



TEST REPORT

Test Report No.: 222339-01/02

Issued: 10. 1. 2023

Name of product: Industrial LED luminaires
Type of product: MIDDLE EAST Ta55
Ratings: 220-240V, 50/60Hz, IP 66, ta +55°C
Serial number: -
Manufacturer: TREVOS, a.s.
Nová Ves 34, 511 01 Turnov, Czech Republic
Production site: -
Ordering firm: TREVOS, a.s.
Nová Ves 34, 511 01 Turnov, Czech Republic
Number of tested samples: 4
Samples submitted on: 22. 11. 2022
Location of testing: Elektrotechnický zkušební ústav, s. p.
Tests performed from 23. 11. 2022 through 9. 1. 2023
Other data: Tested MIDDLE EAST variants:
Ta 55 1,5ft PCc 8000/840 – driver TCI
Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC
Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER
Ta 55 1,2ft PC 2200/840 – driver TCI
Tested according to: ČSN EN IEC 55015 ed.5:2020
(EN IEC 55015:2019)
ČSN EN 61547 ed.2:2010
(EN 61547:2009)
ČSN EN 61000-3-3 ed.3:2014+A1:2019+A2:2022
(EN 61000-3-3:2013+A1:2019+A2:2022)
ČSN EN IEC 61000-3-2 ed.5:2019+A1:2021
(EN IEC 61000-3-2:2019+A1:2021)

Compiled by: František Rybář

Approved by: Pavel Zabloudil
Testing laboratory technical manager

No. of pages: 41

No. of annexes: 1

No. of annexes pages: 8

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.
Without written consent from Elektrotechnický zkušební ústav, s. p., this report must not be reproduced in any other way than as a whole.

1. Emission

ČSN EN IEC 55015	<i>Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment.</i>
ČSN EN IEC 61000-3-2	<i>Electromagnetic compatibility (EMC) - Limits – Limits for harmonic current emission.</i>
ČSN EN 61000-3-3	<i>Electromagnetic compatibility (EMC) - Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection.</i>

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 – driver TCI, Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC, Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER, Ta 55 1,2ft PC 2200/840 – driver TCI

Measured at: Elektrotechnický zkušební ústav, s.p.

Requirements at tests:

Standard	Frequency band	Limits	Test Result
ČSN EN IEC 55015 Art. 4.3.1, Tab. 1	9 kHz – 50 kHz 50 kHz – 150 kHz 150 kHz – 0,5 MHz 0,5 MHz – 5 MHz 5,0 MHz – 30 MHz	QP / AV [dB(μV)] 110 / – 90 – 80 / – 66 – 56 / 56 – 46 56 / 46 60 / 50	Pass
ČSN EN IEC 55015 Art. 4.3.2, Tab. 2	150 kHz – 0,5 MHz 0,5 MHz – 30 MHz	QP / AV [dB(μV)] 84 – 74 / 74 – 64 74 / 64	Pass
ČSN EN IEC 55015 Art. 4.5.2, Tab. 8	9 kHz – 70 kHz 70 kHz – 150 kHz 150 kHz – 3,0 MHz 3,0 MHz – 30 MHz	[dB(μA)] - Ant. Ø2m 88 88-58 58-22 22	Pass without testing *1)
ČSN EN IEC 55015 Art. 4.5.3, Tab. 10	30 MHz – 230 MHz 230 MHz – 1000 MHz	QP [dB(μV/m)], d=3m 40 47	Pass
ČSN EN IEC 61000-3-2 Art. 7.4	50 Hz - 2 kHz	Class C	Pass
ČSN EN 61000-3-3 Art. 5	--	Pst: 1, Plt: 0,65, dmax: 6%	Pass without testing *2)

Notes:

*1) According to ČSN EN IEC 55015:19, Art. 5.3.4.1, only devices that can cause high magnetic dipole moments need to be tested. Luminaires with power supply based on magnetic inductance are considered as devices with very low magnetic dipole moments and their testing is not required.

*2) Pass without testing, due to rated power lower than 600 W, according to ČSN EN 61000-3-3, Art. A.2.

Date: 6. 1. 2023

Compiled by: Rybář



**Measurement of interference voltages introduced into the mains terminals
According to: ČSN EN IEC 55015 Art. 4.3.1 - Tab. 1, Art. 4.3.2 – Tab. 2**

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 – driver TCI, Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,
Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER, Ta 55 1,2ft PC 2200/840 – driver TCI

Operation and ambient conditions:

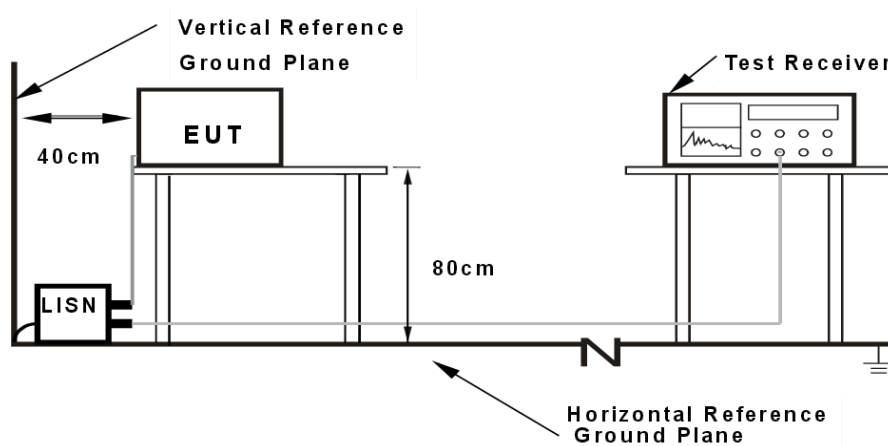
Power supply AC 230 V / 50 Hz, Normal operation

Temperature: 20 °C, Relative humidity: 40 %, Atmospheric pressure: 1020 hPa

Applied limits:

Applied mains	Frequency band	Limits [dB(μV)] QP / AV (quasi-peak/average)
Power supply AC mains terminals	9 kHz – 50 kHz	110 / –
	50 kHz – 150 kHz	90 – 80 / –
	150 kHz – 0,5 MHz	66 – 56 / 56 – 46
	0,5 MHz – 5 MHz	56 / 46
	5,0 MHz – 30 MHz	60 / 50
Control terminals DALI *1)	150 kHz – 0,5 MHz	QP / AV [dB(μV)] 84 - 74 / 74 - 64
	0,5 MHz – 30 MHz	74 / 64

Measurement arrangement:



Notes:

*1) Applicable only for types:

Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,

Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER.

For measured values see next pages.

Test Result: Pass

Date: 28. 11. 2022

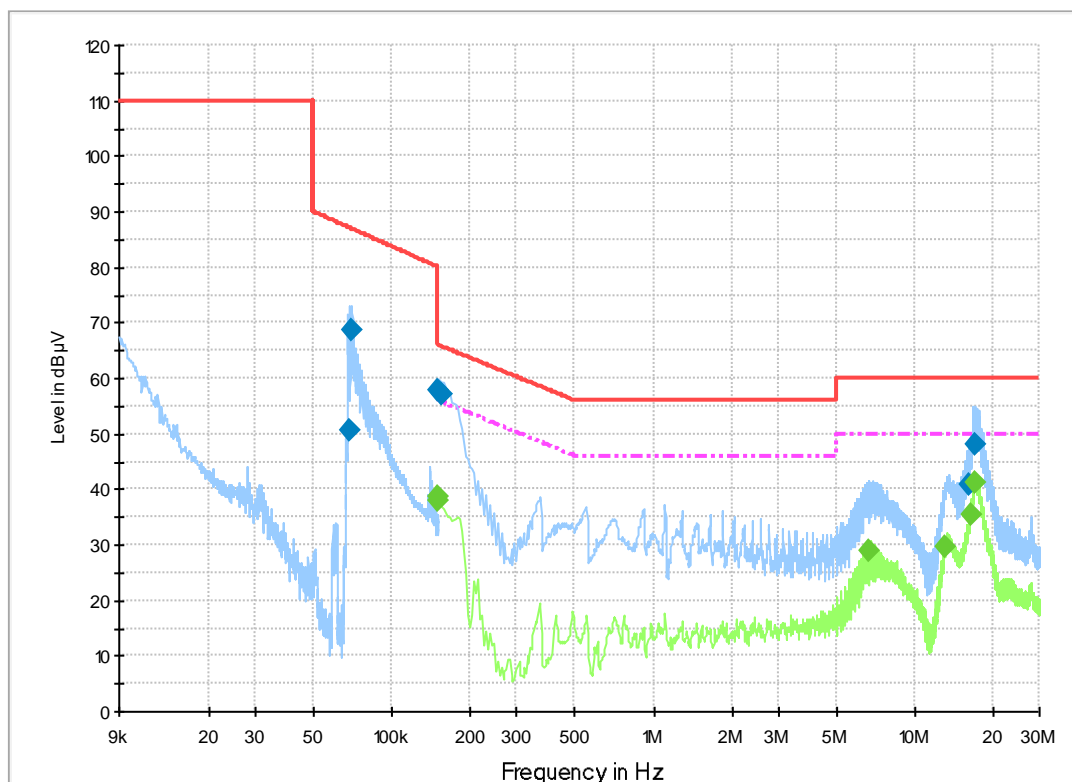
Measured by: Rybář

EMI Measurement

Common Information

EUT: Industrial LED luminaires MIDDLE EAST
 Model: PCc 8000/840 – driver TCI
 Operator Name: Rybář
 Test condition: AC 230 V / 50 Hz
 Test Descriptions: ČSN EN IEC 55015, Tab. 1
 Comment: L1, N

Voltage EN 55015tab2a



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.068260	50.6	1000.0	0.200	GN	N	10.1	36.5	87.2
0.070340	68.8	1000.0	0.200	GN	L1	10.1	18.1	86.9
0.150000	57.8	1000.0	9.000	GN	N	10.0	8.2	66.0
0.153500	57.0	1000.0	9.000	GN	N	10.0	8.8	65.8
16.261500	40.7	1000.0	9.000	GN	L1	11.8	19.3	60.0
17.161500	47.9	1000.0	9.000	GN	L1	11.9	12.1	60.0

Final Result 2

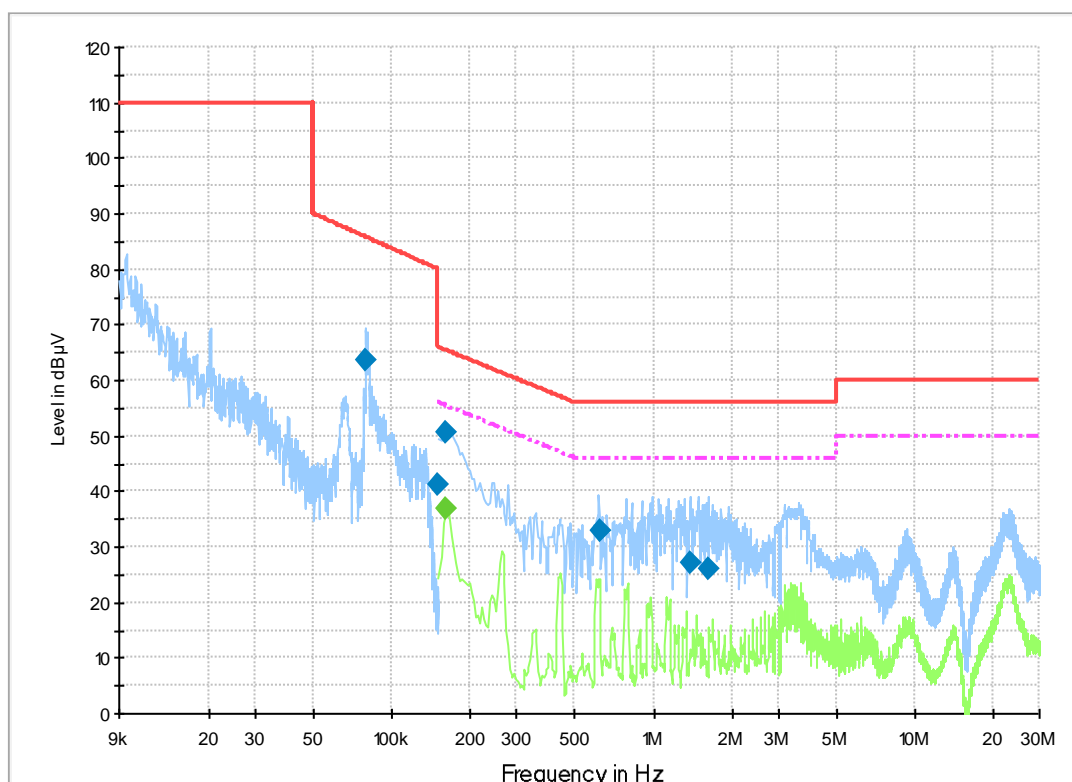
Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	38.1	1000.0	9.000	GN	N	10.0	17.9	56.0
0.150000	38.8	1000.0	9.000	GN	N	10.0	17.2	56.0
6.677500	28.9	1000.0	9.000	GN	L1	10.9	21.1	50.0
13.181500	29.6	1000.0	9.000	GN	L1	11.6	20.4	50.0
16.317500	35.3	1000.0	9.000	GN	L1	11.8	14.7	50.0
17.181500	41.0	1000.0	9.000	GN	L1	11.9	9.0	50.0

EMI Measurement

Common Information

EUT: Industrial LED luminaires MIDDLE EAST
 Model: PCc 8000/840 DALI – driver TRIDONIC
 Operator Name: Rybář
 Test condition: AC 230 V / 50 Hz, maximal light
 Test Descriptions: ČSN EN IEC 55015, Tab. 1
 Comment: L1, N

Voltage EN 55015tab2a



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.079460	63.7	1000.0	0.200	GN	L1	10.1	22.1	85.8
0.150000	41.1	1000.0	9.000	GN	L1	10.1	24.9	66.0
0.161500	50.8	1000.0	9.000	GN	L1	10.1	14.6	65.4
0.621500	32.9	1000.0	9.000	GN	N	10.1	23.1	56.0
1.390500	27.2	1000.0	9.000	GN	L1	10.3	28.8	56.0
1.625500	25.9	1000.0	9.000	GN	L1	10.3	30.1	56.0

Final Result 2

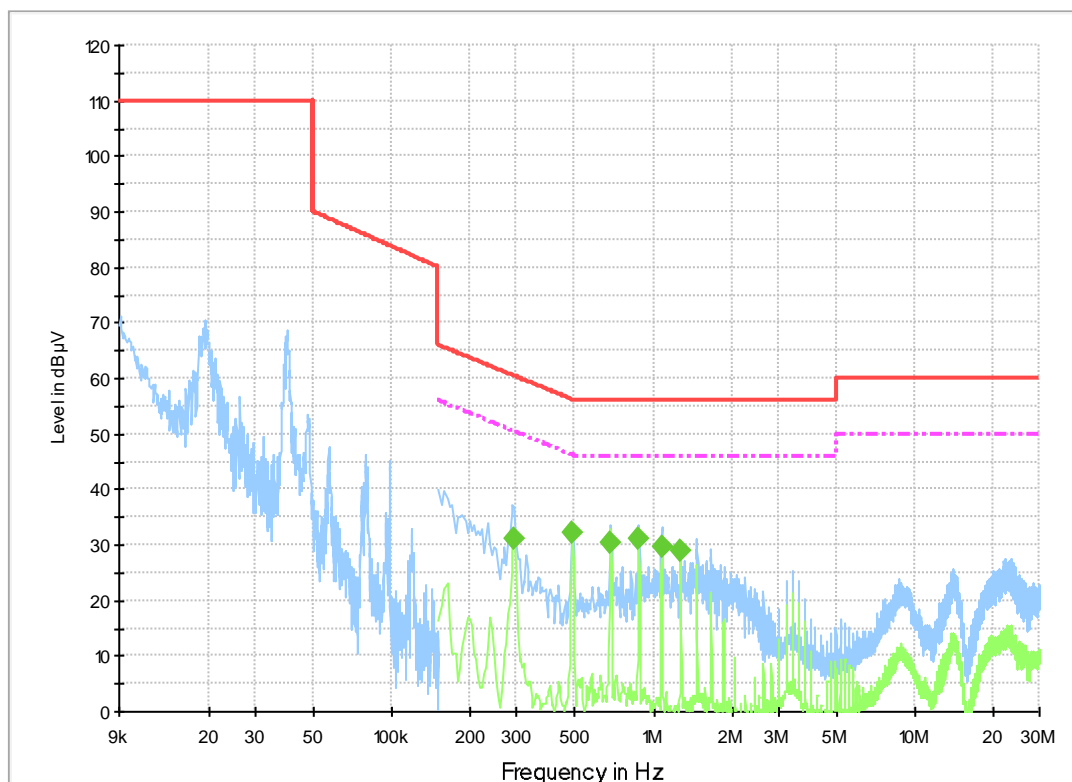
Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.161500	37.0	1000.0	9.000	GN	L1	10.1	18.4	55.4

EMI Measurement

Common Information

EUT: Industrial LED luminaires MIDDLE EAST
 Model: PCc 8000/840 DALI – driver TRIDONIC
 Operator Name: Rybář
 Test condition: AC 230 V / 50 Hz, minimal light
 Test Descriptions: ČSN EN IEC 55015, Tab. 1
 Comment: L1, N

