

WZ-407/B-1, Basai Dara Pur,
Near Ramesh Nagar Metro Station,
New Delhi-110015 (India)

Mob.: +91-98219 74769 / 99719 32901
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Website : www.planetelectrolabs.com

TEST CERTIFICATE

SUMMARY OF TEST REPORT

TEST REPORT NO: PEL/ED/07500421

DATE: 08/04/2021
ULR-TC527221000001169F

(Number of Pages in Test Report: Page No. 1 to 45)
TEST FORMAT AS PER IS 10322 (Part 5/Sec 3): 2012+A1:2015

- Name of the Manufacturer:** ZIYA ENERGY SOLUTIONS
- Product:** STREET LIGHT(Led Luminaires For Road And Street Lighting)
- Lead Model:** ZESSL100, **Series Model:** ZESSL28, ZESSL26, ZESSL24, ZESSL22, ZESSL90, ZESSL80, ZESSL70, ZESSL60, ZESSL50, ZESSL45, ZESSL40, ZESSL36, ZESSL30, ZESSL20, ZESSL18, ZESSL15, ZESSL12, ZESSL09, ZESSL06
- Model differences provided (if applicable):** Yes/No
- Model differences verified as per MEITY Guidelines for series formulation:** Yes/No
- Test Result:** Refer below

PART- A: GENERAL

SL. NO.	TEST REQUIREMENT	CLAUSE	VERDICT
1.	Marking	6(3)	P
2.	Construction	7(4)	P
3.	Creepage Distances And Clearances	8(11)	N/A
4.	Provision For Earthing	9(7)	N/A
5.	Terminals	10(14)	N/A
6.	External And Internal Wiring	11(5)	P
7.	Protection Against Electric Shock	12(8)	N/A
8.	Endurance Tests And Thermal Tests	13(12)	P
9.	Resistance To Dust And Moisture	14(9)	P
10.	Insulation Resistance And Electric Strength	15(10)	P
11.	Resistance to Heat, Fire And Tracking	16(13)	P
12.	Photometric Tests	17	P

For Planet Electro Labs

Authorised Signatory

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GENERAL INFORMATION:

1. The conformity certificates of critical components are verified to ensure complete testing of apparatus under test and details regarding harmonized IEC standards (where IEC standards are not available) are also provided in the list of critical components
2. All tests have been performed on Model: **ZESSL100** only.

CONCLUSION:

1. Sample meets all relevant requirements of IS 10322 (Part 5/ Sec 3):2012+A1:2015 Yes
2. ~~Sample fails to meet the following test requirements.~~
3. I, hereby undertake that the verdict stated in the test reports for all the test matches with the test results. The sample meets all relevant requirements of IS 10322 (Part 5/ Sec 3):2012+A1:2015 ~~does not meet the requirements.~~ If any deviation found, suitable punitive action may be taken by BIS

For Planet Electro Labs

Authorised Signatory

Date: 08/04/2021

(Signature of Authorized Person with Stamp)

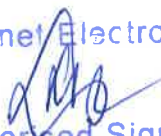
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Report No: PEL/ED/07500421	Issue Date: 08/04/2021 Page No: 2 of 45
TEST REPORT IS 10322 (Part 5/Sec 3) Luminaires Part 5: Particular Requirements Section 3: Luminaires for road and street lighting	
Report Number.....	PEL/ED/07500421
Date of issue.....	08/04/2021
Total number of pages.....	45
Applicant's name.....	ZIYA ENERGY SOLUTIONS
Address.....	G-301, SECTOR – 63, G BLOCK, NOIDA, GAUTAM BUDDHA NAGAR, UTTAR PRADESH, India, 201301
Test specification:	
Standard.....	IS 10322 (Part 5/ Sec 3):2012+A1:2015
Test procedure.....	Compliance Report
Non-standard test method.....	N/A
Test Report Form No.....	BIS_LUM/LRSL_IS10322-5-3_V1.0
Test Report Form(s) Originator.....	Bureau of Indian Standards
Master TRF.....	23/11/2017
Test item description.....	STREET LIGHT (Led Luminaires For Road And Street Lighting)
Trade Mark.....	
Manufacturer.....	ZIYA ENERGY SOLUTIONS
Model/Type Reference.....	Lead Model: ZESSL100 Series Model: ZESSL28, ZESSL26, ZESSL24, ZESSL22, ZESSL90, ZESSL80, ZESSL70, ZESSL60, ZESSL45, ZESSL40, ZESSL36, ZESSL30, ZESSL20, ZESSL18, ZESSL15, ZESSL12, ZESSL09, ZESSL06
Rating.....	Rating for lead model: 12.8VDC, 7.81A, 100W, Ta:45°C, IP66 Rating for series model: See Copy of marking plate at page no. 4-6 of 45.

Tested By	Approved By	Issued By
	For Planet Electro Labs  Authorised Signatory	
Testing Engineer: Mr. Ranjan Kumar Date: 08/04/2021	Quality Manager: Mr. Sandeep Singh Date: 08/04/2021	Proprietor: Mr. Abhinav Dewan Date: 08/04/2021

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Report No: PEL/ED/07500421	Issue Date: 08/04/2021 Page No: 1 of 45
Test Item: STREET LIGHT (Led Luminaires For Road And Street Lighting)	
Manufacturer: ZIYA ENERGY SOLUTIONS G-301, SECTOR – 63, G BLOCK, NOIDA, GAUTAM BUDDHA NAGAR,UTTAR PRADESH,India,201301	
Identification: Lead Model: ZESSL100 Series Model: ZESSL28, ZESSL26, ZESSL24, ZESSL22, ZESSL90, ZESSL80, ZESSL70, ZESSL60, ZESSL50, ZESSL45, ZESSL40, ZESSL36, ZESSL30, ZESSL20, ZESSL18, ZESSL15, ZESSL12, ZESSL09, ZESSL06	Serial No.: Nil
Receipt Job No.: 160321/004	Date: 16/03/2021
Testing Laboratory: Planet Electro Labs WZ-407/B-1, BASAI DARAPUR, NEW DELHI, DELHI-110015 (INDIA)	
Test Specification: IS 10322 (Part 5/ Sec 3):2012+A1:2015	
Test Result: The test item Passed the test specification	
Other Aspects: This test report consists of 45 pages.	

Tested By	Approved By	Issued By
	For Planet Electro Labs  Authorised Signatory	
Testing Engineer: Mr. Ranjan Kumar Date: 08/04/2021	Quality Manager: Mr. Sandeep Singh Date: 08/04/2021	Proprietor: Mr. Abhinav Dewan Date: 08/04/2021

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 3 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Test Code	Description	Measurement/ testing	Total No. of tests	Total no. of applicable tests/ Req.	No. of tests/ Req. passed	Page No.
EL 2400	Marking	Marking Cl.6(3)	28	14	14	11
EL 2401	Construction	Construction Cl. 7(4)	127	15	15	13
EL 2402	Creepage Distances And Clearances	Creepage Distances And Clearances Cl. 8(11)	10	00	N/A	21
EL 2403	Provision For Earthing	Provision For Earthing Cl. 9(7)	19	00	N/A	22
EL 2404	Terminals	Terminals Cl. 10(14)	02	00	N/A	23
			02	00	N/A	24
EL 2405	External And Internal Wiring	External And Internal Wiring Cl. 11(5)	73	29	29	25
EL 2406	Protection Against Electric Shock	Protection Against Electric Shock Cl. 12(8)	18	00	N/A	29
EL 2407	Endurance Tests And Thermal Tests	Endurance Tests And Thermal Tests Cl. 13(12)	08	03	03	31
EL 2408	Resistance To Dust And Moisture	Resistance To Dust And Moisture Cl. 14 (9)	12	06	06	33
EL 2409	Insulation Resistance And Electric Strength	Insulation Resistance And Electric Strength Cl. 15 (10)	07	05	05	35
EL 2410	Resistance to Heat, Fire And Tracking	Resistance to Heat, Fire And Tracking Cl. 16(13)	04	02	02	37
EL 2411	Photometric Tests	Photometric Tests Cl. 17	04	04	04	38

Certificate: It is certified that the above tests were performed and found to be passing/ failing in the requirement tested.

