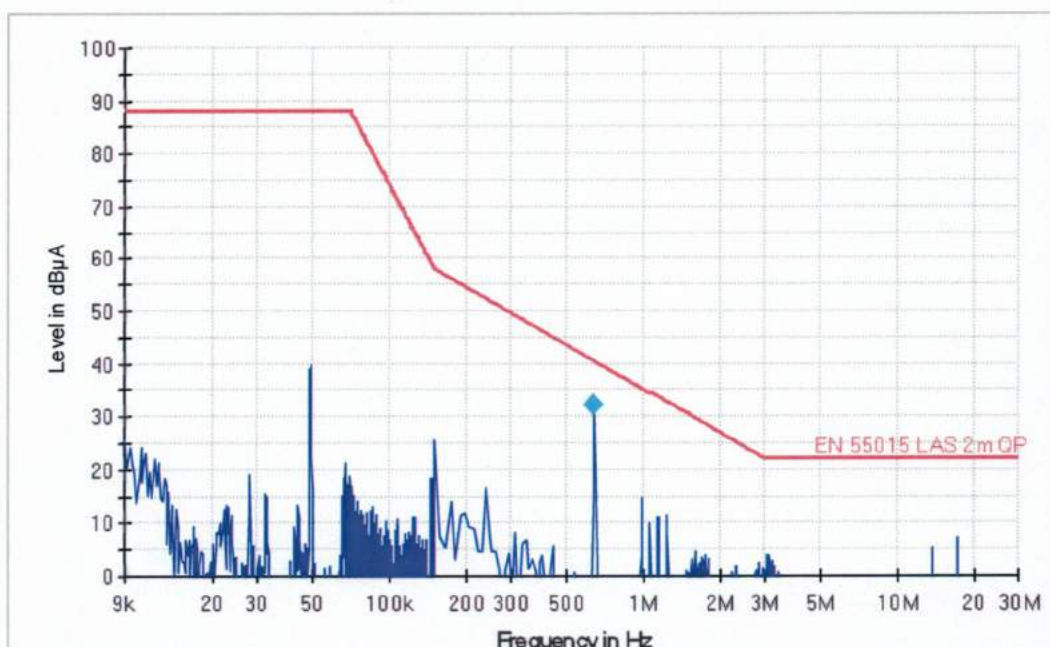


EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, street lighting
Type	URBINO PREMIUM LED (130252.6L202.031)
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Nadherny
Comment:	Axis Y

EFS with Scans EZU KRUH2M2



Final Result 1

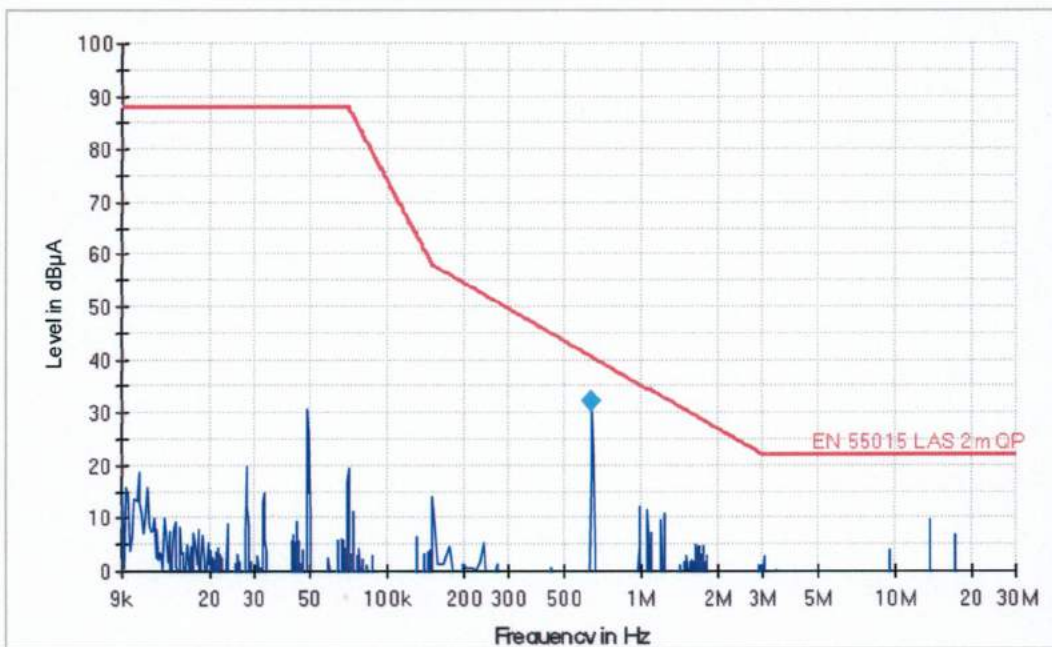
Frequency (MHz)	QuasiPeak (dBµA)	Meas. Time (ms)	Bandwidth (kHz)	Corr. (dB)	Margin (dB)	Limit (dBµA)
0.638000	32.2	1000.00	9.000	1.1	8.4	40.6

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, street lighting
Type	URBINO PREMIUM LED (130252.6L202.031)
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Nadhery
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	32.4	1000.00	9.000	1.1	8.2	40.6

