



## TEST REPORT

Test Report No.: 021810-01/01

Issued: 19. 8. 2020

**Name of product:** URBINO LED

**Type of product:** 130222.6L362.331.001, 130222.6L362.331.002

**Ratings:** 220-240 V, 50/60 Hz

**Serial number:** Not specified

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

**Production site:** dtto

**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+1

**Samples submitted on:** 28. 7. 2020

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

**Tests performed** from August 3 through August 18, 2020

**Other data:** ---

**Tested according to:** EN IEC 55015:19., EN 61547:09, EN 61000-3-3:13,  
EN 61000-3-2:14.

Compiled by: Karel Pařízek

Approved by: Miroslav Vondra  
Testing laboratory technical manager

No. of pages: 46

No. of annexes: 0

No. of annexes pages: 0

The 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 IEC 55015:** *Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment*  
2019
- EN IEC 61000-3-2:** *Electromagnetic compatibility (EMC) - Limits - Limits for harmonic current emission*  
2019
- EN 61000-3-3:** *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:** URBINO LED

**Type:** 130222.6L362.331.001, 130222.6L362.331.002

**Requirements at tests:**

Standard	Frequency band	Allowed values	Note
EN 55015 Art. 4.3.1, tab. 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
EN 55015 Art. 4.3.2, tab. 2	0.15 - 0.5 0,5 - 30	QP / AV [dB(μV)] 84-74 / 74-64 74 / 64	Pass
EN 55015 Art. 4.5.2 (d=2m), tab. 8	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
EN 55015 Art. 4.5.3, tab. 10	f [MHz] 30 - 230 230 - 1000	QP [dB(μV/m)] 30 d=10m 37	Pass
EN 6100-3-2 Art. 7.4.2-3	0 - 2 kHz	Class C	Pass
EN 6100-3-3	50Hz	---	Pass *)

**Notes:**

An electronic ballast is used in both luminaires: TRIDONIC LCO 200/200 1050/355 o4a NF C EXC3

\*) According to EN 61000-3-3, Art. A2 (LED luminaires with power input ≤ 200W) pass without testing

**Test result: Pass**

Compiled by: Pařízek  
*Pařízek*

Date: 19.8. 2020



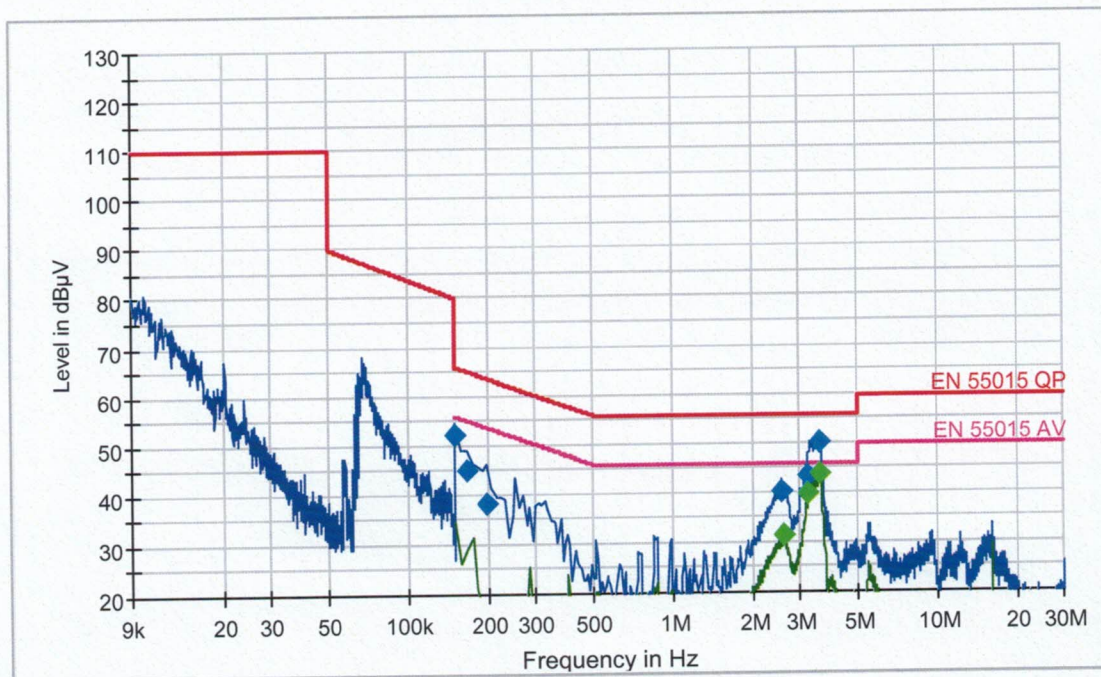


# EMI Measurement

## Common Information

EUT Name: URBINO LED  
 Type: 130222.6L362.331.001  
 Test Description: EN 55015  
 Operating Conditions: 230V, 50Hz, DALI - Pmax  
 Operator Name: Parizek  
 Comment: L, N

Voltage 55015



## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	52.4	1000.00	9.000	FL	N	10.7	13.6	66.0
0.166000	45.2	1000.00	9.000	FL	N	10.7	20.0	65.2
0.198000	38.2	1000.00	9.000	FL	N	10.7	25.5	63.7
2.582000	40.3	1000.00	9.000	FL	N	10.6	15.7	56.0
3.206000	43.3	1000.00	9.000	FL	N	10.6	12.7	56.0
3.558000	50.2	1000.00	9.000	FL	N	10.5	5.8	56.0

## Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.590000	31.6	1000.00	9.000	FL	L1	10.6	14.4	46.0
3.222000	39.7	1000.00	9.000	FL	L1	10.6	6.3	46.0
3.558000	44.1	1000.00	9.000	FL	L1	10.5	1.9	46.0

3.8.2020

16:09:01

Measured by: Pařízek *Pařízek*

Date: 3.8. 2020

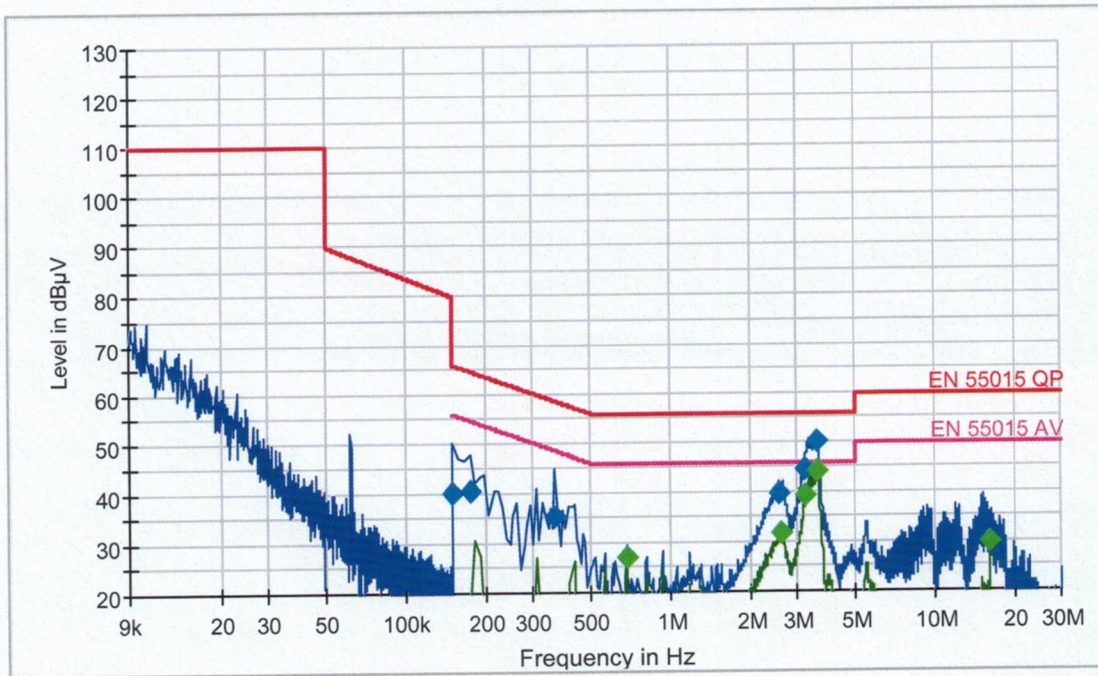


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.001
Test Description	EN 55015
Operating Conditions	230V, 50Hz, DALI - Pmin
Operator Name:	Pařízek
Comment:	L, N

Voltage 55015



## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	40.2	1000.00	9.000	FL	L1	10.7	25.8	66.0
0.174000	40.9	1000.00	9.000	FL	N	10.7	23.9	64.8
0.366000	35.6	1000.00	9.000	FL	L1	10.6	23.0	58.6
2.542000	40.0	1000.00	9.000	FL	N	10.6	16.0	56.0
3.222000	44.6	1000.00	9.000	FL	L1	10.6	11.4	56.0
3.558000	50.3	1000.00	9.000	FL	N	10.5	5.7	56.0

## Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.678000	27.0	1000.00	9.000	FL	N	10.6	19.0	46.0
2.590000	31.8	1000.00	9.000	FL	N	10.6	14.2	46.0
3.222000	39.6	1000.00	9.000	FL	L1	10.6	6.4	46.0
3.558000	44.3	1000.00	9.000	FL	N	10.5	1.7	46.0
15.974000	30.0	1000.00	9.000	FL	L1	10.6	20.0	50.0

3.8.2020

15:55:06

Measured by: Pařízek

Date: 3.8. 2020

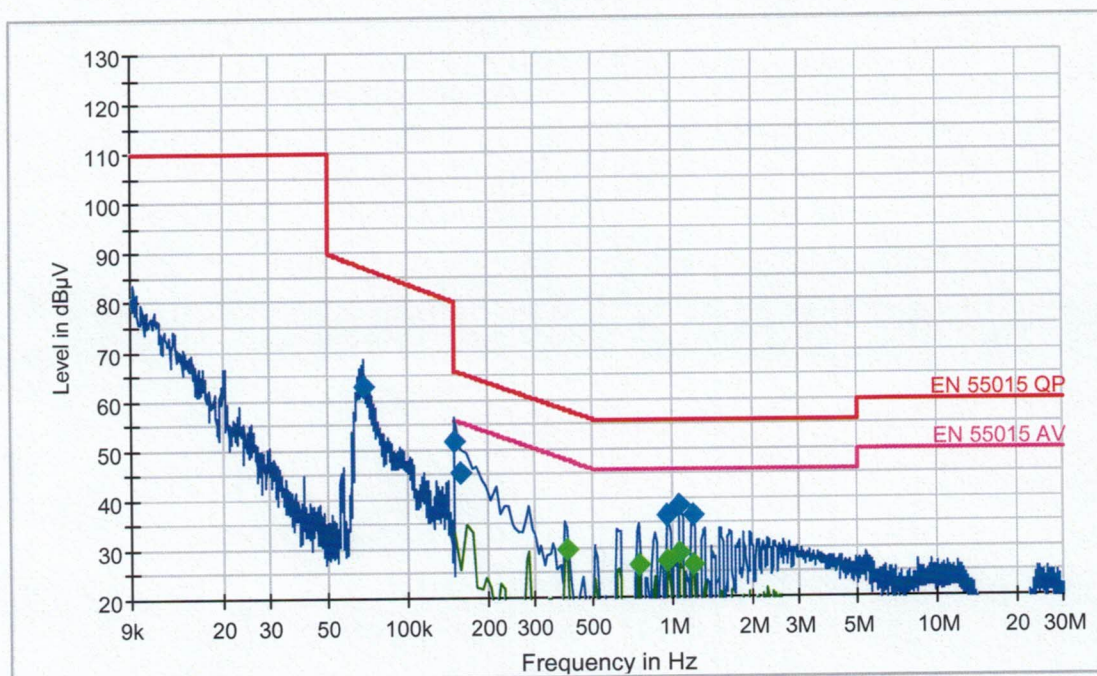


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.002
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Parizek
Comment:	L, N