For Planet Electro Labs

Authorised Signatory

(Tested by/ Approving Authority)

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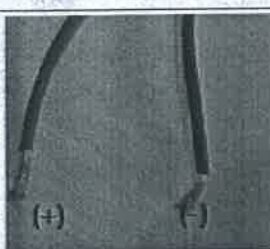
TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 4 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Copy of marking plate



TRADE MARK

STREET LIGHT  Model : ZESSL100 Input Voltage : 12.8V --- 7.81A 100W Ta:45°C IP66  MADE IN INDIA	
--	--

MARKING PLATE OF LEAD MODEL

TERMINATION MARKING

STREET LIGHT  Model : ZESSL28 Input Voltage : 12.8V --- 2.18A 28W Ta:45°C IP66  MADE IN INDIA	STREET LIGHT  Model : ZESSL26 Input Voltage : 12.8V --- 2.03A 26W Ta:45°C IP66  MADE IN INDIA
STREET LIGHT  Model : ZESSL24 Input Voltage : 12.8V --- 1.87A 24W Ta:45°C IP66  MADE IN INDIA	STREET LIGHT  Model : ZESSL22 Input Voltage : 12.8V --- 1.71A 22W Ta:45°C IP66  MADE IN INDIA

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 5 of 45
Dated:08/04/2021		ULR-TC527221000001169F

STREET LIGHT  Model : ZESSL90 Input Voltage : 12.8V $\approx$ 7.03A 90W Ta:45°C IP66  MADE IN INDIA	STREET LIGHT  Model : ZESSL80 Input Voltage : 12.8V $\approx$ 6.25A 80W Ta:45°C IP66  MADE IN INDIA
STREET LIGHT  Model : ZESSL70 Input Voltage : 12.8V $\approx$ 5.46A 70W Ta:45°C IP66  MADE IN INDIA	STREET LIGHT  Model : ZESSL60 Input Voltage : 12.8V $\approx$ 4.68A 60W Ta:45°C IP66  MADE IN INDIA
STREET LIGHT  Model : ZESSL50 Input Voltage : 12.8V $\approx$ 3.90A 50W Ta:45°C IP66  MADE IN INDIA	STREET LIGHT  Model : ZESSL45 Input Voltage : 12.8V $\approx$ 3.51A 45W Ta:45°C IP66  MADE IN INDIA
STREET LIGHT  Model : ZESSL40 Input Voltage : 12.8V $\approx$ 3.12A 40W Ta:45°C IP66  MADE IN INDIA	STREET LIGHT  Model : ZESSL36 Input Voltage : 12.8V $\approx$ 2.81A 36W Ta:45°C IP66  MADE IN INDIA

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 6 of 45
Dated:08/04/2021		ULR-TC527221000001169F

STREET LIGHT  Model : ZESSL30 Input Voltage : 12.8V $\leftrightarrow$ 2.34A 30W Ta:45°C IP66  MADE IN INDIA	STREET LIGHT  Model : ZESSL20 Input Voltage : 12.8V $\leftrightarrow$ 1.56A 20W Ta:45°C IP66  MADE IN INDIA
STREET LIGHT  Model : ZESSL18 Input Voltage : 12.8V $\leftrightarrow$ 1.40A 18W Ta:45°C IP66  MADE IN INDIA	STREET LIGHT  Model : ZESSL15 Input Voltage : 12.8V $\leftrightarrow$ 1.17A 15W Ta:45°C IP66  MADE IN INDIA
STREET LIGHT  Model : ZESSL12 Input Voltage : 12.8V $\leftrightarrow$ 0.93A 12W Ta:45°C IP66  MADE IN INDIA	STREET LIGHT  Model : ZESSL09 Input Voltage : 12.8V $\leftrightarrow$ 0.70A 9W Ta:45°C IP66  MADE IN INDIA
STREET LIGHT  Model : ZESSL06 Input Voltage : 12.8V $\leftrightarrow$ 0.46A 6W Ta:45°C IP66  MADE IN INDIA	
MARKING PLATE OF SERIES MODEL For Planet Electro Labs 	

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 7 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Table – List of Attachments

Attachment No.	Attachment Description	No. of pages in Attachment
Attachment-I	Photometric Measurement	Page 1 (page no. 44 of 45)
Attachment-II	Photo Document	Page 1 (page no. 45 of 45)

General Remarks:

- The test results presented in this report relate only to the object tested.
- This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

Possible test case verdicts:

- test case does not apply to the test object : N/A
- test object does meet the requirement : P (Pass)
- test object does not meet the requirement : F (Fail)

Testing

Date of receipt of test item..... : 16/03/2021

Date (s) of performance of tests : 16/03/2021 to 08/04/2021

Laboratory conditions.....:

Ambient Temperature.....: (25±3)°C

Ambient Humidity.....: (60±15)%RH

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 8 of 45
Dated:08/04/2021		ULR-TC527221000001169F

General product information:

Product Description

Model Tested:

Sr.No.	Product description	Model	Specifications
1.	STREET LIGHT(Led Luminaires For Road And Street Lighting)	ZESSSL100	12.8VDC,7.81A,100W,Ta:45°C,IP66

Representative Models:

Sr.No.	Product description	Model	Specifications
1.	STREET LIGHT (Led Luminaires For Road And Street Lighting)	ZESSSL28	12.8VDC,2.18A,28W , Ta:45°C,IP66
2.		ZESSSL26	12.8VDC,2.03A,26W,Ta:45°C,IP66
3.		ZESSSL24	12.8VDC,1.87A,24W,Ta:45°C,IP66
4.		ZESSSL22	12.8VDC,1.71A,22W,Ta:45°C,IP66
5.		ZESSSL90	12.8VDC,7.03A,90W,Ta:45°C,IP66
6.		ZESSSL80	12.8VDC,6.25A,80W,Ta:45°C,IP66
7.		ZESSSL70	12.8VDC,5.46A,70W,Ta:45°C,IP66
8.		ZESSSL60	12.8VDC,4.68A,60W,Ta:45°C,IP66
9.		ZESSSL50	12.8VDC,3.90A,50W,Ta:45°C,IP66
10.		ZESSSL45	12.8VDC,3.51A,45W,Ta:45°C,IP66
11.		ZESSSL40	12.8VDC,3.12A,40W ,Ta:45°C,IP66
12.		ZESSSL36	12.8VDC,2.81A,36W,Ta:45°C,IP66
13.		ZESSSL30	12.8VDC,2.34A,30W,Ta:45°C,IP66
14.		ZESSSL20	12.8VDC,1.56A,20W,Ta:45°C,IP66
15.		ZESSSL18	12.8VDC,1.40A,18W,Ta:45°C,IP66
16.		ZESSSL15	12.8VDC,1.17A,15W,Ta:45°C,IP66
17.		ZESSSL12	12.8VDC,0.93A,12W ,Ta:45°C,IP66
18.		ZESSSL09	12.8VDC,0.70A,9W , Ta:45°C,IP66
19.		ZESSSL06	12.8VDC,0.46A,6W,Ta:45°C,IP66

Supply connections: The equipment has been tested by giving input of 12.8VDC, Through DC Source available in the Lab.