Voltage EN 55015tab2a



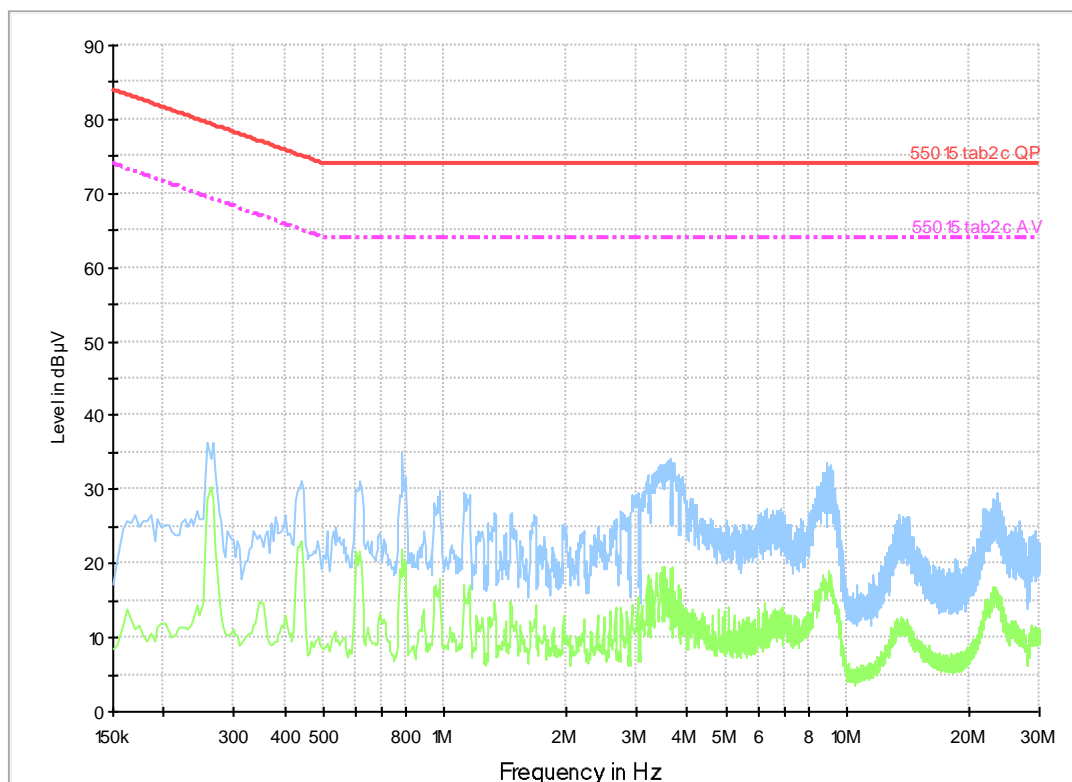
Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.293500	31.0	1000.0	9.000	GN	L1	10.1	19.4	50.4
0.489500	32.1	1000.0	9.000	GN	N	10.1	14.0	46.2
0.681500	30.5	1000.0	9.000	GN	L1	10.1	15.5	46.0
0.877500	30.9	1000.0	9.000	GN	N	10.2	15.1	46.0
1.073500	29.8	1000.0	9.000	GN	L1	10.2	16.2	46.0
1.269500	28.8	1000.0	9.000	GN	N	10.2	17.2	46.0

EMI Measurement**Common Information**

EUT:	Industrial LED luminaires MIDDLE EAST
Model:	PCc 8000/840 DALI – driver TRIDONIC
Operator Name:	Rybář
Test condition:	AC 230 V / 50 Hz, maximal light
Test Descriptions:	ČSN EN IEC 55015, Tab. 2
Comment:	DALI

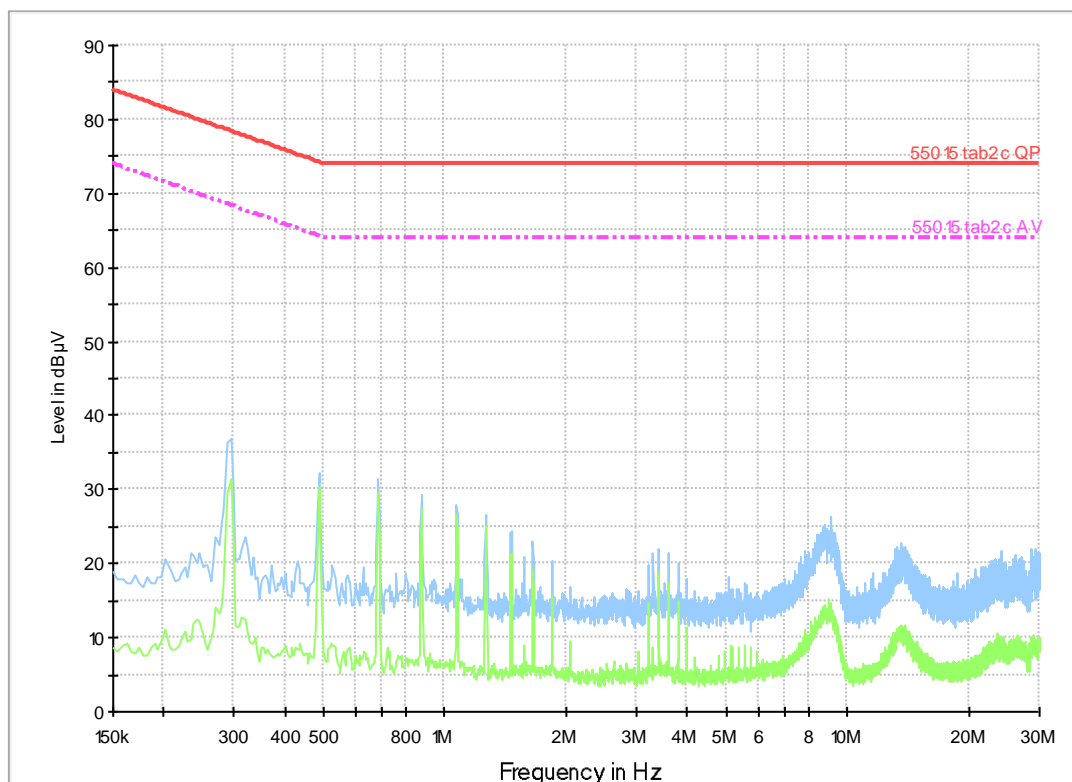
Voltage EN 55015tab2c ISN T200A



EMI Measurement**Common Information**

EUT:	Industrial LED luminaires MIDDLE EAST
Model:	PCc 8000/840 DALI – driver TRIDONIC
Operator Name:	Rybář
Test condition:	AC 230 V / 50 Hz, minimal light
Test Descriptions:	ČSN EN IEC 55015, Tab. 2
Comment:	DALI

Voltage EN 55015tab2c ISN T200A

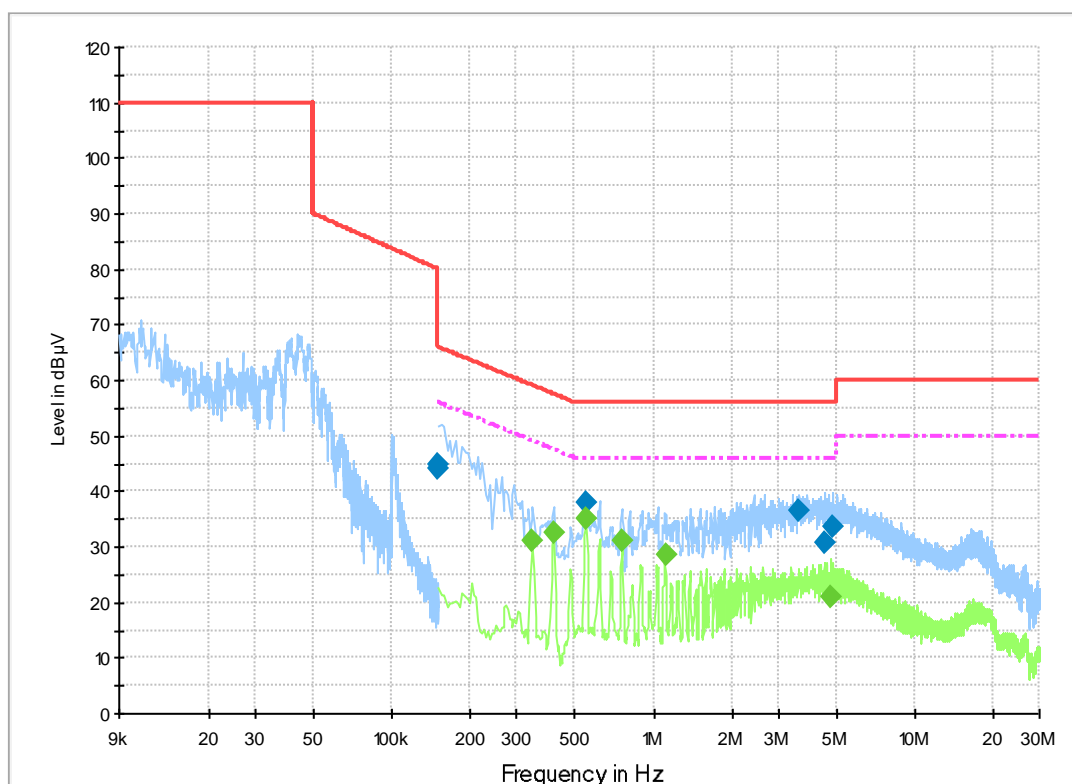


EMI Measurement

Common Information

EUT: Industrial LED luminaires MIDDLE EAST
 Model: PCc 8000/840 DALI – driver CUPOWER
 Operator Name: Rybář
 Test condition: AC 230 V / 50 Hz, maximal light
 Test Descriptions: ČSN EN IEC 55015, Tab. 1
 Comment: L1, N

Voltage EN 55015tab2a



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	44.7	1000.0	9.000	GN	N	10.0	21.3	66.0
0.150000	44.1	1000.0	9.000	GN	N	10.0	21.9	66.0
0.549500	37.9	1000.0	9.000	GN	N	10.1	18.1	56.0
3.629500	36.4	1000.0	9.000	GN	N	10.5	19.6	56.0
4.501500	30.9	1000.0	9.000	GN	N	10.6	25.1	56.0
4.866500	33.8	1000.0	9.000	GN	L1	10.7	22.2	56.0

Final Result 2

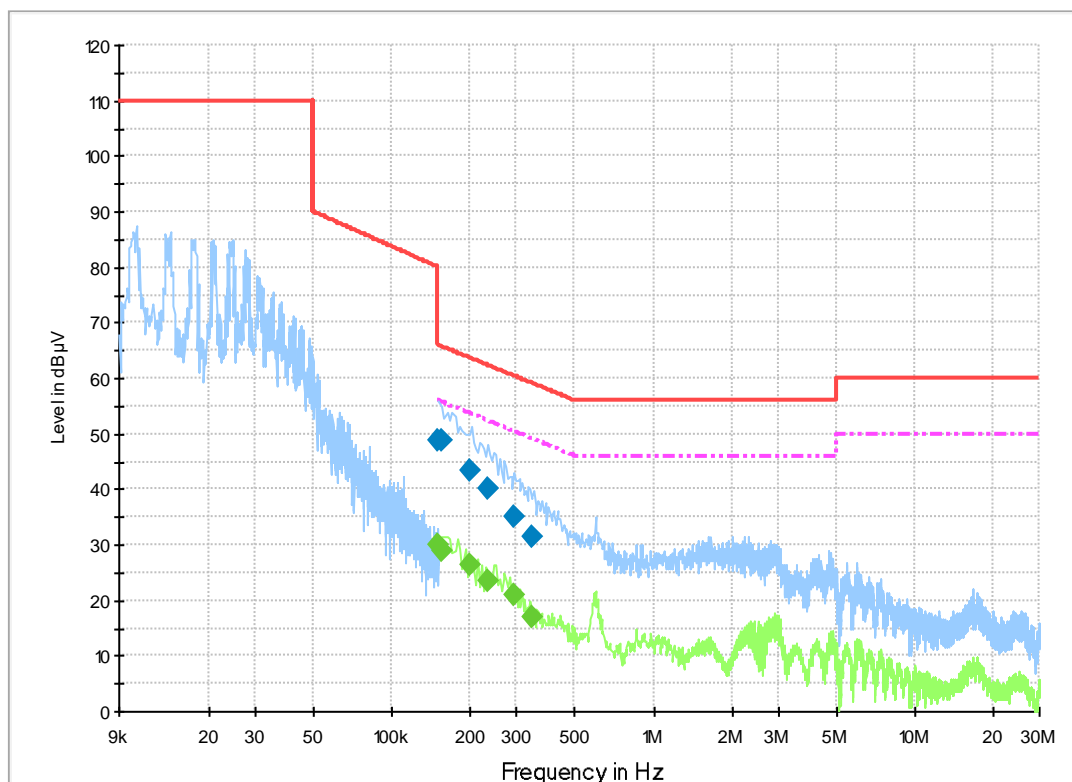
Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.345500	31.2	1000.0	9.000	GN	N	10.0	17.9	49.1
0.417500	32.7	1000.0	9.000	GN	N	10.1	14.8	47.5
0.554500	35.2	1000.0	9.000	GN	N	10.1	10.8	46.0
0.761500	31.0	1000.0	9.000	GN	N	10.1	15.0	46.0
1.114500	28.4	1000.0	9.000	GN	N	10.2	17.6	46.0
4.794500	20.9	1000.0	9.000	GN	N	10.6	25.1	46.0

EMI Measurement

Common Information

EUT: Industrial LED luminaires MIDDLE EAST
 Model: PCc 8000/840 DALI – driver CUPOWER
 Operator Name: Rybář
 Test condition: AC 230 V / 50 Hz, minimal light
 Test Descriptions: ČSN EN IEC 55015, Tab. 1
 Comment: L1, N

Voltage EN 55015tab2a



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	48.8	1000.0	9.000	GN	N	10.0	17.2	66.0
0.154000	49.0	1000.0	9.000	GN	L1	10.1	16.8	65.8
0.197500	43.4	1000.0	9.000	GN	N	10.0	20.3	63.7
0.233500	40.1	1000.0	9.000	GN	N	10.0	22.3	62.3
0.293500	35.0	1000.0	9.000	GN	N	10.0	25.4	60.4
0.345500	31.6	1000.0	9.000	GN	N	10.0	27.5	59.1

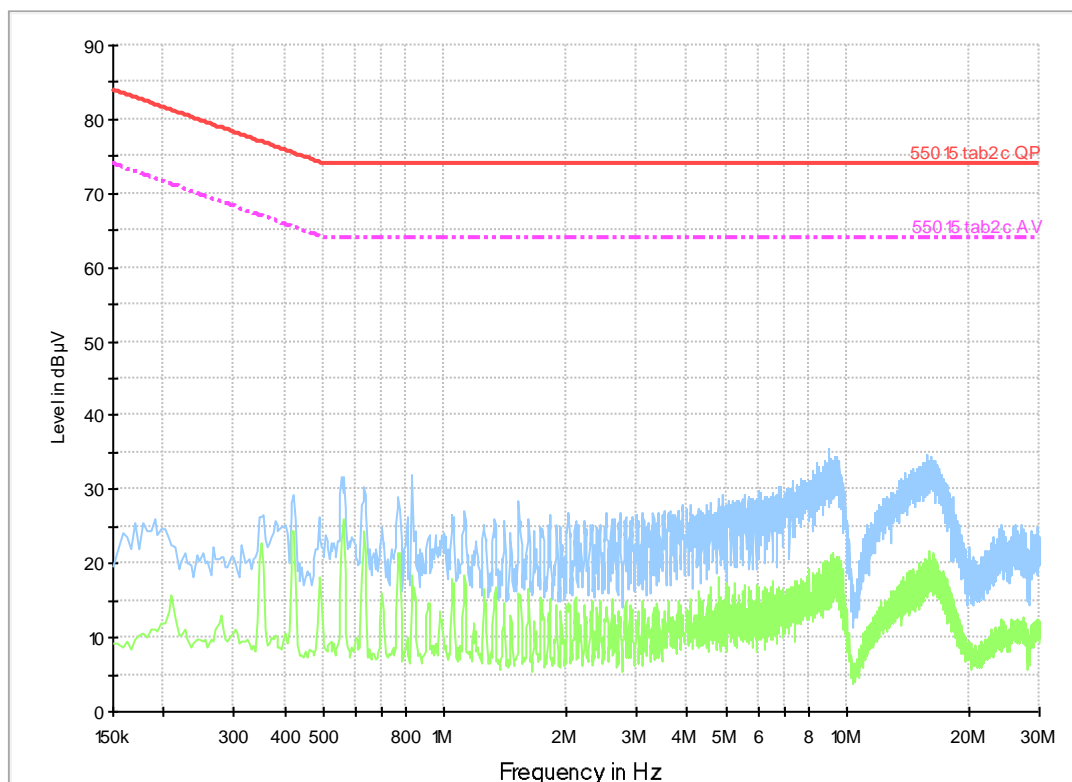
Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	29.9	1000.0	9.000	GN	N	10.0	26.1	56.0
0.154000	28.8	1000.0	9.000	GN	L1	10.1	27.0	55.8
0.197500	26.5	1000.0	9.000	GN	N	10.0	27.2	53.7
0.233500	23.3	1000.0	9.000	GN	N	10.0	29.0	52.3
0.293500	20.8	1000.0	9.000	GN	N	10.0	29.6	50.4
0.345500	17.0	1000.0	9.000	GN	N	10.0	32.1	49.1