Voltage 55015



## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.067800	63.1	1000.00	0.200	FL	L1	10.9	24.1	87.2
0.150000	51.7	1000.00	9.000	FL	N	10.7	14.3	66.0
0.158000	45.5	1000.00	9.000	FL	N	10.7	20.1	65.6
0.950000	36.7	1000.00	9.000	FL	N	10.6	19.3	56.0
1.062000	38.7	1000.00	9.000	FL	N	10.6	17.3	56.0
1.182000	36.9	1000.00	9.000	FL	N	10.6	19.1	56.0

## Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.398000	29.8	1000.00	9.000	FL	L1	10.6	18.1	47.9
0.742000	26.9	1000.00	9.000	FL	N	10.6	19.1	46.0
0.950000	27.5	1000.00	9.000	FL	N	10.6	18.5	46.0
1.062000	29.4	1000.00	9.000	FL	N	10.6	16.6	46.0
1.198000	26.9	1000.00	9.000	FL	N	10.6	19.1	46.0

17.8.2020

7:40:30

Measured by: Pařízek  
*Pařízek*

Date: 17.8. 2020



**Measurement of interference voltages at mains terminals not intended for supply  
According to: EN 55015 art. 4.3.2**

**Product:** URBINO LED

**Type:** 130222.6L362.331.001, 130222.6L362.331.002

**Operating conditions:**

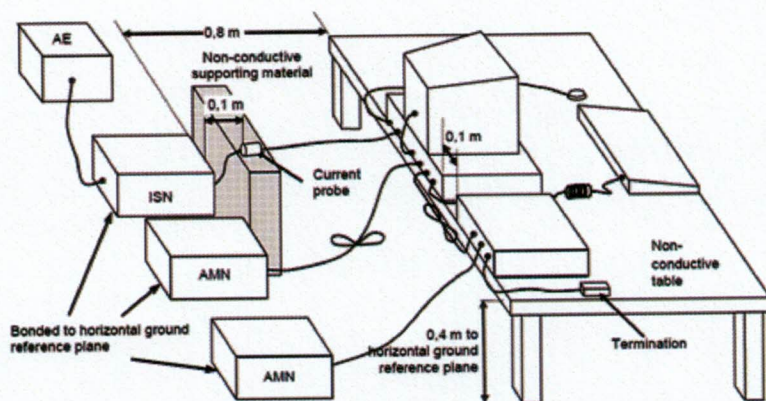
230V, 50Hz, minimally 15 minutes in operation

Temperature: 23°C Relative humidity: 50%

**Applied limits:**

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

**Measuring arrangement:**



**Notes:**

For measured values see next pages

**Test result: Pass**

Measured by: Pařízek  
*Pařízek*

Date: 3.8. 2020

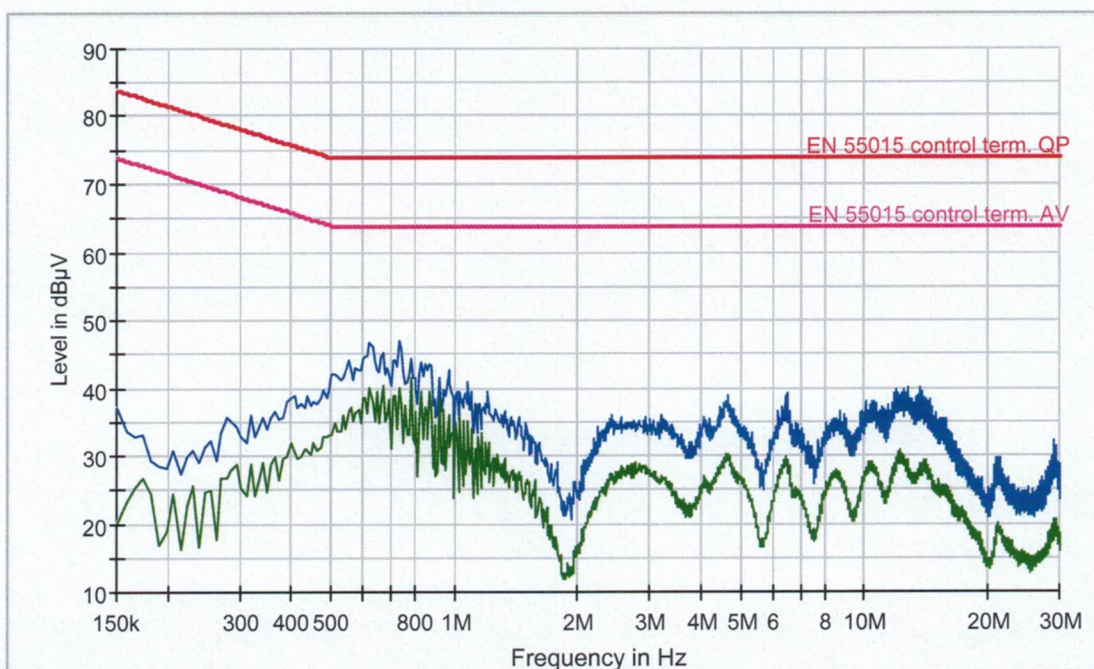


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.001
Test Description	EN 55015
Operating Conditions	230V, 50Hz, DALI - Pmax
Operator Name:	Pařízek
Comment:	DALI terminals

Voltage 55015 control term.\_EMCO



3.8.2020

16:40:18

Measured by: Pařízek  
*Pařízek*

Date: 3.8. 2020





**Measurement of interfering radiation in the 9 kHz - 30 MHz band  
According to: EN 55015 art 4.5.2**

**Product:** URBINO LED

**Type:** 130222.6L362.331.001, 130222.6L362.331.002

**Operating conditions:**

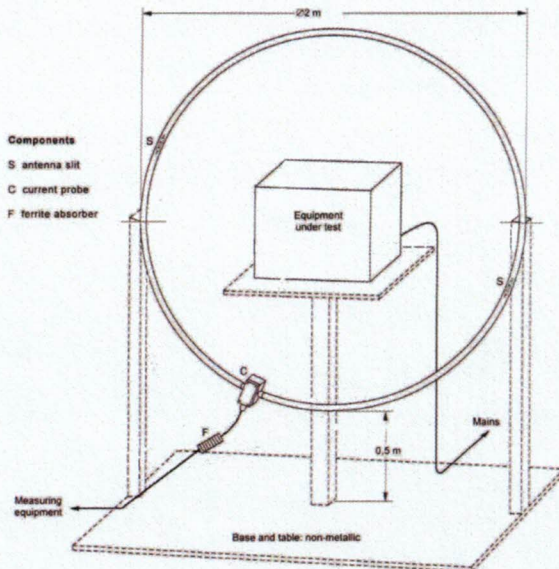
230V, 50Hz, minimally 15 minutes in operation

Temperature: 24°C Relative humidity: 68%

**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: Pařízek

Date: 4.8. 2020

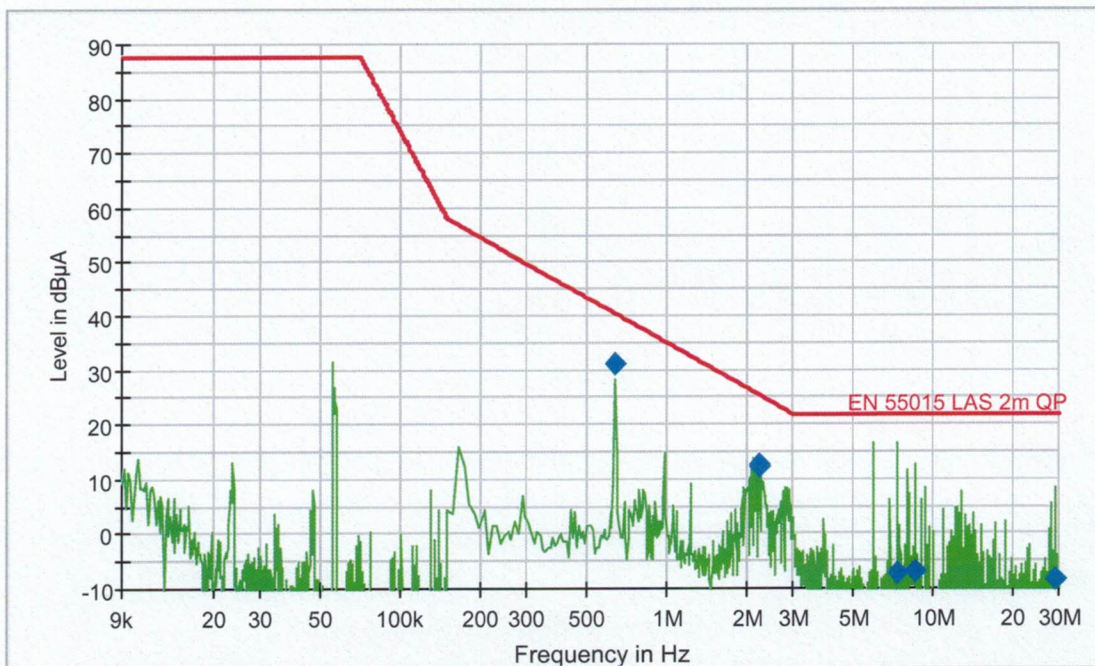


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.001
Test Description	EN 55015
Operating Conditions	230V, 50Hz, DALI - Pmax
Operator Name:	Parizek
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	31.2	1000.00	9.000	1.1	9.4	40.6
2.214000	12.7	1000.00	9.000	1.0	13.0	25.7
2.238000	12.3	1000.00	9.000	1.0	13.2	25.5
7.326000	-7.3	1000.00	9.000	0.9	29.3	22.0
8.638000	-6.6	1000.00	9.000	0.9	28.6	22.0
28.822000	-8.2	1000.00	9.000	1.1	30.2	22.0

4.8.2020

7:28:09

Measured by: Parizek  
*Parizek*

Date: 4.8. 2020

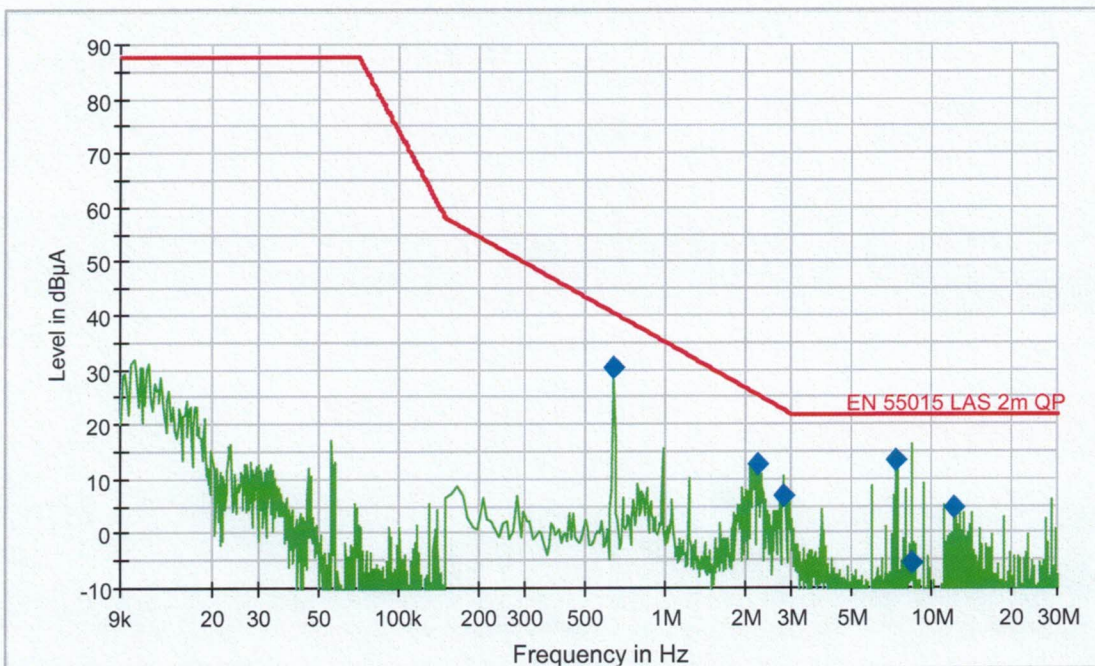


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.001
Test Description	EN 55015
Operating Conditions	230V, 50Hz, DALI - Pmax
Operator Name:	Parizek
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	30.7	1000.00	9.000	1.1	9.9	40.6
2.214000	12.8	1000.00	9.000	1.0	12.9	25.7
2.806000	7.0	1000.00	9.000	1.0	15.8	22.8
7.326000	13.6	1000.00	9.000	0.9	8.4	22.0
8.494000	-5.4	1000.00	9.000	0.9	27.4	22.0
12.198000	4.9	1000.00	9.000	0.9	17.1	22.0