Technical considerations: Same class of construction of luminaire

For Planet Electro Labs

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 9 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Same input rated voltage
Same material for enclosure.
Same ambient temperature rating
Same IP Category

Report Summary: All applicable tests according to the reference standards (s) have been considered

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 10 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
4 (1)	GENERAL TEST REQUIREMENTS		See below	P
4 (1.1)	Information for luminaire design considered.....:		Standard Yes ☒ No ☐	--
4 (1.3)	More sections applicable.....:		Yes ☐ No ☒	--

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
5 (2)	CLASSIFICATION OF LUMINAIRES		See below	P
5 (2.2)	Type of protection		Class- III	--
5 (2.3)	Degree of protection.....:		IP66	--
5 (2.4)	Luminaire suitable for mounting on normally flammable surfaces.....:		Yes ☐ No ☒	--
	Luminaire suitable for mounting on non-combustible materials.....:		Yes ☒ No ☐	--
5 (2.5)	Luminaire for normal use		Yes ☒ No ☐	--
	Luminaire for rough service		Yes ☐ No ☒	--

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 11 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
6 (3)	MARKING		See below	P
6 (3.2)	Mandatory markings*	EL 2400-00	Complies	P
	Position of the marking*	EL 2400-01	Marked on outer surface	P
	Format of symbols/text	EL 2400-02	Complies	P
6 (3.3)	Additional information*	EL 2400-03	See below	P
	Language of instructions*	EL 2400-04	English	P
6 (3.3.1)	Combination luminaires*	EL 2400-05	Not a combination luminaire	N/A
6 (3.3.2)	Nominal frequency in Hz*	EL 2400-06		N/A
6 (3.3.3)	Operating temperature*	EL 2400-07		N/A
6 (3.3.4)	Symbol or warning notice*	EL 2400-08	Marked	P
6 (3.3.5)	Wiring diagram*	EL 2400-09	Marked	P
6 (3.3.6)	Special conditions*	EL 2400-10		N/A
6 (3.3.7)	Metal halide lamp luminaire – warning*	EL 2400-11	Not a metal halide luminaire	N/A
6 (3.3.8)	Limitation for semi-luminaires*	EL 2400-12	Not a semi-luminaire	N/A
6 (3.3.9)	Power factor and supply current*	EL 2400-13	7.81A	P
6 (3.3.10)	Suitability for use indoors*	EL 2400-14		N/A
6 (3.3.11)	Luminaires with remote control*	EL 2400-15	Not a remote control luminaire	N/A
6 (3.3.12)	Clip-mounted luminaire – warning*	EL 2400-16	Not a clip mounted luminaire	N/A
6 (3.3.13)	Specifications of protective shields*	EL 2400-17		N/A
6 (3.3.14)	Symbol for nature of supply*	EL 2400-18	Marked	P
6 (3.3.15)	Rated current of socket outlet*	EL 2400-19	No socket outlet used	N/A
6 (3.3.16)	Rough service luminaire*	EL 2400-20	Not a rough service luminaire	N/A
6 (3.3.17)	Mounting instruction for type X, type Y and type Z attachments*	EL 2400-21	Type-Y attachment	P
6 (3.3.18)	Non-ordinary luminaires with PVC cable*	EL 2400-22	Ordinary luminaire	N/A

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 12 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
6 (3.4)	Test with water	EL 2400-23	Complies	P
	Test with hexane	EL 2400-24	Complies	P
	Legible after test	EL 2400-25	Marking is legible after test	P
	Label attached	EL 2400-26	Complies	P
6 (3.5.1)	Standard Mark is governed by the provisions of the Bureau of Indian Standards Act,1986*	EL 2400-27		N/A

*Total number of Requirements to be observed / inspected = 23
Total No. of Applicable Requirement = 09
No. of Requirements for which the sample passed = 09

Total number of tests to be conducted = 05
Total No. of Applicable Tests = 05
No. of tests for which the sample passed = 05

Certificate: It is certified that the above tests were performed and found to be passing/ failing in the requirement tested.

For Planet Electro Labs

Authorised Signatory

(Tested by/ Approving Authority)

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 13 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
7 (4)	CONSTRUCTION		See below	P
7 (4.2)	Components replaceable without difficulty*	EL 2401-00	No replaceable component used	N/A
7 (4.3)	Wire ways smooth and free from sharp edges*	EL 2401-01	Wire ways are smooth and free from sharp edges	P
7 (4.4)	Lampholders		No lamp holder used	N/A
7 (4.4.1)	Integral lampholder*	EL 2401-02		N/A
7 (4.4.2)	Wiring connection*	EL 2401-03		N/A
7 (4.4.3)	Lampholder for end-to-end mounting*	EL 2401-04		N/A
7 (4.4.4)	Positioning			N/A
	- pressure test (N)	EL 2401-05		N/A
	After test the lampholder comply with relevant standard sheets and show no damage	EL 2401-06		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation	EL 2401-07		N/A
	- bending test (N)	EL 2401-08		N/A
	After test the lampholder have not moved from its position and show no permanent deformation	EL 2401-09		N/A
7 (4.4.5)	Peak pulse voltage	EL 2401-10		N/A
7 (4.4.6)	Centre contact*	EL 2401-11		N/A
7 (4.4.7)	Parts in rough service luminaires resistant to tracking	EL 2401-12		N/A
7 (4.4.8)	Lamp connectors*	EL 2401-13		N/A
7 (4.5)	Starter holders		No starter holders used	N/A
	Starter holder in luminaires other than class II*	EL 2401-14		N/A
	Starter holder class II construction*	EL 2401-15		N/A

For Planet Electro Labs

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 14 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
	Starter can be touched with the standard test finger in class II luminaires*	EL 2401-16		N/A
7 (4.6)	Terminal blocks			N/A
	Tails	EL 2401-17		N/A
	Unsecured blocks	EL 2401-18		N/A
7 (4.7)	Terminals and supply connections		See below	P
7 (4.7.1)	Contact to metal parts*	EL 2401-19	Complies	P
7 (4.7.2)	Test 8 mm live conductor	EL 2401-20	Complies	P
	Test 8 mm earth conductor	EL 2401-21		N/A
7 (4.7.3)	Terminals for supply conductors	EL 2401-22	Complies	P
7 (4.7.4)	Terminals other than supply connection*	EL 2401-23		N/A
7 (4.7.5)	Heat-resistant wiring/sleeves*	EL 2401-24		N/A
7 (4.7.6)	Multi-pole plug*	EL 2401-25		N/A
7 (4.8)	Switches			N/A
	- adequate rating*	EL 2401-26		N/A
	- adequate fixing*	EL 2401-27		N/A
	- polarized supply*	EL 2401-28		N/A
7 (4.9)	Insulating lining and sleeves		No Insulating lining and sleeves used	N/A
7 (4.9.1)	Retainment*	EL 2401-29		N/A
	Method of fixing.....	EL 2401-30		N/A
7 (4.9.2)	Insulated linings and sleeves:			N/A
	Resistant to a temperature > 20 °C to the wire temperature or	EL 2401-31		N/A
	a) & c) Insulation resistance and electric strength	EL 2401-32		N/A
	b) Ageing test. Temperature (°C).....	EL 2401-33		N/A
7 (4.10)	Double or reinforced insulation		Class III luminaries	N/A

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 15 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation*	EL 2401-34		N/A
	Safe installation fixed luminaires*	EL 2401-35		N/A
	Capacitors and switches*	EL 2401-36		N/A
	Interference suppression capacitors according to ISQC 302400*	EL 2401-37		N/A
7 (4.10.2)	Assembly gaps:		No such assembly gaps	N/A
	- not coincidental*	EL 2401-38		N/A
	- no straight access with test probe	EL 2401-39		N/A
7 (4.10.3)	Retainment of insulation:			N/A
	- fixed*	EL 2401-40		N/A
	- unable to be replaced; luminaire inoperative*	EL 2401-41		N/A
	- sleeves retained in position*	EL 2401-42		N/A
	- tube of insulating material*	EL 2401-43		N/A
7 (4.11)	Electrical connections and current-carrying parts		See below	P
7 (4.11.1)	Contact pressure*	EL 2401-44	No contact pressure transmitted through insulated material	P
7 (4.11.2)	Screws:			N/A
	- self-tapping screws*	EL 2401-45		N/A
	- thread-cutting screws*	EL 2401-46		N/A
7 (4.11.3)	Screw locking:			N/A
	- spring washer*	EL 2401-47		N/A
	- rivets*	EL 2401-48		N/A
7 (4.11.4)	Material of current-carrying parts*	EL 2401-49	Copper	P
7 (4.11.5)	No contact to wood or mounting surface*	EL 2401-50	Complies	P
7 (4.11.6)	Electro-mechanical contact systems	EL 2401-51		N/A

