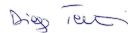



TEST REPORT

EN 62493

Assessment of lighting equipment related to human exposure to electromagnetic fields

Report Reference No.: 378300TRFEMF

Tested by
(name, function and signature): D. Teruzzi (project handler) 

Approved by
(name, function and signature): D. Guarnone (verifier) 

Date of issue: 2019-10-01

Testing Laboratory: **Nemko Spa**

Address.....: Via del Carroccio, 4 – 20853 Biassono (MB) – Italy

Testing location: Nemko Spa

Address.....: Via del Carroccio, 4 – 20853 Biassono (MB) – Italy

Applicant's name: **C Luce Srl**

Address.....: Via Marmolada 5/11 – 20060 Truccazzano (MI) – Italy

Test specification:

Standard: EN 62493 (2015)

Full application of the standards ☒

Partial application of the standards ☐

Test procedure.....: Nemko WM L0077, WM L0177 and WM L1002

Test Report Form No.: 62493TRFEMF

TRF Originator: Nemko Spa

Master TRF.....: 2017-03

Nemko Spa, 20853 Biassono (MB), Italy. All rights reserved.

This publication may be reproduced in whole for non-commercial purposes as long as Nemko Spa is acknowledged as copyright owner and source of the material. Nemko Spa takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test item description.....: **Public Lighting**

Trade Mark:



Manufacturer.....: C Luce Srl.

Address of manufacturer: Via Marmolada 5/11 – 20060 Truccazzano (MI) – Italy

Model: SKYLINE 506643.416


Ratings.....: 220-240 VAC, 50-60 Hz, 140 W 700 mA

This test report may not be partially reproduced, except with the prior written permission of Nemko Spa

The test report merely corresponds to the tested sample.

The phase of sampling / collection of equipment under test is carried out by the customer.

Test Report No. :	378300TRFEMF	2019-10-01
		Date of issue

Short description of the EuT	Copy of marking plate
<p>The EUT is a LED light provided by 64 LED with multiple cluster in PMMA road lens and asymmetrical vertex at 30°.</p> <p>The equipment is powered by dimmable constant current LED driver Philips Xitanium 150W 0.70A 1-10V 230VS240.</p>	
Number of tested samples:	1
Serial number:	378300/2 (number assigned by Nemko Spa)
Accessories and detachable parts included:	The E.U.T. is composed by a single unit
Other options included:	--
Testing	
Date of receipt of test sample:	2019-09-25
Testing commenced on:	2019-09-26
Testing concluded on:	2019-09-30
Possible test case verdicts:	
test case does not apply to the test object:	N (Not applicable)
test object does meet the requirement:	P (Pass)
test object does not meet the requirement:	F (Fail)
Symbols used in this test report	
<input checked="" type="checkbox"/> The crossed square indicates that the listed condition or equipment is applicable for this report.	
<input type="checkbox"/> The empty square indicates that the listed condition or equipment is not applicable for this report.	
Throughout this report point is used as decimal separator.	
The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.	

Verdict according to the standards listed at page 5:	Pass
---	-------------

PROJECT HISTORY		
Report number	Modification to the report / comments	Date
378300TRFEMF	First release	2019-10-01
--	--	--
--	--	--
--	--	--
REMARKS		

PRODUCT VARIANTS		
Variant model	Difference against the main model	Test performed
--	--	--
--	--	--
--	--	--
--	--	--
REMARKS		

Contents

<u>1</u>	<u>TEST STANDARDS</u>	<u>5</u>
<u>2</u>	<u>GENERAL PRODUCT INFORMATION</u>	<u>5</u>
<u>3</u>	<u>EQUIPMENT UNDER TEST</u>	<u>5</u>
3.1	POWER SUPPLY SYSTEM UTILISED	5
3.2	EUT OPERATION MODES	6
3.3	EUT CONFIGURATION MODES	6
3.4	INPUT/OUTPUT PORTS	6
3.5	EQUIPMENT USED DURING TEST	6
<u>4</u>	<u>TEST ENVIRONMENT</u>	<u>7</u>
4.1	ADDRESS OF THE TEST LABORATORY	7
4.2	ENVIRONMENTAL CONDITIONS	7
4.3	TEST EQUIPMENT USED FOR THE MONITORING OF THE ENVIRONMENTAL CONDITIONS	7
4.4	STATEMENT OF THE MEASUREMENT UNCERTAINTY	7
<u>5</u>	<u>TEST CONDITIONS AND RESULTS</u>	<u>8</u>
<u>6</u>	<u>EUT PHOTOS</u>	<u>11</u>

1 TEST STANDARDS

The tests were performed according to following standards and procedures.