4.8.2020

7:33:38

Measured by: Pařízek  
*Pařízek*

Date: 4.8. 2020

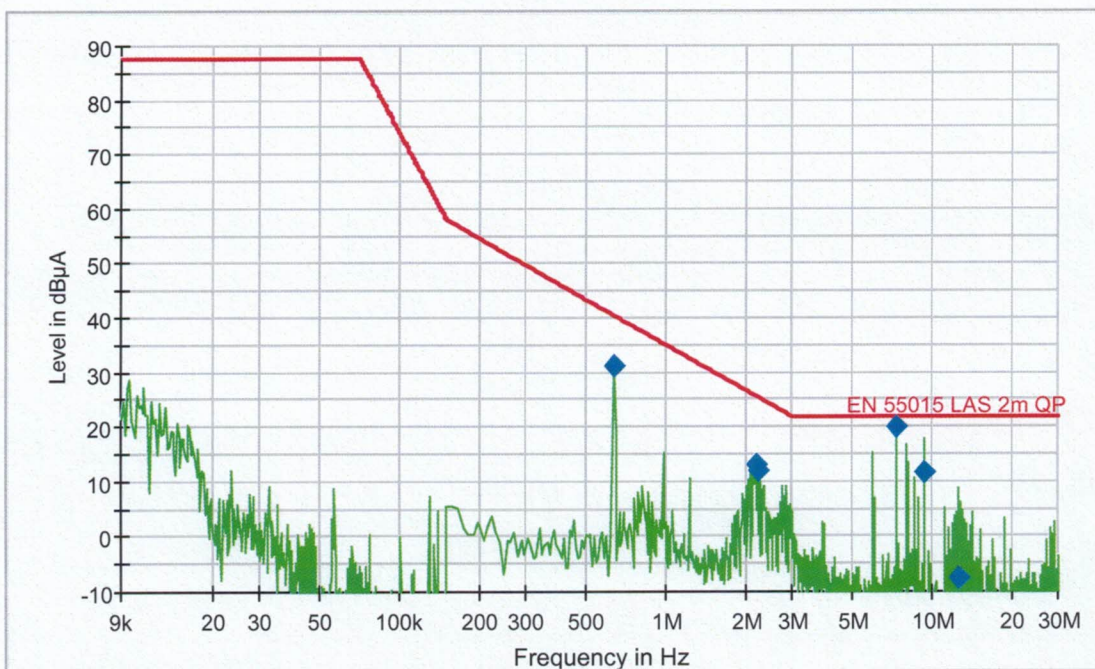


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.001
Test Description	EN 55015
Operating Conditions	230V, 50Hz, DALI - Pmax
Operator Name:	Pařízek
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	31.3	1000.00	9.000	1.1	9.3	40.6
2.198000	13.1	1000.00	9.000	1.0	12.6	25.7
2.246000	12.2	1000.00	9.000	1.0	13.3	25.5
7.326000	20.1	1000.00	9.000	0.9	1.9	22.0
9.422000	11.7	1000.00	9.000	0.9	10.3	22.0
12.598000	-7.5	1000.00	9.000	0.9	29.5	22.0

4.8.2020

7:15:25

Measured by: Pařízek  
*Pařízek*

Date: 4.8. 2020

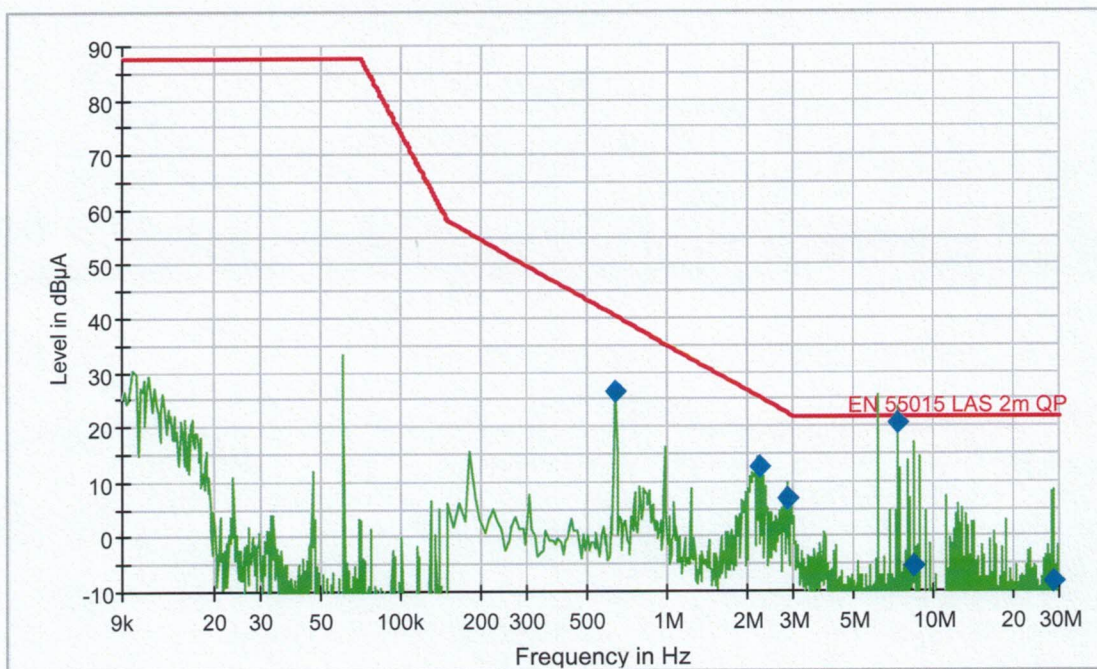


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.001
Test Description	EN 55015
Operating Conditions	230V, 50Hz, DALI - Pmin
Operator Name:	Pařízek
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	26.7	1000.00	9.000	1.1	13.9	40.6
2.214000	12.8	1000.00	9.000	1.0	12.9	25.7
2.830000	7.0	1000.00	9.000	1.0	15.7	22.7
7.326000	20.7	1000.00	9.000	0.9	1.3	22.0
8.510000	-5.2	1000.00	9.000	0.9	27.2	22.0
28.358000	-8.3	1000.00	9.000	1.1	30.3	22.0

4.8.2020

6:53:31

Measured by: Pařízek *Pařízek*

Date: 4.8. 2020

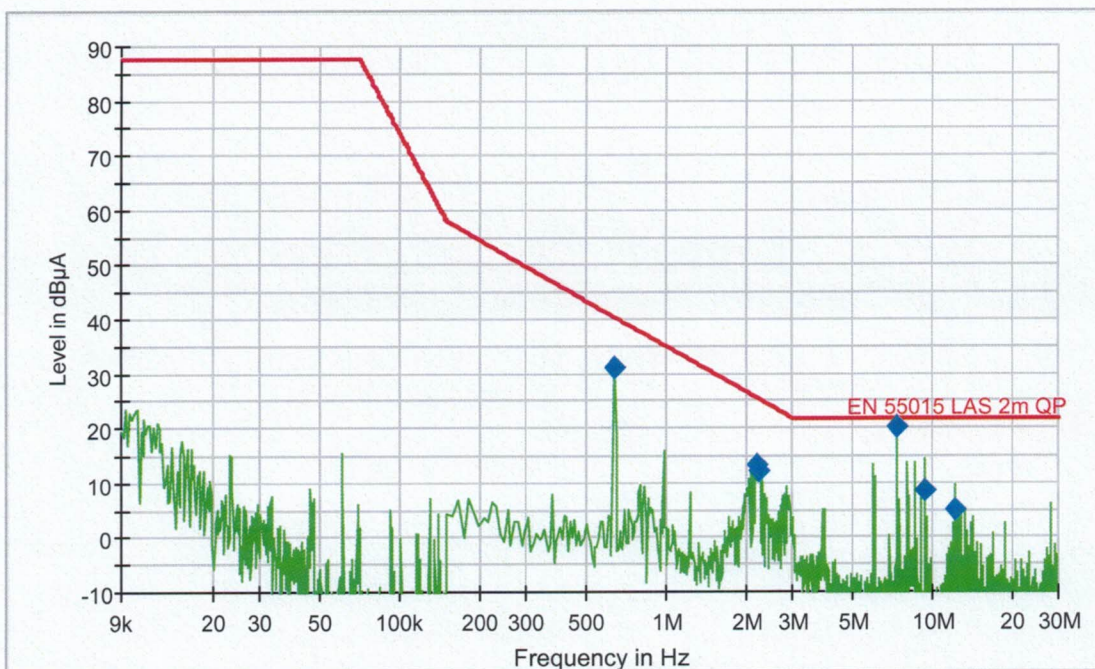


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.001
Test Description	EN 55015
Operating Conditions	230V, 50Hz, DALI - Pmin
Operator Name:	Pařízek
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	31.3	1000.00	9.000	1.1	9.3	40.6
2.174000	13.4	1000.00	9.000	1.0	12.5	25.9
2.246000	12.3	1000.00	9.000	1.0	13.2	25.5
7.326000	20.5	1000.00	9.000	0.9	1.5	22.0
9.422000	9.0	1000.00	9.000	0.9	13.0	22.0
12.198000	5.4	1000.00	9.000	0.9	16.6	22.0

4.8.2020

7:02:39

Measured by: Pařízek  
*Pařízek*

Date: 4.8. 2020

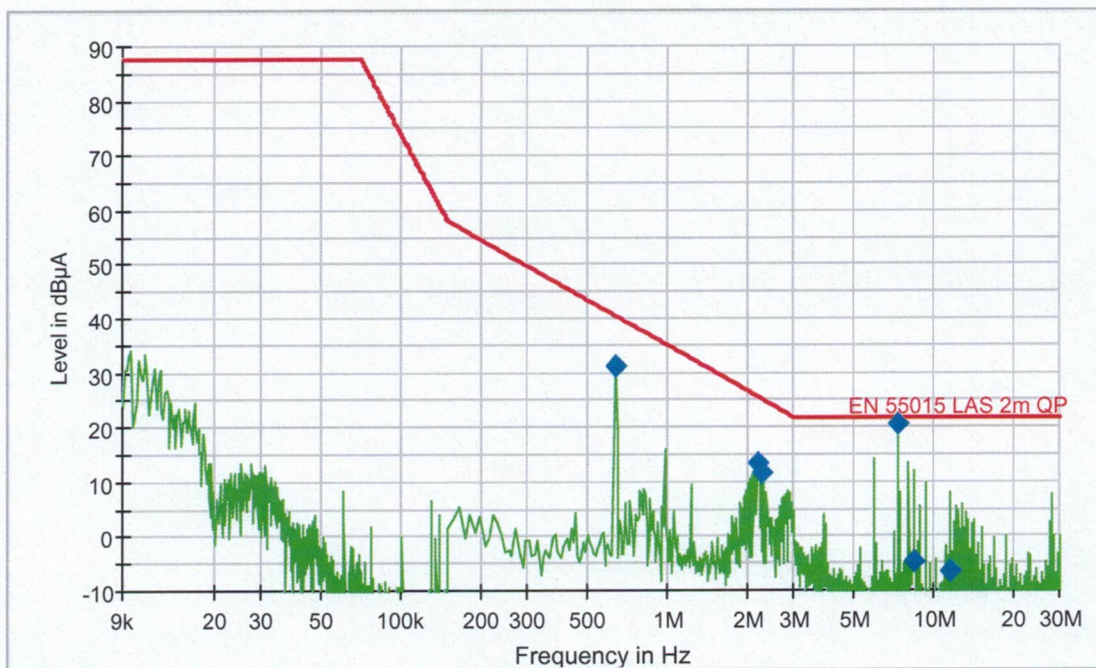


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.001
Test Description	EN 55015
Operating Conditions	230V, 50Hz, DALI - Pmin
Operator Name:	Pařízek
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	31.3	1000.00	9.000	1.1	9.3	40.6
2.182000	13.6	1000.00	9.000	1.0	12.2	25.8
2.254000	11.7	1000.00	9.000	1.0	13.7	25.4
7.326000	20.7	1000.00	9.000	0.9	1.3	22.0
8.478000	-4.6	1000.00	9.000	0.9	26.6	22.0
11.558000	-6.2	1000.00	9.000	0.9	28.2	22.0