EMI Measurement**Common Information**

EUT:	Industrial LED luminaires MIDDLE EAST
Model:	PCc 8000/840 DALI – driver CUPOWER
Operator Name:	Rybář
Test condition:	AC 230 V / 50 Hz, maximal light
Test Descriptions:	ČSN EN IEC 55015, Tab. 2
Comment:	DALI

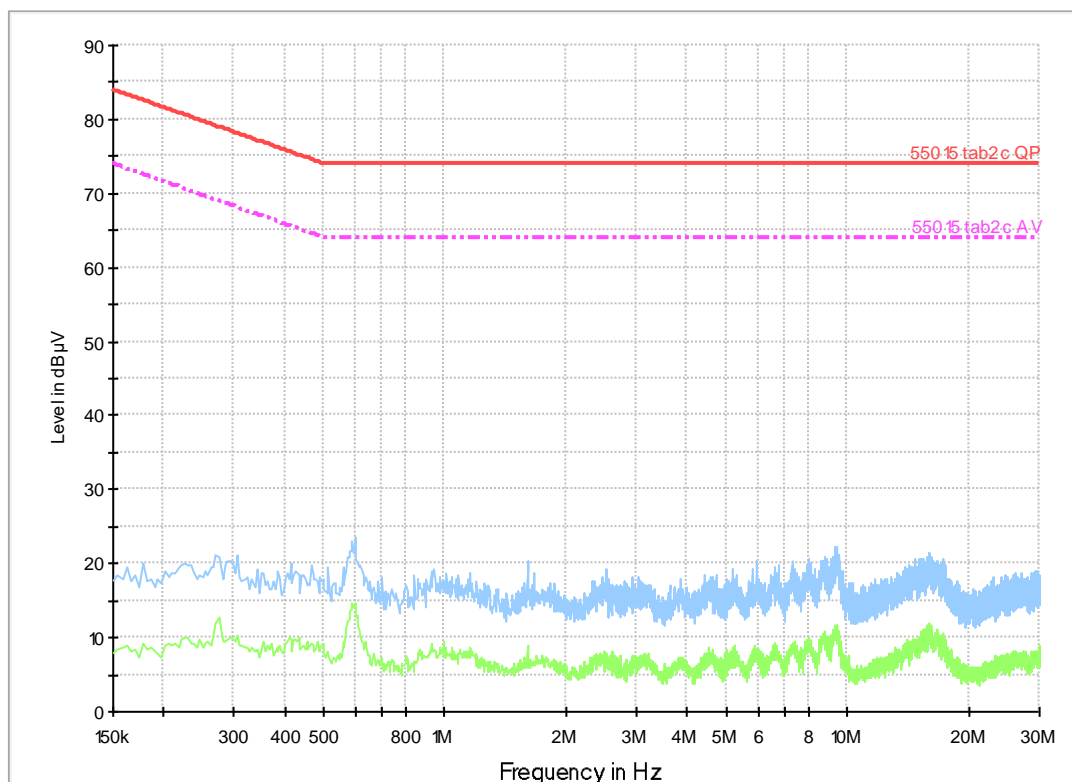
Voltage EN 55015tab2c ISN T200A



EMI Measurement**Common Information**

EUT:	Industrial LED luminaires MIDDLE EAST
Model:	PCc 8000/840 DALI – driver CUPOWER
Operator Name:	Rybář
Test condition:	AC 230 V / 50 Hz, minimal light
Test Descriptions:	ČSN EN IEC 55015, Tab. 2
Comment:	DALI

Voltage EN 55015tab2c ISN T200A

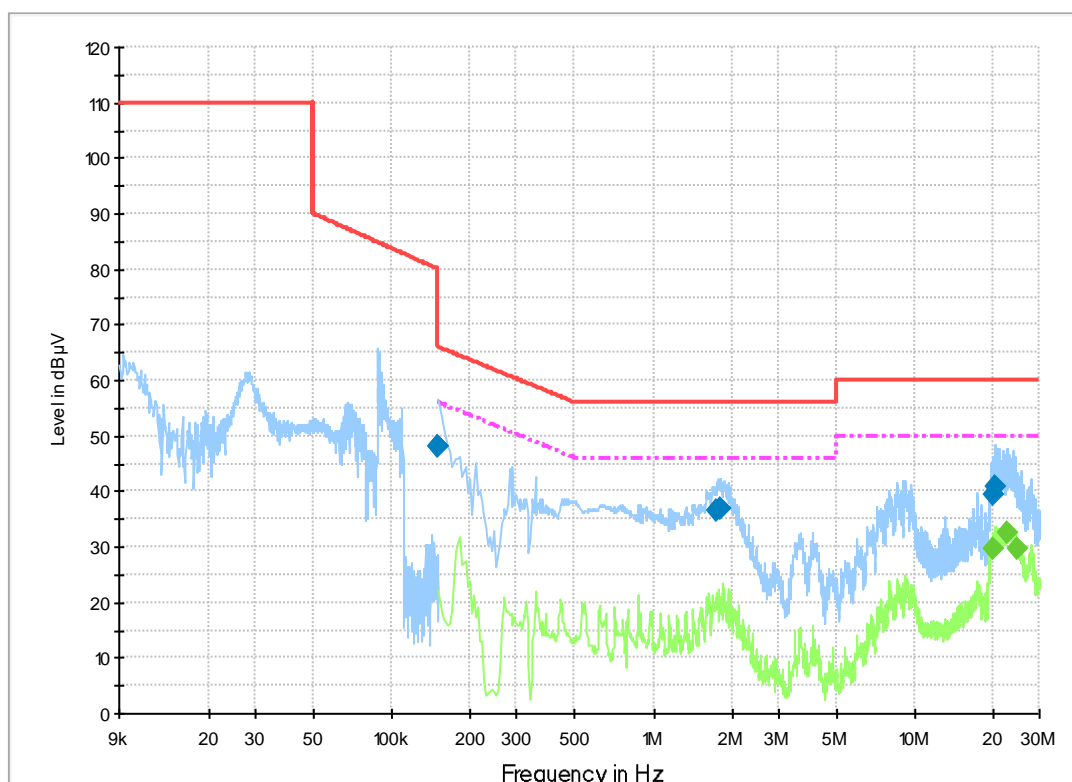


EMI Measurement

Common Information

EUT: Industrial LED luminaires MIDDLE EAST
 Model: PC 2200/840 – driver TCI
 Operator Name: Rybář
 Test condition: AC 230 V / 50 Hz
 Test Descriptions: ČSN EN IEC 55015, Tab. 1
 Comment: L1, N

Voltage EN 55015tab2a



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	48.0	1000.0	9.000	GN	N	10.0	18.0	66.0
0.150000	48.1	1000.0	9.000	GN	N	10.0	17.9	66.0
1.753500	36.4	1000.0	9.000	GN	L1	10.3	19.6	56.0
1.802500	37.0	1000.0	9.000	GN	L1	10.3	19.0	56.0
19.953500	39.3	1000.0	9.000	GN	N	11.9	20.7	60.0
20.505500	40.8	1000.0	9.000	GN	N	11.9	19.2	60.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
19.889500	29.7	1000.0	9.000	GN	N	11.9	20.3	50.0
22.461500	32.5	1000.0	9.000	GN	L1	12.4	17.5	50.0
24.505500	29.6	1000.0	9.000	GN	L1	12.7	20.4	50.0

**Measurement of interfering radiation in the 30–1000 MHz band
According to: ČSN EN IEC 55015 Art. 4.5.3, Tab. 10**

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 – driver TCI, Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,
Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER, Ta 55 1,2ft PC 2200/840 – driver TCI

Operation and ambient conditions:

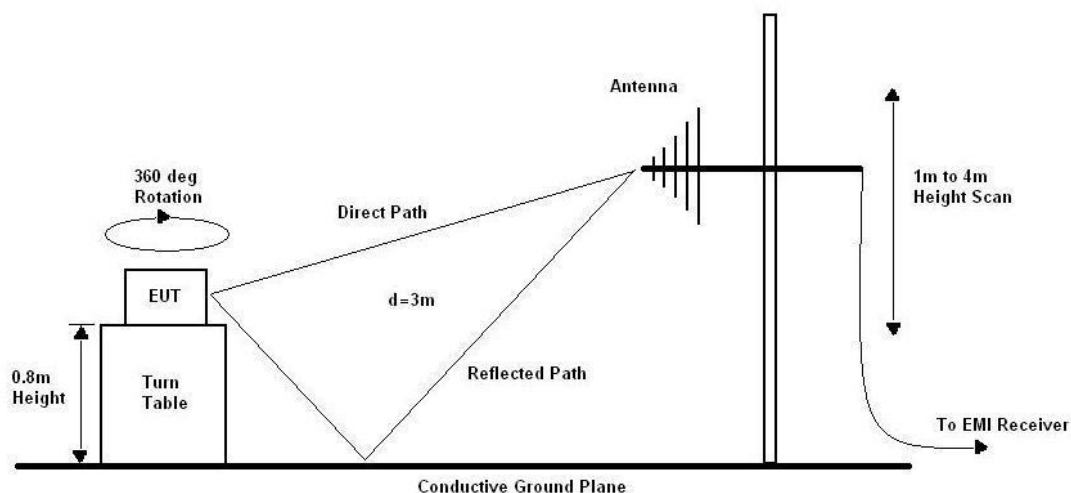
Power supply AC 230 V / 50 Hz, Normal operation

Temperature: 22 °C, Relative humidity: 30 %, Atmospheric pressure: 1020 hPa

Applied limits:

Frequency band	Limits [dB(μV/m)], QP (quasi-peak)
30 MHz – 230 MHz	40
230 MHz – 1000 MHz	47

Measurement arrangement:



Notes:

Used measurement distance: $d = 3$ m.

For measured values see next pages.

Test Result: Pass

Date: 13. 12. 2022

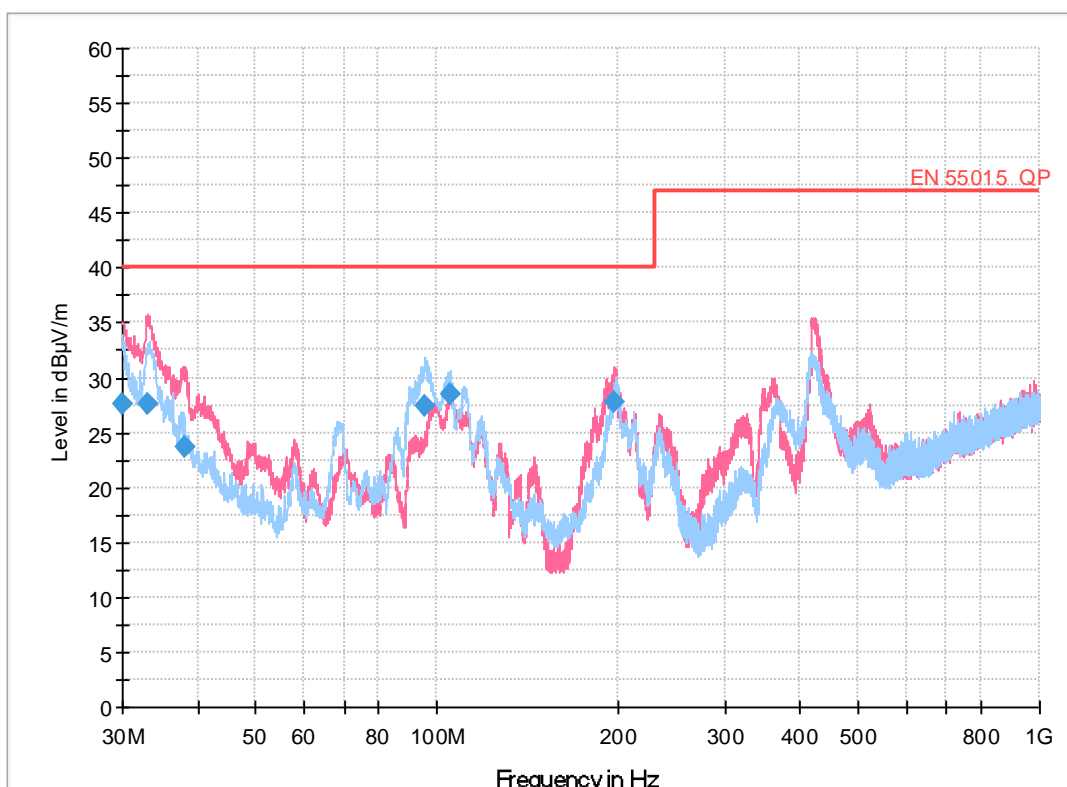
Measured by: Rybář

EMI Measurement

Common Information

EUT: Industrial LED luminaires MIDDLE EAST
 Model: PCc 8000/840 – driver TCI
 Operator Name: Rybář
 Test condition: AC 230 V / 50 Hz
 Test Descriptions: ČSN EN IEC 55015, Tab. 10
 Comment: Polarization H (blue), V (red)

Full Spectrum



Final_Result_QPK

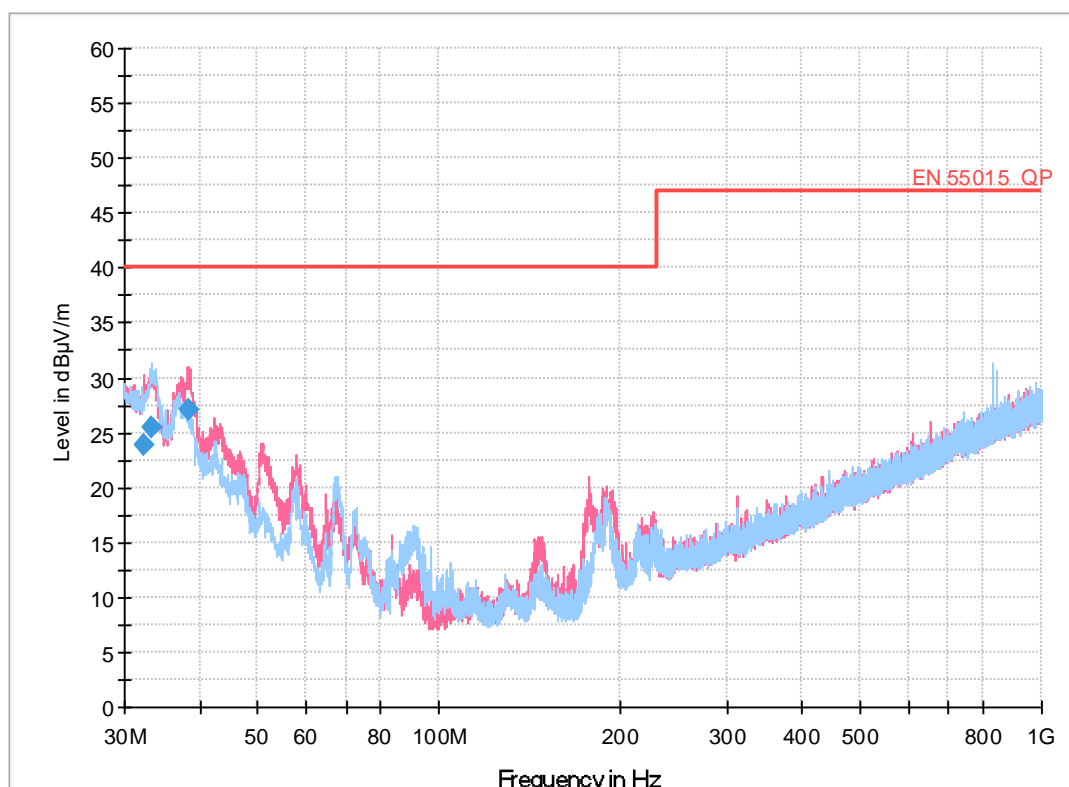
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
30.030000	27.56	40.00	12.44	1000.0	120.000	132.0	V	262.0
33.090000	27.66	40.00	12.34	1000.0	120.000	169.0	V	0.0
37.980000	23.70	40.00	16.30	1000.0	120.000	105.0	V	2.0
95.040000	27.38	40.00	12.62	1000.0	120.000	295.0	H	196.0
104.940000	28.40	40.00	11.60	1000.0	120.000	295.0	H	230.0
197.310000	27.82	40.00	12.18	1000.0	120.000	105.0	V	302.0

EMI Measurement

Common Information

EUT: Industrial LED luminaires MIDDLE EAST
 Model: PCc 8000/840 DALI – driver TRIDONIC
 Operator Name: Rybář
 Test condition: AC 230 V / 50 Hz, maximal light
 Test Descriptions: ČSN EN IEC 55015, Tab. 10
 Comment: Polarization H (blue), V (red)