**Measurement of interfering radiation in the 30 - 300 MHz band
According to: EN 55015 čl. 4.4.2**

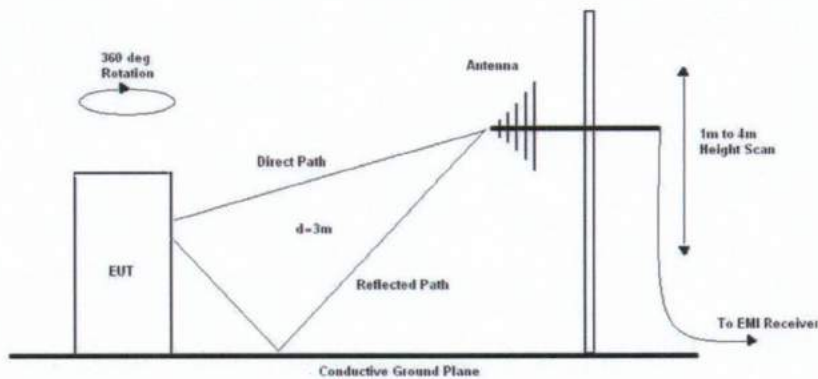
Product: Fixed general purpose luminaires, street lighting
Type: URBINO PREMIUM LED (variants: class I)

Operating conditions:
230V, 50Hz, minimally 15 minutes in operation
Temperature: 24°C Rel. humidity: 35 – 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: 24. 7. 2018

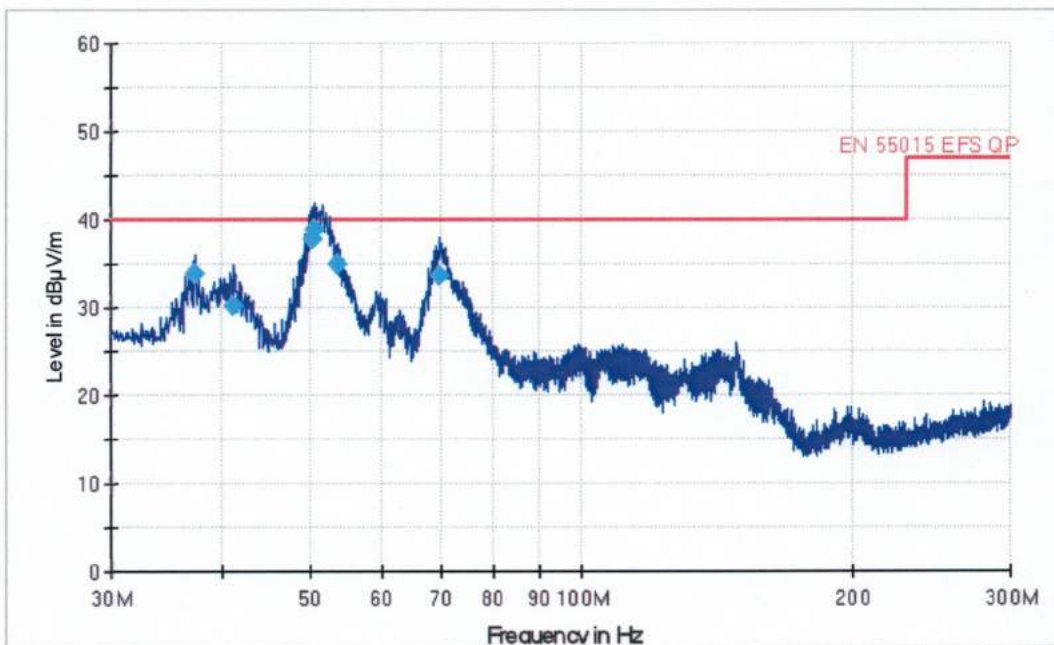
Measured at: Elektrotechnický zkušební ústav, s.p.

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, street lighting
Type	URBINO PREMIUM LED (130252.6L202.031)
Test Description	EN 55015
Operating Conditions	230V, 50Hz, Pmax
Operator Name:	Nadhery
Comment:	V, H polarization

EFS EZU Luminaire



Final Result 1

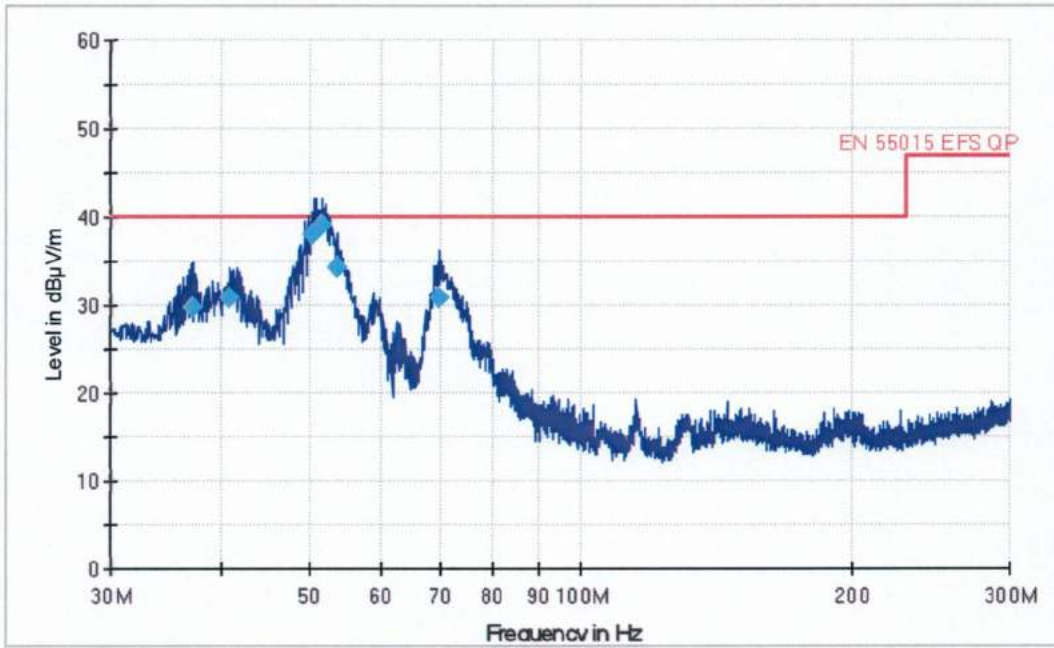
Frequency (MHz)	QuasiPeak (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
37.200000	33.9	153.0	V	135.0	24.0	6.1	40.0
41.160000	30.2	110.0	V	90.0	22.1	9.8	40.0
50.220000	37.9	110.0	V	188.0	19.8	2.1	40.0
50.520000	38.9	110.0	V	90.0	19.6	1.1	40.0
53.520000	35.0	110.0	V	0.0	17.6	5.0	40.0
69.540000	33.8	130.0	V	135.0	10.9	6.2	40.0