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 16 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
7 (4.12)	Screws and connections (mechanical) and glands		See below	P
7 (4.12.1)	Screws not made of soft metal*	EL 2401-52	Complies	P
	Screws of insulating material*	EL 2401-53		N/A
	Torque test: torque (Nm); part.....	EL 2401-54	0.80Nm applied(Withstood) on Enclosure metal Screws	P
	Torque test: torque (Nm); part.....	EL 2401-55	8.00Nm applied on Mounting screws	P
	Torque test: torque (Nm); part.....	EL 2401-56		N/A
7 (4.12.2)	Screws with diameter < 3 mm screwed into metal*	EL 2401-57		N/A
7 (4.12.4)	Locked connections:		No locked connection	N/A
	- fixed arms; torque (Nm).....	EL 2401-58		N/A
	- lampholder; torque (Nm).....	EL 2401-59		N/A
	- push-button switches; torque 0,8 Nm....	EL 2401-60		N/A
7 (4.12.5)	Screwed glands; force (Nm).....	EL 2401-61		N/A
7 (4.13)	Mechanical strength		See below	P
7 (4.13.1)	Impact tests:		See below	P
	-fragile parts; energy (Nm).....	EL 2401-62		N/A
	-other parts; energy (Nm).....	EL 2401-63	0.7Nm applied, No damage observed	P
	1) live parts	EL 2401-64		P
	2) linings	EL 2401-65	No such linings	N/A
	3) protection	EL 2401-66	Adequate protection provided	P
	4) covers	EL 2401-67	Complies	P
7 (4.13.3)	Straight test finger	EL 2401-68	30N force applied, No damage, No hazards	P
7 (4.13.4)	Rough service luminaires		Not a rough service luminaires	N/A
	- IP54 or higher	EL 2401-69		N/A
	a) fixed	EL 2401-70		N/A

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 17 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
	b) hand-held	EL 2401-71		N/A
	c) delivered with a stand	EL 2401-72		N/A
	d) for temporary installations and suitable for mounting on a stand	EL 2401-73		N/A
7 (4.13.6)	Tumbling barrel	EL 2401-74		N/A
7 (4.14)	Suspensions, fixings and means of adjusting			N/A
7 (4.14.1)	Mechanical load:			N/A
	A) four times the weight	EL 2401-75		N/A
	B) torque 2,5 Nm	EL 2401-76		N/A
	C) bracket arm; bending moment (Nm).....:	EL 2401-77		N/A
	D) load track-mounted luminaires	EL 2401-78		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)	EL 2401-79		N/A
	Metal rod. diameter (mm)	EL 2401-80		N/A
7 (4.14.2)	Load to flexible cables			N/A
	Mass (kg)	EL 2401-81		N/A
	Stress in conductors (N/mm ²)	EL 2401-82		N/A
	Mass (kg) of semi-luminaire	EL 2401-83		N/A
	Bending moment (Nm) of semi-luminaire	EL 2401-84		N/A
7 (4.14.3)	Adjusting devices:			N/A
	- flexing test; number of cycles.....:	EL 2401-85		N/A
	-strands broken.....:	EL 2401-86		N/A
	- electric strength test afterwards	EL 2401-87		N/A
7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors*	EL 2401-88		N/A
7 (4.14.5)	Guide pulleys*	EL 2401-89		N/A

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 18 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
7 (4.14.6)	Strain on socket-outlets*	EL 2401-90		N/A
7 (4.15)	Flammable materials			N/A
	-glow-wire test 650°C.....	EL 2401-91		N/A
	- spacing ≥ 30 mm	EL 2401-92		N/A
	- screen withstanding test of 13.3.1	EL 2401-93		N/A
	- screen dimensions	EL 2401-94		N/A
	- no fiercely burning material	EL 2401-95		N/A
	- thermal protection	EL 2401-96		N/A
	- electronic circuits exempted	EL 2401-97		N/A
	Luminaires made of thermoplastic material with lamp control gear			N/A
	a) construction*	EL 2401-98		N/A
	b) temperature sensing control	EL 2401-99		N/A
	c) surface temperature	EL 2401-100		N/A
7 (4.16)	Luminaires marked with  symbol		No such symbol marked	N/A
	No lamp control gear.....	EL 2401-101		N/A
	Lamp control gear spacing:			N/A
	- spacing 10 mm	EL 2401-102		N/A
	- spacing 35 mm	EL 2401-103		N/A
7 (4.16.2)	Thermal protection:			N/A
	- in lamp control gear	EL 2401-104		N/A
	- external	EL 2401-105		N/A
	- fixed position	EL 2401-106		N/A
	- temperature marked lamp control gear	EL 2401-107		N/A
7 (4.16.3)	Design to satisfy the test of 12.6	EL 2401-108		N/A
7 (4.17)	Drain holes		No drain holes	N/A
	Clearance at least 5 mm	EL2401-109		N/A

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 19 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
7 (4.18)	Resistance to corrosion			N/A
7 (4.18.1)	- rust-resistance	EL 2401-110		N/A
7 (4.18.2)	- season cracking in copper	EL 2401-111		N/A
7 (4.18.3)	- corrosion of aluminium	EL 2401-112		N/A
7 (4.19)	Igniters compatible with ballast*	EL 2401-113	No igniters used	N/A
7 (4.20)	Rough service vibration	EL 2401-114	Not a rough service luminaires	N/A
7 (4.21)	Protective shield			N/A
7 (4.21.1)	Shield fitted if tungsten halogen lamps	EL 2401-115		N/A
7 (4.21.2)	Particles from a shattering lamp not impair safety	EL 2401-116		N/A
7 (4.21.3)	No direct path	EL 2401-117		N/A
7 (4.21.4)	Impact test on shield	EL 2401-118		N/A
	Glow-wire test on lamp compartment.....	EL 2401-119		N/A
7 (4.22)	Attachments to lamps not cause overheating or damage*	EL 2401-120		N/A
7 (4.23)	Semi-luminaires comply Class II*	EL 2401-121		N/A
7 (4.24)	UV Radiation			N/A
	UV radiation for metal halide lamps (Annex P)	EL 2401-122		N/A
7 (4.25)	Mechanical hazard		See below	P
	No sharp point or edges*	EL 2401-123	Complies	P
7 (4.26)	Short-circuit protection			N/A
7 (4.26.1)	Adequate means of uninsulated accessible SELV parts	EL 2401-124		N/A
7 (4.26.2)	Short-circuit test	EL 2401-125		N/A
7 (4.26.3)	Test chain according to Fig. 29	EL 2401-126		N/A
7.1	IP rating for column integrated luminaire			N/A
7.2	Luminare for suspension on spain wires			N/A
7.3	Static Load test		Complies	P
7.4	For Adjustable lampholder and optical parts			N/A
7.5	Glass shatter test			N/A

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 20 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
7.6	The connection compartment of column integrated luminaires			N/A
7.7	Load calculation			N/A
7.8	Impact energy test of 5 Nm			N/A
7.9	Cable entry for column integrated luminaires			N/A

*Total number of Requirements to be observed / inspected = 45
Total No. of Applicable Requirement = 09
No. of Requirements for which the sample passed = 09

Total number of tests to be conducted = 82
Total No. of Applicable Tests = 06
No. of tests for which the sample passed = 06

Certificate: It is certified that the above tests were performed and found to be passing/ failing in the requirement tested.