Full Spectrum



Final_Result_QPK

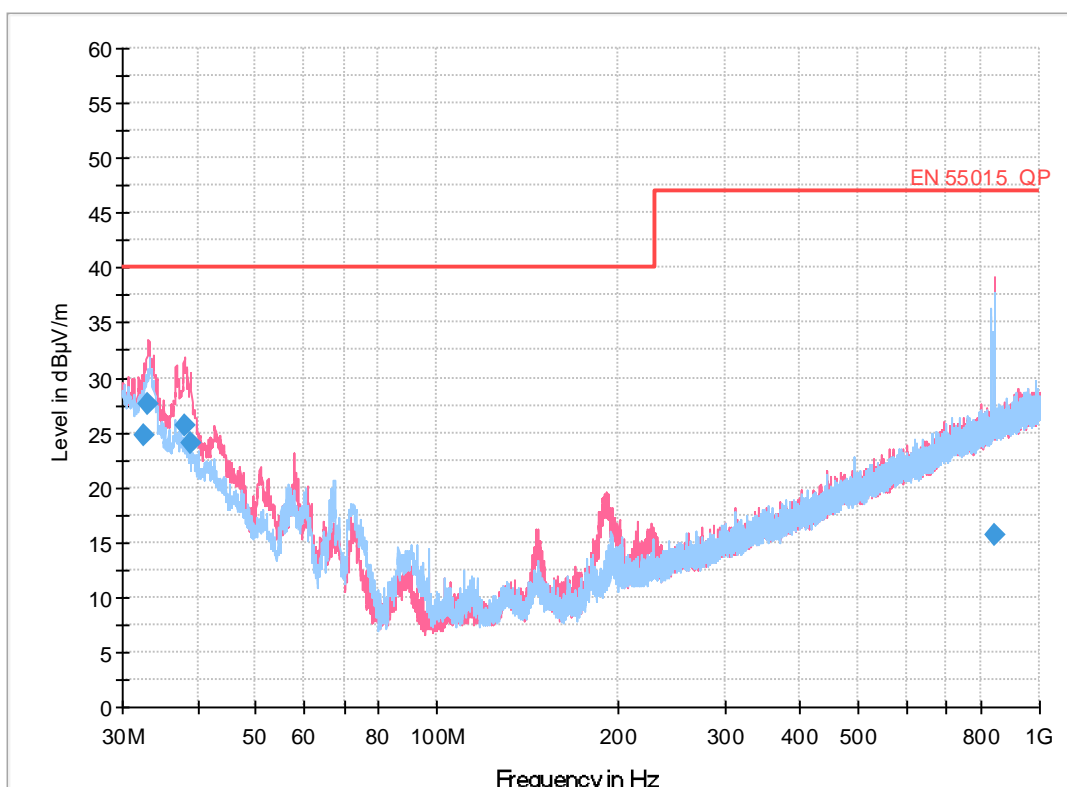
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
32.280000	23.79	40.00	16.21	1000.0	120.000	170.0	V	83.0
33.300000	25.55	40.00	14.45	1000.0	120.000	370.0	H	358.0
38.280000	27.13	40.00	12.87	1000.0	120.000	105.0	V	81.0

EMI Measurement

Common Information

EUT: Industrial LED luminaires MIDDLE EAST
 Model: PCc 8000/840 DALI – driver TRIDONIC
 Operator Name: Rybář
 Test condition: AC 230 V / 50 Hz, minimal light
 Test Descriptions: ČSN EN IEC 55015, Tab. 10
 Comment: Polarization H (blue), V (red)

Full Spectrum



Final_Result_QPK

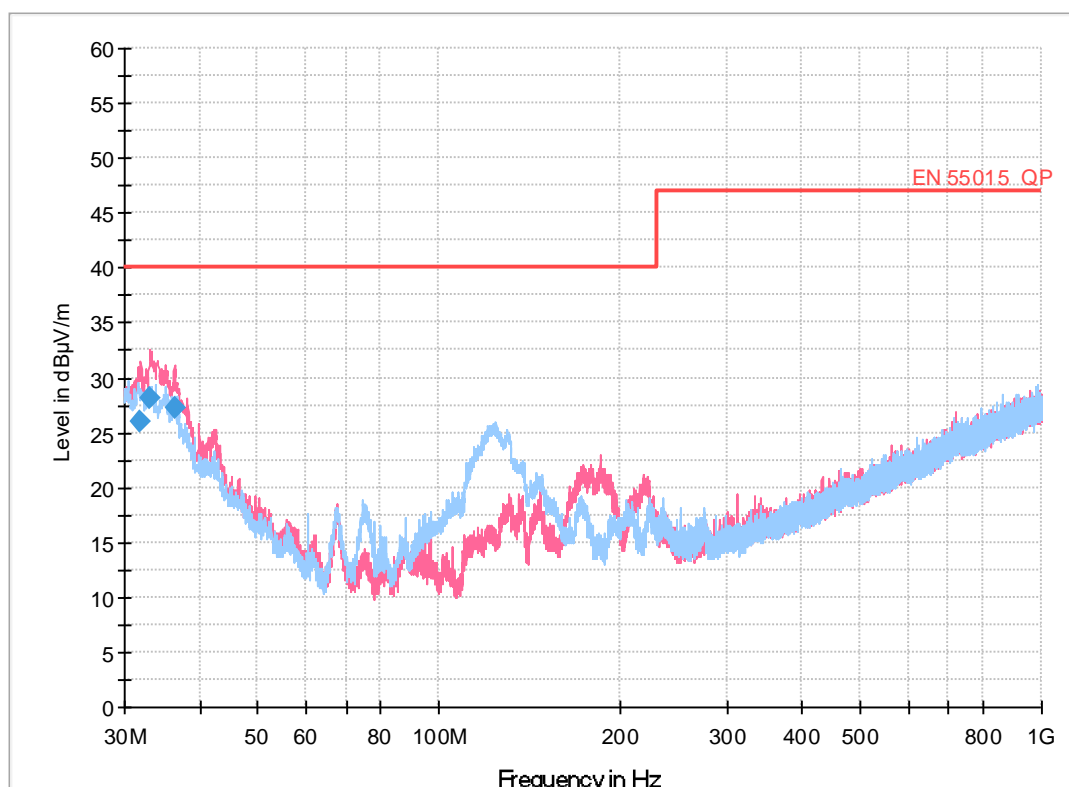
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
32.520000	24.77	40.00	15.23	1000.0	120.000	170.0	V	88.0
33.150000	27.59	40.00	12.41	1000.0	120.000	170.0	V	156.0
37.980000	25.71	40.00	14.29	1000.0	120.000	105.0	V	66.0
39.030000	24.01	40.00	15.99	1000.0	120.000	105.0	V	246.0
841.410000	15.66	47.00	31.34	1000.0	120.000	370.0	V	0.0

EMI Measurement

Common Information

EUT: Industrial LED luminaires MIDDLE EAST
 Model: PCc 8000/840 DALI – driver CUPOWER
 Operator Name: Rybář
 Test condition: AC 230 V / 50 Hz, maximal light
 Test Descriptions: ČSN EN IEC 55015, Tab. 10
 Comment: Polarization H (blue), V (red)

Full Spectrum



Final_Result_QPK

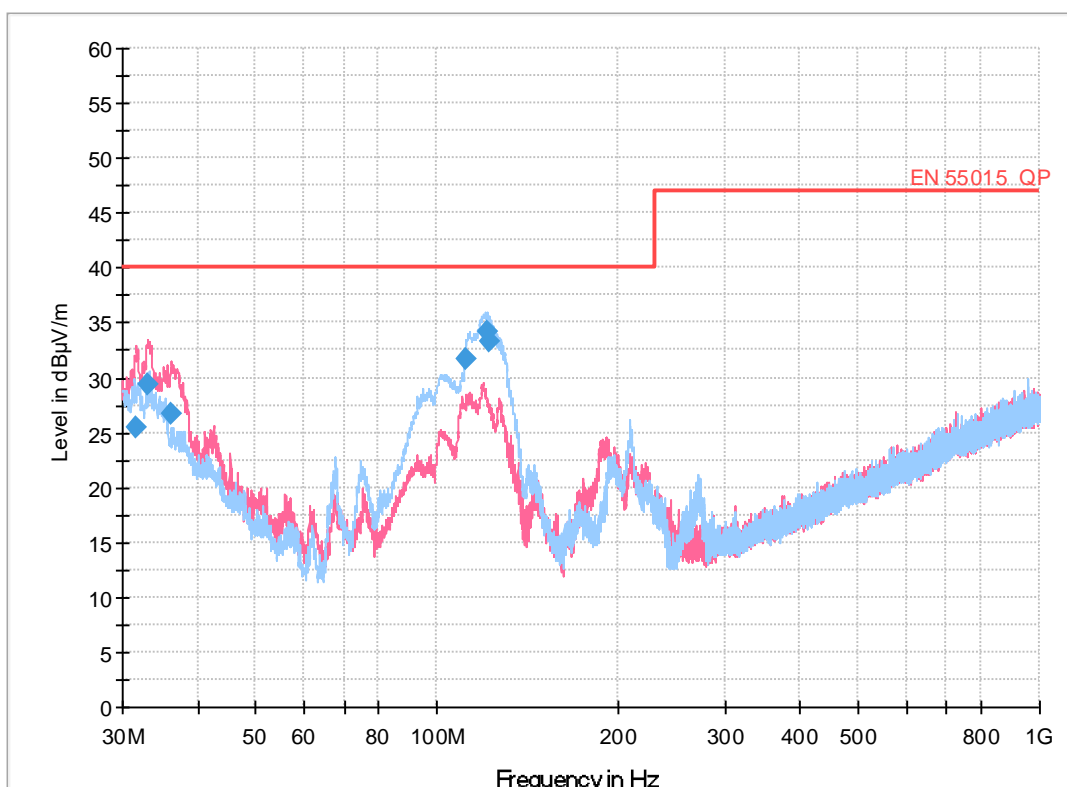
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
31.950000	25.94	40.00	14.06	1000.0	120.000	151.0	V	336.0
33.090000	28.07	40.00	11.93	1000.0	120.000	170.0	V	0.0
36.330000	27.28	40.00	12.72	1000.0	120.000	210.0	V	302.0

EMI Measurement

Common Information

EUT: Industrial LED luminaires MIDDLE EAST
 Model: PCc 8000/840 DALI – driver CUPOWER
 Operator Name: Rybář
 Test condition: AC 230 V / 50 Hz, minimal light
 Test Descriptions: ČSN EN IEC 55015, Tab. 10
 Comment: Polarization H (blue), V (red)

Full Spectrum



Final_Result_QPK

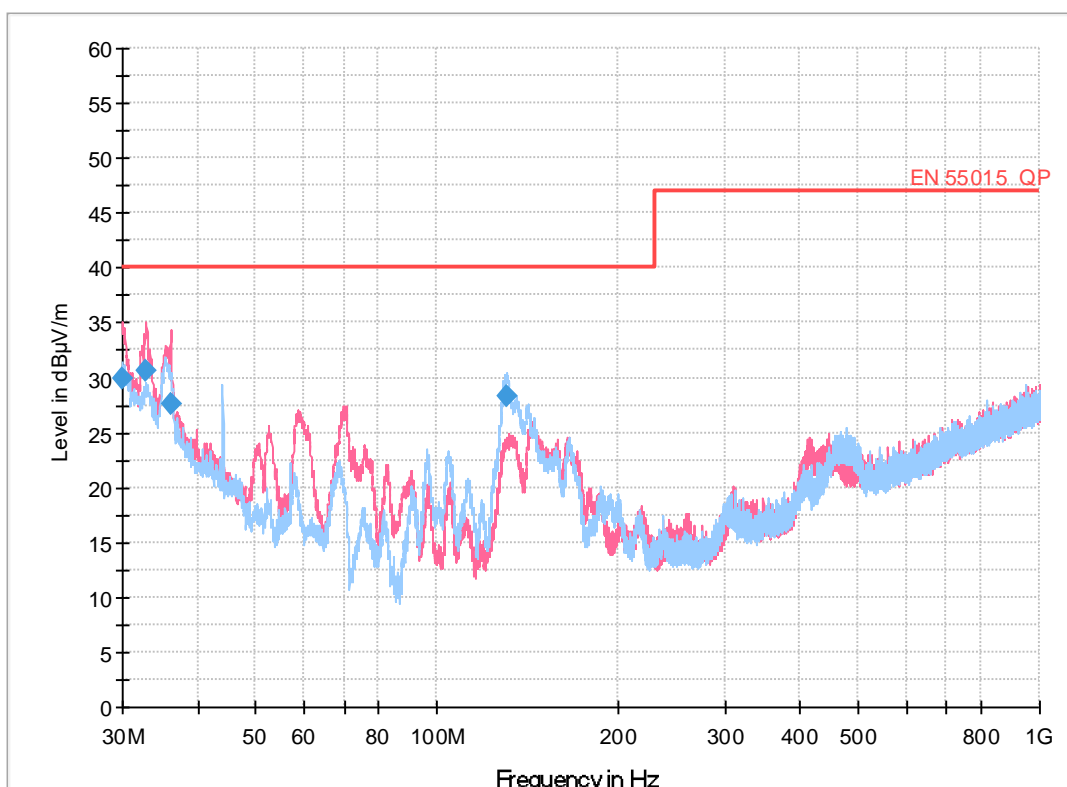
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
31.680000	25.47	40.00	14.53	1000.0	120.000	151.0	V	302.0
33.030000	29.38	40.00	10.62	1000.0	120.000	170.0	V	92.0
36.240000	26.74	40.00	13.26	1000.0	120.000	210.0	V	285.0
111.630000	31.78	40.00	8.22	1000.0	120.000	310.0	H	33.0
121.200000	34.17	40.00	5.83	1000.0	120.000	295.0	H	33.0
121.980000	33.32	40.00	6.68	1000.0	120.000	270.0	H	34.0

EMI Measurement

Common Information

EUT: Industrial LED luminaires MIDDLE EAST
 Model: PC 2200/840 – driver TCI
 Operator Name: Rybář
 Test condition: AC 230 V / 50 Hz
 Test Descriptions: ČSN EN IEC 55015, Tab. 10
 Comment: Polarization H (blue), V (red)

Full Spectrum



Final_Result_QPK

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
30.030000	29.92	40.00	10.08	1000.0	120.000	110.0	V	352.0
32.880000	30.58	40.00	9.42	1000.0	120.000	170.0	V	50.0
36.060000	27.58	40.00	12.42	1000.0	120.000	210.0	V	180.0
130.170000	28.27	40.00	11.73	1000.0	120.000	305.0	H	33.0

Electromagnetic compatibility (EMC) - Limits – Limits for harmonic current emission
According to: ČSN EN IEC 61000-3-2, Art. 7.4

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 – driver TCI, Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,
Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER, Ta 55 1,2ft PC 2200/840 – driver TCI

Operation and ambient conditions:

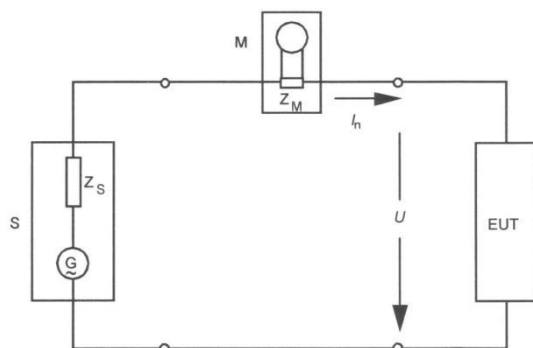
Power supply AC 230 V / 50 Hz, Normal operation

Temperature: 20 °C, Relative humidity: 40 %, Atmospheric pressure: 1010 hPa

Applied limits:

Rated power from 5 to 25 W (Table 3) *1)		Rated power >25 W (Table 2)	
Order of harmonic	Limits I_n [mA/W]	Order of harmonic	Limits [%] I_1
3	3,4	2	2
5	1,9	3	27 * power factor
7	1,0	5	10
9	0,5	7	7
11	0,35	9	5
$13 \leq n \leq 39$ (odd only)	$3,85 / n$	$11 \leq n \leq 39$ (odd only)	3

Measurement arrangement:



S power source
EUT tested equipment
M harmonic analyser
 Z_M measurement shunt
 Z_s internal impedance of source
 I_n n^{th} harmonic component of current in the phase/neutral line

Notes:

*1) Valid only for type: Ta 55 1,2ft PC 2200/840 – driver TCI.

For measured values see next pages.

Test Result: Pass

Date: 9. 12. 2022

Measured by: Rybář

Report Number: 222339-01/02
 Test Object: Ta 55 1,5ft PCc 8000/840 – driver TCI
 Customer: TREVOS, a.s.
 Test Date: 09. 12. 2022 / 15:47 AM

Standard Group: Industry
 Standard Name: IEC 61000-3-2 (Edition 5.1)
 Limits for harmonic current emissions (equipment input current < 16 A per phase)
 Device Under Test: **PASS**
 Power Source: **PASS**
 Connection Type: L - N
 Main Line: 230 V, 50 Hz
 Classification: Class C (Rated power > 25 W, Table 2)
 Appli. of Limits: Less than or equal to 150 % (Without POHC Enhancement)

Check Harmonics 2..40

First detected harmonic order > 150 %

Line 1: **None**

Harmonics orders > 150 %

Line 1: **None**

Harmonics orders with average > 100 %

Line 1: **None**

Measured values

Fundamental Current

Line 1: 0,239 A

Active input Power

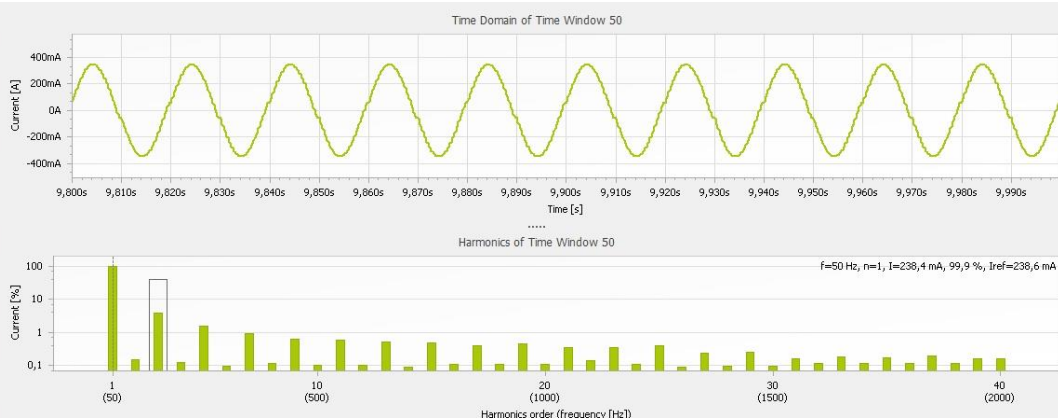
Line 1: 53,3 W *

Circuit power factor

Line 1: 0,971 *

* Absolute value.