4.8.2020

7:10:06

Measured by: Pařízek *Pařízek*

Date: 4.8. 2020

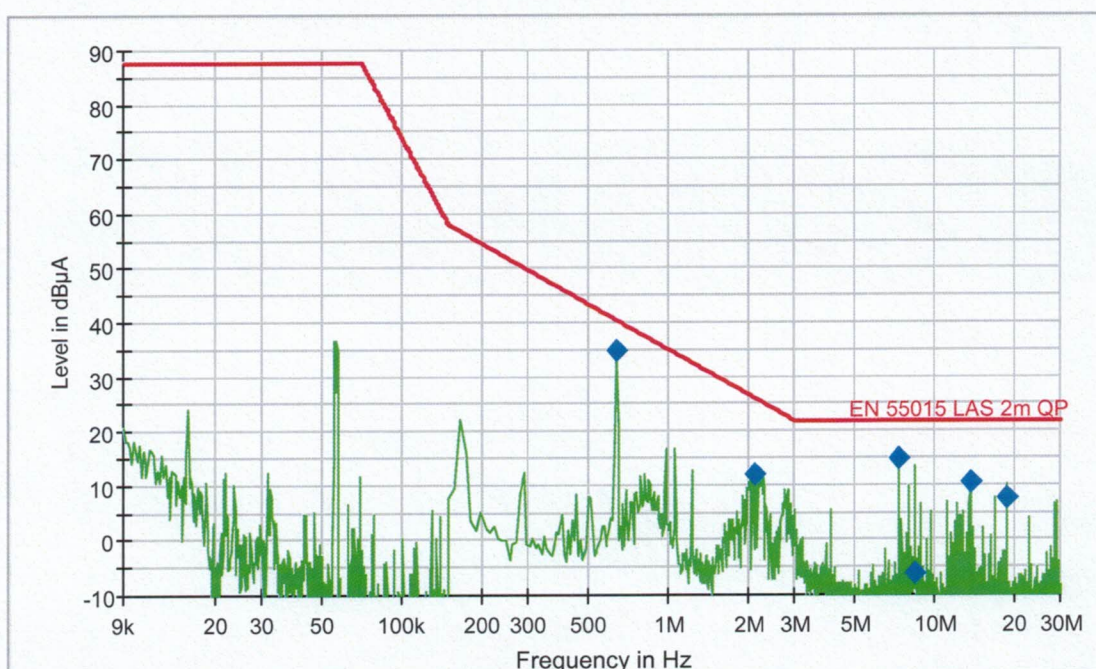


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.002
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Parizek
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	35.0	1000.00	9.000	1.1	5.6	40.6
2.126000	12.1	1000.00	9.000	1.0	14.0	26.1
7.326000	15.1	1000.00	9.000	0.9	6.9	22.0
8.494000	-6.2	1000.00	9.000	0.9	28.2	22.0
13.638000	10.5	1000.00	9.000	0.9	11.5	22.0
18.886000	7.9	1000.00	9.000	1.0	14.1	22.0

17.8.2020

8:08:40

Measured by: Pařízek  
*Pařízek*

Date: 17.8. 2020



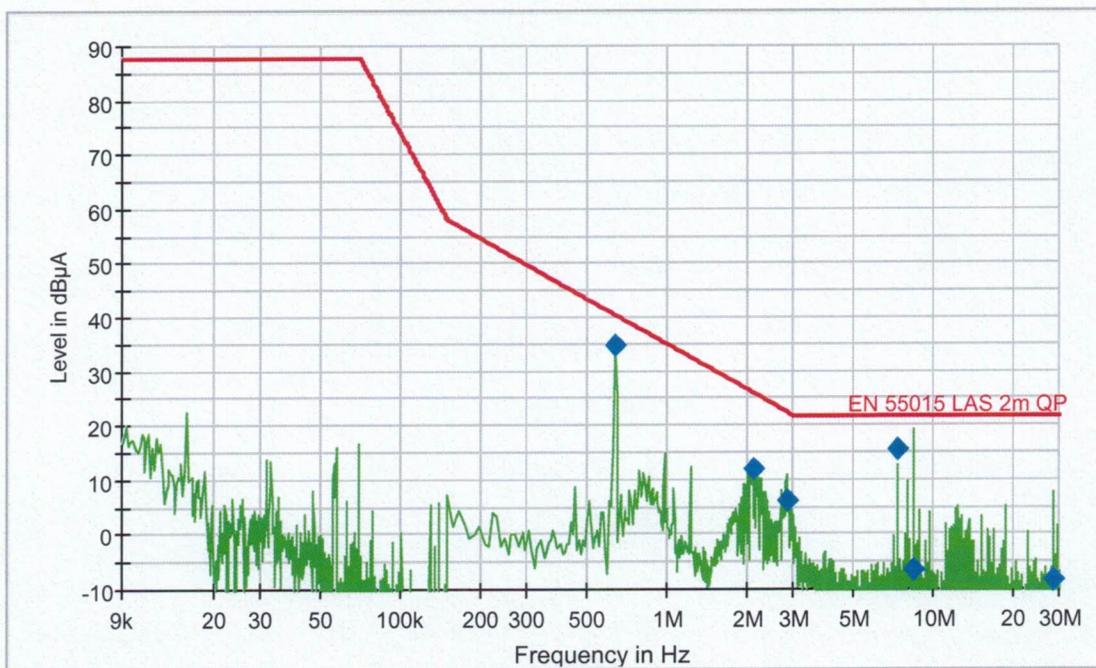


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.002
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Pařízek
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	34.8	1000.00	9.000	1.1	5.8	40.6
2.110000	12.0	1000.00	9.000	1.0	14.2	26.2
2.822000	6.4	1000.00	9.000	1.0	16.3	22.7
7.326000	15.9	1000.00	9.000	0.9	6.1	22.0
8.510000	-6.5	1000.00	9.000	0.9	28.5	22.0
28.598000	-8.1	1000.00	9.000	1.1	30.1	22.0

17.8.2020

8:19:15

Measured by: Pařízek  
*[Signature]*

Date: 17.8. 2020

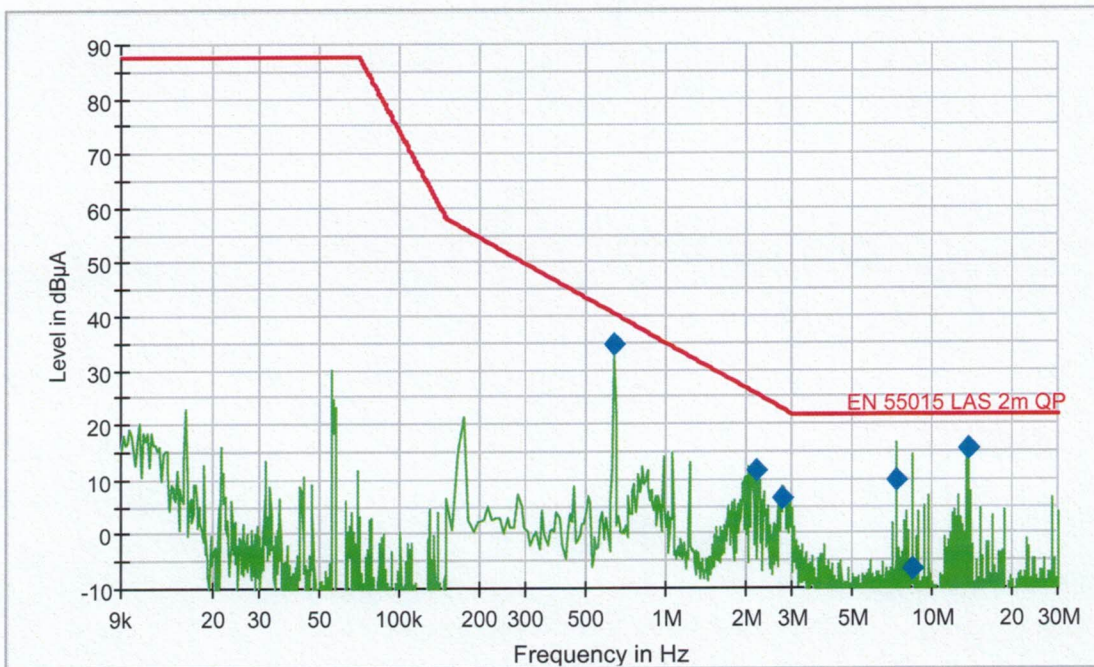


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.002
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Pařízek
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	35.0	1000.00	9.000	1.1	5.6	40.6
2.182000	11.8	1000.00	9.000	1.0	14.0	25.8
2.766000	6.8	1000.00	9.000	1.0	16.2	23.0
7.326000	9.9	1000.00	9.000	0.9	12.1	22.0
8.510000	-6.6	1000.00	9.000	0.9	28.6	22.0
13.638000	15.8	1000.00	9.000	0.9	6.2	22.0

17.8.2020

8:24:10

Measured by: Pařízek *Pařízek*

Date: 17.8. 2020



**Measurement of interfering radiation in the 30 - 300 MHz band  
According to: EN 55015 art. 4.5.3**

**Product:** URBINO LED

**Type:** 130222.6L362.331.001, 130222.6L362.331.002

**Operating conditions:**

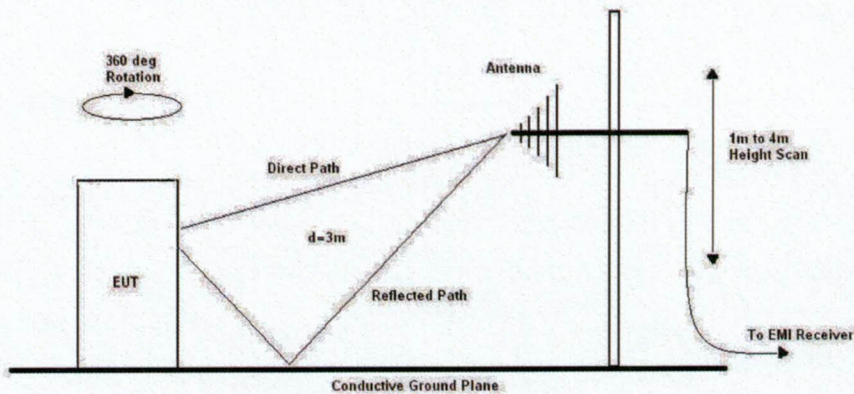
230V, 50Hz, minimally 15 minutes in operation

Temperature: 23°C Relative humidity: 50%

**Applied limits:**

Band (MHz)	Limits dB( $\mu$ V/m), quasi-peak	
30 - 230	*)	30 (d=10m)
230 - 1000	*)	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: Pařízek  
*Pařízek*