EMI Measurement

Common Information

EUT Name:	Fixed general purpose luminaires, street lighting
Type	URBINO PREMIUM LED (130252.6L202.031)
Test Description	EN 55015
Operating Conditions	230V, 50Hz, Pmin
Operator Name:	Nadherny
Comment:	V, H polarization

EFS EZU Luminaire



Final Result 1

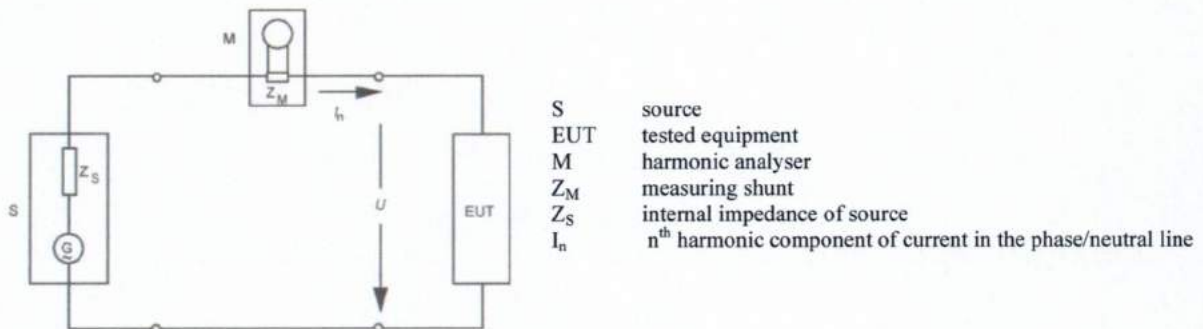
Frequency (MHz)	QuasiPeak (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
37.020000	29.8	160.0	V	205.0	24.1	10.2	40.0
40.680000	31.0	110.0	V	188.0	22.3	9.0	40.0
50.340000	38.0	110.0	V	0.0	19.7	2.0	40.0
51.540000	39.2	115.0	V	180.0	18.9	0.8	40.0
53.580000	34.3	110.0	V	8.0	17.6	5.7	40.0
69.480000	31.0	132.0	V	159.0	10.9	9.0	40.0

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

Product: Fixed general purpose luminaires, street lighting
Type: URBINO PREMIUM LED (variants: class II)

Operating conditions:
230V, 50Hz, minimally 15 minutes in operation
Temperature: 24°C Rel. humidity: 35 – 45 %

Measuring arrangement:



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 = power factor

Notes:

Equipment class C
For measured values see next pages

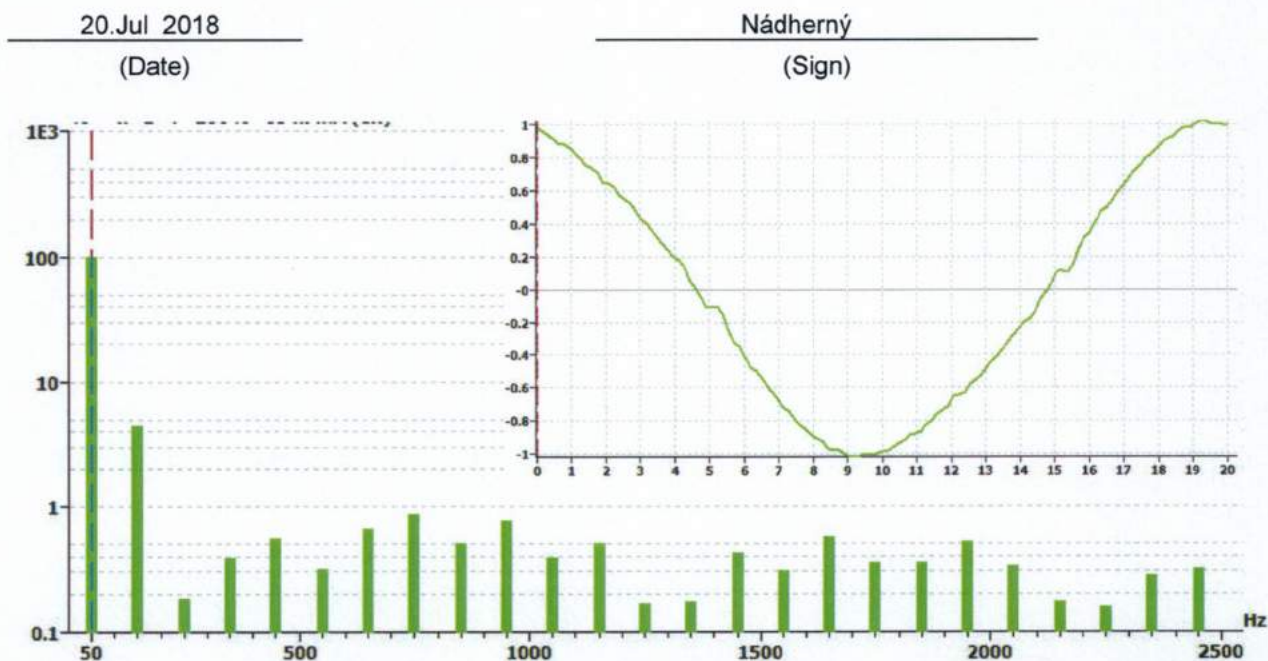
Test result: Pass

Measured by: Nádherný Date: 20. 7. 2018

Measured at: Elektrotechnický zkušební ústav, s.p.

