

Test Report No.:	Page 1 of 35
Issue Date:	

Manufacturer:	
Test item:	Recessed Luminaires
Identification:	Serial No:
Receipt No.:	Date of receipt:
Testing laboratory and its address:	
Test specification:	IS 10322 (Part 5/ Sec 2):2012+ A 1 : 2015
Test Result:	The test item passed the test specification(s).
Other Aspects:	

Tested by:	Approved by / Authorized Signatory:	Issued by:
Date:	Date:	Date:

TEST REPORT
IS 10322 (Part 5/Sec 2)
Luminaires
Part 5: Particular requirements
Section 2: Recessed Luminaires

Report Number.

Date of issue

Total number of pages.....

Applicant's name

Address

Test specification:

Standard **IS 10322 (Part 5/ Sec 2):2012**

Test procedure Compliance Report

Non-standard test method N/A

Test Report Form No. BIS_LUM/RL_IS10322-5-2_V1.0

Test Report Form(s) Originator Bureau of Indian Standards

Master TRF..... 23/11/2017

Test item description.....:

Trade Mark.....:

Manufacturer.....:

Model/Type Reference.....:

Rating.....:

Tested by:	Approved by / Authorized Signatory:	Issued by:
Date:	Date:	Date:

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				
EL 2401	Construction	Construction				
EL 2402	Creepage Distances And Clearances	Creepage Distances And Clearances				
EL 2403	Provision For Earthing	Provision For Earthing				
EL 2404	Terminals	Screw Terminals				
EL 2404	Terminals	Screw less Terminals				
EL 2405	External And Internal Wiring	External And Internal Wiring				
EL 2406	Protection Against Electric Shock	Protection Against Electric Shock				
EL 2407	Endurance Tests And Thermal Tests	Endurance Tests And Thermal Tests				
EL 2408	Resistance To Dust And Moisture	Resistance To Dust And Moisture				
EL 2409	Insulation Resistance And Electric Strength	Insulation Resistance And Electric Strength				
EL 2410	Resistance to Heat, Fire And Tracking	Resistance to Heat, Fire And Tracking				
EL 2411	Photometric Tests	Photometric Tests				

Certificate: It is certified that the above tests were performed and found to be passing in the requirement test

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(Approving Authority)

Copy of marking plate:

Copy of trademark:

(provided on the equipment)

Table – List of Attachments

Attachment No.	Attachment Description	No. of pages in Attachment
Attachment – 1	Photo Document	Page no.

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.

Appendix for component certificates are retained for any future reference as per UL's document Retention policy.

UL has verified that the Recessed Luminaires and its variations comply with the series definition as per guidelines provided by MEITY

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 :

Date (s) of performance of tests :

Laboratory conditions.....:

Ambient Temperature.....:

Ambient Humidity.....:

General product information:**Product Description****Model Tested:**

Sr. No.	Product description	Model	Specifications
1			

Representative Models:


Sr. No.	Product Description	Model	Specifications	Variation From Family Representative
1				
2				
3				
4				
5				

Supply connections:

Representative Models:**Technical Considerations:****Report Summary**

Clause No	Test / Requirement name	Code	Test result/ observation	Verdict
4 (1)	GENERAL TEST REQUIREMENTS			--
4 (1.1)	Information for luminaire design considered.....:		Standard Yes <input type="checkbox"/> No <input type="checkbox"/>	—
4 (1.3)	More sections applicable.....:		Yes <input type="checkbox"/> No <input type="checkbox"/>	—

Clause No	Test / Requirement name	Code	Test result/ observation	Verdict
5 (2)	CLASSIFICATION OF LUMINAIRES			--
5 (2.2)	Type of protection			—
5 (2.3)	Degree of protection.....:			—
5 (2.4)	Luminaire suitable for mounting on normally flammable surfaces.....:		Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire suitable for mounting on non-combustible materials.....:		Yes <input type="checkbox"/> No <input type="checkbox"/>	
5 (2.5)	Luminaire for normal use		Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire for rough service		Yes <input type="checkbox"/> No <input type="checkbox"/>	—