Actual Values	
Measuring Time [s]	9,8
Frequency [Hz]	50
Voltage RMS [V]	229,8
Current RMS [A]	0,2387
Current Peak [A]	0,3472
Current Fundamental [A]	0,2384
Crest Factor (U)	1,414
Crest Factor (I)	1,455
Active Power P [W]	53,26
Reactive Power Q [var]	-13,03
Apparent Power S [VA]	54,83
Power Factor	0,9714
Displacement Factor	0,9725
Phi [°]	-13,7
THD (U)	2,256e-3
THD (I)	0,04743
THC [A]	0,01131
Inst. POHC [A]	2,029e-3



Current Test Result

Average and Maximum harmonic current results									
H n	Average				Maximum				Harmoni c Result
	leff [%]	of Limit [%]	Limit [%]	Resul t	leff [%]	of Limit [%]	Limit [%]	Resul t	
1	99,97				100,00				
2	0,146	7,278	2,000	n/a	0,169	5,619	3,000	n/a	PASS
3	4,030	14,92	27,00	PASS	4,050	10,00	40,50	PASS	PASS
4	0,141				0,156				
5	1,570	15,70	10,00	n/a	1,585	10,56	15,00	n/a	PASS
6	0,129				0,148				
7	0,984	14,05	7,000	n/a	0,991	9,439	10,50	n/a	PASS
8	0,122				0,137				
9	0,637	12,74	5,000	n/a	0,651	8,684	7,500	n/a	PASS
10	0,134				0,147				
11	0,642	21,40	3,000	n/a	0,652	14,49	4,500	n/a	PASS
12	0,115				0,123				
13	0,506	16,86	3,000	n/a	0,523	11,63	4,500	n/a	PASS
14	0,101				0,109				
15	0,512	17,06	3,000	n/a	0,525	11,66	4,500	n/a	PASS
16	0,135				0,142				
17	0,396	13,21	3,000	n/a	0,413	9,168	4,500	n/a	PASS
18	0,123				0,128				
19	0,485	16,16	3,000	n/a	0,510	11,33	4,500	n/a	PASS
20	0,116				0,122				
21	0,372	12,40	3,000	n/a	0,383	8,517	4,500	n/a	PASS
22	0,121				0,128				
23	0,371	12,37	3,000	n/a	0,391	8,678	4,500	n/a	PASS
24	0,105				0,111				
25	0,371	12,36	3,000	n/a	0,388	8,611	4,500	n/a	PASS
26	0,110				0,116				
27	0,216	7,203	3,000	n/a	0,227	5,039	4,500	n/a	PASS
28	0,115				0,122				
29	0,277	9,248	3,000	n/a	0,287	6,388	4,500	n/a	PASS
30	0,100				0,112				
31	0,180	5,990	3,000	n/a	0,186	4,143	4,500	n/a	PASS
32	0,109				0,116				
33	0,212	7,064	3,000	n/a	0,222	4,930	4,500	n/a	PASS
34	0,113				0,125				
35	0,193	6,426	3,000	n/a	0,199	4,418	4,500	n/a	PASS
36	0,116				0,125				
37	0,222	7,409	3,000	n/a	0,238	5,279	4,500	n/a	PASS
38	0,114				0,126				
39	0,145	4,840	3,000	n/a	0,157	3,480	4,500	n/a	PASS
40	0,165				0,173				

Note: 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.

Report Number: 222339-01/02
 Test Object: Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC
 Customer: TREVOS, a.s.
 Test Date: 13. 12. 2022 / 15:51 AM

Standard Group: Industry
 Standard Name: IEC 61000-3-2 (Edition 5.1)
 Limits for harmonic current emissions (equipment input current < 16 A per phase)
 Device Under Test: **PASS**
 Power Source: **PASS**
 Connection Type: L - N
 Main Line: 230 V, 50 Hz
 Classification: Class C (Rated power > 25 W, Table 2), Set to obtain Pmax
 Appli. of Limits: Less than or equal to 150 % (Without POHC Enhancement)

Check Harmonics 2..40

First detected harmonic order > 150 %

Line 1: **None**

Harmonics orders > 150 %

Line 1: **None**

Harmonics orders with average > 100 %

Line 1: **None**

Measured values

Fundamental Current

Line 1: 0,236 A

Active input Power

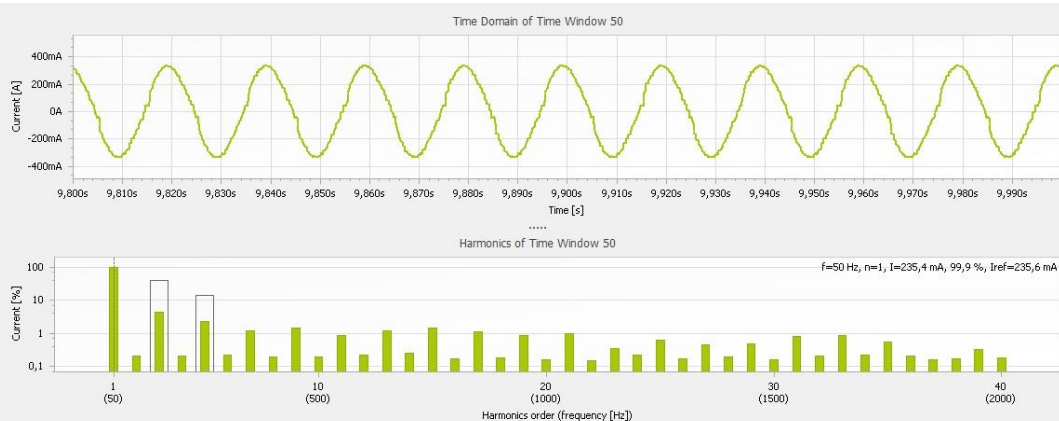
Line 1: 52,808 W *

Circuit power factor

Line 1: 0,973 *

* Absolute value.

Actual Values	
Measuring Time [s]	9,8
Frequency [Hz]	50
Voltage RMS [V]	229,8
Current RMS [A]	0,2360
Current Peak [A]	0,3358
Current Fundamental [A]	0,2354
Crest Factor (U)	1,413
Crest Factor (I)	1,423
Active Power P [W]	52,76
Reactive Power Q [var]	-12,47
Apparent Power S [VA]	54,21
Power Factor	0,9732
Displacement Factor	0,9754
Phi [°]	-13,3
THD (U)	2,335e-3
THD (I)	0,06445
THC [A]	0,01519
Inst. POHC [A]	4,731e-3



Current Test Result

Average and Maximum harmonic current results									
H n	Average				Maximum				Harmoni c Result
	I _{eff} [%]	of Limit [%]	Limit [%]	Result	I _{eff} [%]	of Limit [%]	Limit [%]	Result	
1	99,95				100,00				
2	0,261	13,04	2,000	n/a	0,294	9,793	3,000	n/a	PASS
3	4,529	16,77	27,00	PASS	4,554	11,24	40,50	PASS	PASS
4	0,242				0,274				
5	2,390	23,90	10,00	PASS	2,414	16,09	15,00	PASS	PASS
6	0,228				0,254				
7	1,299	18,55	7,000	n/a	1,322	12,59	10,50	n/a	PASS
8	0,203				0,221				
9	1,477	29,54	5,000	n/a	1,489	19,84	7,500	n/a	PASS
10	0,208				0,226				
11	0,864	28,78	3,000	n/a	0,873	19,39	4,500	n/a	PASS
12	0,233				0,270				
13	1,209	40,29	3,000	n/a	1,232	27,38	4,500	n/a	PASS
14	0,237				0,251				
15	1,452	48,38	3,000	n/a	1,466	32,57	4,500	n/a	PASS
16	0,210				0,225				
17	1,136	37,86	3,000	n/a	1,175	26,10	4,500	n/a	PASS
18	0,196				0,205				
19	0,924	30,79	3,000	n/a	0,958	21,28	4,500	n/a	PASS
20	0,207				0,218				
21	0,997	33,22	3,000	n/a	1,045	23,22	4,500	n/a	PASS
22	0,202				0,213				
23	0,409	13,61	3,000	n/a	0,426	9,458	4,500	n/a	PASS
24	0,209				0,224				
25	0,654	21,81	3,000	n/a	0,669	14,86	4,500	n/a	PASS
26	0,202				0,216				
27	0,467	15,56	3,000	n/a	0,490	10,89	4,500	n/a	PASS
28	0,210				0,263				
29	0,527	17,56	3,000	n/a	0,566	12,57	4,500	n/a	PASS
30	0,206				0,223				
31	0,845	28,17	3,000	n/a	0,858	19,06	4,500	n/a	PASS
32	0,202				0,209				
33	0,902	30,07	3,000	n/a	0,919	20,41	4,500	n/a	PASS
34	0,212				0,227				
35	0,583	19,42	3,000	n/a	0,604	13,41	4,500	n/a	PASS
36	0,203				0,218				
37	0,184	6,138	3,000	n/a	0,196	4,361	4,500	n/a	PASS
38	0,190				0,202				
39	0,329	10,96	3,000	n/a	0,351	7,804	4,500	n/a	PASS
40	0,224				0,235				

Note: 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.

Report Number: 222339-01/02
 Test Object: Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC
 Customer: TREVOS, a.s.
 Test Date: 13. 12. 2022 / 16:00 AM

Standard Group: Industry
 Standard Name: IEC 61000-3-2 (Edition 5.1)
 Limits for harmonic current emissions (equipment input current < 16 A per phase)
 Device Under Test: **PASS**
 Power Source: **PASS**
 Connection Type: L - N
 Main Line: 230 V, 50 Hz
 Classification: Class C (Rated power > 25 W, Table 2), Set to the maximum THC
 Appli. of Limits: Less than or equal to 150 % (Without POHC Enhancement)

Check Harmonics 2..40	
<i>First detected harmonic order > 150 %</i>	
Line 1:	None
<i>Harmonics orders > 150 %</i>	
Line 1:	None
<i>Harmonics orders with average > 100 %</i>	
Line 1:	None

Measured values			
Fundamental Current			
Line 1:	0,042 A	specified value: 0,236	specified value applies
Active input Power			
Line 1:	6,512 W *		
Circuit power factor			
Line 1:	0,607 *	specified value: 0,973	specified value applies

* *Absolute value.*



Current Test Result

Average and Maximum harmonic current results									
Hn	Average				Maximum				Harmonic Result
	I _{eff} [%]	of Limit [%]	Limit [%]	Result	I _{eff} [%]	of Limit [%]	Limit [%]	Result	
1	17,870				17,892				
2	0,502	25,113	2,000	n/a	0,536	17,864	3,000	n/a	PASS
3	7,874	29,162	27,000	PASS	7,893	19,489	40,500	PASS	PASS
4	0,576				0,642				
5	1,281	12,808	10,000	n/a	1,300	8,670	15,000	n/a	PASS
6	0,532				0,570				
7	1,529	21,844	7,000	n/a	1,565	14,908	10,500	n/a	PASS
8	0,471				0,491				
9	1,004	20,073	5,000	n/a	1,041	13,885	7,500	n/a	PASS
10	0,378				0,403				
11	0,585	19,488	3,000	n/a	0,616	13,694	4,500	n/a	PASS
12	0,303				0,324				
13	0,647	21,580	3,000	n/a	0,685	15,212	4,500	n/a	PASS
14	0,283				0,303				
15	0,564	18,808	3,000	n/a	0,595	13,217	4,500	n/a	PASS
16	0,245				0,261				
17	0,416	13,858	3,000	n/a	0,438	9,737	4,500	n/a	PASS
18	0,227				0,239				
19	0,422	14,070	3,000	n/a	0,447	9,937	4,500	n/a	PASS
20	0,210				0,220				
21	0,498	16,612	3,000	n/a	0,528	11,726	4,500	n/a	PASS
22	0,202				0,215				
23	0,359	11,952	3,000	n/a	0,377	8,372	4,500	n/a	PASS
24	0,188				0,202				
25	0,372	12,402	3,000	n/a	0,388	8,618	4,500	n/a	PASS
26	0,196				0,209				
27	0,325	10,817	3,000	n/a	0,338	7,506	4,500	n/a	PASS
28	0,177				0,188				
29	0,326	10,868	3,000	n/a	0,334	7,429	4,500	n/a	PASS
30	0,166				0,178				
31	0,320	10,672	3,000	n/a	0,357	7,932	4,500	n/a	PASS
32	0,174				0,180				
33	0,323	10,770	3,000	n/a	0,346	7,692	4,500	n/a	PASS
34	0,163				0,180				
35	0,242	8,055	3,000	n/a	0,255	5,659	4,500	n/a	PASS
36	0,161				0,168				
37	0,253	8,434	3,000	n/a	0,292	6,487	4,500	n/a	PASS
38	0,157				0,169				
39	0,247	8,217	3,000	n/a	0,262	5,829	4,500	n/a	PASS
40	0,152				0,168				

Note: 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.

Report Number: 222339-01/02
 Test Object: Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER
 Customer: TREVOS, a.s.
 Test Date: 13. 12. 2022 / 15:00 AM

Standard Group: Industry
 Standard Name: IEC 61000-3-2 (Edition 5.1)
 Limits for harmonic current emissions (equipment input current < 16 A per phase)
 Device Under Test: **PASS**
 Power Source: **PASS**
 Connection Type: L - N
 Main Line: 230 V, 50 Hz
 Classification: Class C (Rated power > 25 W, Table 2), Set to obtain Pmax
 Appli. of Limits: Less than or equal to 150 % (Without POHC Enhancement)

Check Harmonics 2..40

First detected harmonic order > 150 %

Line 1: **None**

Harmonics orders > 150 %

Line 1: **None**

Harmonics orders with average > 100 %

Line 1: **None**

Measured values

Fundamental Current

Line 1: 0,228 A

Active input Power

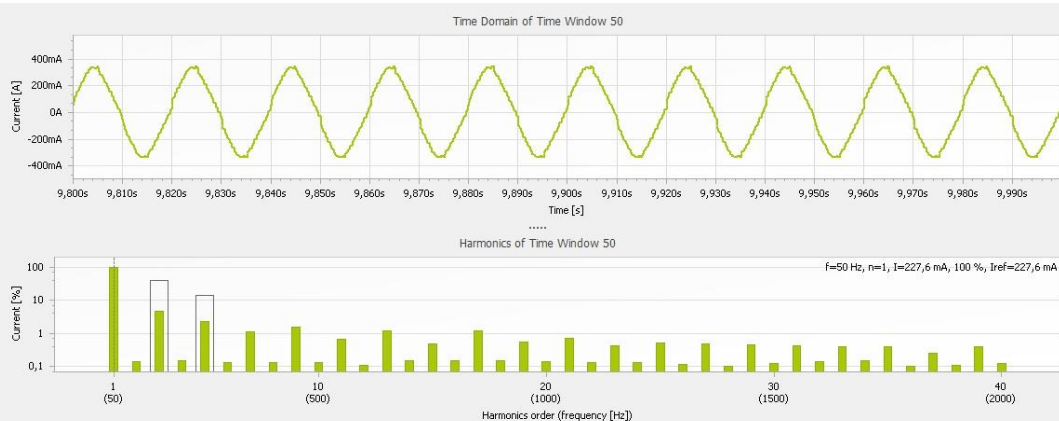
Line 1: 50,992 W *

Circuit power factor

Line 1: 0,973 *

* Absolute value.