Report title:	801442-01/02
Company Name:	Elektrotechnický zkušební ústav, s.p.
Date of test:	13:15 20.Jul 2018
Measurement file name:	Harmonics_3_2_Ed4.rsd
Tester:	Nádherný
Standard used:	EN/IEC 61000-3-2 Ed.4 Quasi-stationary Equipment class C
Observation time:	10s
Windows width:	10 periods - (EN/IEC 61000-4-7 Edition 2002 + A1:2008)
Customer:	LUG LIGHT FACTORY SP.Z O.O.
E. U. T.:	URBINO PREMIUM LED (variants: class II) (130252.6L202.031)
Temperature :	24
Humidity :	39
Comment:	230 V, 50 Hz, 159W (rated 157W)
Measurement smoothed data:	Fund. Current: 0.695A , 0.618A, 0.496A, 0.268A, 0.156A Power Factor: 0.99, 0.988, 0.983, 0.951, 0.858

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-159W

Hn	I _{eff} [A]	I _{eff} [%]	Limit [%]	Result
1	694.564E-3	99.983		
2	594.544E-6	0.086		PASS
3	30.634E-3	4.410	29.71	PASS
4	599.012E-6	0.086		PASS
5	1.382E-3	0.199		PASS
6	558.427E-6	0.080		PASS
7	2.753E-3	0.396		PASS
8	553.367E-6	0.080		PASS
9	4.006E-3	0.577		PASS
10	548.696E-6	0.079		PASS
11	2.275E-3	0.327		PASS
12	582.882E-6	0.084		PASS
13	4.776E-3	0.687		PASS
14	511.965E-6	0.074		PASS
15	6.094E-3	0.877	3.00	PASS
16	538.513E-6	0.078		PASS
17	3.563E-3	0.513		PASS
18	559.689E-6	0.081		PASS
19	5.215E-3	0.751	3.00	PASS
20	521.774E-6	0.075		PASS
21	2.639E-3	0.380		PASS
22	565.961E-6	0.081		PASS
23	3.695E-3	0.532		PASS
24	598.070E-6	0.086		PASS
25	1.315E-3	0.189		PASS
26	568.583E-6	0.082		PASS
27	1.320E-3	0.190		PASS
28	530.246E-6	0.076		PASS
29	3.020E-3	0.435		PASS
30	539.716E-6	0.078		PASS
31	2.190E-3	0.315		PASS
32	586.544E-6	0.084		PASS
33	4.000E-3	0.576		PASS
34	600.245E-6	0.086		PASS
35	2.491E-3	0.359		PASS
36	584.068E-6	0.084		PASS
37	2.479E-3	0.357		PASS
38	567.992E-6	0.082		PASS
39	3.971E-3	0.572		PASS
40	573.934E-6	0.083		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.

Average harmonic current results-141W

Hn	I _{eff} [A]	I _{eff} [%]	Limit [%]	Result
1	617.608E-3	99.981		
2	590.831E-6	0.096		PASS
3	27.944E-3	4.524	29.64	PASS
4	612.039E-6	0.099		PASS
5	2.026E-3	0.328		PASS
6	618.548E-6	0.100		PASS
7	1.644E-3	0.266		PASS
8	571.073E-6	0.092		PASS
9	3.715E-3	0.601		PASS
10	578.618E-6	0.094		PASS
11	1.325E-3	0.214		PASS
12	544.132E-6	0.088		PASS
13	4.123E-3	0.668		PASS
14	550.711E-6	0.089		PASS
15	5.135E-3	0.831	3.00	PASS
16	575.372E-6	0.093		PASS
17	2.668E-3	0.432		PASS
18	591.856E-6	0.096		PASS
19	5.698E-3	0.922	3.00	PASS
20	583.092E-6	0.094		PASS
21	3.409E-3	0.552		PASS
22	585.096E-6	0.095		PASS
23	3.838E-3	0.621		PASS
24	603.681E-6	0.098		PASS
25	1.874E-3	0.303		PASS
26	581.471E-6	0.094		PASS
27	1.530E-3	0.248		PASS
28	585.650E-6	0.095		PASS
29	3.530E-3	0.571		PASS
30	588.263E-6	0.095		PASS
31	2.141E-3	0.347		PASS
32	554.471E-6	0.090		PASS
33	4.153E-3	0.672		PASS
34	554.356E-6	0.090		PASS
35	2.465E-3	0.399		PASS
36	601.453E-6	0.097		PASS
37	2.228E-3	0.361		PASS
38	575.806E-6	0.093		PASS
39	3.217E-3	0.521		PASS
40	614.498E-6	0.099		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.

Average harmonic current results-112W

Hn	I _{eff} [A]	I _{eff} [%]	Limit [%]	Result
1	495.795E-3	99.976		
2	529.328E-6	0.107		PASS
3	24.373E-3	4.915	29.50	PASS
4	600.269E-6	0.121		PASS
5	2.625E-3	0.529		PASS
6	582.716E-6	0.118		PASS
7	2.143E-3	0.432		PASS
8	563.032E-6	0.114		PASS
9	3.183E-3	0.642		PASS
10	563.244E-6	0.114		PASS
11	1.317E-3	0.266		PASS
12	583.722E-6	0.118		PASS
13	4.647E-3	0.937		PASS
14	581.388E-6	0.117		PASS
15	5.892E-3	1.188	3.00	PASS
16	582.622E-6	0.117		PASS
17	3.002E-3	0.605		PASS
18	604.413E-6	0.122		PASS
19	5.150E-3	1.039	3.00	PASS
20	589.149E-6	0.119		PASS
21	3.076E-3	0.620		PASS
22	593.913E-6	0.120		PASS
23	3.199E-3	0.645		PASS
24	571.612E-6	0.115		PASS
25	1.475E-3	0.298		PASS
26	566.457E-6	0.114		PASS
27	1.026E-3	0.207		PASS
28	593.007E-6	0.120		PASS
29	2.342E-3	0.472		PASS
30	589.117E-6	0.119		PASS
31	1.399E-3	0.282		PASS
32	551.951E-6	0.111		PASS
33	2.780E-3	0.560		PASS
34	566.809E-6	0.114		PASS
35	3.074E-3	0.620		PASS
36	556.383E-6	0.112		PASS
37	1.900E-3	0.383		PASS
38	534.932E-6	0.108		PASS
39	3.041E-3	0.613		PASS
40	544.884E-6	0.110		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.