Clause No	Test / Requirement name	Code	Test result/ observation	Verdict
6 (3)	MARKING			
6 (3.2)	Mandatory markings*	EL 2400-00		
	Position of the marking*	EL 2400-01		
	Format of symbols/text*	EL 2400-02		
6 (3.3)	Additional information*	EL 2400-03		
	Language of instructions*	EL 2400-04		
6 (3.3.1)	Combination luminaires*	EL 2400-05		
6 (3.3.2)	Nominal frequency in Hz*	EL 2400-06		
6 (3.3.3)	Operating temperature*	EL 2400-07		
6 (3.3.4)	Symbol or warning notice*	EL 2400-08		
6 (3.3.5)	Wiring diagram*	EL 2400-09		
6 (3.3.6)	Special conditions*	EL 2400-10		
6 (3.3.7)	Metal halide lamp luminaire – warning*	EL 2400-11		
6 (3.3.8)	Limitation for semi-luminaires*	EL 2400-12		
6 (3.3.9)	Power factor and supply current*	EL 2400-13		
6 (3.3.10)	Suitability for use indoors*	EL 2400-14		
6 (3.3.11)	Luminaires with remote control*	EL 2400-15		
6 (3.3.12)	Clip-mounted luminaire – warning*	EL 2400-16		
6 (3.3.13)	Specifications of protective shields*	EL 2400-17		
6 (3.3.14)	Symbol for nature of supply*	EL 2400-18		
6 (3.3.15)	Rated current of socket outlet*	EL 2400-19		
6 (3.3.16)	Rough service luminaire*	EL 2400-20		
6 (3.3.17)	Mounting instruction for type X, type Y and type Z attachments*	EL 2400-21		
6 (3.3.18)	Non-ordinary luminaires with PVC cable*	EL 2400-22		
6 (3.4)	Test with water	EL 2400-23		
	Test with hexane	EL 2400-24		
	Legible after test*	EL 2400-25		
	Label attached*	EL 2400-26		
6 (3.5.1)	Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 1986*	EL 2400-27		
6.1	Insulating Ceiling F mark Symbol 			

Dated:

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Total No. of Applicable Requirement =

No of Requirements for which the sample passed =

Total number of tests to be conducted =

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.....
(Approving Authority)


Clause No	Test / Requirement name	Code	Test result/ observation	Verdict
7 (4)	CONSTRUCTION			
7 (4.2)	Components replaceable without difficulty*	EL 2401-00		
7 (4.3)	Wire ways smooth and free from sharp edges*	EL 2401-01		
7 (4.4)	Lamp holders			
7 (4.4.1)	Integral lamp holder*	EL 2401-02		
7 (4.4.2)	Wiring connection*	EL 2401-03		
7 (4.4.3)	Lamp holder for end-to-end mounting*	EL 2401-04		
7 (4.4.4)	Positioning			
	- Pressure test (N)	EL 2401-05		
	After test the lamp holder comply with relevant standard sheets and show no damage	EL 2401-06		
	After test on single-capped lamp holder the lamp holder have not moved from its position and show no permanent deformation	EL 2401-07		
	- bending test (N)	EL 2401-08		
	After test the lamp holder have not moved from its position and show no permanent deformation	EL 2401-09		
7 (4.4.5)	Peak pulse voltage	EL 2401-10		
7 (4.4.6)	Centre contact*	EL 2401-11		
7 (4.4.7)	Parts in rough service luminaires resistant to tracking	EL 2401-12		
7 (4.4.8)	Lamp connectors*	EL 2401-13		
7 (4.5)	Starter holders			
	Starter holder in luminaires other than class II*	EL 2401-14		
	Starter holder class II construction*	EL 2401-15		
	Starter can be touched with the standard test finger in class II luminaires*	EL 2401-16		
7 (4.6)	Terminal blocks			
	Tails	EL 2401-17		
	Unsecured blocks	EL 2401-18		
7 (4.7)	Terminals and supply connections			
7 (4.7.1)	Contact to metal parts*	EL 2401-19		
7 (4.7.2)	Test 8 mm live conductor	EL 2401-20		
	Test 8 mm earth conductor	EL 2401-21		
7 (4.7.3)	Terminals for supply conductors	EL 2401-22		
7 (4.7.4)	Terminals other than supply connection*	EL 2401-23		
7 (4.7.5)	Heat-resistant wiring/sleeves*	EL 2401-24		
7 (4.7.6)	Multi-pole plug*	EL 2401-25		
7 (4.8)	Switches			
	- adequate rating*	EL 2401-26		
	- adequate fixing*	EL 2401-27		
	- polarized supply*	EL 2401-28		
7 (4.9)	Insulating lining and sleeves			
7 (4.9.1)	Retainment*	EL 2401-29		