NEMKO WM L0177: General routines for using instruments at Nemko

NEMKO WM L1002: Measurement Uncertainty - Policy and Statement

NEMKO WM L0077: General routines to perform EMC tests

EN 62493 (2015)

Assessment of lighting equipment related to human exposure to electromagnetic fields

2 GENERAL PRODUCT INFORMATION

Description of the EUT	<input checked="" type="checkbox"/>	Luminaire
	<input type="checkbox"/>	Self-ballasted lamp
	<input type="checkbox"/>	Built-in electronic control gear
	<input type="checkbox"/>	Independent electronic control gear
	<input type="checkbox"/>	Others:
Control Gear.....	<input type="checkbox"/>	Magnetic control gear / transformer
	<input checked="" type="checkbox"/>	Electronic control gear
	<input type="checkbox"/>	Others:
Lamp technology used	<input type="checkbox"/>	Fluorescent lamp
	<input type="checkbox"/>	High pressure discharge lamp (HID)
	<input checked="" type="checkbox"/>	Light emitting diode (LED)
	<input type="checkbox"/>	Tungsten halogen lamp
	<input type="checkbox"/>	Incandescent lamp
	<input type="checkbox"/>	Others:

3 EQUIPMENT UNDER TEST

3.1 Power supply system utilised

Power supply voltage:	<input checked="" type="checkbox"/>	230V/50 Hz / 1 ϕ	<input type="checkbox"/>	115V/60Hz / 1 ϕ
	<input type="checkbox"/>	400V/50 Hz 3PE	<input type="checkbox"/>	400V/50 Hz 3NPE
	<input type="checkbox"/>	12 VDC	<input type="checkbox"/>	24 VDC

3.2 EuT operation modes

Mode	Description
1	Normal working

3.3 EuT configuration modes

The EuT was configured to measure its highest possible radiation level. The test modes selected are according to EuT instruction manual.

Mode	Description
1	The EUT has been tested connected to the mains

3.4 Input/Output Ports

Port	Name	Type*	Cable Max. >3m	Cable Shielded	Description
0	Enclosure	N/E	—	—	—
1	Mains	AC	<input type="checkbox"/>	<input type="checkbox"/>	Three wires cable

*Note:

AC = AC Power Port

DC = DC Power Port

N/E = Non-Electrical

I/O = Signal/Control Input or Output Port

TP = Telecommunication Ports

3.5 Equipment Used During Test

Use*	Product Type	Manufacturer	Model	Comments
--	--	--	--	--

Note: * Use

EUT - Equipment Under Test

AE - Auxiliary/Associated Equipment (Not Subjected to Test)

SIM - Simulator (Not Subjected to Test)

4 TEST ENVIRONMENT

4.1 Address of the test laboratory

Nemko Spa
Via del Carroccio, 4
20853 Biassono (MB) – Italy

Tests site/benches are in accordance with applicable standard/s, and have been utilized by Nemko Spa testing engineer(s).

4.2 Environmental conditions

Unless different values are declared in the test case, following ambient conditions apply for the tests:

Ambient temperature:	<u>18÷33 °C</u>
Relative Humidity:	<u>30÷60 %</u>
Atmospheric pressure:	<u>980÷1060 hPa</u>

4.3 Test equipment used for the monitoring of the environmental conditions

Equipment	Manufacturer	Model	Serial N°
Thermohygrometer data loggers	Testo	175-H2	20012380/305
Baarometer	MSR	MSR145B	330080

4.4 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according to CISPR 16-4-2 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-2: Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements" and is documented in the Nemko Spa Technical Procedure WML1002. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device. Hereafter the best measurement capability for Nemko Spa laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Induced current	20 kHz ÷ 10 MHz	26 %	(1)

NOTES:

- (1) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$ which has been derived from the assumed normal probability distribution with infinite degrees of freedom and for a coverage probability of 95 %.