Average harmonic current results-60W

Hn	I _{eff} [A]	I _{eff} [%]	Limit [%]	Result
1	267.709E-3	99.967		
2	638.318E-6	0.238		PASS
3	21.295E-3	7.952	28.53	PASS
4	709.920E-6	0.265		PASS
5	4.183E-3	1.562		PASS
6	768.086E-6	0.287		PASS
7	1.965E-3	0.734		PASS
8	733.582E-6	0.274		PASS
9	4.510E-3	1.684		PASS
10	723.687E-6	0.270		PASS
11	2.396E-3	0.895		PASS
12	709.234E-6	0.265		PASS
13	2.296E-3	0.858		PASS
14	708.407E-6	0.265		PASS
15	4.873E-3	1.820		PASS
16	658.423E-6	0.246		PASS
17	3.339E-3	1.247		PASS
18	678.249E-6	0.253		PASS
19	2.819E-3	1.053		PASS
20	656.433E-6	0.245		PASS
21	3.037E-3	1.134		PASS
22	677.685E-6	0.253		PASS
23	1.873E-3	0.700		PASS
24	637.557E-6	0.238		PASS
25	2.598E-3	0.970		PASS
26	629.296E-6	0.235		PASS
27	2.273E-3	0.849		PASS
28	612.399E-6	0.229		PASS
29	1.275E-3	0.476		PASS
30	681.155E-6	0.254		PASS
31	1.004E-3	0.375		PASS
32	669.997E-6	0.250		PASS
33	1.494E-3	0.558		PASS
34	691.339E-6	0.258		PASS
35	3.278E-3	1.224		PASS
36	647.055E-6	0.242		PASS
37	1.700E-3	0.635		PASS
38	638.610E-6	0.238		PASS
39	2.056E-3	0.768		PASS
40	657.091E-6	0.245		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.

Average harmonic current results-31W

Hn	I _{eff} [A]	I _{eff} [%]	Limit [%]	Result
1	155.734E-3	99.965		
2	770.999E-6	0.495		PASS
3	17.794E-3	11.422	25.75	PASS
4	914.613E-6	0.587		PASS
5	7.501E-3	4.815	10.00	PASS
6	981.526E-6	0.630		PASS
7	3.412E-3	2.190		PASS
8	929.523E-6	0.597		PASS
9	3.246E-3	2.084		PASS
10	846.919E-6	0.544		PASS
11	2.255E-3	1.447		PASS
12	831.583E-6	0.534		PASS
13	1.024E-3	0.658		PASS
14	800.059E-6	0.514		PASS
15	2.425E-3	1.557		PASS
16	789.996E-6	0.507		PASS
17	3.078E-3	1.975		PASS
18	768.710E-6	0.493		PASS
19	3.606E-3	2.315		PASS
20	710.494E-6	0.456		PASS
21	1.979E-3	1.270		PASS
22	712.792E-6	0.458		PASS
23	2.493E-3	1.600		PASS
24	740.926E-6	0.476		PASS
25	2.882E-3	1.850		PASS
26	701.512E-6	0.450		PASS
27	2.087E-3	1.340		PASS
28	686.870E-6	0.441		PASS
29	1.148E-3	0.737		PASS
30	664.360E-6	0.426		PASS
31	2.718E-3	1.745		PASS
32	667.312E-6	0.428		PASS
33	3.522E-3	2.261		PASS
34	683.764E-6	0.439		PASS
35	3.014E-3	1.934		PASS
36	650.961E-6	0.418		PASS
37	3.650E-3	2.343		PASS
38	656.390E-6	0.421		PASS
39	1.941E-3	1.246		PASS
40	642.052E-6	0.412		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.

2. Immunity

EN 61547
Equipment for general lighting purposes - EMC - immunity requirements

Product: Fixed general purpose luminaires, street lighting

Type: URBINO PREMIUM LED (variants: class II)

Type representative: 130252.6L202.031

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 ballasts:

130252.6L202.031; TRIDONIC LCA 160W 350-1050mA one4all C PRE OTD

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

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

Test result: Pass

Compiled by: Nádherný



Measured at: Elektrotechnický zkušební ústav, s.p.