Date: 3.8. 2020

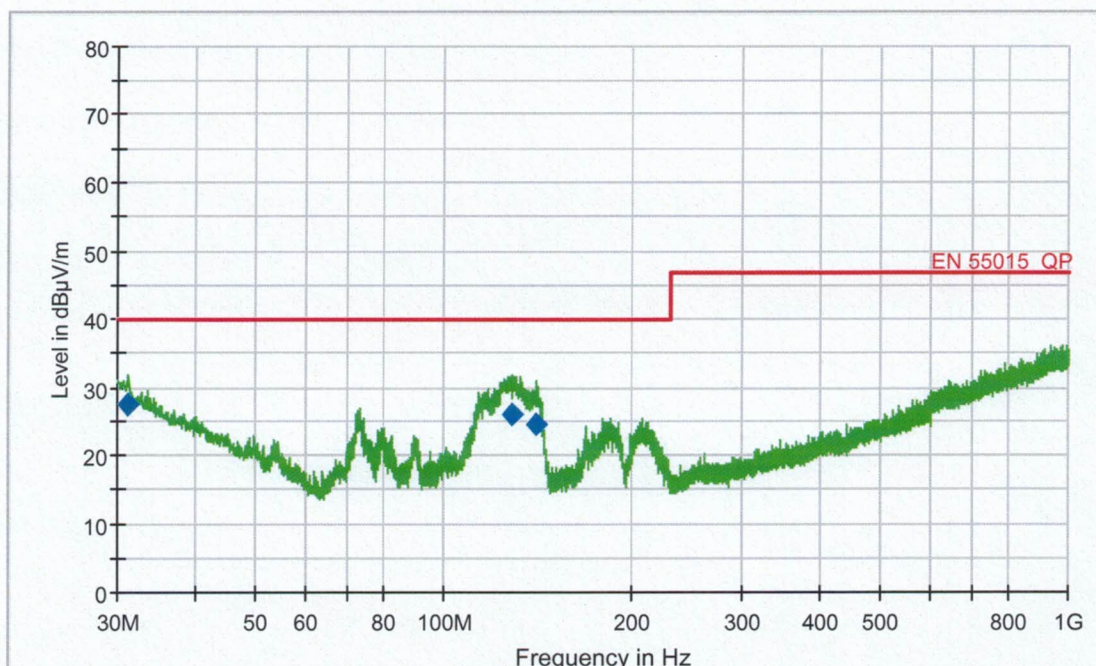


# EMI Measurement

## Common Information

EUT Name: URBINO LED  
 Type: 130222.6L362.331.001  
 Test Description: EN 55015  
 Operating Conditions: 230V, 50Hz, DALI - Pmax  
 Operator Name: Pařízek  
 Comment: H polarization

EFS EZU 1



## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
31.200000	27.7	1000.00	120.000	322.0	H	270.0	27.5	12.3	40.0
128.160000	26.0	1000.00	120.000	235.0	H	45.0	10.5	14.0	40.0
140.220000	24.7	1000.00	120.000	250.0	H	225.0	9.8	15.3	40.0

3.8.2020

15:23:50

Measured by: Pařízek  
*Pařízek*

Date: 3.8. 2020

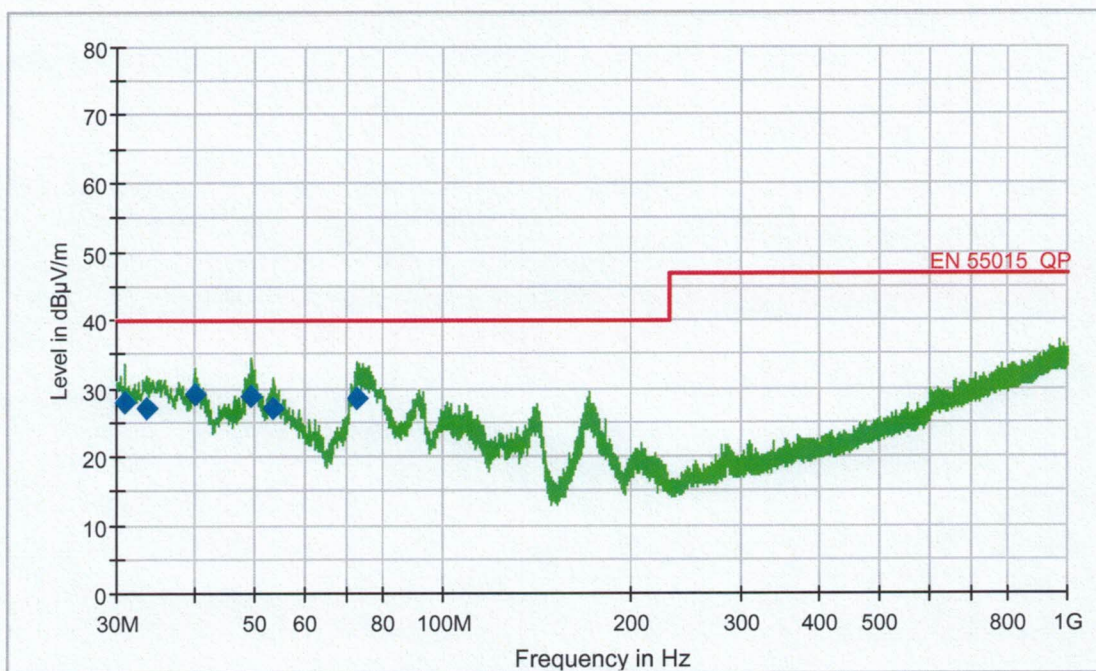


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.001
Test Description	EN 55015
Operating Conditions	230V, 50Hz, DALI - Pmax
Operator Name:	Pařízek
Comment:	V polarization

EFS EZU 1



## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
30.900000	28.1	1000.00	120.000	322.0	V	45.0	27.7	11.9	40.0
33.420000	27.3	1000.00	120.000	110.0	V	85.0	26.3	12.7	40.0
39.900000	29.2	1000.00	120.000	146.0	V	190.0	23.1	10.8	40.0
49.320000	28.9	1000.00	120.000	110.0	V	135.0	18.0	11.1	40.0
53.520000	27.2	1000.00	120.000	110.0	V	315.0	16.2	12.8	40.0
72.900000	28.7	1000.00	120.000	146.0	V	333.0	10.1	11.3	40.0

3.8.2020

14:52:20

Measured by: Pařízek  
*Pařízek*

Date: 3.8. 2020

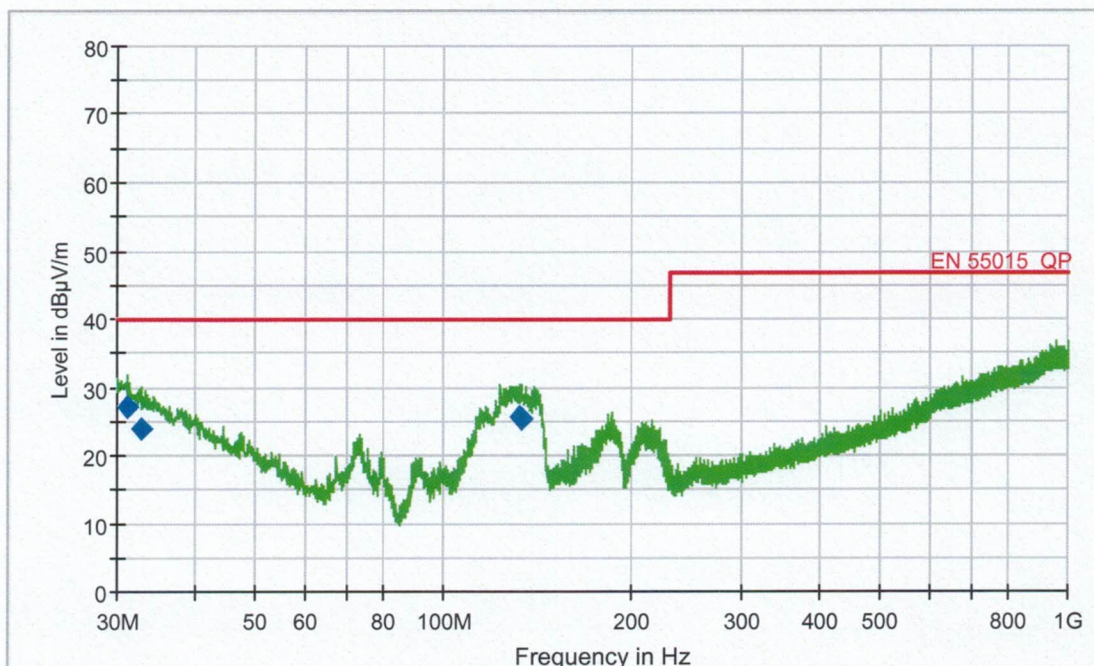


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.001
Test Description	EN 55015
Operating Conditions	230V, 50Hz, DALI - Pmin
Operator Name:	Pařízek
Comment:	H polarization

EFS EZU 1



## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
31.140000	27.4	1000.00	120.000	322.0	H	18.0	27.6	12.6	40.0
32.820000	24.1	1000.00	120.000	150.0	H	48.0	26.6	15.9	40.0
132.780000	25.7	1000.00	120.000	256.0	H	40.0	10.6	14.3	40.0
133.560000	25.6	1000.00	120.000	258.0	H	225.0	10.4	14.4	40.0

3.8.2020

14:26:17

Measured by: Pařízek  
*Pařízek*

Date: 3.8. 2020

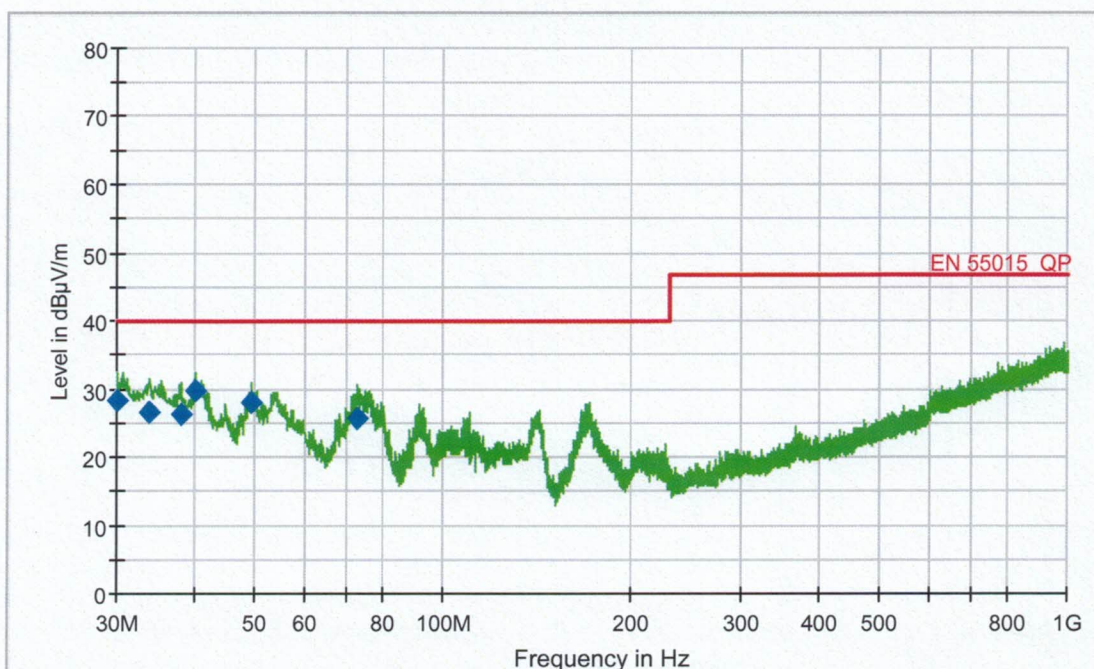


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.001
Test Description	EN 55015
Operating Conditions	230V, 50Hz, DALI - Pmin
Operator Name:	Pařízek
Comment:	V polarization

EFS EZU 1



## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
30.000000	28.4	1000.00	120.000	310.0	V	0.0	28.3	11.6	40.0
33.840000	26.5	1000.00	120.000	210.0	V	90.0	26.1	13.5	40.0
37.920000	26.5	1000.00	120.000	269.0	V	190.0	23.9	13.5	40.0
39.900000	29.8	1000.00	120.000	146.0	V	123.0	23.1	10.2	40.0
49.200000	28.1	1000.00	120.000	110.0	V	0.0	18.0	11.9	40.0
72.840000	25.8	1000.00	120.000	135.0	V	315.0	10.1	14.2	40.0

