



**PRODUCT MANUAL FOR
SELF BALLASTED LAMPS FOR GENERAL LIGHTING SERVICES
ACCORDING TO IS 15111 (Part 1 & 2):2002**

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	Product	:	IS 15111 (Part 1 & 2):2002
	Title	:	Self-ballasted lamps for general lighting services
	No. of amendments	:	IS 15111 (Part 1):2002 - 6 IS 15111 (Part 2):2002 - 9
2.	Sampling Guidelines		
a)	Raw material	:	NA
b)	Grouping Guidelines	:	Please refer Annex - A
c)	Sample Size	:	Lamps – 30 nos. Specially prepared Lamps – for each fault conditions
3.	List of Test Equipment	:	Please refer Annex - B
4.	Scheme of Inspection and Testing	:	Please refer Annex - C
5.	Possible tests in a day	:	Please refer Annex - D
6.	Scope of the Licence :		
	Licence is granted to use Standard Mark as per IS 15111 (Part 1 & 2):2002 with the following scope:		
	Name of the product	Self-ballasted lamps for general lighting services	
	Type	Rated voltage/voltage range ____, Rated wattage ____, Rated frequency ____, Rated colour temperature ____, Power factor ____, Type of cap ____	

ANNEX A

Grouping Guidelines

1. The following groups shall be considered for GoL/CSoL of Self-ballasted lamps for general lighting services as per IS 15111 (Part 1 & 2): 2002.

Group	Rated Wattage (W)
I	Up to and including 7
II	8 to 10
III	11 to 15
IV	16 to 23
V	24 to 26

2. For covering any two groups, one sample of any rating from each group shall be tested.
3. For covering any three groups, one sample each of any rating from lowest and highest groups shall be tested.
4. For covering more than three groups, one sample each of any rating from lowest, highest and any of the middle groups shall be tested.
5. For covering different physical configurations of tubes (e.g. helical, 2U, 3U etc.), samples across groups shall be drawn in such a manner that lamps with each physical configuration are tested.
6. For covering different cap types, samples across groups shall be drawn in such a manner that lamps with each cap type are tested.
7. For covering lamps with different colour temperature, samples across groups shall be drawn in such a manner that lamps with each colour temperature are tested.
8. In case CSoL is required only w.r.t type of cap, samples shall be tested for Safety Requirements as per IS 15111 (Part 1) only.
9. In case CSoL is required only w.r.t colour temperature, samples shall be tested for Lumen and Colour characteristics only.
10. The Firm shall declare the varieties of Lamps they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
11. During the operation of the Licence, BO shall ensure that all the varieties covered in the Licence are tested in rotation, to the extent possible.

ANNEX B**List Of Test Equipment***Major test equipment required to test as per the Indian Standard*

Sl. No.	Test Equipment	Tests used in with Clause Reference
1	High Voltage Tester	Electric strength - Cl 9 of IS 15111 (Part 1)
2	Torsion tester	Mechanical strength - Cl 10 of IS 15111(Part 1)
3	Cap temperature rise test apparatus	Cap temperature rise - Cl 11 of IS 15111(Part 1)
4	Ball pressure apparatus, Oven	Resistance to heat - Cl 12 of IS 15111(Part 1)
5	Test finger	Protection against electric shock - Cl 8 of IS 15111(Part 1)
6	Glow wire test apparatus	Resistance to flame and ignition - Cl 13 of IS 15111(Part 1)
7	Insulation tester , Humidity Chamber	Insulation resistance after humidity treatment - Cl 9 of IS 15111(Part 1)
8	GO/NO-GO gauge	Interchangeability - Cl 7 of IS 15111(Part 1)
9	Complete lamp analyser with integrator	Harmonics - Cl 14 of IS 15111(Part 2)
10	Electronic ballast analyser	Lamp wattage - Cl 9 of IS 15111(Part 2)
11	Vernier Calliper	Dimensions - Cl 6 of IS 15111(Part 2)

The above list is indicative only and may not be treated as exhaustive.

ANNEX C

Scheme Of Inspection And Testing

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipments.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. LABELLING AND MARKING - As per the requirements of IS 15111 (Part 1 & 2):2002

4. LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5. REJECTIONS – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1

(1)			(2)	(3)		
Test Details			Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods Clause/ Reference		No. of Sample	Frequency	Remarks
As per IS 15111 (Part 1)						
6.3	Marking and visual	6.3 (a) 6.3 (c)	---	Each lamp	---	In case of failure, the lamp shall be rejected
6.3	Durability of marking	6.3 (b)	R	As per the relevant clause of IS 15111 (Part 1)	Once in 15 days for each rating	No. of failures shall not exceed the limits given in Cl 15.2.1. Please see Note 1 also.
7	Interchangeability	7	R			
8	Protection against electric shock	8	R			
9	Insulation resistance and electric strength after humidity treatment	9	R			
10	Mechanical strength	10	R		Once in 3 months for each rating	No. of failures shall not exceed the limits given in Cl 16.1.3. Please see Note 1 also.
11	Cap temperature rise	11	S			
12	Resistance to heat	12	S			
13	Resistance to flame and ignition	13	S		Once in a year for each rating	—
14	Fault condition	14	S			
15	Mercury Content	15	S			

As per IS 15111 (Part 2)						
6	Dimensions	6	R	As per the relevant clause of IS 15111 (Part 2)	Once in 15 days for each rating	No. of failures shall not exceed the limits given in Cl 5.2.1. Please see Note 1 also.
8	Starting and Run-up	8	R			No. of failures shall not exceed the limits given in Cl 5.3. Please see Note 1 also.
9	Lamp wattage	9	R			No. of failures shall not exceed the limits given in Cl 5.4. Please see Note 1 also.
10	Luminous flux	10	R			
11	Colour	11	R			
16	Power Factor	16	R			
14	Harmonics	14	S		Once in 3 months for each rating	Please see Note 1
5.7	Emission (Radiated and Conducted) of radio frequency disturbances	5.7	S		Once in a year for each rating	Please see Note 1
12	Lumen maintenance	12	S		Once in two years from any one rating	No. of failures shall not exceed the limits given in Cl 5.5. Please see Note 1 also.
13	Life	13	S		Sample shall be tested from each of the 5 groups as given in Table 2 of IS 15111 (Part 2) for each colour temperature	

Note 1: In case the number of lamps failing exceeds the limits, the production of that rating shall be stopped. A thorough investigation shall be made to identify the cause of failure and actions shall be taken to rectify the defects. Another sample from the improved production shall be taken and marking shall be resumed only after this sample passes.

Note-2: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-3: Levels of control given in column 3 are obligatory in nature.

ANNEX D

Possible Tests in a day

- (a) Durability of marking
- (b) Interchangeability
- (c) Protection against electric shock
- (d) Mechanical strength
- (e) Dimensions
- (f) Power factor
- (g) Starting and run-up