Test of electric discharge resistance
According to: EN 61000-4-2

Product: Fixed general purpose luminaires, street lighting
Type: URBINO PREMIUM LED (variants: class II)

Operating conditions:
230V, 50Hz, minimally 15 minutes in operation
Temperature: 24°C Rel. humidity: 35 – 45 %

Allowed criterion: B

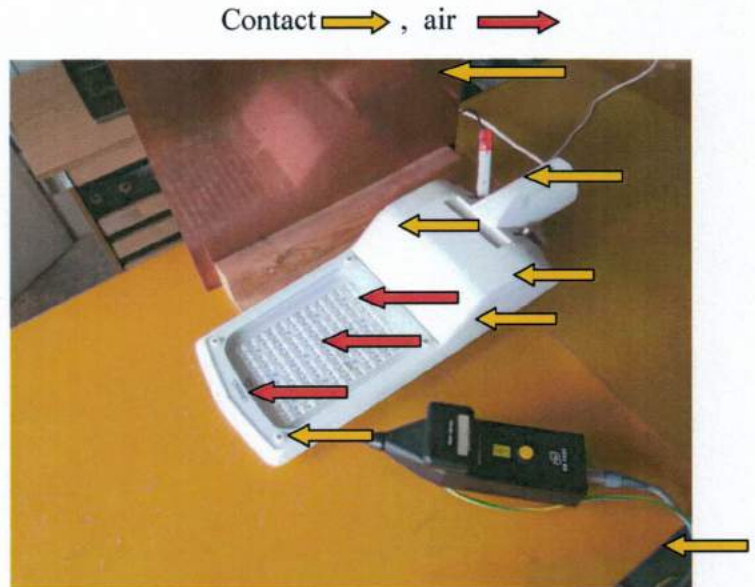
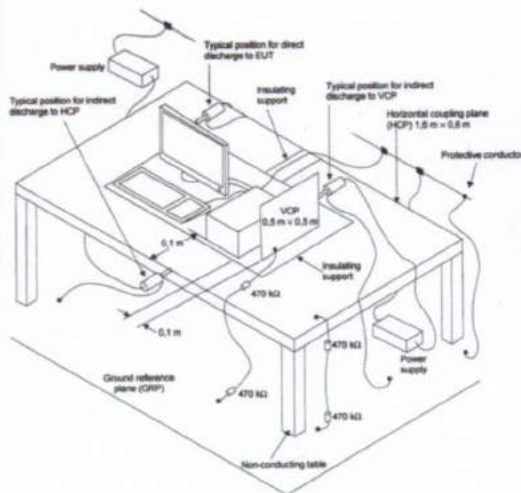
Number of testing discharges: 10/10 contact/air discharge to every test-places in each polarity, besides indirect contact discharges into a vertical and horizontal coupling plane

Tested points: Contact discharge into the metal parts and to the horizontal and vertical coupling plane. Air discharge into plastic parts, contact discharge into conducted parts.

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

Achieved criterion: A

Measuring arrangement:



Notes:--

Test result: Pass

Measured by: Nádherný Date: 20. 7. 2018

Measured at: Elektrotechnický zkušební ústav, s.p.

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

Product: Fixed general purpose luminaires, street lighting
Type: URBINO PREMIUM LED (variants: class II)

Operating conditions:

230V, 50Hz, minimally 15 minutes in operation
Temperature: 24°C Rel. humidity: 35 – 45 %

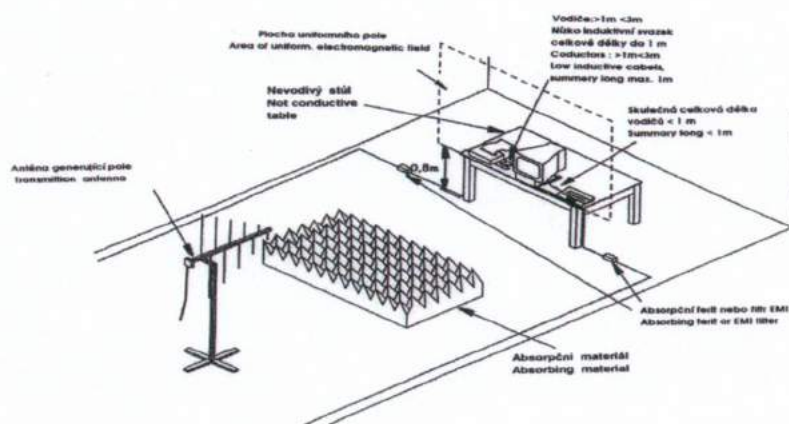
Applied limits:

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

Měřil - Measured by: Nádherný Datum - Date: 24. 7. 2018

Místo měření - Measured at: Elektrotechnický zkušební ústav, s.p.

*Test by quick transient burst
According to: EN 61000-4-4*

Product: Fixed general purpose luminaires, street lighting

Type: URBINO PREMIUM LED (variants: class II)

Operating conditions:

230V, 50Hz, minimally 15 minutes in operation

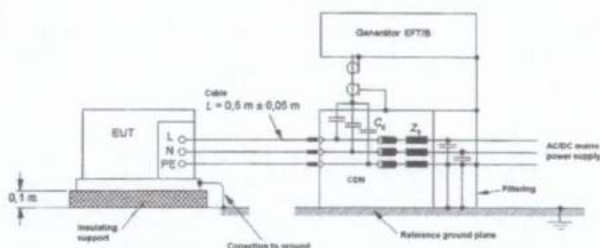
Temperature: 25°C Rel. humidity: 35 – 45 %

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	-	
DA, DA	±0,5kV	A	By coupling network to DALI terminals

Measuring arrangement:



Notes:--

Test result: Pass

Measured by: Nádherný Date: 20. 7. 2018

Measured at: Elektrotechnický zkušební ústav, s.p.