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 21 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
8 (11)	CREEPAGE DISTANCES AND CLEARANCES		See below	N/A
8 (11.2)	Working voltage (V).....:	EL 2402-00	Class-III DC Luminaires	N/A
	Voltage form.....:	EL 2402-01	See above	N/A
	PTI.....:	EL 2402-02	See above	N/A
	Impulse withstand category (Normal category II) (Category III Annex U)	EL 2402-03	See above	N/A
	Rated pulse voltage (kV).....:	EL 2402-04	See above	N/A
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm).....:	EL 2402-05	See above	N/A
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm).....:	EL 2402-06	See above	N/A
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm).....:	EL 2402-07	See above	N/A
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm).....:	EL 2402-08	See above	N/A
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm).....:	EL 2402-09	See above	N/A

*Total number of Requirements to be observed / inspected = 00
Total No. of Applicable Requirement = 00
No. of Requirements for which the sample passed = N/A

Total number of tests to be conducted = 10
Total No. of Applicable Tests = 00
No. of tests for which the sample passed = N/A

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 22 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
9 (7)	PROVISION FOR EARTHING		See below	N/A
9 (7.2.1 + 7.2.3)	Accessible metal parts	EL 2403-00	Class-III DC Luminaires	N/A
	Metal parts in contact with supporting surface*	EL 2403-01	See above	N/A
	Resistance < 0,5 Ω	EL 2403-02	See above	N/A
	Self-tapping screws used*	EL 2403-03	See above	N/A
	Thread-forming screws*	EL 2403-04	See above	N/A
	Thread-forming screw used in a grove*	EL 2403-05	See above	N/A
	Earth makes contact first*	EL 2403-06	See above	N/A
9 (7.2.2+7.2.3)	Earth continuity in joints, etc. *	EL 2403-07	See above	N/A
9 (7.2.4)	Compliance with 4.7.3	EL 2403-08	See above	N/A
	Connections adequately locked	EL 2403-09	See above	N/A
9 (7.2.5)	Earth terminal integral part of connector socket*	EL 2403-10	See above	N/A
9 (7.2.6)	Earth terminal adjacent to mains terminals*	EL 2403-11	See above	N/A
9 (7.2.7)	Electrolytic corrosion of the earth terminal*	EL 2403-12	See above	N/A
9 (7.2.8)	Material of earth terminal*	EL 2403-13	See above	N/A
	Contact surface bare metal*	EL 2403-14	See above	N/A
9 (7.2.10)	Class II luminaire for looping-in*	EL 2403-15	See above	N/A
	Double or reinforced insulation to functional earth*	EL 2403-16	See above	N/A
9 (7.2.11)	Earthing core coloured green-yellow*	EL 2403-17	See above	N/A
	Length of earth conductor*	EL 2403-18	See above	N/A

*Total number of Requirements to be observed / inspected = 15
Total No. of Applicable Requirement = 00
No. of Requirements for which the sample passed = N/A

Total number of tests to be conducted = 04
Total No. of Applicable Tests = 00
No. of tests for which the sample passed = N/A

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 23 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
10 (14)	SCREW TERMINALS			N/A
	Separately approved; component list.....	EL 2404-00		N/A
	Part of the luminaire	EL 2404-01		N/A

*Total number of Requirements to be observed / inspected = 00
Total No. of Applicable Requirement = 00
No. of Requirements for which the sample passed = N/A

Total number of tests to be conducted = 02
Total No. of Applicable Tests = 00
No. of tests for which the sample passed = N/A

Certificate: It is certified that the above tests were performed and found to be passing/ failing in the requirement tested.

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 24 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
10 (15)	SCREWLESS TERMINALS ANDELECTRICAL CONNECTIONS			N/A
	Separately approved; component list.....	EL 2404-02		N/A
	Part of the luminaire	EL 2404-03		N/A

*Total number of Requirements to be observed / inspected = 00
Total No. of Applicable Requirement = 00
No. of Requirements for which the sample passed = N/A

Total number of tests to be conducted = 02
Total No. of Applicable Tests = 00
No. of tests for which the sample passed = N/A

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 25 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
11 (5)	EXTERNAL AND INTERNAL WIRING		Complies	P
11 (5.2)	Supply connection and external wiring		See below	P
11 (5.2.1)	Means of connection*	EL 2405-00	Non-Detachable flexible cord used	P
11 (5.2.2)	Type of cable*	EL 2405-01	Flexible Cable used	P
	Nominal cross-sectional area (mm ²)*	EL 2405-02	2x0.75mm ²	P
	Cables equal to IS 694 and IS 9968 (Part 1) *	EL 2405-03	Complies with IS 694:2010	P
	Luminaire provided with socket-outlet*	EL 2405-04	No socket outlet used	N/A
11 (5.2.3)	Type of attachment, X, Y or Z*	EL 2405-05	Type-Y attachment	P
11 (5.2.5)	Type Z not connected to screws	EL 2405-06		N/A
11 (5.2.6)	Cable entries:		See below	P
	- suitable for introduction	EL 2405-07	Complies	P
	- adequate degree of protection	EL 2405-08	Adequate degree of protection provided	P
11 (5.2.7)	Cable entries through rigid material have rounded edges*	EL 2405-09	Complies	P
11 (5.2.8)	Insulating bushing		No insulating bushing	N/A
	- suitably fixed*	EL 2405-10		N/A
	- material in bushings*	EL 2405-11		N/A
	- material not likely to deteriorate*	EL 2405-12		N/A
	- tubes or guards made of insulating material*	EL 2405-13		N/A
11 (5.2.9)	Locking of screwed bushings*	EL 2405-14		N/A
11 (5.2.10)	Cord anchorage:		Complies	P
	- covering protected from abrasion	EL 2405-15	Complies	P
	- clear how to be effective	EL 2405-16	Complies	P
	- no mechanical or thermal stress	EL 2405-17	Complies	P

For Planet Electro Labs

Authorised Signatory

TRF No. BIS_LUM/LRSL_IS10322-5-3_V1.0

Terms & Conditions: 1) This report will not be valid for judicial purpose. 2) Total liability of our laboratory is limited to invoiced amount.
3) Test reports are valid only for the sample tested in our laboratory. 4) Samples tested are Non-Returnable until specified at time of sample submission.

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 26 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
	- no tying of cables into knots etc.	EL 2405-18	Complies	P
	- insulating material or lining	EL 2405-19	Complies	P
11 (5.2.10.1)	Cord anchorage for type X attachment:		Type-Y attachment	N/A
	a) at least one part fixed	EL 2405-20		N/A
	b) types of cable	EL 2405-21		N/A
	c) no damaging of the cable	EL 2405-22		N/A
	d) whole cable can be mounted	EL 2405-23		N/A
	e) no touching of clamping screws	EL 2405-24		N/A
	f) metal screw not directly on cable	EL 2405-25		N/A
	g) replacement without special tool	EL 2405-26		N/A
	Glands not used as anchorage	EL 2405-27		N/A
	Labyrinth type anchorages	EL 2405-28		N/A
11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	EL 2405-29	Type-Y attachment (Complies)	P
11(5.2.10.3)	Tests:		See below	P
	- impossible to push cable; unsafe	EL 2405-30	Not possible to push cable inside	P
	- pull test: 25 times; pull (N)	EL 2405-31	Tested at 60N	P
	- torque test: torque (Nm)	EL 2405-32	0.25Nm applied	P
	- displacement ≤ 2 mm	EL 2405-33	Displacement: 1.02mm	P
	- no movement of conductors	EL 2405-34	Complies	P
	- no damage of cable or cord	EL 2405-35	Complies	P
11 (5.2.11)	External wiring passing into luminaire	EL 2405-36	Complies	P
11 (5.2.12)	Looping-in terminals*	EL 2405-37		N/A
11 (5.2.13)	Wire ends not tinned*	EL 2405-38	Complies	P
	Wire ends tinned: no cold flow*	EL 2405-39		N/A
11 (5.2.14)	Mains plug same protection*	EL 2405-40	No main plug used	N/A

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 27 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
	Class III luminaire plug*	EL 2405-41		N/A
11 (5.2.15)	Colour coded red and black*	EL 2405-42		N/A
11 (5.2.16)	Appliance inlets *	EL 2405-43		N/A
	Appliance couplers *	EL 2405-44		N/A
11 (5.3)	Internal wiring		See below	P
11 (5.3.1)	Internal wiring of suitable size and type*	EL 2405-45	Internal wiring of suitable sizes used	P
	Through wiring			N/A
	- not delivered/ mounting instruction	EL 2405-46		N/A
	- factory assembled	EL 2405-47		N/A
	- socket outlet loaded (A)	EL 2405-48		N/A
	- temperatures	EL 2405-49		N/A
	Green-yellow for earth only	EL 2405-50		N/A
11 (5.3.1.1)	Internal wiring connected directly to fixed wiring*			N/A
	Cross-sectional area (mm ²).....	EL 2405-51	Internal wiring not directly connected fixed wiring	N/A
	Insulation thickness	EL 2405-52		N/A
	Extra insulation added where necessary	EL 2405-53		N/A
11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device*			N/A
	Adequate cross-sectional area and insulation thickness	EL 2405-54	No current-limiting device used	N/A
11 (5.3.1.3)	Double or reinforced insulation for class II*	EL 2405-55	Class III luminaire	N/A
11 (5.3.1.4)	Conductors without insulation*	EL 2405-56		N/A
11 (5.3.1.5)	SELV current-carrying parts*	EL 2405-57	Complies	P
11 (5.3.1.6)	Insulation thickness other than PVC or rubber*	EL 2405-58		N/A