Dated:

	Method of fixing.....:	EL 2401-30		
7 (4.9.2)	Insulated linings and sleeves:			
	Resistant to a temperature > 20 °C to the wire temperature or	EL 2401-31		
	a) & c) Insulation resistance and electric strength	EL 2401-32		
	b) Ageing test. Temperature (°C).....:	EL 2401-33		
7 (4.10)	Double or reinforced insulation			
7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation*	EL 2401-34		
	Safe installation fixed luminaires*	EL 2401-35		
	Capacitors and switches*	EL 2401-36		
	Interference suppression capacitors according to ISQC 302400*	EL 2401-37		
7 (4.10.2)	Assembly gaps:			
	- not coincidental*	EL 2401-38		
	- no straight access with test probe	EL 2401-39		
7 (4.10.3)	Retainment of insulation:			
	- fixed*	EL 2401-40		
	- unable to be replaced; luminaire inoperative*	EL 2401-41		
	- sleeves retained in position*	EL 2401-42		
	- tube of insulating material*	EL 2401-43		
7 (4.11)	Electrical connections and current-carrying parts			
7 (4.11.1)	Contact pressure*	EL 2401-44		
7 (4.11.2)	Screws:			
	- self-tapping screws*	EL 2401-45		
	- thread-cutting screws*	EL 2401-46		
7 (4.11.3)	Screw locking:			
	- spring washer*	EL 2401-47		
	- rivets*	EL 2401-48		
7 (4.11.4)	Material of current-carrying parts*	EL 2401-49		
7 (4.11.5)	No contact to wood or mounting surface*	EL 2401-50		
7 (4.11.6)	Electro-mechanical contact systems	EL 2401-51		
7 (4.12)	Screws and connections (mechanical) and glands			
7 (4.12.1)	Screws not made of soft metal*	N/A		
	Screws of insulating material*	EL 2401-53		
	Torque test: torque (Nm); part.....:	EL 2401-54		
	Torque test: torque (Nm); part.....:	EL 2401-55		
	Torque test: torque (Nm); part.....:	EL 2401-56		
7 (4.12.2)	Screws with diameter < 3 mm screwed into metal*	EL 2401-57		
7 (4.12.4)	Locked connections:			
	- fixed arms; torque (Nm).....:	EL 2401-58		
	- Lamp holder; torque (Nm).....:	EL 2401-59		

Dated:

	- Push-button switches; torque 0,8 Nm.....:	EL 2401-60		
7 (4.12.5)	Screwed glands; force (Nm).....:	EL 2401-61		
7 (4.13)	Mechanical strength			
7 (4.13.1)	Impact tests: Table 1 in 10322 (part 5/ sec 2)			
	- Fragile parts; energy (Nm).....:	EL 2401-62		
	- Other parts; energy (Nm).....:	EL 2401-63		
	1) live parts	EL 2401-64		
	2) linings	EL 2401-65		
	3) protection	EL 2401-66		
	4) covers	EL 2401-67		
7 (4.13.3)	Straight test finger	EL 2401-68		
7 (4.13.4)	Rough service luminaires			
	- IP54 or higher	EL 2401-69		
	a) fixed	EL 2401-70		
	b) hand-held	EL 2401-71		
	c) delivered with a stand	EL 2401-72		
	d) for temporary installations and suitable for mounting on a stand	EL 2401-73		
7 (4.13.6)	Tumbling barrel	EL 2401-74		
7 (4.14)	Suspensions, fixings and means of adjusting			
7 (4.14.1)	Mechanical load:			
	A) four times the weight	EL 2401-75		
	B) torque 2,5 Nm	EL 2401-76		
	C) Bracket arm; bending moment (Nm).....:	EL 2401-77		
	D) load track-mounted luminaires	EL 2401-78		
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)	EL 2401-79		
	Metal rod. Diameter (mm)	EL 2401-80		
7 (4.14.2)	Load to flexible cables			
	Mass (kg)	EL 2401-81		
	Stress in conductors (N/mm ²)	EL 2401-82		
	Mass (kg) of semi-luminaire	EL 2401-83		
	Bending moment (Nm) of semi-luminaire	EL 2401-84		
7 (4.14.3)	Adjusting devices:			
	- flexing test; number of cycles.....:	EL 2401-85		
	- Strands broken.....:	EL 2401-86		
	- electric strength test afterwards	EL 2401-87		
7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors*	EL 2401-88		
7 (4.14.5)	Guide pulleys*	EL 2401-89		
7 (4.14.6)	Strain on socket-outlets*	EL 2401-90		
7 (4.15)	Flammable materials			
	- Glow-wire test 650°C.....:	EL 2401-91		
	- spacing ≥30 mm	EL 2401-92		
	- screen withstanding test of 13.3.1	EL 2401-93		