3.8.2020

13:52:57

Measured by: Pařízek *Pařízek*

Date: 3.8. 2020

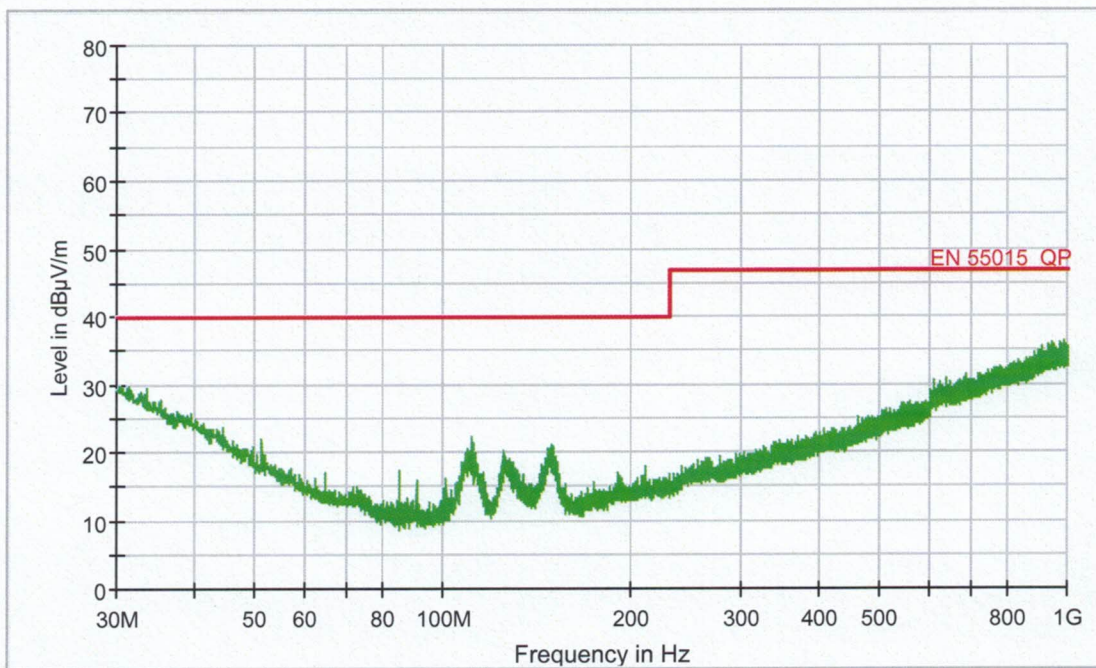


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.002
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Pařízek
Comment:	H polarization

EFS EZU 1



17.8.2020

7:17:28

Measured by: Pařízek  
*Pařízek*

Date: 17.8. 2020



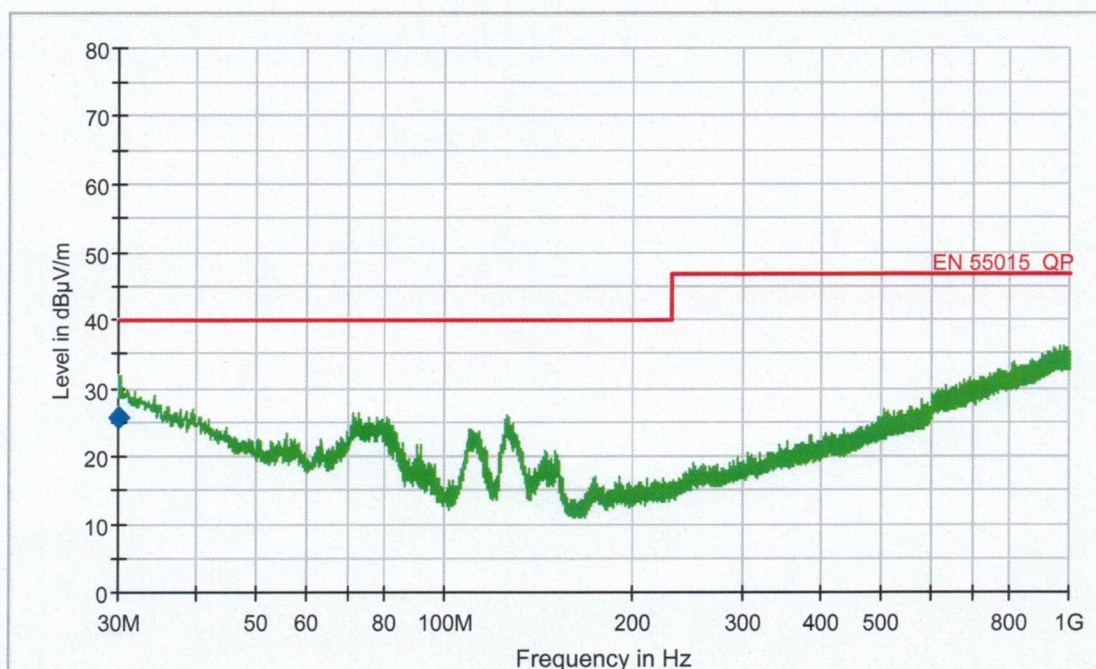


# EMI Measurement

## Common Information

EUT Name:	URBINO LED
Type	130222.6L362.331.002
Test Description	EN 55015
Operating Conditions	230V, 50Hz
Operator Name:	Pařízek
Comment:	V polarization

EFS EZU 1



## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
30.060000	25.9	1000.00	120.000	122.0	V	90.0	28.3	14.1	40.0

17.8.2020

6:58:40

Measured by: Pařízek *Pařízek*

Date: 17.8. 2020



**Electromagnetic compatibility (EMC) - Limits -  
Limits for harmonic current emission  
According to: EN 61000-3-2 art. 7.4**

**Product:** URBINO LED

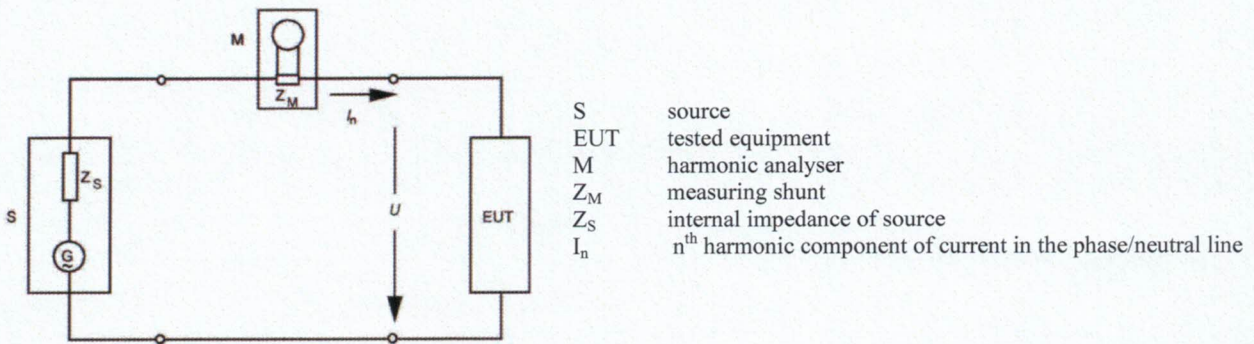
**Type:** 130222.6L362.331.001, 130222.6L362.331.002

**Operating conditions:**

230V, 50Hz, minimally 15 minutes in operation

Temperature: 24°C Relative humidity: 68%

**Measuring arrangement:**



**Applied limits:**

Order of harmonics	Limit (%I1) P > 25W	5W ≤ P ≤ 25W
2	2	See EN 61000-3-2, Art. 7.4.3
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: Pařízek *Pařízek*

Date: 4.8. 2020

**Test Report ISMDPA**

Report title:	021810-01/01
Company Name:	EZU
Date of test:	9:38 4.Aug 2020
Measurement file name:	Harmonics_3_2_Ed4.rsd
Tester:	Pařízek
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
E. U. T.:	URBINO LED 6L362,331,001
Temperature :	24
Humidity :	68
Comment:	230 V, 50 Hz, P= 160 W
Measurement smoothed data:	Fund. Current: 0.705A Power Factor: 0.988

<b>Test Result</b>	
E. U. T.:	PASS
Power Source:	PASS

4.Aug 2020

(Date)

Pařízek

(Sign)



E. U. T. Result

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

<b>Harmonic(s) &gt; 150%:</b>	
Order (n):	None
<b>Harmonic(s) with average &gt; 100%:</b>	
Order (n):	None

**Check odd harmonics 21..39:**

<b>All Partial Odd Harmonics below partial limits.</b>	
<b>Harmonic(s) &gt; 150%:</b>	
Order (n):	None
<b>Harmonic(s) with average &gt; 150%:</b>	
Order (n):	None

Power Source Result

<b>First dataset out of limit:</b>	
DS (time):	None
<b>Harmonic(s) out of limit:</b>	
Order (n):	None

**Average harmonic current results**

Hn	I <sub>eff</sub> [A]	I <sub>eff</sub> [%]	Limit [%]	Result
1	705.078E-3	99.974		
2	723.200E-6	0.103		PASS
3	35.663E-3	5.057	29.63	PASS
4	746.885E-6	0.106		PASS
5	4.805E-3	0.681		PASS
6	705.671E-6	0.100		PASS
7	8.676E-3	1.230	7.00	PASS
8	683.164E-6	0.097		PASS
9	2.484E-3	0.352		PASS
10	714.469E-6	0.101		PASS
11	2.170E-3	0.308		PASS
12	683.716E-6	0.097		PASS
13	4.457E-3	0.632		PASS
14	678.792E-6	0.096		PASS
15	7.577E-3	1.074	3.00	PASS
16	713.067E-6	0.101		PASS
17	6.553E-3	0.929	3.00	PASS
18	714.974E-6	0.101		PASS
19	4.539E-3	0.644		PASS
20	691.905E-6	0.098		PASS
21	3.648E-3	0.517		PASS
22	756.415E-6	0.107		PASS
23	2.744E-3	0.389		PASS
24	688.161E-6	0.098		PASS
25	2.410E-3	0.342		PASS
26	688.305E-6	0.098		PASS
27	1.676E-3	0.238		PASS
28	683.109E-6	0.097		PASS
29	1.841E-3	0.261		PASS
30	709.025E-6	0.101		PASS
31	3.529E-3	0.500		PASS
32	686.988E-6	0.097		PASS
33	1.671E-3	0.237		PASS
34	709.059E-6	0.101		PASS
35	1.674E-3	0.237		PASS
36	690.793E-6	0.098		PASS
37	1.805E-3	0.256		PASS
38	689.557E-6	0.098		PASS
39	1.259E-3	0.178		PASS
40	694.082E-6	0.098		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.

**Test Report ISMDPA**

Report title:	021810-01/01
Company Name:	EZU
Date of test:	9:40 4.Aug 2020
Tester:	Pařízek
Standard used:	EN/IEC 61000-3-2 Ed.4 Equipment class C<= 25W (3. and 5. harm.)
Observation time:	1s
Windows width:	10 periods - (EN/IEC 61000-4-7 Edition 2002 + A1:2008)
Customer:	LUG
E. U. T.:	URBINO LED 6L362.331.001
Temperature :	24
Humidity :	68
Comment:	230 V, 50 Hz, P= 16 W

<b>Test Result</b>	
E. U. T.:	PASS (Wave form of the input current PASS)
Power Source:	PASS

4.Aug 2020

(Date)

Pařízek

(Sign)

**Harmonic current results**

Hn	I <sub>eff</sub> [A]	I <sub>eff</sub> [%]	Limit [%]	Result
1	99.964E-3	100.000		
2	194.445E-6	0.195		PASS
3	28.069E-3	28.079	86.00	PASS
4	59.605E-6	0.060		PASS
5	6.012E-3	6.014	61.00	PASS
6	269.798E-6	0.270		PASS
7	4.579E-3	4.581		PASS
8	216.809E-6	0.217		PASS
9	3.811E-3	3.813		PASS
10	166.419E-6	0.166		PASS
11	1.917E-3	1.918		PASS
12	109.329E-6	0.109		PASS
13	2.278E-3	2.278		PASS
14	42.240E-6	0.042		PASS
15	1.742E-3	1.743		PASS
16	132.180E-6	0.132		PASS
17	1.452E-3	1.453		PASS
18	70.301E-6	0.070		PASS
19	1.427E-3	1.428		PASS
20	155.861E-6	0.156		PASS
21	1.053E-3	1.054		PASS
22	56.824E-6	0.057		PASS
23	1.224E-3	1.225		PASS
24	233.872E-6	0.234		PASS
25	1.123E-3	1.123		PASS
26	49.790E-6	0.050		PASS
27	1.110E-3	1.111		PASS
28	140.602E-6	0.141		PASS
29	1.133E-3	1.133		PASS
30	162.604E-6	0.163		PASS
31	930.719E-6	0.931		PASS
32	140.489E-6	0.141		PASS
33	864.598E-6	0.865		PASS
34	118.445E-6	0.118		PASS
35	733.204E-6	0.733		PASS
36	108.095E-6	0.108		PASS
37	794.977E-6	0.795		PASS
38	87.510E-6	0.088		PASS
39	657.545E-6	0.658		PASS
40	159.738E-6	0.160		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.