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 28 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
11 (5.3.2)	Sharp edges etc.*	EL 2405-59	No sharp edges	P
	No moving parts of switches etc.*	EL 2405-60		N/A
	Joints, raising/lowering devices*	EL 2405-61		N/A
	Telescopic tubes etc.*	EL 2405-62		N/A
	No twisting over 360°	EL 2405-63	Complies	P
11 (5.3.3)	Insulating bushings:		No such bushing used	N/A
	- suitable fixed*	EL 2405-64		N/A
	- material in bushings*	EL 2405-65		N/A
	- material not likely to deteriorate*	EL 2405-66		N/A
	- cables with protective sheath*	EL 2405-67		N/A
11 (5.3.4)	Joints and junctions effectively insulated*	EL 2405-68		N/A
11 (5.3.5)	Strain on internal wiring*	EL 2405-69	No strain on internal wiring	P
11 (5.3.6)	Wire carriers*	EL 2405-70		N/A
11 (5.3.7)	Wire ends not tinned*	EL 2405-71	Complies	P
	Wire ends tinned: no cold flow*	EL 2405-72		N/A
11.1	Cord anchorage test for street light ,Pull of 60N ,Torque of 0.25Nm		Complies	P

*Total number of Requirements to be observed / inspected = 38
Total No. of Applicable Requirement = 12
No. of Requirements for which the sample passed = 12

Total number of tests to be conducted = 35
Total No. of Applicable Tests = 17
No. of tests for which the sample passed = 17

Certificate: It is certified that the above tests were performed and found to be passing/ failing in the requirement tested.

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 29 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
12 (8)	PROTECTION AGAINST ELECTRIC SHOCK		See below	N/A
12 (8.2.1)	Live parts not accessible*	EL 2406-00	Class III DC Luminaires	N/A
	Protection shall be maintained after removal of all parts*	EL 2406-01	See above	N/A
	Supply conductors held by screw less terminals with push-button*	EL 2406-02	See above	N/A
	Tubular filament lamps having a cap/base at each end*	EL 2406-03	See above	N/A
	Insulating properties of lacquer, enamel, paper and similar materials*	EL 2406-04	See above	N/A
	Luminaires with ignitors	EL 2406-05	See above	N/A
12(8.2.2)	Portable luminaire adjusted in most unfavourable position*	EL 2406-06	See above	N/A
12 (8.2.3.a)	Class II luminaire:		Class III DC Luminaires	N/A
	- basic insulated metal parts not accessible during starter or lamp replacement*	EL 2406-07	See above	N/A
	- glass protective shields not used as supplementary insulation*	EL 2406-08	See above	N/A
12 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed*	EL 2406-09	See above	N/A
12 (8.2.4)	Portable luminaire have protection independent of supporting surface*	EL 2406-10	See above	N/A
12 (8.2.5)	Compliance with the standard test finger or relevant probe	EL 2406-11	See above	N/A
12 (8.2.6)	Covers reliably secured*	EL 2406-12	See above	N/A
12 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu F$	EL 2406-13	See above	N/A
	Portable plug connected luminaire with capacitor	EL 2406-14	See above	N/A
	Other plug connected luminaire with capacitor	EL 2406-15	See above	N/A
	Discharge device on or within capacitor	EL 2406-16	See above	N/A
	Discharge device mounted separately	EL 2406-17	See above	N/A

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 30 of 45
Dated:08/04/2021		ULR-TC527221000001169F

*Total number of Requirements to be observed / inspected = 11
Total No. of Applicable Requirement = 00
No. of Requirements for which the sample passed = N/A

Total number of tests to be conducted = 07
Total No. of Applicable Tests = 00
No. of tests for which the sample passed = N/A

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 31 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
13 (12)	ENDURANCE TEST AND THERMAL TEST		See below	P
13 (12.3)	Endurance test:	EL 2407-00	Complies	P
	- mounting-position.....		Normal mounting position	P
	- test temperature (°C)		55°C	P
	- total duration (h)		240 hours	P
	- supply voltage: Un factor; calculated voltage (V)		14.08VDC	P
	- lamp used.....		LED module	P
13 (12.3.2)	After endurance test:	EL 2407-01	See below	P
	- no part unserviceable*		Complies	P
	- plastic ES lampholder not deformed*			N/A
	- luminaire not unsafe*		Complies	P
	- no damage to track system*			N/A
	- marking legible*		Complies	P
	- no cracks, deformation etc.*		Complies	P
13 (12.4)	Thermal test (normal operation)	EL 2407-02	(see Annex 2)	P
13 (12.5)	Thermal test (abnormal operation)	EL 2407-03		N/A
13 (12.6)	Thermal test (failed lamp control gear condition):			N/A
13 (12.6.1)	Without Thermal Cut-Outs	EL 2407-04		N/A
	- case of abnormal conditions			N/A
	- electronic lamp control gear			N/A
	- measured winding temperature (°C): at 1,1 Un			N/A
	- measured mounting surface temperature (°C) at 1,1 Un.....			N/A
	- calculated mounting surface temperature (°C)			N/A
	- track-mounted luminaires			N/A
13 (12.6.2)	Temperature sensing control	EL 2407-05		N/A
	- case of abnormal conditions			N/A
	- thermal link			N/A

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 32 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
	- manual reset cut-out			N/A
	- auto reset cut-out			N/A
	- measured mounting surface temperature (°C)			N/A
	- track-mounted luminaires			N/A
13 (12.7)	Thermal test (fault conditions in lamp control gear or electronic devices in plastic luminaires):			N/A
13 (12.7.1)	Luminaire without temperature sensing control	EL 2407-06		N/A
	- case of abnormal conditions			N/A
	- measured winding temperature (°C): at 1,1 Un			N/A
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un			N/A
	- calculated temperature of fixing point/exposed part (°C)			N/A
13 (12.7.2)	Luminaire with temperature sensing control	EL 2407-07		N/A
	- thermal link.....		Yes [] No [✓]	N/A
	- manual reset cut-out		Yes [] No [✓]	N/A
	- auto reset cut-out		Yes [] No [✓]	N/A
	- case of abnormal conditions			N/A
	- highest measured temperature of fixing point/ exposed part (°C):.....			N/A

*Total number of Requirements to be observed / inspected = 00
Total No. of Applicable Requirement = 00
No. of Requirements for which the sample passed = N/A

Total number of tests to be conducted = 08
Total No. of Applicable Tests = 03
No. of tests for which the sample passed = 03

Certificate: It is certified that the above tests were performed and found to be passing/ failing in the requirement tested.