	- screen dimensions	EL 2401-94		
	- no fiercely burning material	EL 2401-95		
	- thermal protection	EL 2401-96		
	- electronic circuits exempted	EL 2401-97		
	Luminaires made of thermoplastic material with lamp control gear			
	a) construction*	EL 2401-98		
	b) temperature sensing control	EL 2401-99		
	c) surface temperature	EL 2401-100		
7 (4.16)	Luminaires marked with  symbol			
	No lamp control gear.....:	EL 2401-101		
7 (4.16.1)	Lamp control gear spacing:			
	- spacing 10 mm	EL 2401-102		
	- spacing 35 mm	EL 2401-103		
7 (4.16.2)	Thermal protection:			
	- in lamp control gear	EL 2401-104		
	- external	EL 2401-105		
	- fixed position	EL 2401-106		
	- temperature marked lamp control gear	EL 2401-107		
7 (4.16.3)	Design to satisfy the test of 12.6	EL 2401-108		
7 (4.17)	Drain holes			
	Clearance at least 5 mm	EL 2401-109		
7 (4.18)	Resistance to corrosion			
7 (4.18.1)	- rust-resistance	EL 2401-110		
7 (4.18.2)	- season cracking in copper	EL 2401-111		
7 (4.18.3)	- corrosion of aluminium	EL 2401-112		
7 (4.19)	Igniters compatible with ballast*	EL 2401-113		
7 (4.20)	Rough service vibration	EL 2401-114		
7 (4.21)	Protective shield			
7 (4.21.1)	Shield fitted if tungsten halogen lamps	EL 2401-115		
7 (4.21.2)	Particles from a shattering lamp not impair safety	EL 2401-116		
7 (4.21.3)	No direct path	EL 2401-117		
7 (4.21.4)	Impact test on shield	EL 2401-118		
	Glow-wire test on lamp compartment.....:	EL 2401-119		
7 (4.22)	Attachments to lamps not cause overheating or damage*	EL 2401-120		
7 (4.23)	Semi-luminaires comply Class II*	EL 2401-121		
7 (4.24)	UV Radiation			
	UV radiation for metal halide lamps (Annex P)	EL 2401-122		
7 (4.25)	Mechanical hazard			
	No sharp point or edges*	EL 2401-123		
7 (4.26)	Short-circuit protection			
7 (4.26.1)	Adequate means of uninsulated accessible SELV parts	EL 2401-124		
7 (4.26.2)	Short-circuit test	EL 2401-125		

7 (4.26.3)	Test chain according to Fig. 29	EL 2401-126		
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Dated:

Clause No	Test / Requirement name	Code	Test result/ observation	Verdict
8 (11)	CREEPAGE DISTANCES AND CLEARANCES			
8 (11.2)	Working voltage (V).....:	EL 2402-00		—
	Voltage form.....:	EL 2402-01	Sinusoidal <input type="checkbox"/> Non-sinusoidal <input type="checkbox"/>	—
	PTI.....:	EL 2402-02	< 600 <input type="checkbox"/> > 600 <input type="checkbox"/>	—
	Impulse withstand category (Normal category II) (Category III Annex U)	EL 2402-03	Category II <input type="checkbox"/> Category III <input type="checkbox"/>	—
	Rated pulse voltage (kV).....:	EL 2402-04	--	—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm).....:	EL 2402-05		
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm).....:	EL 2402-06 BI		
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm).....:	EL 2402-07		
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm).....:	EL 2402-08		
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm).....:	EL 2402-09		

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Dated:

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

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

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

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Clause No	Test / Requirement name	Code	Test result/ observation	Verdict
11 (5)	EXTERNAL AND INTERNAL WIRING			P
11 (5.2)	Supply connection and external wiring			
11 (5.2.1)	Means of connection*	EL 2405-00		
11 (5.2.2)	Type of cable*	EL 2405-01		
	Nominal cross-sectional area (mm ²)*	EL 2405-02		
	Cables equal to IS 694 and IS 9968 (Part 1) *	EL 2405-03		
	Luminaire provided with socket-outlet*	EL 2405-04		
11 (5.2.3)	Type of attachment, X, Y or Z*	EL 2405-05		
11 (5.2.5)	Type Z not connected to screws	EL 2405-06		
11 (5.2.6)	Cable entries:			
	- suitable for introduction	EL 2405-07		
	- adequate degree of protection	EL 2405-08		
11 (5.2.7)	Cable entries through rigid material have rounded edges*	EL 2405-09		
11 (5.2.8)	Insulating bushings:			
	- suitably fixed*	EL 2405-10		
	- material in bushings*	EL 2405-11		
	- material not likely to deteriorate*	EL 2405-12		
	- tubes or guards made of insulating material*	EL 2405-12		
11 (5.2.9)	Locking of screwed bushings*	EL 2405-13		
11 (5.2.10)	Cord anchorage:			
	- covering protected from abrasion	EL 2405-14		
	- clear how to be effective	EL 2405-15		
	- no mechanical or thermal stress	EL 2405-16		
	- no tying of cables into knots etc.	EL 2405-17		
	- insulating material or lining	EL 2405-18		
11 (5.2.10.1)	Cord anchorage for type X attachment:			
	a) at least one part fixed	EL 2405-19		
	b) types of cable	EL 2405-20		
	c) no damaging of the cable	EL 2405-21		
	d) whole cable can be mounted	EL 2405-22		
	e) no touching of clamping screws	EL 2405-23		
	f) metal screw not directly on cable	EL 2405-24		
	g) replacement without special tool	EL 2405-25		

	Glands not used as anchorage	EL 2405-26		
	Labyrinth type anchorages	EL 2405-27		
11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	EL 2405-28		
11 (5.2.10.3)	Tests:			
	- impossible to push cable; unsafe	EL 2405-29		
	- pull test: 25 times; pull (N)	EL 2405-30		
	- torque test: torque (Nm)	EL 2405-31		
	- displacement ≤ 2 mm	EL 2405-32		
	- no movement of conductors	EL 2405-33		
	- no damage of cable or cord	EL 2405-34		
11 (5.2.11)	External wiring passing into luminaire	EL 2405-35		
11 (5.2.12)	Looping-in terminals*	EL 2405-36		
11 (5.2.13)	Wire ends not tinned*	EL 2405-37		
	Wire ends tinned: no cold flow*	EL 2405-38		
11 (5.2.14)	Mains plug same protection*	EL 2405-39		
	Class III luminaire plug*	EL 2405-40		
11 (5.2.15)	Colour coded red and black*	EL 2405-41		
11 (5.2.16)	Appliance inlets *	EL 2405-42		
	Appliance couplers *	EL 2405-43		
11 (5.3)	Internal wiring			
11 (5.3.1)	Internal wiring of suitable size and type*	EL 2405-44		
	Through wiring			
	- not delivered/ mounting instruction	EL 2405-45		
	- factory assembled	EL 2405-46		
	- socket outlet loaded (A).....	EL 2405-47		
	- temperatures.....	EL 2405-48		
	Green-yellow for earth only	EL 2405-49		
11 (5.3.1.1)	Internal wiring connected directly to fixed wiring*			
	Cross-sectional area (mm ²)	EL 2405-50		
	Insulation thickness	EL 2405-51		
	Extra insulation added where necessary	EL 2405-52		
11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device*			
	Adequate cross-sectional area and insulation thickness	EL 2405-53		

Dated:

11 (5.3.1.3)	Double or reinforced insulation for class II*	EL 2405-54		
11 (5.3.1.4)	Conductors without insulation*	EL 2405-55		
11 (5.3.1.5)	SELV current-carrying parts*	EL 2405-56		
11 (5.3.1.6)	Insulation thickness other than PVC or rubber*	EL 2405-57		
11 (5.3.2)	Sharp edges etc.*	EL 2405-58		
	No moving parts of switches etc.*	EL 2405-59		
	Joints, raising/lowering devices*	EL 2405-60		
	Telescopic tubes etc.*	EL 2405-61		
	No twisting over 360°	EL 2405-62		
11 (5.3.3)	Insulating bushings:			
	- suitable fixed*	EL 2405-63		
	- material in bushings*	EL 2405-64		
	- material not likely to deteriorate*	EL 2405-65		
	- cables with protective sheath*	EL 2405-66		
11 (5.3.4)	Joints and junctions effectively insulated*	EL 2405-67		
11 (5.3.5)	Strain on internal wiring*	EL 2405-68		
11 (5.3.6)	Wire carriers*	EL 2405-69		
11 (5.3.7)	Wire ends not tinned*	EL 2405-70		
	Wire ends tinned: no cold flow*	EL 2405-71		