5 TEST CONDITIONS AND RESULTS

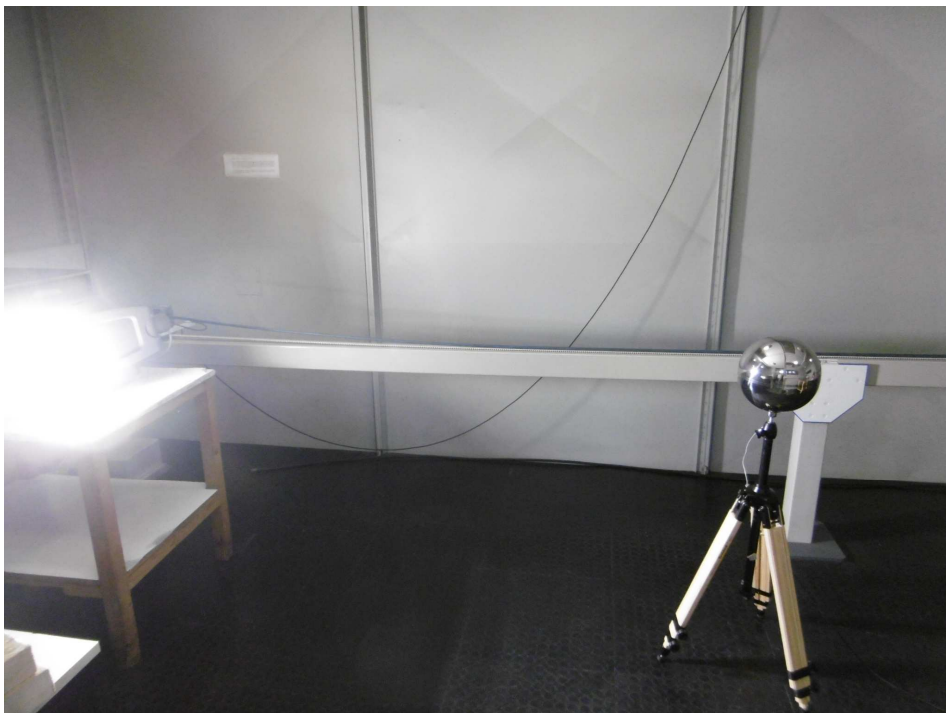
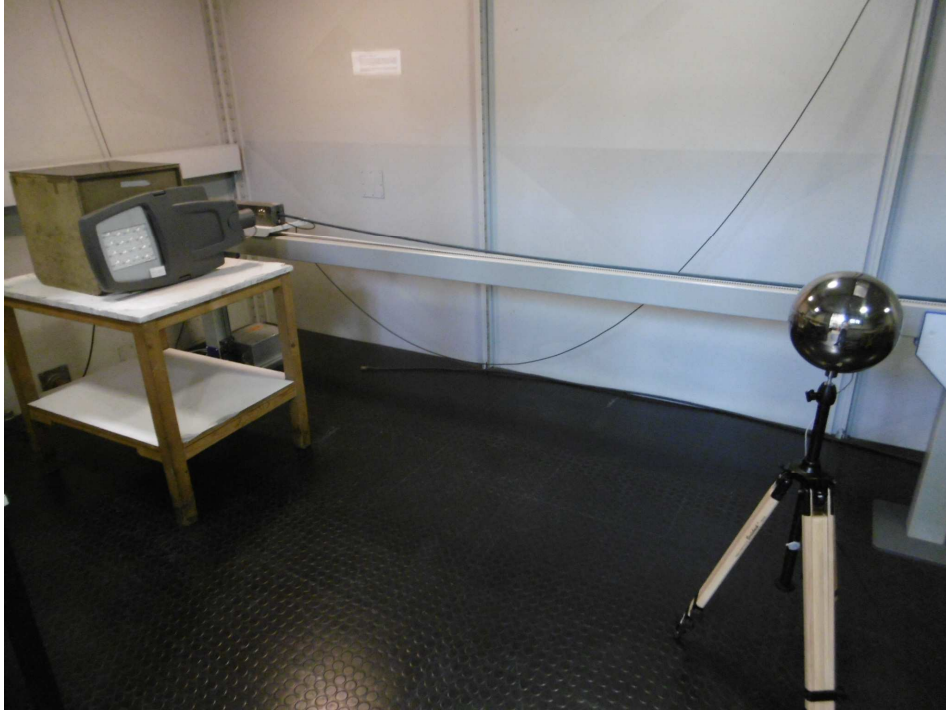
EN 62493			
Clause	Requirement + Test	Result - Remark	Verdict
4	LIMITS		P
4.1	General		P
	Comply with Van der Hoofden test limit in 4.2.3 or inherently compliant in 4.2.2 and pass assessment procedure for intentional radiators in 4.3		P
4.2	Unintentional radiating part of lighting equipment		P
4.2.2	Lighting equipment deemed to comply with the Van der Hoofden test without testing		N
	1) no electronic controlgear	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	2) incandescent-lamp technology	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	3) LED-light-source technology	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	4) OLED-light-source technology	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	5) high-pressure discharge lamp LED-light-source technologies	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	6) low-pressure discharge lamp technologies with exposure distance ≥ 50 cm	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	7) independent auxiliary	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Not fulfil any of 1-7 above subject to 4.2.3		—
4.2.3	Applications of limits		P
	Not fulfil any of 1-7 in 4.2.2 but the compliance factor F is ≤ 1		P
4.3	Intentional radiating part of lighting equipment		N
	Comply with one of methods in Clause 7 if intentional radiator		N
5	GENERAL		P
5.1	Measurand		P
	Test head, measuring instrumentation and measuring conditions according Clause 5.1 – 5.8		P
6	MEASUREMENT PROCEDURE FOR THE VAN DER HOOFDEN TEST		P
6.1	General		P
	Measurements carried out under conditions according Clause 6.1 – 6.6	See Table 6	P

