

TEST REPORT

No. AI19-0046170-02

SURGE IMMUNITY TEST

performed in accordance with

- IEC 61000-4-5:2014 + A1:2017
- EN 61000-4-5:2014 + A1:2017
- CEI EN 61000-4-5:2015 + A1:2018

PRODUCT	LED Luminaire
MODEL TESTED	Art. Lyra 32
SERIES	Lotto 00/00 00001
TRADE MARK	<p style="font-size: 24pt; font-weight: bold;">NERI Lyra 32</p> <p>220-240V ~ 50/60Hz Ta 50°C IP66 IK09</p> <p>3000K 8000lm 83 W type IV</p> <p>modello brevettato</p> <p>made in Italy</p> <div style="display: flex; justify-content: space-around; align-items: center;">      </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 10px;">  <div style="font-size: 10pt;">  <p>Neri S.p.A. Via Emilia, 1622 47020 (FC) Longiano - Italy</p> </div> </div> <p style="text-align: center; font-weight: bold;">* 0 0 0 0 1 1 9 0 0 0 0 1 *</p>
APPLICANT	NERI S.p.A. Via Emilia, 1622 - 47020 Longiano (FC) - Italy

Tested by	Giordano Carcano	<i>[Laboratory technician]</i>
Approved by	Giovanni Di Turi	<i>[Laboratory manager]</i>

Revision Sheet

Release No.	Date	Revision Description
Rev. 0	2020-04-01	First edition

The results of tests and checks reported in this Test Report refer exclusively to the samples tested and described in the Report itself.
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1. GENERAL DATA

SAMPLE		
Samples received on	2019-11- 29 / 2020-01-03	(item sent and sampling by applicant)
IMQ reference samples	BEM	97978 / 98323
Samples tested No.	1	
Object under analysis recognition	Not carried out	
Remark:	Except where stated, characteristics of products were taken from client description and were not verified by the laboratory	
Date of acceptance of test item	2020-01-14	
TEST LOCATION		
Testing dates	2020-01-14 ÷ 2020-01-15	
Testing laboratory	IMQ S.p.A. - Via Quintiliano, 43 – IT - 20138 Milano	
Testing site	Via Quintiliano, 43 – I - 20138 Milano	
ENVIRONMENTAL CONDITIONS		
<i>Parameter</i>	<i>Range</i>	
Ambient Temperature	20 ÷ 25 °C	
Relative Humidity	50 ÷ 60 %	
Atmospheric Pressure	900 ÷ 1000 mbar	
The laboratory is monitored by a continuous environmental conditions measurements system. Temperature, humidity and pressure data are recorded on a weekly basis and stored in local archive.		

2. REFERENCE DOCUMENT

	DOCUMENT	DATE	TITLE
<input checked="" type="checkbox"/>	IEC 61000-4-5 A1	2014 2017	Electromagnetic Compatibility (EMC) Part 4-5: Testing and measurement techniques Surge immunity test
<input checked="" type="checkbox"/>	EN 61000-4-5 A1	2014 2017	Electromagnetic Compatibility (EMC) Part 4-5: Testing and measurement techniques Surge immunity test
<input type="checkbox"/>	CEI EN 61000-4-5 A1	2015 2018	Electromagnetic Compatibility (EMC) Part 4-5: Testing and measurement techniques Surge immunity test

3. EQUIPMENT UNDER TEST (EUT) DETAILS

Label
<p>NERI Lyra 32 Lotto 00/00 00001</p> <p>220-240V ~ 50/60Hz Ta 50°C IP66 IK09</p> <p>3000K 8000lm 83 W type IV</p> <p>modello brevettato made in Italy</p>      <p> * 0 0 0 0 1 1 9 0 0 0 0 1 *</p> <p> Neri S.p.A. Via Emilia, 1622 47020 (FC) Longiano - Italy</p>

MODEL (basic)	Description						
Art. Lyra 32	LED street lighting equipment 220-240V 83W						
	<table border="1"> <thead> <tr> <th>Light source</th> <th>LED</th> <th>Electronic controlgear for led module</th> </tr> </thead> <tbody> <tr> <td>CUBA32</td> <td>32 x Nichia NVSW219F</td> <td>Philips Xi FP 75W 0.3-1.0A SNLDAE 230V S240 sXt</td> </tr> </tbody> </table>	Light source	LED	Electronic controlgear for led module	CUBA32	32 x Nichia NVSW219F	Philips Xi FP 75W 0.3-1.0A SNLDAE 230V S240 sXt
	Light source	LED	Electronic controlgear for led module				
CUBA32	32 x Nichia NVSW219F	Philips Xi FP 75W 0.3-1.0A SNLDAE 230V S240 sXt					
<p>Model Lyra 32 represent also Lang models: Lyra 24 and Lyra 16.</p> <p>Lyra 24, same as Lyra 32, but with CUBA24 LED module (24 x Nichia NVSW219F) and rated 66W</p> <p>Lyra 16, same as Lyra 32, but with CUBA16 LED module (16 x Nichia NVSW219F) and rated 36W</p>							

