



**PRODUCT MANUAL FOR
STARTERS FOR FLUORESCENT LAMPS
ACCORDING TO IS 2215: 2006**

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 2215: 2006
	Title	:	STARTERS FOR FLUORESCENT LAMPS
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	NA
b)	Grouping guidelines	:	Please refer ANNEX –A
c)	Sample Size	:	50 Nos. starters + 10 starter capacitors
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 :		
	a) Dimensions b) Torsion test, Mechanical Strength test c) Ball pressure test d) Glow wire test e) Quality of Marking		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 2215: 2006 with the following scope:		
	Name of the product	Starters for fluorescent lamps	
	Type	Operating Time Limitation (if applicable) - Non-resettable/ Manual reset/ Automatic reset	
	Rating Watts , Volts	

ANNEX A

Grouping Guidelines

1. The following parameters shall be considered for the purpose of grouping of Starters for fluorescent lamps:
 - a. Voltage
 - b. Wattage
 - c. Operating Time Limitation feature
2. For a given Voltage, to cover a range of Wattages, Starters of the highest, lowest and an interim rating shall be tested.
3. Starters with different Operating Time Limitation features shall be tested separately. If Starters with any Operating Time Limitation feature are tested, those without this feature may also be covered.
4. Starters for use in Class-II fluorescent lamp luminaires shall be tested separately.
5. The Firm shall declare the varieties intended to be covered in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
6. 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.	Tests used in with Clause Reference	Test Equipment
1	Dimensions 7.6	Go & NO-GO Gauges as per standard, Vernier Calipers
2	Insulation Resistance Under Humidity Conditions 7.4	Conditioning chamber with digital temp. indicator, Hour meter & Humidity Indicator, Insulation Resistance tester
3	Di-electric Strength Test 7.5	AC HV Tester
4	Torsion Test 7.7	Torsion testing arrangement
5	Mechanical Strength Test 7.8	Tumbling Barrel and steel plate as per Fig 5
6	Resistance to Heat and Fire 7.10	Heating Cabinet, Ball pressure test apparatus as per fig 6, digital caliper or equivalent, Glow wire test Apparatus
7	Radio Interference Suppression Capacitors 7.12	Capacitance Meter, Conditioning chamber with digital temp. indicator, Hour meter & Humidity Indicator, DC HV tester, AC HV Tester, tissue paper, 40W inductive ballast
8	Heating of Starters with Operating Time Limitation 7.13	Ballast, voltmeter, watch, temp indicator, deactivated lamp of desired rating
9	Quality of Marking 7.11	Petroleum Spirit, stop watch
10	Starting Test 8.0 & Table1	test setup as per fig 7 & fig 8, stop watch, variable power supply, voltmeter, digital oscilloscope
11	Endurance Test 9.0	Endurance test setup as per cl 9.3 & fig 9 including variable power supply, voltmeter, test cycle controller
12	Deactivated Lamp Test 10.0	i) For starters without time limit operation Deactivated Lamp test setup as per fig 9, ii) For starters with time limit operation test setup as per 10.5 as applicable

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 equipment.

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

3. LABELLING AND MARKING – As per the requirement of IS 2215: 2006.

4. CONTROL UNIT – Starters of the same type and rating and manufactured under similar conditions in a day shall constitute a control unit.

5. 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.

5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

6. 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 Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
4	General Requirements	4	IS 2215	-	Each Starter		---
7.6	Dimensions	7.6	IS 2215	R	50	Each Control Unit	---
7.3	Protection Against Accidental Electric Shock	7.3	IS 2215	R	50	Each Control Unit	---
7.4	Insulation Resistance Under Humidity Conditions	7.4	IS 2215	R	50	Every 7th Control Unit	Please see Note 1
7.5	Di-electric Strength Test	7.5	IS 2215	R	50	Each Control Unit	---
7.7	Torsion Test	7.7	IS 2215	R	50	Each Control Unit	---
7.8	Mechanical Strength Test	7.8	IS 2215	R	50	Each Control Unit	---
7.10	Resistance to Heat and Fire	7.10	IS 2215	S	50	Once in a month	Please see Note 1
7.12	Radio Interference Suppression Capacitors	7.12	IS 2215	R	50	Every 7th Control Unit	Please see Note 1
7.13	Heating of Starters with Operating Time Limitation	7.13	IS 2215	R	50	Once in a month	Please see Note 1
7.11	Quality of Marking	7.11	IS 2215	R	50	Each Control Unit	---
8.0	Starting Test	8.0 & Table 1	IS 2215	R	50	Each Control Unit	---
8.4	Speed of Operation	8.4	IS 2215	R	Each Starter		---
9.0	Endurance Test	9.0	IS 2215	S	5	Once in six months	Please see Note: 1
10.0	Deactivated Lamp Test	10.0	IS 2215	R	5	Each Control Unit	---

Note 1: In case a sample fails in the requirement, the marking of that type of starter shall be stopped. Thorough investigation of the failure shall be made and defect rectified. The marking shall only be resumed when the samples of that type produced show conformity to these requirements. The original frequency may be restored when samples taken from each five consecutive control units show conformity to the requirements.

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

Note 3: The control unit and levels of control as decided by the Bureau are obligatory, to which the licensee shall comply with.