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 33 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
14 (9)	RESISTANCE TO DUST AND MOISTURE			P
14 (-)	If IP > IP 20 the order of tests as specified in clause 9.2	EL 2408-00	IP66	P
14 (9.2)	Tests for ingress of dust, solid objects and moisture:	EL 2408-01	See below	P
	- classification according to IP		IP66	P
	- mounting position during test.....		Normal operating position	P
	- fixing screws tightened; torque (Nm)		0.80Nm applied on enclosure fixing screws (Withstood)	P
	- tests according to clauses.....		Cl. 9.2.2 & 9.2.7	P
	- electric strength test afterwards		Withstood	P
	a) no deposit in dust-proof luminaire	EL 2408-02		N/A
	b) no talcum in dust-tight luminaire	EL 2408-03	Complies	P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard	EL 2408-04	Complies	P
	d) i) For luminaires without drain holes – no water entry	EL 2408-05	Complies	P
	d) ii) For luminaires with drain holes – no hazardous water entry	EL 2408-06		N/A
	e) no water in watertight luminaire	EL 2408-07		N/A
	f) no contact with live parts (IP 2X)	EL 2408-08		N/A
	g) no entry into enclosure (IP 3X and IP4X)	EL 2408-09		N/A
	h) no contact with live parts (IP3X and IP4X)	EL 2408-10		N/A
14 (9.3)	Humidity test 48 h	EL 2408-11	Humidity test carried out at 25°C and 92% RH for 48 hours	P

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 34 of 45
Dated:08/04/2021		ULR-TC527221000001169F

*Total number of Requirements to be observed / inspected = 00
Total No. of Applicable Requirement = 00
No. of Requirements for which the sample passed = N/A

Total number of tests to be conducted = 12
Total No. of Applicable Tests = 06
No. of tests for which the sample passed = 06

Certificate: It is certified that the above tests were performed and found to be passing/ failing in the requirement tested.

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 35 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No	Test / Requirement name	Code	Test result/ observation	Verdict
15 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH			P
15 (10.2.1)	Insulation resistance test	EL 2409-00	See below	P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		Metal foil wrapped on cable	P
	Insulation resistance (MΩ)		>1MΩ	P
	SELV	EL 2409-01	See below	P
	- between current-carrying parts of different polarity		>1MΩ	P
	- between current-carrying parts and mounting surface			N/A
	- between current-carrying parts and metal parts of the luminaire			N/A
	Other than SELV	EL 2409-02	Class III DC Luminaires	N/A
	- between live parts of different polarity		See above	N/A
	- between live parts and mounting surface		See above	N/A
	- between live parts and metal parts		See above	N/A
	- between live parts of different polarity through action of a switch		See above	N/A
15 (10.2.2)	Electric strength test	EL 2409-03	See below	P
	Dummy lamp		No dummy lamp	N/A
	Luminaires with ignitors after 24 h test			N/A
	Luminaires with manual ignitors			N/A
	Test voltage (V)		See below	P
	SELV	EL 2409-04	See below	P
	- between current-carrying parts of different polarity		Test conducted at 500V, No flashover or breakdown occurred (Withstood)	P
	- between current-carrying parts and mounting surface			N/A
	- between current-carrying parts and metal parts of the luminaire			N/A
	Other than SELV	EL 2409-05	Class III DC Luminaires	N/A
	- between live parts of different polarity			N/A
	- between live parts and mounting surface			N/A
	- between live parts and metal parts			N/A
	- between live parts of different polarity through action of a switch			N/A

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 36 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No	Test / Requirement name	Code	Test result/ observation	Verdict
15 (10.3)	Touch current or protective conductor current (mA)	EL 2409-06	Class III DC Luminaires	N/A

*Total number of Requirements to be observed / inspected = 00
 Total No. of Applicable Requirement = 00
 No. of Requirements for which the sample passed = N/A
 Total number of tests to be conducted = 07
 Total No. of Applicable Tests = 05
 No. of tests for which the sample passed = 05

Certificate: It is certified that the above tests were performed and found to be passing/ failing in the requirement tested.

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 37 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
16 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		See below	P
16 (13.2.1)	Ball-pressure test	EL 2410-00	No such material used	N/A
	- part tested; temperature (°C)			N/A
	- part tested; temperature (°C)			N/A
	- part tested; temperature (°C)			N/A
	- part tested; temperature (°C)			N/A
16 (13.3.1)	Needle-flame test (10 s)	EL 2410-01	Certified material used (See Annex-1)	P
	- part tested		See above	P
	- part tested; temperature (°C)			P
16 (13.3.2)	Glow-wire test (650°C)	EL 2410-02	No such material used	N/A
	- part tested			N/A
	- part tested; temperature (°C)			N/A
16 (13.4.1)	Tracking test	EL 2410-03	Certified material used (See Annex-1)	P
	- part tested		See above	P

*Total number of Requirements to be observed / inspected = 00
Total No. of Applicable Requirement = 00
No. of Requirements for which the sample passed = N/A

Total number of tests to be conducted = 04
Total No. of Applicable Tests = 02
No. of tests for which the sample passed = 02

Certificate: It is certified that the above tests were performed and found to be passing/ failing in the requirement tested.

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 38 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Clause No.	Test / Requirement name	Code	Test result/ observation	Verdict
17	PHOTOMETRIC TESTS			P
	The photometric performance	---	See Below	P
	The general guidance regarding the photometric data to be provided by the manufacturers of luminaires is given in Annex 17	---	Provided by manufacture	P
17.2	Light Controlling Components	---	Complies	P
17.3	Photometric tests	---	Refer Attachment II	P

*Total number of Requirements to be observed / inspected = 00
Total No. of Applicable Requirement = 00
No. of Requirements for which the sample passed = N/A

Total number of tests to be conducted = 04
Total No. of Applicable Tests = 04
No. of tests for which the sample passed = 04

Certificate: It is certified that the above tests were performed and found to be passing/ failing in the requirement tested.

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 39 of 45
Dated:08/04/2021		ULR-TC527221000001169F

ANNEX 1	TABLE: Critical components information					P
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹
LED PCB	A	GUANGDONG CH LAMINATES TECHNOLOGY CORP LTD	CH-1.0	130 °C, V-0	UL 796 (No equivalent IEC standard)	UL E494951
Supply Wire	A	SUN KABEL INDUSTRIES	PVC	2x0.75mm ² , 1100V	IS 694:2010	CM/L- 7800020712
LED Package	A	Shenzhen Diranda Optoelectronics Co.,Ltd	SMD3030	DC6.5V	EN 62471:2008 (Equivalent to IEC 62471:2006)	Report No. AGC0756117 0202SS01
Alternate	D	Philips Lumileds Lighting Co LLC	LUXEON_30 30_2DI LED	6.836 V,0.240 A, 1.641 W	IEC 62471 : 2006	Report No. JM10462

Supplementary information:

¹ Provided evidence ensures the agreed level of compliance. See OD-CB2039.

The codes above have the following meaning:

- A - The component is replaceable with another one, also certified, with equivalent characteristics
- B - The component is replaceable if authorised by the test house
- C - Integrated component tested together with the appliance
- D - Alternative component

For Planet Electro Labs

Authorised Signatory

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TEST CERTIFICATE

Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 40 of 45
Dated:08/04/2021		ULR-TC527221000001169F

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
	Type reference	ZESSSL100	--
	Lamp used.....	LED Module	--
	Lamp control gear used	No control gear used	--
	Mounting position of luminaire	Normal operating position	--
	Supply wattage (W).....	100.02W	--
	Supply current (A)	7.81A	--
	Calculated power factor		--
	Table: measured temperatures corrected for ta =	45°C	--
	- abnormal operating mode		--
	- test 1: rated voltage	12.8VDC	--
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage	13.56VDC	--
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage		--
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage		-

Temperature measurements, (°C)

Part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	Limit	test 4	Limit
Supply Wire	09	10	-	90	-	-
Metal Enclosure	09	11	-	70	-	-

Supplementary information:

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 41 of 45
Dated:08/04/2021		ULR-TC527221000001169F

ANNEX 3	Screw terminals (part of the luminaire)	N/A
(14)	SCREW TERMINALS	N/A
(14.2)	Type of terminal	N/A
	Rated current (A)	N/A
(14.3.2.1)	One or more conductors	N/A
(14.3.2.2)	Special preparation	N/A
(14.3.2.3)	Terminal size	N/A
	Cross-sectional area (mm ²)	N/A
(14.3.3)	Conductor space (mm)	N/A
(14.4)	Mechanical tests	N/A
(14.4.1)	Minimum distance	N/A
(14.4.2)	Cannot slip out	N/A
(14.4.3)	Special preparation	N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread).....	N/A
	External wiring	N/A
	No soft metal	N/A
(14.4.5)	Corrosion88	N/A
(14.4.6)	Nominal diameter of thread (mm).....	N/A
	Torque (Nm).....	N/A
(14.4.7)	Between metal surfaces	N/A
	Lug terminal	N/A
	Mantle terminal	N/A
	Pull test; pull (N).....	N/A
(14.4.8)	Without undue damage	N/A