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(Approving Authority)

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

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Clause No	Test / Requirement name	Code	Test result/ observation	Verdict
13 (12)	ENDURANCE TEST AND THERMAL TEST			
13 (12.3)	Endurance test:	EL 2407-00		
	- mounting-position.....			—
	- test temperature (°C)			—
	- total duration (h)			—
	- supply voltage: Un factor; calculated voltage (V).....			—
	- lamp used.....			—
13 (12.3.2)	After endurance test:	EL 2407-01		
	- no part unserviceable*			
	- plastic ES lampholder not deformed*			
	- luminaire not unsafe*			
	- no damage to track system*			
	- marking legible*			
	- no cracks, deformation etc.*			
13 (12.4)	Thermal test (normal operation)	EL 2407-02		
13 (12.5)	Thermal test (abnormal operation)	EL 2407-03		
13 (12.6)	Thermal test (failed lamp control gear condition):			
13 (12.6.1)	Without Thermal Cut-Outs	EL 2407-04		
	- case of abnormal conditions			
	- electronic lamp control gear			
	- measured winding temperature (°C): at 1,1 Un .			
	- measured mounting surface temperature (°C) at 1,1 Un.....			
	- calculated mounting surface temperature (°C) ..			
	- track-mounted luminaires			
13 (12.6.2)	Temperature sensing control	EL 2407-05		
	- case of abnormal conditions			
	- thermal link			
	- manual reset cut-out			
	- auto reset cut-out			
	- measured mounting surface temperature (°C) ...			
	- track-mounted luminaires			
13 (12.7)	Thermal test (fault conditions in lamp control gear or electronic devices in plastic luminaires):			

Dated:

13 (12.7.1)	Luminaire without temperature sensing control	EL 2407-06		
	- case of abnormal conditions			—
	- measured winding temperature (°C): at 1,1 Un ..			—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un			—
	- calculated temperature of fixing point/exposed part (°C)			—
13 (12.7.2)	Luminaire with temperature sensing control	EL 2407-07		
	- thermal link		Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- manual reset cut-out		Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- auto reset cut-out		Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- case of abnormal conditions			—
	- highest measured temperature of fixing point/exposed part (°C):			—
13.1	Wiring, for connection to the supply (Table 2 in IS 10322 (Part5/Sec2))			

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Clause No	Test / Requirement name	Code	Test result/ observation	Verdict
14 (9)	RESISTANCE TO DUST AND MOISTURE			
14 (-)	If IP > IP 20 the order of tests as specified in clause 9.2	EL 2408-00		
14 (9.2)	Tests for ingress of dust, solid objects and moisture:	EL 2408-01		—
	- classification according to IP.....			—
	- mounting position during test.....			—
	- fixing screws tightened; torque (Nm)			—
	- tests according to clauses.....			—
	- electric strength test afterwards			
	a) no deposit in dust-proof luminaire	EL 2408-02		
	b) no talcum in dust-tight luminaire	EL 2408-03		
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard	EL 2408-04		
	d) i) For luminaires without drain holes – no water entry	EL 2408-05		
	d) ii) For luminaires with drain holes – no hazardous water entry	EL 2408-06		
	e) no water in watertight luminaire	EL 2408-07		
	f) no contact with live parts (IP 2X)	EL 2408-08		
	g) no entry into enclosure (IP 3X and IP 4X)	EL 2408-09		
	h) no contact with live parts (IP3X and IP4X)	EL 2408-10		
14 (9.3)	Humidity test 48 h	EL 2408-11		