**Power and THD results**

True power P:	16.16W	Apparent power S:	23.98VA
Reactive power Q:	17.71var	Power factor:	0.674
THD (U):	0.002	THD (I):	0.298
Crest Factor (U):	1.413	Crest Factor (I):	1.568

**Test Report ISMDPA**

Report title:	021810-01/01
Company Name:	EZU
Date of test:	10:22 4.Aug 2020
Measurement file name:	Harmonics_3_2_Ed4.rsd
Tester:	Pařízek
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
E. U. T.:	URBINO LED 6L362.331.002
Temperature :	24
Humidity :	68
Comment:	230 V, 50 Hz, P= 160 W
Measurement smoothed data:	Fund. Current: 0.707A Power Factor: 0.987

<b>Test Result</b>	
E. U. T.:	PASS
Power Source:	PASS

4.Aug 2020

(Date)

Pařízek

(Sign)





### E. U. T. Result

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

<b>Harmonic(s) &gt; 150%:</b>		
Order (n):		None
<b>Harmonic(s) with average &gt; 100%:</b>		
Order (n):		None

#### **Check odd harmonics 21..39:**

<b>All Partial Odd Harmonics below partial limits.</b>		
<b>Harmonic(s) &gt; 150%:</b>		
Order (n):		None
<b>Harmonic(s) with average &gt; 150%:</b>		
Order (n):		None

### Power Source Result

<b>First dataset out of limit:</b>		
DS (time):		None
<b>Harmonic(s) out of limit:</b>		
Order (n):		None

**Average harmonic current results**

Hn	I <sub>eff</sub> [A]	I <sub>eff</sub> [%]	Limit [%]	Result
1	706.924E-3	99.979		
2	802.462E-6	0.113		PASS
3	36.800E-3	5.205	29.61	PASS
4	664.933E-6	0.094		PASS
5	4.027E-3	0.570		PASS
6	662.860E-6	0.094		PASS
7	9.363E-3	1.324	7.00	PASS
8	633.134E-6	0.090		PASS
9	3.134E-3	0.443		PASS
10	639.343E-6	0.090		PASS
11	2.596E-3	0.367		PASS
12	648.420E-6	0.092		PASS
13	4.270E-3	0.604		PASS
14	663.290E-6	0.094		PASS
15	7.106E-3	1.005	3.00	PASS
16	642.605E-6	0.091		PASS
17	6.713E-3	0.949	3.00	PASS
18	635.922E-6	0.090		PASS
19	4.739E-3	0.670		PASS
20	668.784E-6	0.095		PASS
21	3.360E-3	0.475		PASS
22	649.640E-6	0.092		PASS
23	2.760E-3	0.390		PASS
24	662.362E-6	0.094		PASS
25	2.181E-3	0.309		PASS
26	705.481E-6	0.100		PASS
27	1.631E-3	0.231		PASS
28	754.603E-6	0.107		PASS
29	1.796E-3	0.254		PASS
30	728.212E-6	0.103		PASS
31	3.310E-3	0.468		PASS
32	700.371E-6	0.099		PASS
33	2.405E-3	0.340		PASS
34	663.289E-6	0.094		PASS
35	964.833E-6	0.136		PASS
36	735.072E-6	0.104		PASS
37	2.133E-3	0.302		PASS
38	628.483E-6	0.089		PASS
39	1.043E-3	0.147		PASS
40	706.741E-6	0.100		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*  
2009

Výrobek - Product: URBINO LED

Type: 130222.6L362.331.001, 130222.6L362.331.002

### 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, ±0,5kV signal	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	Pass *2)
EN61000-4-11	200 ms / 70%U <sub>T</sub> 10 ms / 0% U <sub>T</sub>	C B	Pass

### Notes:

An electronic ballast is used in both luminaires: TRIDONIC LCO 200/200 1050/355 o4a NF C EXC3

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

\*2) Devices do not contain parts sensitive to the magnetic field. Pass without testing.

**Test result: Pass**



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

**Product:** URBINO LED

**Type:** 130222.6L362.331.001, 130222.6L362.331.002

**Operating conditions:**

230V, 50Hz, minimally 15 minutes in operation

Temperature: 24°C Relative humidity: 68%

**Allowed criterion: B**

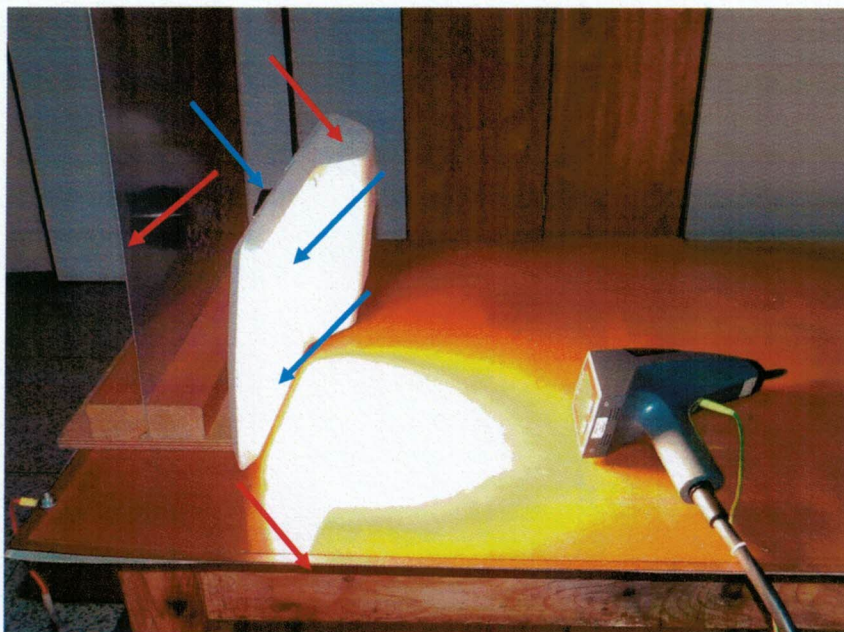
**Number of testing discharges:** 10/10 contact/air discharge to every test-places in each polarity, besides indirect contact discharges into a vertical and horizontal coupling plane

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

**Testing voltage [kV]:**  $\pm 4$  - contact /  $\pm 8$  - air

**Achieved criterion: A**

**Measuring arrangement:**



**Notes:**

**Test result: Pass**

Measured by: Pařízek  
*Pařízek*

Date: 4.8. 2020



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

**Product:** URBINO LED

**Type:** 130222.6L362.331.001, 130222.6L362.331.002

**Operating conditions:**

230V, 50Hz, minimally 15 minutes in operation

Temperature: 22°C Relative humidity: 67%

**Applied limits:**

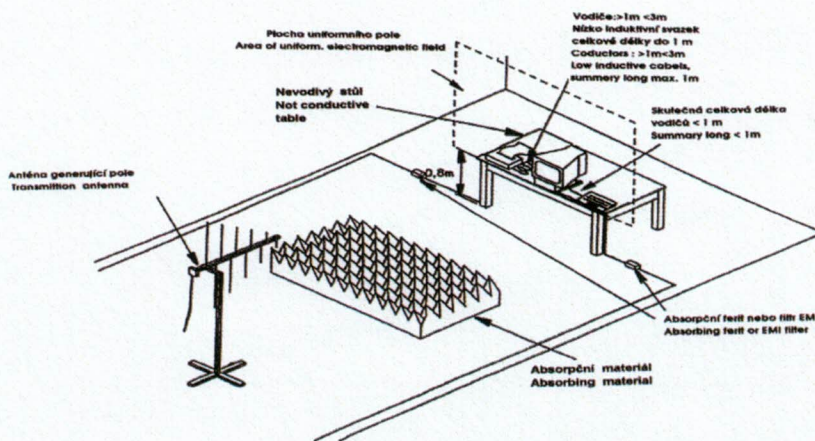
Scan spectrum: 80 - 1000 MHz

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

**Allowed criterion: A**

**Achieved criterion: A**

**Measuring arrangement:**



**Notes:**

**Test result: Pass**

Measured by: Pařízek

Date: 18.8. 2020



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

**Product:** URBINO LED

**Type:** 130222.6L362.331.001, 130222.6L362.331.002

**Operating conditions:**

230V, 50Hz, minimally 15 minutes in operation

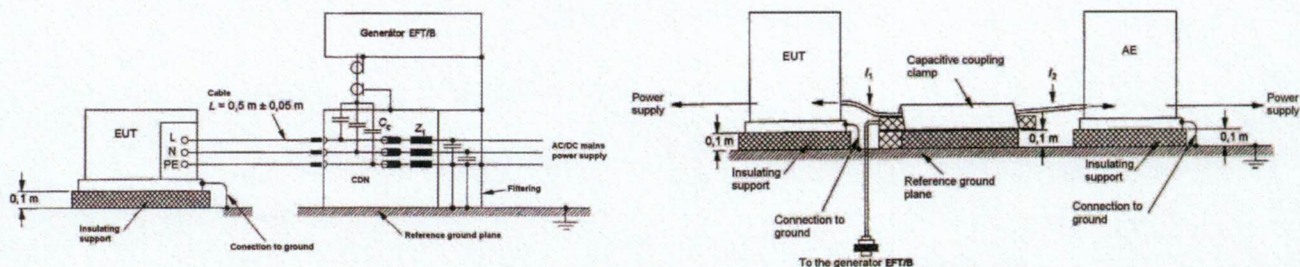
Temperature: 23°C Relative humidity: 50%

**Allowed criterion: B**

**Testing voltage applied:**

Applied voltage	Testing level	Performance criterion	Remark
L,N, L+N	±1kV	A	Coupling networks to power supply
Data cable (DALI)	±0,5kV	A	By capacity clamp

**Measuring arrangement:**



**Notes:**

**Test result: Pass**

Measured by: Pařízek *Pařízek*

Date: 3.8.2020



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

**Product:** URBINO LED

**Type:** 130222.6L362.331.001, 130222.6L362.331.002

**Operating conditions:**

230V, 50Hz, minimally 15 minutes in operation

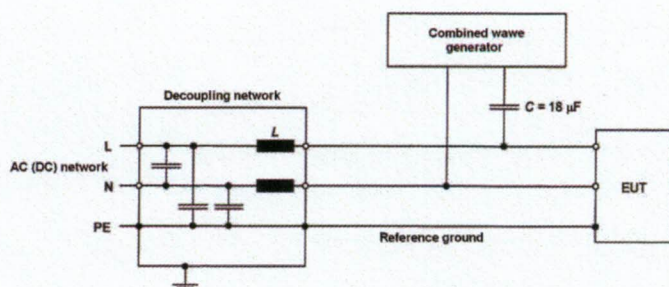
Temperature: 23°C Relative humidity: 50%