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 42 of 45
Dated:08/04/2021		ULR-TC527221000001169F

ANNEX 4	Screwless terminals (part of the luminaire)		N/A
(15)	SCREWLESS TERMINALS	No screw less terminals used	N/A
(15.2)	Type of terminal		N/A
	Rated current (A).....		N/A
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5.1)	Terminals internal wiring		N/A
(15.5.1.1)	Pull test spring-type terminals (4 N, 4 samples).....		N/A
(15.5.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.2)	Permanent connections: pull-off test (20 N)		N/A
(15.6)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples).....		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles		N/A
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples)		N/A

For Planet Electro Labs

Authorised Signatory

TRF No. BIS LUM/LRSL IS10322-5-3 V1.0

Terms & Conditions: 1) This report will not be valid for judicial purpose. 2) Total liability of our laboratory is limited to invoiced amount.
3) Test reports are valid only for the sample tested in our laboratory. 4) Samples tested are Non-Returnable until specified at time of sample submission.

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Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 43 of 45
Dated:08/04/2021		ULR-TC527221000001169F

	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)									N/A
(15.7)	Terminals external wiring									N/A
	Terminal size and rating									N/A
(15.8.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)									N/A
	Pull test pin or tab terminals (4 samples); pull (N)									N/A
(15.9)	Contact resistance test									N/A
	Voltage drop (mV) after 1 h									N/A
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	---	---	---	---	---	---	---	---	---	---
	Voltage drop of two inseparable joints									N/A
	Voltage drop after 10th alt. 25th cycle									N/A
	Max. allowed voltage drop (mV)									---
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	---	---	---	---	---	---	---	---	---	---
	Voltage drop after 50th alt. 100th cycle									N/A
	Max. allowed voltage drop (mV)									---
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	---	---	---	---	---	---	---	---	---	---
	Continued ageing: voltage drop after 10th alt. 25th cycle									N/A
	Max. allowed voltage drop (mV)									---
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	---	---	---	---	---	---	---	---	---	---
	Continued ageing: voltage drop after 50th alt. 100th cycle									N/A
	Max. allowed voltage drop (mV)									---
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	---	---	---	---	---	---	---	---	---	---

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TEST CERTIFICATE

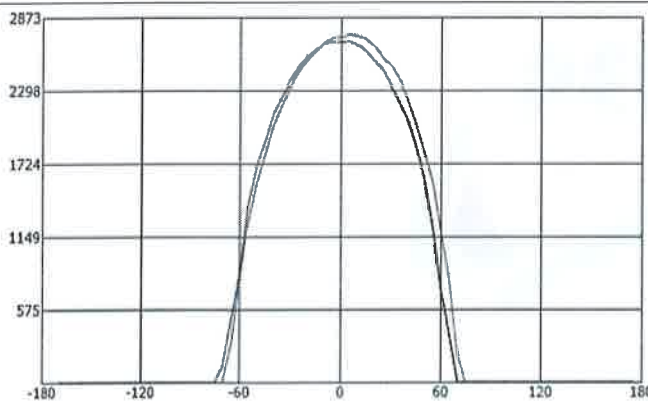
Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 44 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Photometric Measurement

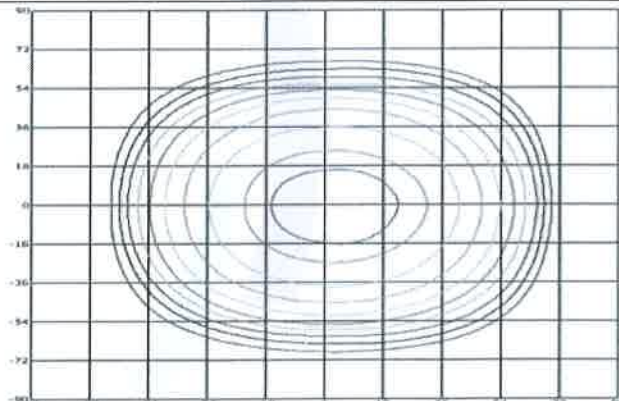
Attachment-I

Parameters	Measured value
Power	100.04W
Luminous Flux	11021.40lm
Max Intensity Value	2729.32cd
Beam Angle Value	146.35°
Efficacy	110.17lm/W
LED Module temperature	25°C

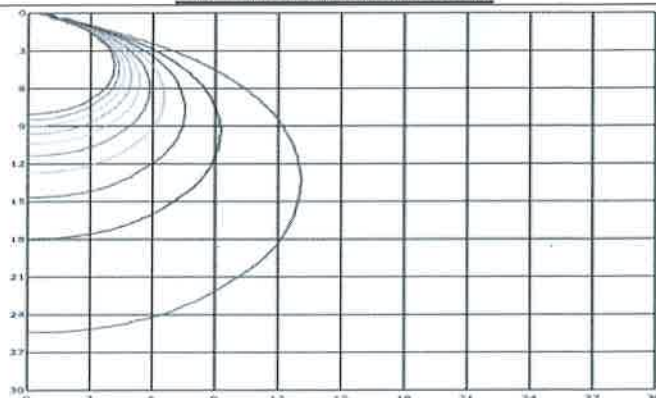
LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



ISOCANDELA DIAGRAM (RECTANGULAR)



SPACE ISOLX DIAGRAM



For Planet Electro Labs


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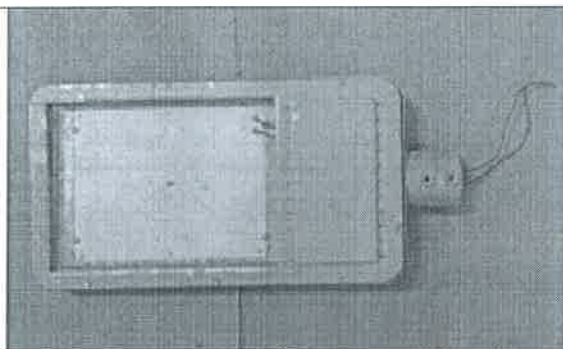
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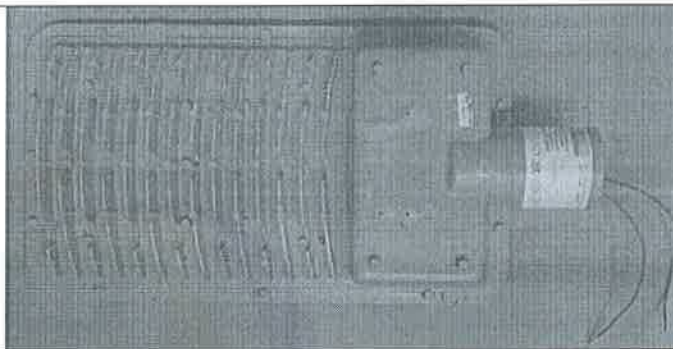
Report No: PEL/ED/07500421	IS 10322 (Part 5/Sec 3): 2012+A1:2015	Page 45 of 45
Dated:08/04/2021		ULR-TC527221000001169F

Attachment-I

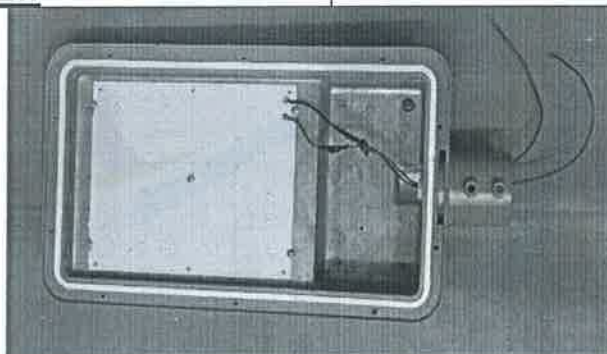
PHOTOGRAPH



FRONT VIEW



REAR VIEW



INTERNAL VIEW

****END OF TEST REPORT****

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