Surge immunity test
According to: EN 61000-4-5

Product: Fixed general purpose luminaires, street lighting

Type: URBINO PREMIUM LED (variants: class II)

Operating conditions:

230V, 50Hz, minimally 15 minutes in operation

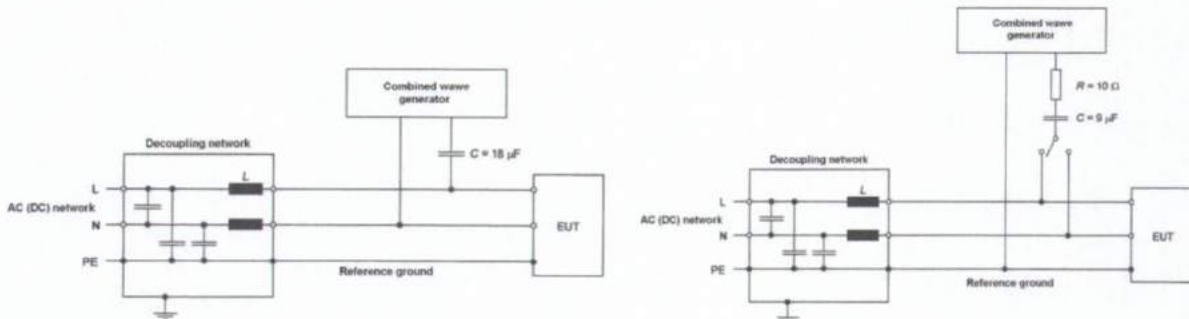
Temperature: 25°C Rel. humidity: 35 – 45 %

Allowed criterion: C

Testing voltage applied:

Applied voltage	Testing level	Performance criterion	Remark
L-N	P>25W: ±1kV	B	90°, 270°
L-PE, N-PE, L+N-PE	P>25W: ±2kV	-	90°, 270°

Measuring arrangement:



Notes: --

Test result: Pass

Measured by: Nádherný Date: 20. 7. 2018

Measured at: Elektrotechnický zkušební ústav, s.p.

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

Product: Fixed general purpose luminaires, street lighting

Type: URBINO PREMIUM LED (variants: class II)

Operating conditions:

230V, 50Hz, minimally 15 minutes in operation

Temperature: 25 °C Rel. humidity: 35 – 45 %

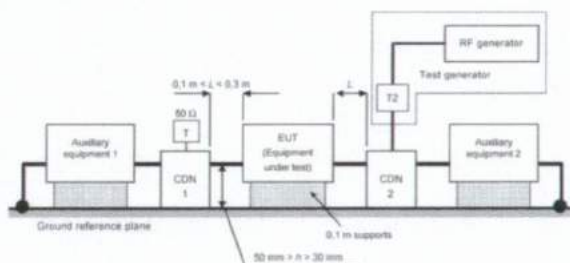
Allowed criterion: A

Testing voltage applied:

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

Achieved criterion: A

Measuring arrangement:



Notes: --

Test result: Pass

Measured by: Nádherný Date: 23. 7. 2018

Measured at: Elektrotechnický zkušební ústav, s.p.

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

Product: Fixed general purpose luminaires, street lighting

Type: URBINO PREMIUM LED (variants: class II)

Operating conditions:

230V, 50Hz, minimally 15 minutes in operation

Temperature: 24°C Rel. humidity: 35 – 45 %

Allowed criterion: C, B


Tests requirements:

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

Notes: --

Test result: Pass

Measured by: Nádherný Date: 23. 7. 2018



Measured at: Elektrotechnický zkušební ústav, s.p.

Measuring equipment used:

<input checked="" type="checkbox"/> Test receiver RaS	ESCI	110213	04.2020
<input checked="" type="checkbox"/> Měřicí přijímač- Test receiver RaS	ESIB26	110097	02.2020
<input checked="" type="checkbox"/> Continuous wave simulátor EM Test	CWS500N1	110232	03.2019
<input checked="" type="checkbox"/> Harmonic analyzer EM TEST	DPA503N	110272	02.2019
<input checked="" type="checkbox"/> Power fail simulator EM Test	PFS 500	98-6040	10.2019
<input checked="" type="checkbox"/> Ultra Compact Simulator EM Test	UCS 500N	110235	02.2019
<input checked="" type="checkbox"/> ESD generator	ESD30N	110196	03.2019
<input type="checkbox"/> ESD generátor	ESD30	110090	12.2018
<input checked="" type="checkbox"/> Artificial mains EMCO	3825/2	95-5852	07.2019
<input type="checkbox"/> Artificial mains Narda	PMM L3-32	110250	11.2019
<input checked="" type="checkbox"/> Artificial mains ESH	ESH4-Z5	5821/1	05.2020
<input checked="" type="checkbox"/> Antenna Frankonia	BTA-M	00-6321	05.2020
<input type="checkbox"/> Antenna Double Ridget	HF 907	110177	08.2020
<input checked="" type="checkbox"/> Burst generátor Haefely	PEFT Junior	5872	12.2018
<input checked="" type="checkbox"/> Surge generator	VCS500-M	110114	04.2020
<input type="checkbox"/> Current Probe R&S	EZ-17	110098	05.2019

Auxiliary equipment:

<input checked="" type="checkbox"/> Supply source EM TEST	HFS300	98-6042	02.2019
<input type="checkbox"/> Ref. impedance SCHAFFNER	LR4	X71773	02.2019
<input checked="" type="checkbox"/> Attenuator 6dB	ATT6	110233/3	05.2020
<input checked="" type="checkbox"/> Electric Field Probe Narda	EP603	110273	01.2019
<input checked="" type="checkbox"/> Amplifier PRÁNA	AP32 LT225	07-110145	
<input type="checkbox"/> Amplifier MILMEGA	AS0822-100	98-6038	
<input type="checkbox"/> Amplifier MILMEGA	AS0204-125	110144	
<input type="checkbox"/> Amplifier MILMEGA (1.8-6GHz)	AS1860-100	110219	
<input checked="" type="checkbox"/> Signal generator RaS	SMF100A	110167	05.2021
<input type="checkbox"/> Multimetr - Multimeter	FLUKE189	550049	02.2020
<input type="checkbox"/> Probe RFT	TK12	700044	06.2020
<input checked="" type="checkbox"/> Coupling/dec. EM TEST	CDN M3N	552097	11.2019
<input checked="" type="checkbox"/> Coupling/dec. EM TEST	CDN M2N	110233/2	11.2019
<input type="checkbox"/> Coupling/SCHAFFNER ISN T4xx	ISN T4xx	110032	
<input type="checkbox"/> Capacitive coupling clamp	Haefely		
<input type="checkbox"/> Current probe	P MP-120		
<input type="checkbox"/> Current probe	AM503	79-4221	
<input checked="" type="checkbox"/> Current probe RFT	SMZ 11 -9076	700459	06.2021
<input type="checkbox"/> Elektromag. kleště- Electromag. injection clamp	EM-101	110233	11.2019
<input type="checkbox"/> Ferrite clamp 1-1000 MHz	EZ-24	10003	
<input checked="" type="checkbox"/> Anechoic chamber - Euroshield Oy	RFMSD-F/A	6341	02.2020
<input type="checkbox"/> Absorbing Clamp	MDS-21	5425	06.2022
<input checked="" type="checkbox"/> Notebook Dell	Dell D351	551492	
<input type="checkbox"/> Multimeter Fluke	289	552550	06.2020
<input checked="" type="checkbox"/> Ocelové pásmo – Metal meter	5m	N400014	12.2020
<input checked="" type="checkbox"/> Pulse Limiter RaS	ESH3-Z2	5424	01.2019
<input checked="" type="checkbox"/> Hygrometer	TESTO 608-H2	551002	10.2018
<input checked="" type="checkbox"/> Hygrometer	TESTO 625	50021821	10.2018

Cables:

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

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

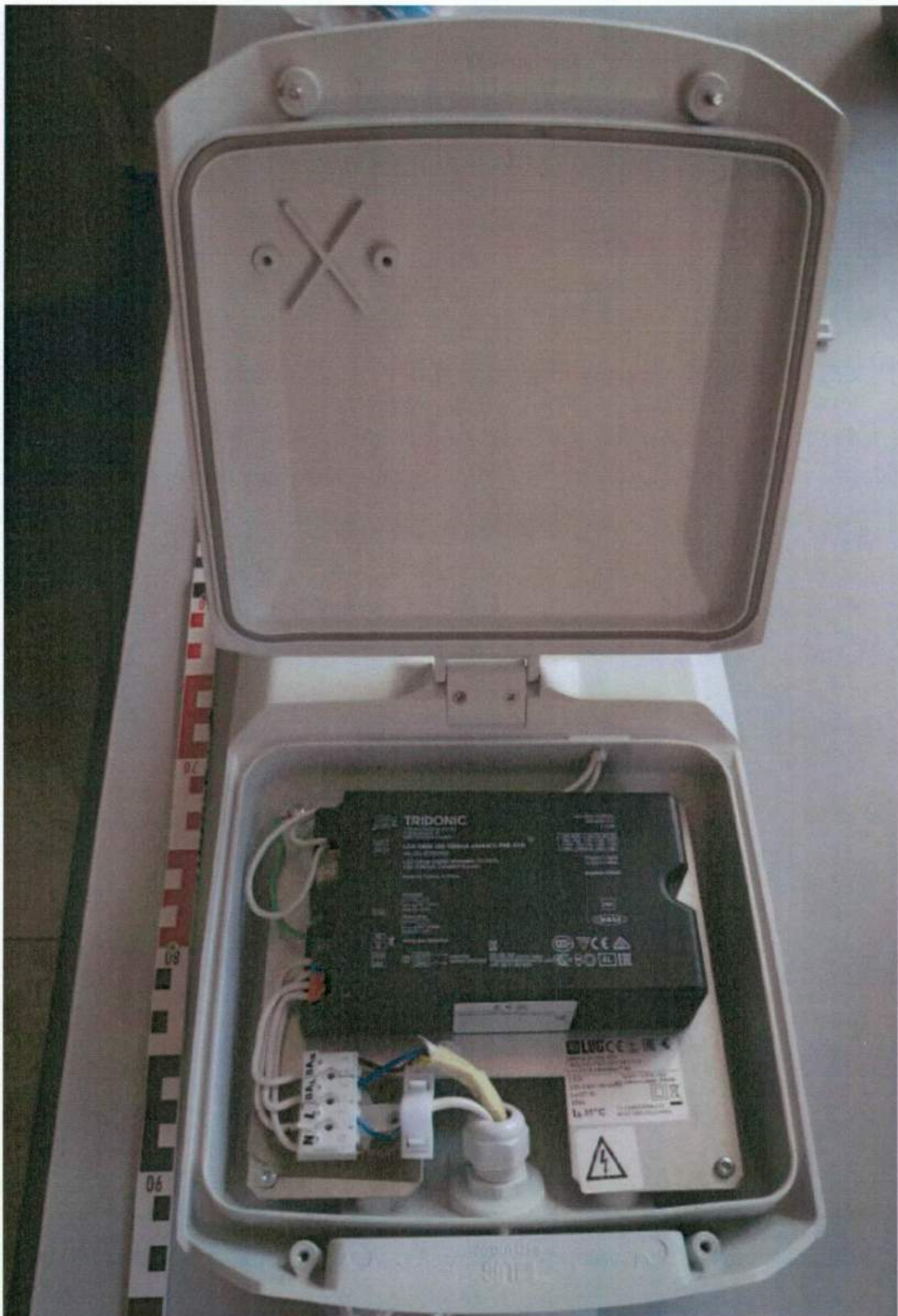
Product: Fixed general purpose luminaires, street lighting

Type: URBINO PREMIUM LED (variants: class II)



A handwritten signature in blue ink, appearing to be "M. J.", is located to the left of the caption.

Celkový pohled - Overview: 130252.6L202.031



Předřadník - Ballast : TRIDONIC LCA 160W 350-1050mA one4all C PRE OTD

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Výrobní štítek – Name plate