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Clause No	Test / Requirement name	Code	Test result/ observation	Verdict
15 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH			
15 (10.2.1)	Insulation resistance test	EL 2409-00		
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø			
	Insulation resistance (MΩ)			
	SELV	EL 2409-01		
	- between current-carrying parts of different polarity			
	- between current-carrying parts and mounting surface			
	- between current-carrying parts and metal parts of the luminaire			
	Other than SELV	EL 2409-02		
	- between live parts of different polarity			
	- between live parts and mounting surface			
	- between live parts and metal parts			
	- between live parts of different polarity through action of a switch			
15 (10.2.2)	Electric strength test	EL 2409-03		
	Dummy lamp			
	Luminaires with ignitors after 24 h test			
	Luminaires with manual ignitors			
	Test voltage (V)			
	SELV	EL 2409-04		
	- between current-carrying parts of different polarity			
	- between current-carrying parts and mounting surface			
	- between current-carrying parts and metal parts of the luminaire			
	Other than SELV	EL 2409-05		
	- between live parts of different polarity			
	- between live parts and mounting surface			
	- between live parts and metal parts			
	- between live parts of different polarity through action of a switch			
15 (10.3)	Touch current or protective conductor current (mA)	EL 2409-06		

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(Approving Authority)

Dated:

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

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Clause No	Test / Requirement name	Code	Test result/ observation	Verdict
17	PHOTOMETRIC TESTS			
	The photometric performance	EL 2411-00		
	The general guidance regarding the photometric data to be provided by the manufacturers of luminaires is given in Annex B			

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ANNEX 1		TABLE: Critical components information				
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity
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 authorized by the test house C - Integrated component tested together with the appliance D - Alternative component						

Dated:

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12						
	Type reference.....:						—
	Lamp used						—
	Lamp control gear used						—
	Mounting position of luminaire						—
	Supply wattage (W)						—
	Supply current (A)						—
	Calculated power factor						—
	Table: measured temperatures corrected for $t_a = 25\text{ }^{\circ}\text{C}$:						--
	- abnormal operating mode.....:						—
	- test 1: rated voltage						—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage						—
	- 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, ($^{\circ}\text{C}$)							
Sr. No.	Part	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	Limit	test 4	Limit

Supplementary information: Measured temperatures corrected for $t_a = \text{ }^{\circ}\text{C}$

*Ref : For Internal Reference only.

ANNEX 3	Screw terminals (part of the luminaire)		
(14)	SCREW TERMINALS		
(14.2)	Type of terminal		
	Rated current (A)		
(14.3.2.1)	One or more conductors		
(14.3.2.2)	Special preparation		
(14.3.2.3)	Terminal size		
	Cross-sectional area (mm ²)		
(14.3.3)	Conductor space (mm)		
(14.4)	Mechanical tests		
(14.4.1)	Minimum distance		
(14.4.2)	Cannot slip out		
(14.4.3)	Special preparation		
(14.4.4)	Nominal diameter of thread (metric ISO thread)		
	External wiring		
	No soft metal		
(14.4.5)	Corrosion		
(14.4.6)	Nominal diameter of thread (mm)		
	Torque (Nm)		
(14.4.7)	Between metal surfaces		
	Lug terminal		
	Mantle terminal		
	Pull test; pull (N)		
(14.4.8)	Without undue damage		
ANNEX 4	Screwless terminals (part of the luminaire)		
(15)	SCREWLESS TERMINALS		
(15.2)	Type of terminal		
	Rated current (A)		
(15.3.1)	Material		
(15.3.2)	Clamping		
(15.3.3)	Stop		
(15.3.4)	Unprepared conductors		
(15.3.5)	Pressure on insulating material		
(15.3.6)	Clear connection method		
(15.3.7)	Clamping independently		

Dated:

(15.3.8)	Fixed in position									
(15.3.10)	Conductor size									
	Type of conductor									
(15.5.1)	Terminals internal wiring									
(15.5.1.1)	Pull test spring-type terminals (4 N, 4 samples).....:									
(15.5.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....:									
	Insertion force not exceeding 50 N									
(15.5.2)	Permanent connections: pull-off test (20 N)									
(15.6)	Electrical tests									
	Voltage drop (mV) after 1 h (4 samples).....:									
	Voltage drop of two inseparable joints									
	Number of cycles									
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples)									
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples)									
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples)									
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)									
(15.7)	Terminals external wiring									
	Terminal size and rating									
(15.8.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)									
	Pull test pin or tab terminals (4 samples); pull (N)									
(15.9)	Contact resistance test									
	Voltage drop (mV) after 1 h									
Terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop of two inseparable joints								--	
	Voltage drop after 10th alt. 25th cycle									
	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								--	
	Max. allowed voltage drop (mV).....:								—	

Dated:

Terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 10th alt. 25th cycle									--
	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									--
	Max. allowed voltage drop (mV).....:									—
Terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										

Report No.:

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Attachment – 1

Photo Document