Actual Values	
Measuring Time [s]	9,8
Frequency [Hz]	50
Voltage RMS [V]	229,8
Current RMS [A]	0,2280
Current Peak [A]	0,3508
Current Fundamental [A]	0,2276
Crest Factor (U)	1,413
Crest Factor (I)	1,539
Active Power P [W]	51,00
Reactive Power Q [var]	-12,06
Apparent Power S [VA]	52,40
Power Factor	0,9732
Displacement Factor	0,9753
Phi [°]	-13,3
THD (U)	2,219e-3
THD (I)	0,06358
THC [A]	0,01447
Inst. POHC [A]	3,444e-3



Current Test Result

Average and Maximum harmonic current results									
H n	Average				Maximum				Harmoni c Result
	I _{eff} [%]	of Limit [%]	Limit [%]	Result	I _{eff} [%]	of Limit [%]	Limit [%]	Result	
1	99,98				100,00				
2	0,195	9,751	2,000	n/a	0,218	7,267	3,000	n/a	PASS
3	4,906	18,17	27,00	PASS	4,984	12,30	40,50	PASS	PASS
4	0,166				0,178				
5	2,368	23,68	10,00	PASS	2,454	16,36	15,00	PASS	PASS
6	0,162				0,188				
7	1,157	16,53	7,000	n/a	1,191	11,34	10,50	n/a	PASS
8	0,158				0,187				
9	1,566	31,32	5,000	n/a	1,593	21,24	7,500	n/a	PASS
10	0,144				0,157				
11	0,724	24,14	3,000	n/a	0,768	17,05	4,500	n/a	PASS
12	0,144				0,155				
13	1,251	41,69	3,000	n/a	1,270	28,21	4,500	n/a	PASS
14	0,136				0,164				
15	0,550	18,34	3,000	n/a	0,561	12,45	4,500	n/a	PASS
16	0,151				0,161				
17	1,215	40,51	3,000	n/a	1,241	27,57	4,500	n/a	PASS
18	0,133				0,154				
19	0,575	19,18	3,000	n/a	0,602	13,37	4,500	n/a	PASS
20	0,144				0,162				
21	0,761	25,35	3,000	n/a	0,777	17,26	4,500	n/a	PASS
22	0,152				0,188				
23	0,571	19,03	3,000	n/a	0,591	13,13	4,500	n/a	PASS
24	0,134				0,148				
25	0,550	18,31	3,000	n/a	0,568	12,62	4,500	n/a	PASS
26	0,135				0,153				
27	0,595	19,84	3,000	n/a	0,618	13,73	4,500	n/a	PASS
28	0,119				0,130				
29	0,511	17,02	3,000	n/a	0,525	11,67	4,500	n/a	PASS
30	0,126				0,137				
31	0,428	14,25	3,000	n/a	0,455	10,10	4,500	n/a	PASS
32	0,126				0,152				
33	0,378	12,61	3,000	n/a	0,406	9,016	4,500	n/a	PASS
34	0,134				0,175				
35	0,414	13,78	3,000	n/a	0,422	9,370	4,500	n/a	PASS
36	0,123				0,132				
37	0,266	8,872	3,000	n/a	0,309	6,867	4,500	n/a	PASS
38	0,128				0,145				
39	0,472	15,73	3,000	n/a	0,518	11,50	4,500	n/a	PASS
40	0,120				0,127				

Note: 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.

Report Number: 222339-01/02
 Test Object: Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER
 Customer: TREVOS, a.s.
 Test Date: 13. 12. 2022 / 14:59 AM

Standard Group: Industry
 Standard Name: IEC 61000-3-2 (Edition 5.1)
 Limits for harmonic current emissions (equipment input current < 16 A per phase)
 Device Under Test: **PASS**
 Power Source: **PASS**
 Connection Type: L - N
 Main Line: 230 V, 50 Hz
 Classification: Class C (Rated power > 25 W, Table 2), Set to the maximum THC
 Appli. of Limits: Less than or equal to 150 % (Without POHC Enhancement)

Check Harmonics 2..40

First detected harmonic order > 150 %

Line 1: **None**

Harmonics orders > 150 %

Line 1: **None**

Harmonics orders with average > 100 %

Line 1: **None**

Measured values

Fundamental Current

Line 1: 0,104 A specified value: 0,227 specified value applies

Active input Power

Line 1: 22,106 W *

Circuit power factor

Line 1: 0,908 * specified value: 0,973 specified value applies

* Absolute value.

Actual Values	
Measuring Time [s]	9,8
Frequency [Hz]	50
Voltage RMS [V]	229,8
Current RMS [A]	0,1059
Current Peak [A]	0,1915
Current Fundamental [A]	0,1042
Crest Factor (U)	1,414
Crest Factor (I)	1,807
Active Power P [W]	22,09
Reactive Power Q [var]	-10,23
Apparent Power S [VA]	24,34
Power Factor	0,9074
Displacement Factor	0,9223
Phi [°]	-24,8
THD (U)	2,193e-3
THD (I)	0,08244
THC [A]	0,01871
Inst. POHC [A]	4,224e-3



Current Test Result

Average and Maximum harmonic current results									
Hn	Average				Maximum				Harmonic Result
	I _{eff} [%]	of Limit [%]	Limit [%]	Result	I _{eff} [%]	of Limit [%]	Limit [%]	Result	
1	45,939				45,976				
2	0,133	6,659	2,000	n/a	0,152	5,077	3,000	n/a	PASS
3	4,121	15,262	27,000	PASS	4,179	10,319	40,500	PASS	PASS
4	0,159				0,174				
5	5,671	56,707	10,000	PASS	5,696	37,977	15,000	PASS	PASS
6	0,172				0,190				
7	1,210	17,285	7,000	n/a	1,226	11,672	10,500	n/a	PASS
8	0,151				0,169				
9	1,811	36,211	5,000	n/a	1,824	24,323	7,500	n/a	PASS
10	0,153				0,177				
11	2,117	70,574	3,000	n/a	2,136	47,467	4,500	n/a	PASS
12	0,149				0,175				
13	1,218	40,595	3,000	n/a	1,242	27,589	4,500	n/a	PASS
14	0,149				0,162				
15	0,722	24,050	3,000	n/a	0,738	16,402	4,500	n/a	PASS
16	0,169				0,197				
17	1,431	47,708	3,000	n/a	1,453	32,289	4,500	n/a	PASS
18	0,170				0,187				
19	1,187	39,558	3,000	n/a	1,218	27,062	4,500	n/a	PASS
20	0,151				0,163				
21	0,869	28,974	3,000	n/a	0,887	19,717	4,500	n/a	PASS
22	0,149				0,166				
23	0,583	19,433	3,000	n/a	0,602	13,379	4,500	n/a	PASS
24	0,135				0,150				
25	0,378	12,599	3,000	n/a	0,402	8,934	4,500	n/a	PASS
26	0,142				0,153				
27	0,218	7,254	3,000	n/a	0,236	5,245	4,500	n/a	PASS
28	0,170				0,183				
29	0,501	16,698	3,000	n/a	0,591	13,144	4,500	n/a	PASS
30	0,156				0,165				
31	0,527	17,577	3,000	n/a	0,548	12,186	4,500	n/a	PASS
32	0,155				0,179				
33	0,815	27,163	3,000	n/a	0,832	18,497	4,500	n/a	PASS
34	0,153				0,173				
35	0,738	24,596	3,000	n/a	0,798	17,730	4,500	n/a	PASS
36	0,150				0,171				
37	0,553	18,438	3,000	n/a	0,632	14,050	4,500	n/a	PASS
38	0,159				0,175				
39	0,408	13,601	3,000	n/a	0,435	9,673	4,500	n/a	PASS
40	0,140				0,156				

Note: 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.

Report Number: 222339-01/02
 Test Object: Ta 55 1,2ft PC 2200/840 – driver TCI
 Customer: TREVOS, a.s.
 Test Date: 09. 12. 2022 / 12:11 AM

Standard Group: Industry
 Standard Name: IEC 61000-3-2 (Edition 5.1)
 Limits for harmonic current emissions (equipment input current < 16 A per phase)
 Device Under Test: **PASS**
 Power Source: **PASS**
 Connection Type: L - N
 Main Line: 230 V, 50 Hz
 Classification: Class C (Rated power ≥ 5 W and ≤ 25 W, Power-related limits)
 Appli. of Limits: Less than or equal to 150 % (Without POHC Enhancement)

Check Harmonics 2..40

First detected harmonic order > 150 %

Line 1: **None**

Harmonics orders > 150 %

Line 1: **None**

Harmonics orders with average > 100 %

Line 1: **None**

Measured values

Fundamental Current

Line 1: 0,074 A

Active input Power

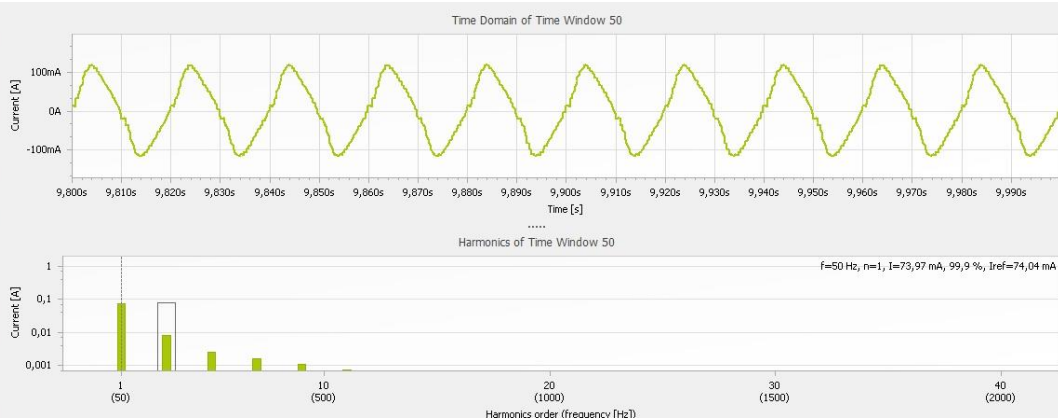
Line 1: 16,158 W *

Circuit power factor

Line 1: 0,943 *

* Absolute value.

Actual Values	
Measuring Time [s]	9,8
Frequency [Hz]	50
Voltage RMS [V]	229,8
Current RMS [A]	0,07459
Current Peak [A]	0,1194
Current Fundamental [A]	0,07397
Crest Factor (I)	1,412
Crest Factor (I)	1,601
Active Power P [W]	16,14
Reactive Power Q [var]	-5,761
Apparent Power S [VA]	17,14
Power Factor	0,9418
Displacement Factor	0,9500
Phi [°]	-19,6
THD (I)	2,296e-3
THD (I)	0,1291
THC [A]	9,559e-3
Inst. POHC [A]	1,311e-3



Current Test Result

Average and Maximum harmonic current results									
Hn	Average				Maximum				Harmonic Result
	I _{eff} [%]	of Limit [%]	Limit [%]	Result	I _{eff} [%]	of Limit [%]	Limit [%]	Result	
1	0,074				0,074				
2	0,000				0,000				
3	0,009	15,961	0,055	PASS	0,009	10,687	0,082	PASS	PASS
4	0,000				0,000				
5	0,003	8,184	0,031	n/a	0,003	5,521	0,046	n/a	PASS
6	0,000				0,000				
7	0,002	10,022	0,016	n/a	0,002	6,999	0,024	n/a	PASS
8	0,000				0,000				
9	0,001	13,293	0,008	n/a	0,001	9,049	0,012	n/a	PASS
10	0,000				0,000				
11	0,001	12,708	0,006	n/a	0,001	8,949	0,008	n/a	PASS
12	0,000				0,000				
13	0,000	8,327	0,005	n/a	0,000	5,866	0,007	n/a	PASS
14	0,000				0,000				
15	0,001	12,569	0,004	n/a	0,001	9,052	0,006	n/a	PASS
16	0,000				0,000				
17	0,001	14,020	0,004	n/a	0,001	10,567	0,005	n/a	PASS
18	0,000				0,000				
19	0,001	15,337	0,003	n/a	0,001	10,918	0,005	n/a	PASS
20	0,000				0,000				
21	0,001	20,219	0,003	n/a	0,001	14,992	0,004	n/a	PASS
22	0,000				0,000				
23	0,000	16,869	0,003	n/a	0,001	12,354	0,004	n/a	PASS
24	0,000				0,000				
25	0,000	15,571	0,002	n/a	0,000	11,446	0,004	n/a	PASS
26	0,000				0,000				
27	0,000	18,126	0,002	n/a	0,000	12,904	0,003	n/a	PASS
28	0,000				0,000				
29	0,000	17,537	0,002	n/a	0,000	12,277	0,003	n/a	PASS
30	0,000				0,000				
31	0,000	16,860	0,002	n/a	0,000	12,071	0,003	n/a	PASS
32	0,000				0,000				
33	0,000	15,730	0,002	n/a	0,000	11,016	0,003	n/a	PASS
34	0,000				0,000				
35	0,000	17,041	0,002	n/a	0,000	11,867	0,003	n/a	PASS
36	0,000				0,000				
37	0,000	21,339	0,002	n/a	0,000	15,165	0,003	n/a	PASS
38	0,000				0,000				
39	0,000	21,075	0,002	n/a	0,000	14,875	0,002	n/a	PASS
40	0,000				0,000				

Note: 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

ČSN EN 61547 *Equipment for general lighting purposes – EMC immunity requirements*

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 – driver TCI, Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,
 Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER, Ta 55 1,2ft PC 2200/840 – driver TCI

Measured at: Elektrotechnický zkušební ústav, s.p.

Requirements at tests:

Standard	Level	Allowed Criterion *1)	Achieved Criterion *1)	Test Result
ČSN EN 61547 Art. 5.2, Tab. 1 ČSN EN 61000-4-2	$\pm 4 \text{ kV} / \pm 8 \text{ kV}$	B	A	Pass
ČSN EN 61547 Art. 5.3, Tab. 2 ČSN EN 61000-4-3	3 V/m 80–1000 MHz	A	A	Pass
ČSN EN 61547 Art. 5.5, Tab. 6 ČSN EN 61000-4-4	$\pm 1 \text{ kV} / \pm 0,5 \text{ kV}$	B	A	Pass
ČSN EN 61547 Art. 5.7, Tab. 10 ČSN EN 61000-4-5	$\pm 2 \text{ kV} / \pm 1 \text{ kV}$ $\pm 1 \text{ kV} / \pm 0,5 \text{ kV}$	C	A, B	Pass
ČSN EN 61547 Art. 5.6, Tab. 9 ČSN EN 61000-4-6	3 V 150 kHz - 80 MHz	A	A	Pass
ČSN EN 61547 Art. 5.4, Tab. 3 ČSN EN 6100-4-8	3 A/m	A	---	Pass without testing *2)
ČSN EN 61547 Art. 5.8, Tab. 11, 12 ČSN EN 61000-4-11	0% $U_T / 10 \text{ ms}$ 70% $U_T / 200 \text{ ms}$	B C	A, B A, B	Pass

Notes:

*1) Performance criteria A, B, C, according to ČSN EN 61547, Art. 4.2.

*2) According to ČSN EN 61547, Art. 5.4, test is required only for devices containing parts sensitive for magnetic field, like Hall elements or magnetic field sensors.

Date: 6. 1. 2023

Compiled by: Rybář



Electrostatic discharge immunity test
According to: ČSN EN 61000-4-2

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 – driver TCI, Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,
Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER, Ta 55 1,2ft PC 2200/840 – driver TCI

Operation and ambient conditions:
Power supply AC 230 V / 50 Hz, Normal operation
Temperature: 21 °C, Relative humidity: 40 %, Atmospheric pressure: 1010 hPa

Number of testing discharges:
For direct contact/air discharges were applied 10/10 pulses in each polarity into each test point, and for indirect contact discharge also into vertical and horizontal coupling plane.

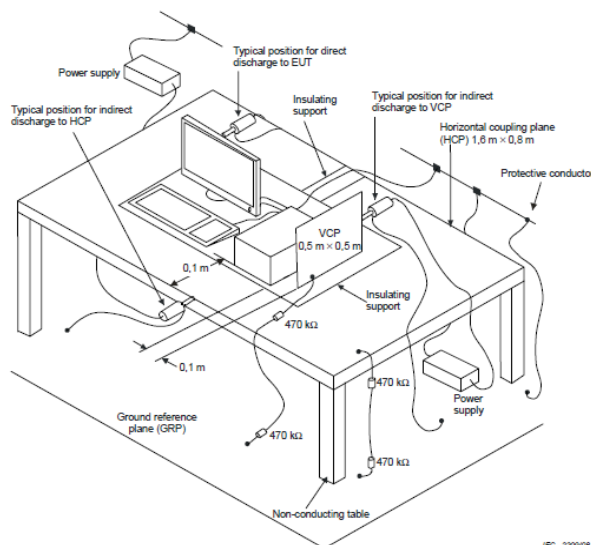
Tested points: Contact discharge was applied into vertical and horizontal coupling plane and into the metal parts of EUT, air discharge was applied into non-conductive parts of EUT, see Annex No. 1.

Test voltage applied: ± 4 kV – contact discharge
 ± 8 kV – air discharge

Allowed criterion: B

Achieved criterion: A

Measurement arrangement:



Notes:
No change of EUT function was detected during the test.

Test Result: Pass

Date: 8. 12. 2022

Tested by: Rybář

Radiated, radio-frequency, electromagnetic field immunity test
According to: ČSN EN 61000-4-3

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 – driver TCI, Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,
Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER, Ta 55 1,2ft PC 2200/840 – driver TCI

Operation and ambient conditions:

Power supply AC 230 V / 50 Hz, Normal operation

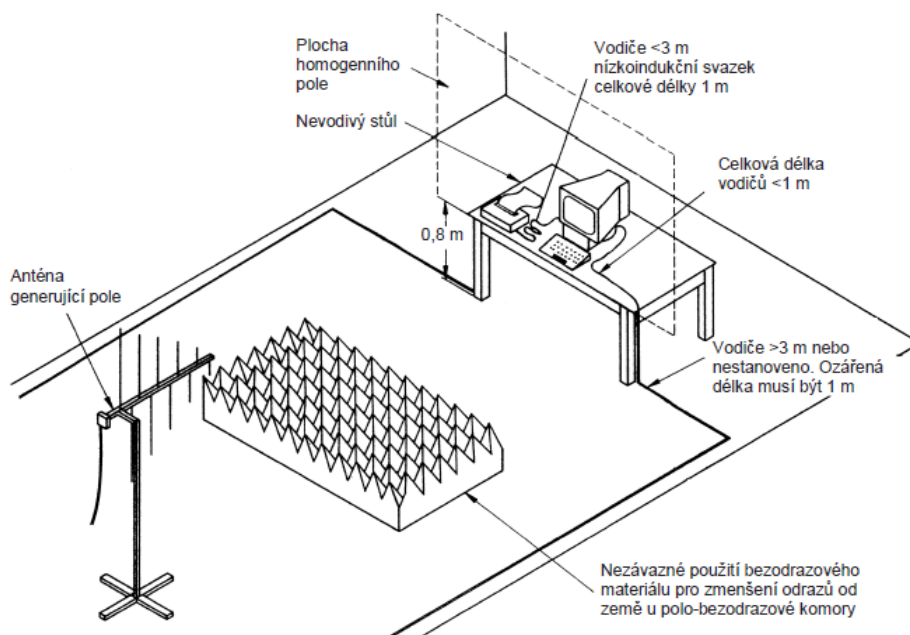
Temperature: 20 °C, Relative humidity: 40 %, Atmospheric pressure: 1015 hPa

Allowed criterion: A

Applied limits and achieved criterion:

Frequency Band	Testing level	Achieved criterion	Notes
80–1000 MHz	3 V/m (mod. 80% AM, 1 kHz)	A	Horizontal and vertical polarization

Measurement arrangement:



Notes:

No change of EUT function was detected during the test.