**Allowed criterion: C**

**Testing voltage applied:**

Applied voltage	Testing level	Performance criterion	Remark
L-N	±1kV	B	90°, 270°

**Measuring arrangement:**



**Notes:**

**Test result: Pass**

Measured by: Pařízek *Pařízek*

Date: 3.8 2020



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

**Product:** URBINO LED

**Type:** 130222.6L362.331.001, 130222.6L362.331.002

**Operating conditions:**

230V, 50Hz, minimally 15 minutes in operation

Temperature: 23°C Relative humidity: 50%

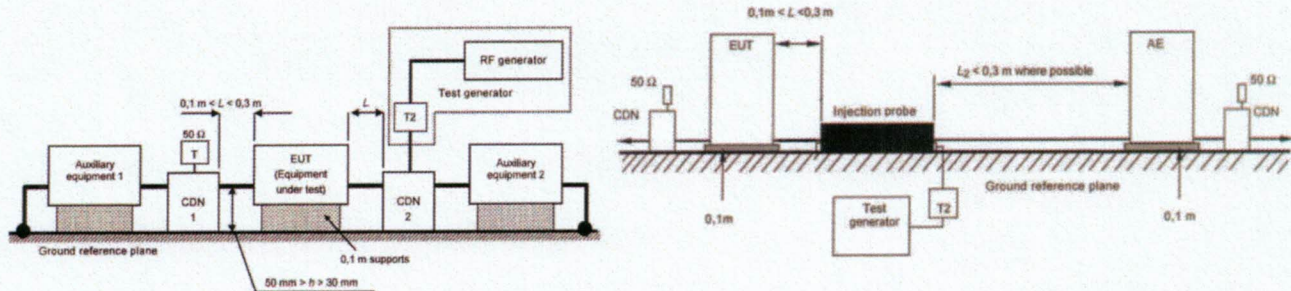
**Allowed criterion:** A

**Testing voltage applied:**

Frequency band	Testing voltage level	Note
150kHz - 80MHz	3V (mod. 80% AM / 1 kHz)	Applied by coupling network to mains
150kHz - 80MHz	3V (mod. 80% AM / 1 kHz)	By inject clamp into the signal cable (DALI)

**Achieved criterion:** A

**Measuring arrangement:**



**Notes:**

**Test result:** Pass

Measured by: Pařízek  
*Pařízek*

Date: 3.8 2020





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

**Product:** URBINO LED

**Type:** 130222.6L362.331.001, 130222.6L362.331.002

**Operating conditions:**

230V, 50Hz, minimally 15 minutes in operation

Temperature: 22°C Relative humidity: 67%

**Allowed criterion:** C, B

**Tests requirements:**

Test level [ % ] Ut	Duration 50 Hz [ ms ]	Allowed criterion	Achieved criterion
0	10	B	A
70	200	C	B

**Notes:**

**Test result: Pass**

Measured by: Pařízek  
*Pařízek*

Date: 17.8 2020

**Measuring equipment used**

<input checked="" type="checkbox"/>	Test receiver RaS	ESU26	110252	01.2021
<input checked="" type="checkbox"/>	Harmonic analyzer EM TEST	DPA503N	110272	02.2021
<input checked="" type="checkbox"/>	Continuos wawe simulátor EM Test	CWS500N	110342	03.2021
<input checked="" type="checkbox"/>	EM Test	PFS 500	98-6040	12.2021
<input checked="" type="checkbox"/>	Ultra Compact Simulator EM Test	UCS 500N	110235	02.2021
<input type="checkbox"/>	Combination Wave Simulator EM Test	VCS 500N	110182	01.2022
<input type="checkbox"/>	Combined 3-Phase CDN EM Test	CNI503	110181	01.2022
<input checked="" type="checkbox"/>	ESD generator	ESD30N	110196	05.2021
<input checked="" type="checkbox"/>	Artificial mains EMCO	3825/2	95-5852	07.2022
<input type="checkbox"/>	Artificial mains NARDA	L3-32	110250	03.2022
<input checked="" type="checkbox"/>	Antenna Frankonia	BTA-M	00-6321	05.2023

**Auxiliary equipment:**

<input type="checkbox"/>	Multi-function AC/DC Power Supply EM TEST	NetWave 20.2	110299	01.2021
<input checked="" type="checkbox"/>	Supply source EM TEST	HFS300	98-6042	02.2021
<input checked="" type="checkbox"/>	Ref. impedance SCHAFFNER	LR4	X71773	02.2021
<input type="checkbox"/>	Isotropic field probe DARE, Radi Sense	CTR 1001A	110117	02.2021
<input checked="" type="checkbox"/>	Field probe Narda	EP603	110273	05.2021
<input type="checkbox"/>	Amplifier BONN ELEKTRONIK	BLWA0810-100	96-5871	
<input type="checkbox"/>	Amplifier BONN ELEKTRONIK	BSA0115-50	98-6038	
<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	AS1860-100	110219	
<input type="checkbox"/>	Amplifier AMETEK	CBA 6G-200D		
<input checked="" type="checkbox"/>	Signal generator RaS	SMF100A	110167	05.2021
<input type="checkbox"/>	Antenna Double Ridged R&S	HF907	110177	02.2021
<input type="checkbox"/>	Counter	PM6613	20200	
<input type="checkbox"/>	Probe RFT	TK12	700044	
<input checked="" type="checkbox"/>	Coupling/dec. EM TEST	CDN M2N	110233/2	03.2022
<input checked="" type="checkbox"/>	Coupling/dec. EM TEST	CDN M3N	110233/1	03.2022
<input type="checkbox"/>	Coupling/dec. EM TEST	CDN M5N	552097	08.2021
<input type="checkbox"/>	Coupling. SCHAFFNER	T440		
<input checked="" type="checkbox"/>	Capacitive coupling clamp	Haefely		
<input type="checkbox"/>	Coupling filter Haefely	FP 16 / 3-1		
<input type="checkbox"/>	Current probe	P MP-120		
<input type="checkbox"/>	Current probe	AM503	79-4221	
<input checked="" type="checkbox"/>	Electromag. injection clamp	EM-101	110233	03.2022
<input type="checkbox"/>	Ferite clamp 1-1000 MHz	EZ-24	10003	
<input checked="" type="checkbox"/>	Anechoic chamber - Euroshield Oy	RFMSD-F/A	EZÚ	02.2020 *)
<input checked="" type="checkbox"/>	Notebook Dell	Dell E6520	552020	
<input checked="" type="checkbox"/>	Notebook Dell	HP ProBook	552714	
<input checked="" type="checkbox"/>	Notebook Dell	Dell D531	551171	

**Cables:**

- K1
- K22 , ESH3-Z2
- K14 , K15a , K16
- KB01, KB02, KB04
- K7 , K10 , ESH3-Z2
- KB14
- K23
- K24

**EZU equipments:**

- PR-01 - Coupling resistance 40 Ω
- PR-02 - Coupling capacitor 0,5μF
- Regulating transformer - ZPA RA20
- PR-21 - Stabilized power supply DF 3010
- PR-15 - Variable resistor 2,35 Ω /16A
- PR-57 - Isolation transformer 0 - 2kV
- P43 – DALI preparation
- PR52 - VCP

\*) Calibration interval extended based on sufficient calibration data and experience of use (see IECCE OD-5011:2015 clause 8.3)

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**Photo-documentation**

**Product:** URBINO LED  
**Type:** 130222.6L362.331.001



Overview



Source and LED controller 130222.6L362.331.001

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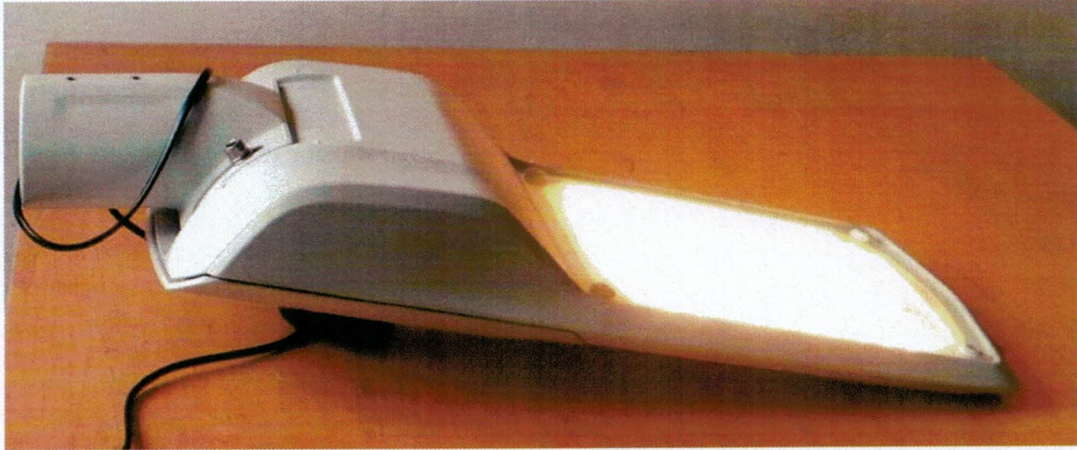


Name plate

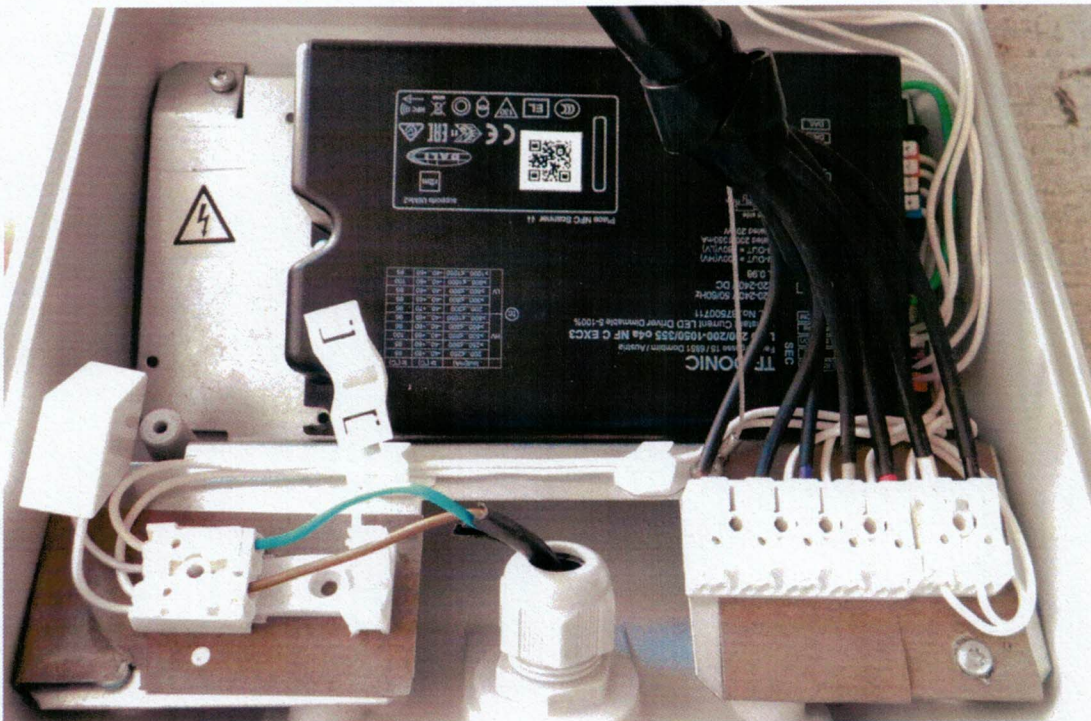
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Typ - Type: 130222.6L362.331.002



Overview



Source and LED controller

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 **LUG**    

**130222.6L362.331.002**  
**URBINO LED**  
**DALI/ED 19400lm/730 O16 szary II klasa**  
**130222.6LR7B30S1940.233.N.T.V**

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**LED** **MADE IN POLAND**  
**220-240V 50/60Hz** **DB-22005869-0020 / 697561**  
**1x max 157W**     
**IP66** **UL.GORZOWSKA 11**  
**t<sub>a</sub> 50 °C** **65-127 ZIELONA GÓRA**

Name plate

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