MANUFACTURER	NERI S.p.A.
ASSEMBLY PLANT	Via Emilia, 1622 - 47020 Longiano (FC) - Italy

EUT IDENTIFICATION

EUT type	Lighting equipment appliance
EUT description	Led luminaire for road and street lighting
EUT classification	Insulation class II
EUT standing	Fixed (suspended)
EUT single or system	Single

EUT TECHNICAL DATA

Parameters	Value
Supply Voltage IN	220-240V ac
Supply Voltage OUT	/
Frequency	50/60Hz
Power	83W
Ambient rating	/

EUT CONFIGURATION

The following peripheral devices and interface cables were connected during the measurement: none

Port	Name	Type (*)	Cable max. >3m	Cable Shielded	Comments
0	Enclosure	N/E	—	—	None
1	AC Mains	AC	Yes	No	None
2	DC Mains	DC	—	—	None
3	Load	LP	—	—	None
4	Control	CP	---	---	None

(*) **Note:** AC = AC Power Port
DC = DC Power Port
N/E = Non-Electrical
LP = Load ports (Not Involved in Process Control)
CP = Control Ports

MODE OF OPERATION DURING THE TESTS

Ref.	Mode	Description
<input checked="" type="checkbox"/> #1	Normal operation	LEDs ON at maximum power

4. PERFORMANCE CRITERIA

Immunity performance criteria

The test results is classified in terms of the loss of function or degradation of performance of the equipment under test, relative to a performance level defined by the manufacturer or the requestor of the test, or agreed between the manufacturer and the purchaser of the product.

- A. normal performance within limits specified by the manufacturer, requestor or purchaser;
- B. temporary loss of function or degradation of performance which ceases after the disturbance ceases, and from which the equipment under test recovers its normal performance, without operator intervention;
- C. temporary loss of function or degradation of performance, the correction of which requires operator intervention;
- D. loss of function or degradation of performance which is not recoverable, owing to damage to hardware or software, or loss of data.

EUT PERFORMANCE ASSESSMENT

As declared by manufacturer:

Primary function	The EUT is a LED lighting equipment
Representative parameter	The EUT shall continue to perform as intended
Acceptable level of performance	As standard requirements

5. SUMMARY OF TEST RESULTS

POSSIBLE TEST CASE VERDICTS:	
Test object does meet the requirement	PASS
Test object does not meet the requirement	FAIL

PORT	ENVIRONMENTAL PHENOMENON	RESULT
AC mains	Surge immunity test	PASS

6. RESULTS

SURGE IMMUNITY TEST

TEST REQUIREMENT	
Reference standard	IEC 61000-4-5
Test set-up	§ 7
IMQ operational instruction	FL-EM80-I08 + FL-EM80-I11
Test procedure	IEC 61000-4-5 § 8.2
Deviation to test procedure	None
EUT operating condition	#1, during the test the EUT enclosure was connected to PE (Protective Earth), to simulate the real installation.

Port under test	Mode	Test voltage (kV)	Repetition rate	Phase angle	Polarity		Perf. criteria	Results
					+	-		
AC mains	☑ Common L-PE and N-PE	10	1 per minute (5 pulses)	90°	x		A	PASS
				270°		x		
	☑ Differential N-L	10	1 per minute (5 pulses)	90°	x		A	PASS
				270°		x		

REMARKS

The tested sample continues to operate as intended during and after the test.

7. MEASUREMENTS AND TESTS UNCERTAINTY

Unless otherwise stated the uncertainties for the tests and measurements are evaluated in accordance with IMQ Operational Instruction IO-LAB-001, IO-LAB-004 and IO-LAB-009.

The uncertainty evaluation has been carried out in accordance with IEC Guide 115 “Application of Uncertainty of measurement’s to Conformity Assessment Activity in the Electrotechnical Sector” and IECCE OD-5014.

The expanded uncertainty was calculated for all measurements and tests listed in this test report according to CISPR 16-4-2 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-2: Uncertainty in EMC Measurements”, with UKAS document LAB 34 and is documented in the quality system accordance to ISO/IEC 17025.

Internal Procedure PG-037 ensures that the requirements for traceability of calibrations, of all test equipment requiring calibration, and calibration intervals are met.

All instrumentation used for immunity tests is calibrated and within the specifications required by the basic standards (IEC 61000-4-X).

8. MEASUREMENT EQUIPMENT AND INSTRUMENTATION

Test equipment used					
Description	Manufacturer	Model	Identifier	Last Calibration date	Calibration due date
SURGE generator	EMC PARTNER	MIG 1206-1P	S07044	2019-10-08	2020-10-31

9. PHOTOGRAPHIC DOCUMENTATION

Test set-up photo



END OF TEST REPORT