Test Result: Pass

Date: 12. 12. 2022

Tested by: Rybář

Electrical fast transient burst immunity test
According to: ČSN EN 61000-4-4

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 – driver TCI, Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,
Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER, Ta 55 1,2ft PC 2200/840 – driver TCI

Operation and ambient conditions:

Power supply AC 230 V / 50 Hz, Normal operation

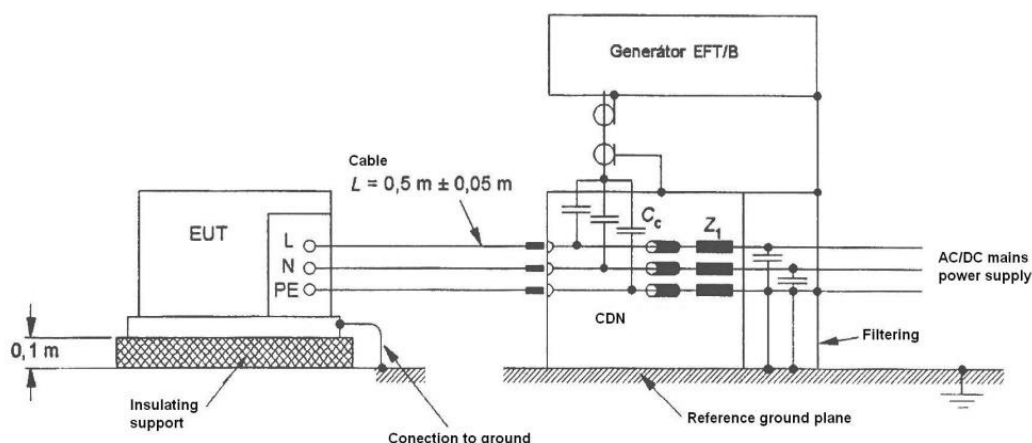
Temperature: 20 °C, Relative humidity: 40 %, Atmospheric pressure: 1020 hPa

Allowed criterion: B

Applied test voltage and achieved criterion:

Applied mains	Testing level	Achieved criterion	Notes
L, N, PE, L+N, L+PE, N+PE, L+N+PE	±1 kV	A	By coupling network
DALI+, DALI- *1)	±0,5 kV	A	By coupling network

Measurement arrangement:



Notes:

*1) Applicable only for types:

Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,
Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER.

No change of EUT function was detected during the test.

Test Result: Pass

Date: 28. 11. 2022

Tested by: Rybář

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

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 – driver TCI, Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,
Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER, Ta 55 1,2ft PC 2200/840 – driver TCI

Operation and ambient conditions:

Power supply AC 230 V / 50 Hz, Normal operation

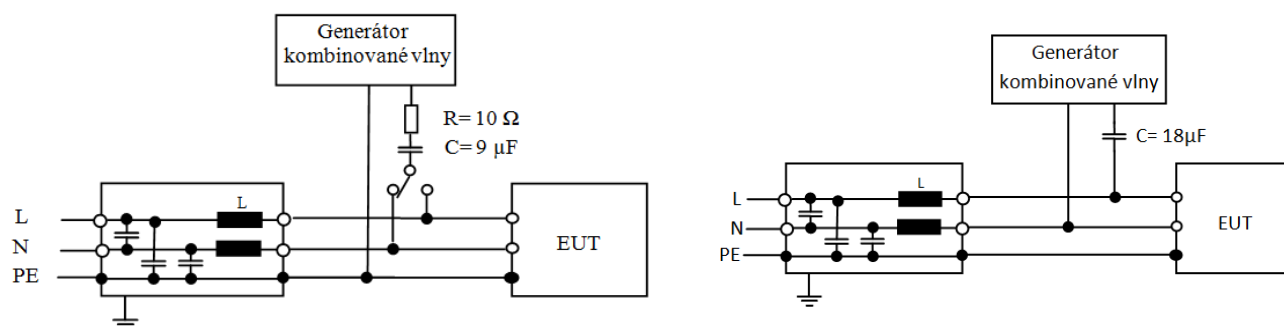
Temperature: 21 °C, Relative humidity: 40 %, Atmospheric pressure: 1010 hPa

Allowed criterion: C

Applied test voltage and achieved criterion:

Applied mains	Testing level	Achieved criterion	Notes
L-N	±1 kV	A	Ta 55 1,5ft PCc 8000/840 – driver TCI
L-PE, N-PE, L+N-PE	±2 kV	B *1)	
L-N	±1 kV	A	Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC
L-PE, N-PE, L+N-PE	±2 kV	B *1)	
L-N	±1 kV	A	Ta 55 1,5ft PCc 8000/840 DALI - driver CUPOWER
L-PE, N-PE, L+N-PE	±2 kV	A	
L-N	±0,5 kV	A	Ta 55 1,2ft PC 2200/840 – driver TCI
L-PE, N-PE, L+N-PE	±1 kV	A	

Measurement arrangement:



Notes:

Surge was applied with 90° and 270° of power supply voltage phase angle.

*1) During the test, the luminance decreased momentarily for time <3s. After the test, the original state was automatically restored.

Test Result: Pass

Date: 8. 12. 2022

Tested by: Rybář

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

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 – driver TCI, Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,
Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER, Ta 55 1,2ft PC 2200/840 – driver TCI

Operation and ambient conditions:

Power supply AC 230 V / 50 Hz, Normal operation

Temperature: 22 °C, Relative humidity: 30 %, Atmospheric pressure: 1020 hPa

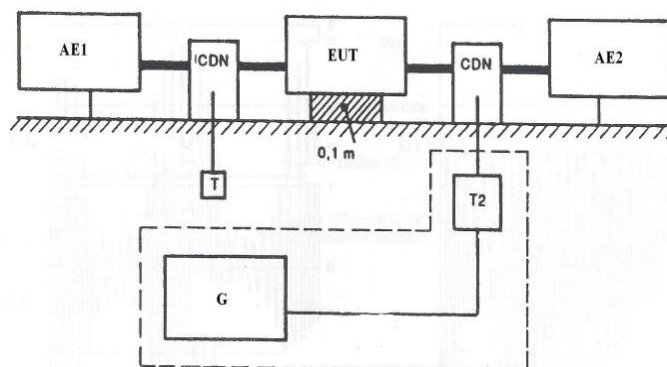
Allowed criterion: A

Applied test voltage:

Applied mains	Frequency Band	Testing voltage	Notes
Power supply AC mains	150 kHz – 80 MHz	3 V (mod. 80% AM / 1 kHz)	Coupling network CDN-M3N
Control mains DALI *1)	150 kHz – 80 MHz	3 V (mod. 80% AM / 1 kHz)	EM Injection clamp

Achieved criterion: A

Measurement arrangement:



AE1, AE2 Associated equipment
CDN Coupling/decoupling network
G HF generator
T2 Attenuation element
T Matching element 50Ω
EUT Equipment under test

Notes:

*1) Applicable only for types:

Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,

Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER.

No change of EUT function was detected during the test.

Test Result: Pass

Date: 13. 12. 2022

Tested by: Rybář

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

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 – driver TCI, Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,
Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER, Ta 55 1,2ft PC 2200/840 – driver TCI

Operation and ambient conditions:

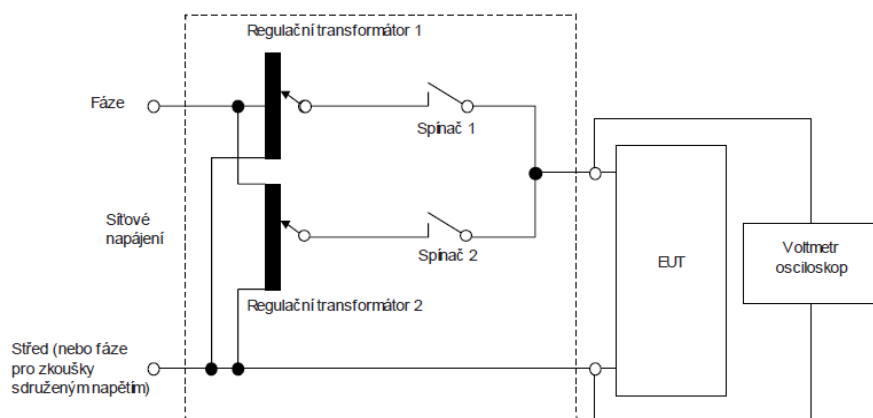
Power supply AC 230 V / 50 Hz, Normal operation

Temperature: 20 °C, Relative humidity: 40 %, Atmospheric pressure: 1010 hPa

Test requirements and achieved criterion:

Test level [%] Ut	Duration [ms]	Allowed criterion	Achieved criterion	Notes
0	10	B	B *1)	Ta 55 1,5ft PCc 8000/840 – driver TCI
70	200	C	A	
0	10	B	B *1)	Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC
70	200	C	A	
0	10	B	A	Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER
70	200	C	A	
0	10	B	A	Ta 55 1,2ft PC 2200/840 – driver TCI
70	200	C	A	

Measurement arrangement:



Notes:

*1) During the test, the luminance decreased momentarily for time <1s. After the test, the original state was automatically restored.

Test Result: Pass

Date: 9. 12. 2022

Tested by: Rybář

Used Test Equipment and Accessories**Test apparatus:**

	Type:	Ev. No.:	Calibration to:
EMI Test receiver R&S (č.302)	ESCI	110213	07.2023
Test receiver R&S	ESU 26	110252	06.2023
Ultra Compact Simulator EM Test	UCS500N	110235	03.2023
Burst generátor Haefely (1N, č.302)	PEFT Junior	5872	01.2023
Surge generator EM Test (1N, č.302)	VCS500-M4	110114	04.2024
Continuos wave simulator EM Test (EN 61000-4-6)	CWS500N	110342	04.2023
Signal generator R&S (EN 61000-4-3)	SMF100A	110167	06.2023
Harmonic analyzer EM Test	DPA503N	110272	03.2023
Power fail simulator EM Test	PFS500	6040	01.2024
ESD generator (č.302)	ESD30	110090	01.2023

Auxiliary equipment:

	Type:	Ev. No.:	Calibration to:
Supply source EM Test	HFS300	6042	03.2023
Ref. impedance SCHAFFNER	LR4	6042	03.2023
Antenna Frankonia	BTA-M	6321	05.2023
Electric Field Probe – Narda	EP603	110273	06.2025
Amplifier PRÁNA (20–1000 MHz)	AP32 LT225	07-110145	---
Artificial mains ESH	ESH3-Z5	5821/2	05.2023
Coupling/dec. EM Test (EN 61000-4-6)	CDN M3N	110233/1	03.2025
Coupling/dec. EM Test (luminaires emission)	CDN-M3N	700478	12.2022
Coupling/dec. Teseq ISN T200A	ISN T200A	110232	08.2024
EM Injection clamp LUTHI (EN 61000-4-6)	EM-101	110233	12.2022
Pulse Limiter R&S	ESH3-Z2	5424	01.2025
Attenuator 6dB	ATT6	110233/3	06.2023
Shielded chamber (param. verification only)	B831000	3161	---
Anechoic chamber Euroshield (param. verif. only)	RFMSD-F/A	6341	02.2025
Notebook Dell	D351	551492	---
Multimeter	FLUKE 289	552550	06.2024
Thermometer/Hygrometer	Testo 608-H2	551001	12.2022
Barometr	B1	50018305	03.2032
Metal meter	5m	400014	12.2029

Cables:

K22 (ESH3-Z2)
 K14, K15a, K16
 KB06
 K24 (antenna Frankonia)
 K25, K2, K4 (voltage mains – č.302)

Jig equipment:

PR43 – DALI controller
 PR51 – Vertical coupling plane (EN 61000-4-2)
 Regulated transformer – ZPA RA20 (EN 61000-4-11)

End of Test Report No. 222339-01/02

Photo documentation

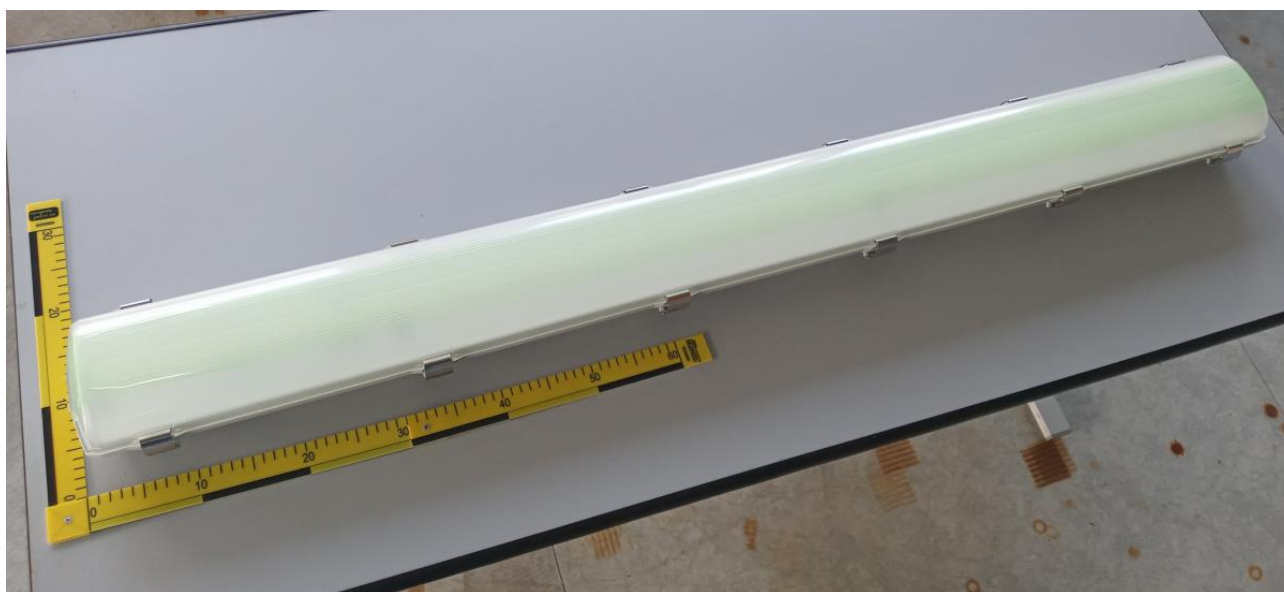
Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 – driver TCI