IEC 62493			
Clause	Requirement + Test	Result - Remark	Verdict
7	ASSESSMENT PROCEDURE INTENTIONAL RADIATORS		N
7.2	Low-power exclusion method		N
7.2.1	Input $P_{\text{int,rad}}$		—
	Exclusion level P_{max}		—
	Input power $P_{\text{int,rad}} < \text{exclusion level } P_{\text{max}}$		N
7.3	Application of the EMF product standard for body worn-equipment		N
	If not Clause 7.2 is met and expose distance ≤ 0.05 m, comply with IEC 62209-2		N
7.4	Application of the EMF product standard for base stations		N
	If not Clause 7.2 is met and if intentional radiator is base station, comply with IEC 62232		N
7.5	Application of another EMF standard		N
	If not Clause 7.2 is met and if intentional radiator cannot be considered as in Clause 7.3 or 7.4, comply with IEC 62311		N

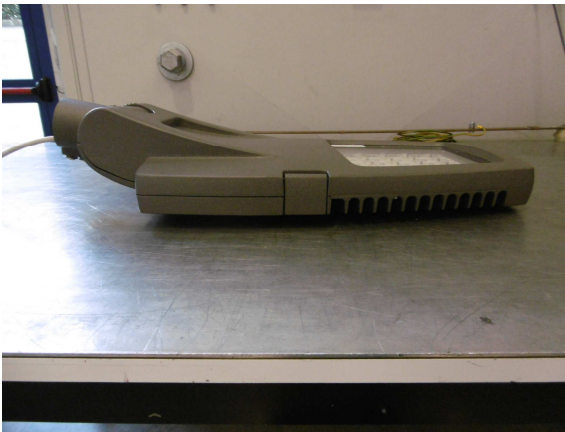
6	TABLE: Measurement results with Van der Hoofden test head				
Location of EuT		Measuring distance	Result (F)	Limit (F)	Verdict
Lighting equipment for road and street lighting		200 cm	0.009	≤ 1	P

6	TABLE: Equipment used during test with Van der Hoofden test head			
Equipment	Manufacturer	Type	Id. No.	
Van der Hoofden test head	MPB	MSA-210	441205	
Measurement receiver	R&S	ESCI	100888	
Protection network	MPB	P-0003	0022	
Shielded room	Siemens	Conducted emission test room	1862	

Photos of the test setup



6 EUT PHOTOS





End of report