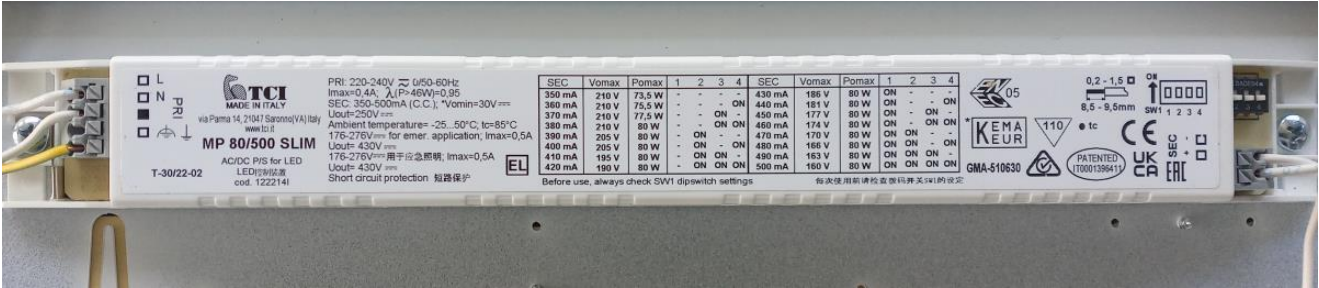
EUT type label



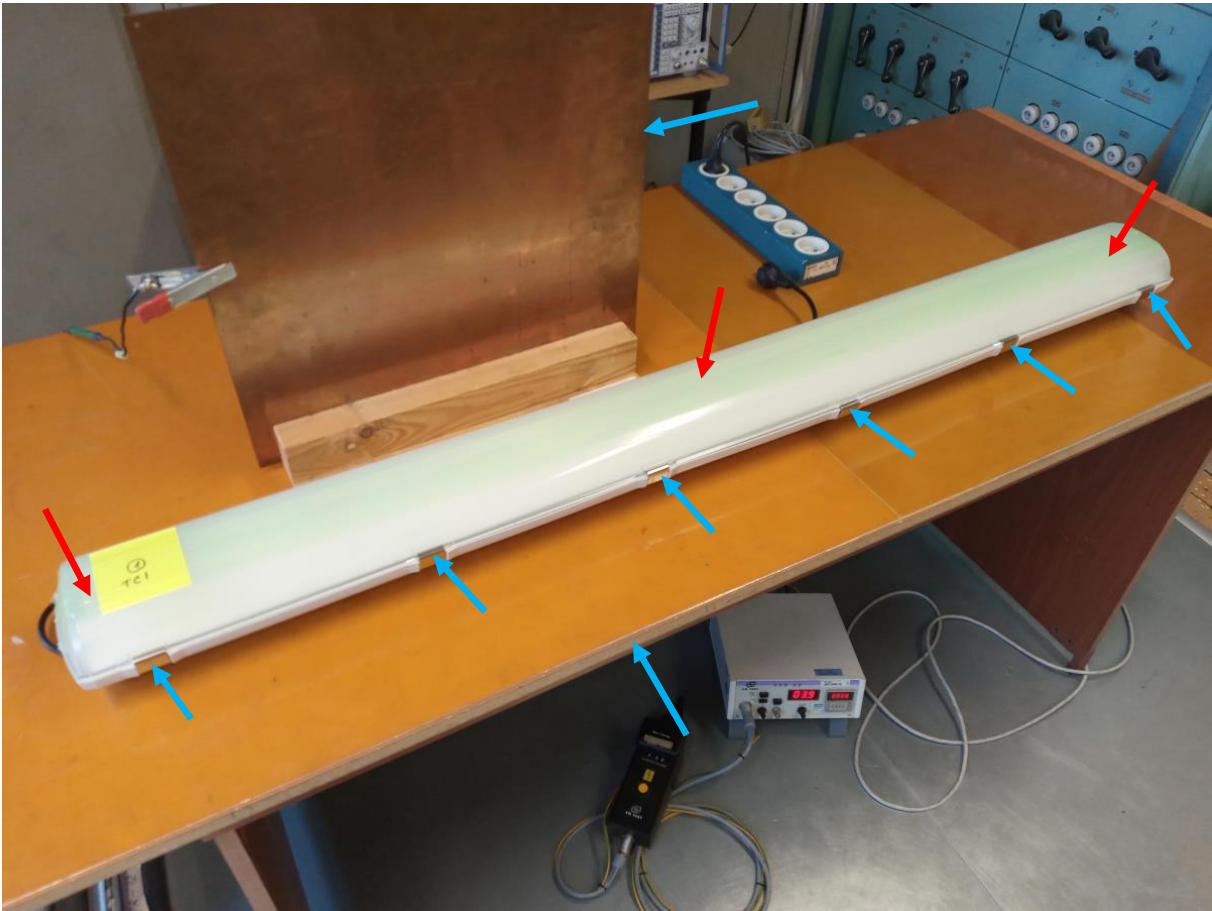
LED strip type label



View of EUT



Power supply unit TCI MP 80/500 SLIM



Electrostatic discharges, tested points (→ contact, → air)

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 DALI – driver TRIDONIC,



EUT type label



LED strip type label



View of EUT

Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,5ft PCc 8000/840 DALI – driver CUPOWER



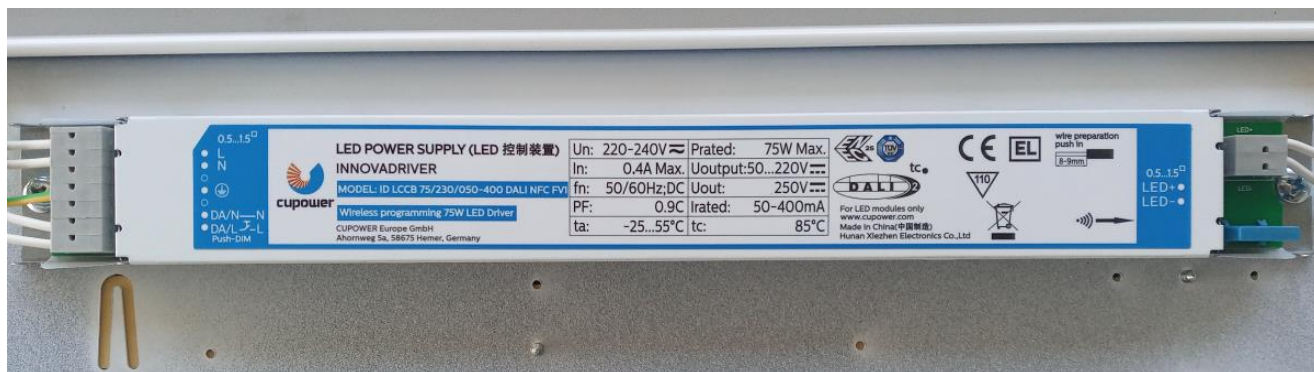
EUT type label



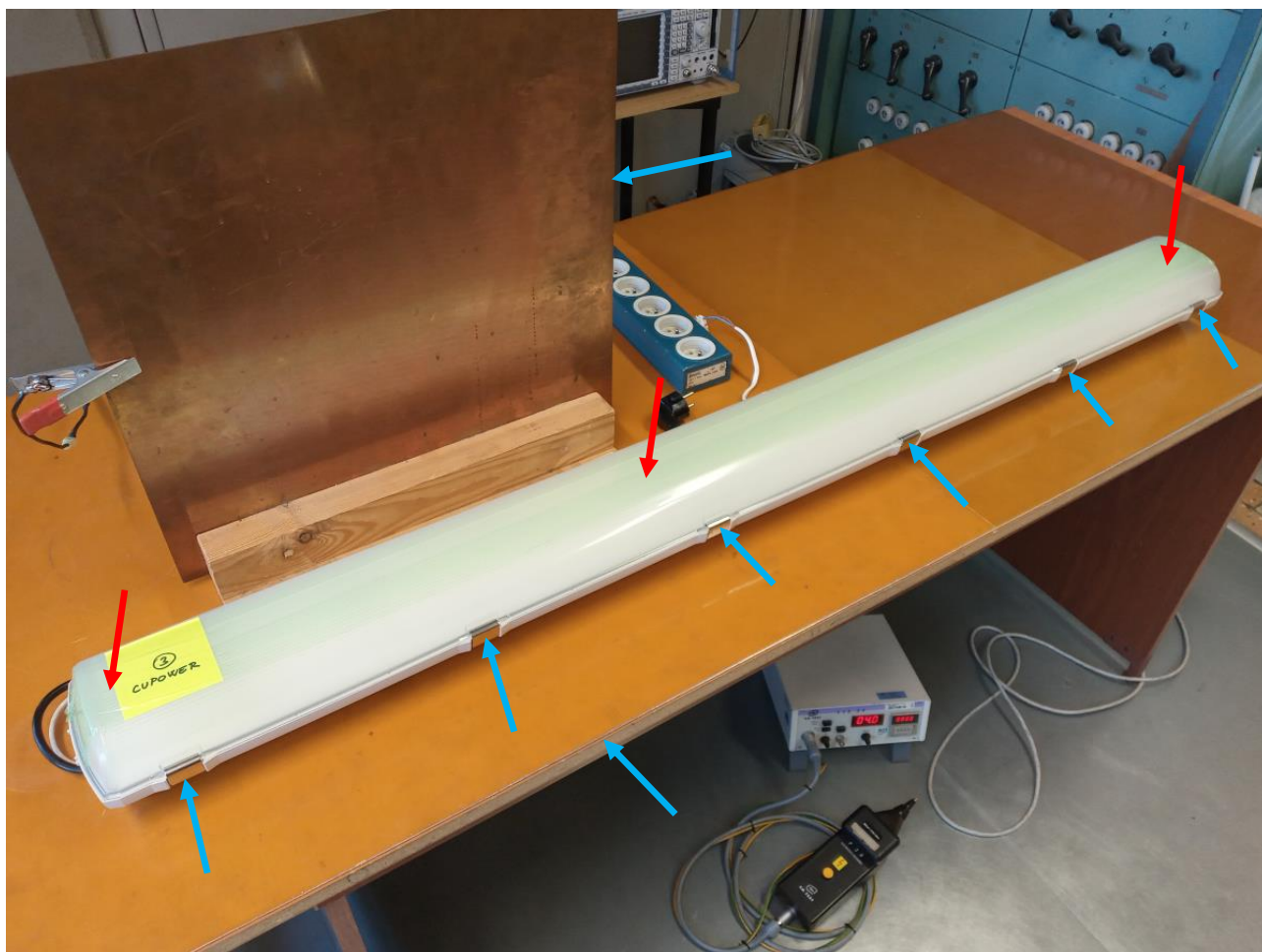
LED strip type label



View of EUT



Power supply unit CUPOWER ID LCCB 75/230/050-400 DALI NFC FV1



Electrostatic discharges, tested points (→ contact, → air)

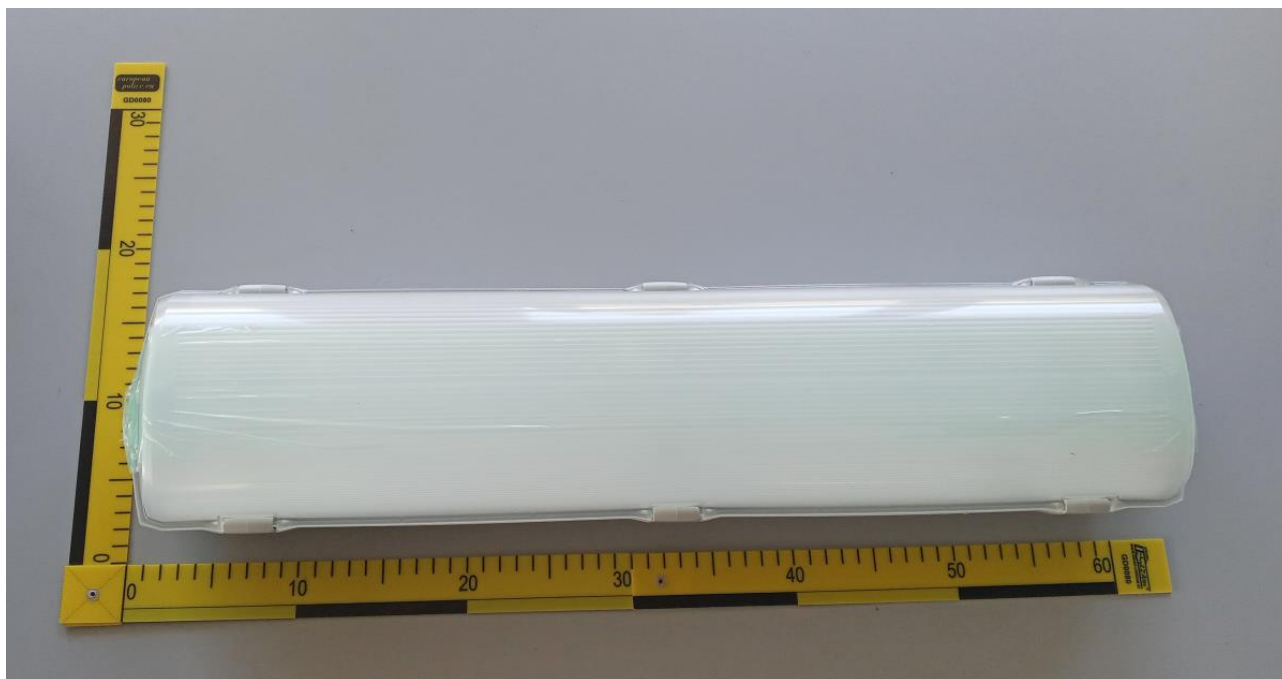
Product: Industrial LED luminaires MIDDLE EAST
Type: Ta 55 1,2ft PC 2200/840 – driver TCI



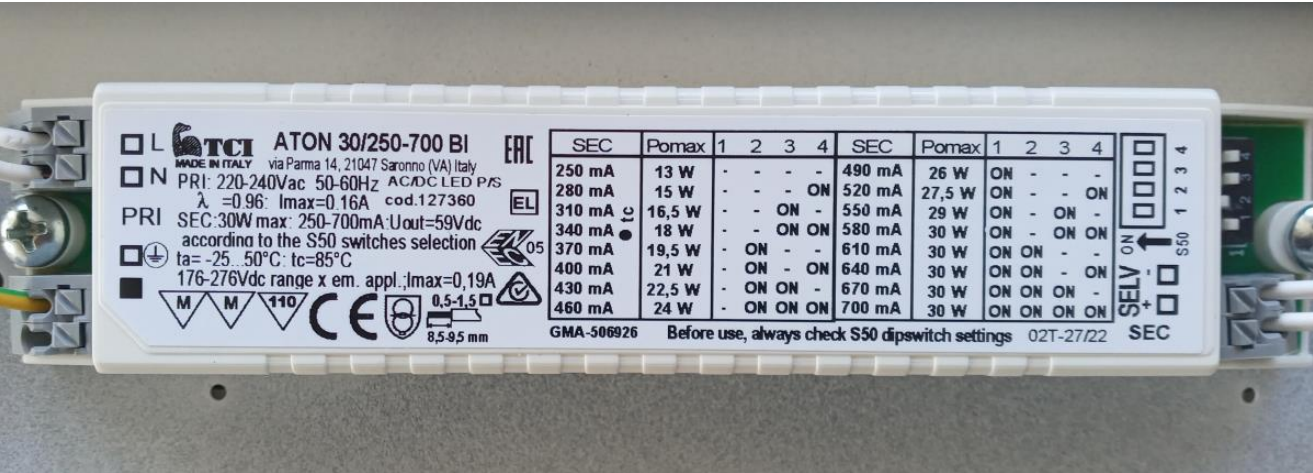
EUT type label



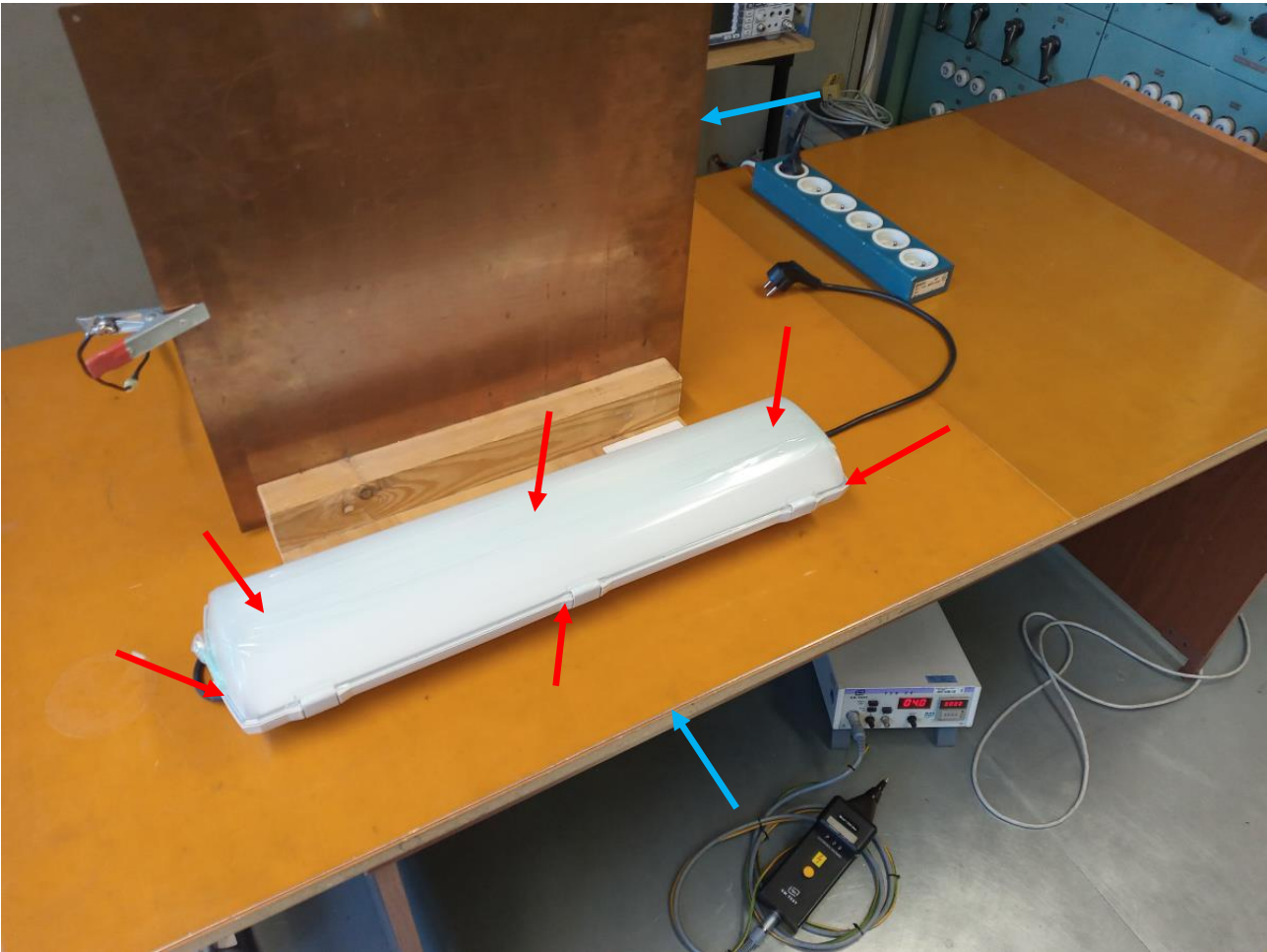
LED strip type label





View of EUT



Power supply unit TCI ATON 30/250-700 BI



Electrostatic discharges, tested points ( contact,  air)