

**SRI LANKA STANDARD 1150 Part 2 : 2009**  
**IEC 60921 : 2006**

**SPECIFICATION FOR BALLASTS  
FOR TUBULAR FLUORESCENT LAMPS  
PART 2: PERFORMANCE REQUIREMENTS**  
*(First Revision)*

**SRI LANKA STANDARDS INSTITUTION**

**Sri Lanka Standard**  
**SPECIFICATION FOR BALLASTS FOR TUBULAR FLUORESCENT LAMPS**  
**PART 2: PERFORMANCE REQUIREMENTS**  
*(First Revision)*

**SLS 1150 : Part 2 : 2009  
IEC 60921 : 2006**

Gr. P

*Copyright Reserved*  
**SRI LANKA STANDARDS INSTITUTION**  
Victoria Place, No. 17,  
Elvitigala Mawatha,  
Colombo - 08.  
Sri Lanka

**Sri Lanka Standard**  
**SPECIFICATION FOR BALLASTS FOR TUBULAR FLUORESCENT LAMPS**  
**PART 2 : PERFORMANCE REQUIREMENTS**  
*(First Revision)*

## NATIONAL FOREWORD

This standard was approved by the Sectoral Committee on Electrical Appliances and Accessories and was authorized for adoption and publication as a Sri Lanka Standard by the Council of Sri Lanka Standards Institution on 2009-10-28.

This is the first revision of the **SLS 1150 : Part 2 : 1997** and identical with **IEC 60921: 2006** Ballasts for tubular fluorescent lamps - Performance requirements, Edition 2.1 2006-06, published by the International Electrotechnical Commission (IEC).

## Terminology and conventions

The text of the International Standard has been accepted as suitable for publication, without deviation, as a Sri Lanka Standard. However, certain terminology and conventions are not identical with those used in Sri Lanka Standards; attention is therefore drawn to the following:

- a) Wherever the words “International Standard” appear referring to this standard they should be interpreted as “Sri Lanka Standard”.
- b) Wherever the page numbers are quoted they are the page numbers of IEC standard.
- c) The comma has been used as a decimal marker. In Sri Lanka Standards it is the current practices to use a full point on the base line as a decimal marker.

## CROSS REFERENCES

### International Standards

IEC 60081: Double capped fluorescent lamps – Performance specifications

IEC 60901 Single capped fluorescent lamps – Performance specifications

IEC 61347-1: Lamp controlgear – Part 1: General and safety requirements

IEC 61347-2-8 Lamp controlgear – Part 2-8 : Particular requirements for tubular fluorescent lamps

### Corresponding Sri Lanka Standards

SLS 1009 -1: Codes for the representation of countries and their subdivisions – Part 1 : Country codes

SLS 1232 : Single capped fluorescent lamps Part 1 : Performance requirements

SLS IEC 61347-1: Lamp controlgear – Part 1: General and safety requirements

SLS 1150 : Ballast for tubular fluorescent lamps Part 1: General and Safety requirements

**NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD**

**CEI  
IEC  
60921**  
**Edition 2.1**

2006-06

Edition 2:2004 consolidée par l'amendement 1:2006  
Edition 2:2004 consolidated with amendment 1:2006

---

---

---

**Ballasts pour lampes tubulaires à fluorescence –  
Exigences de performances**

**Ballasts for tubular fluorescent lamps –  
Performance requirements**



Numéro de référence  
Reference number  
CEI/IEC 60921:2004+A1:2006

## CONTENTS

FOREWORD .....	7
INTRODUCTION .....	11
1 Scope .....	13
2 Normative References .....	13
3 Terms and definitions .....	13
4 General notes on tests .....	15
5 Marking .....	15
6 Voltage at terminations of lamp or starter (if any) .....	15
6.1 For lamps operated with a starter .....	15
6.2 For lamps operated without a starter .....	17
6.3 For lamps operated without a starter (North American practice) .....	17
6.4 Maximum (r.m.s.) voltage across starter terminals with lamp operating .....	19
6.5 For lamps with integral means of starting .....	19
7 Pre-heating conditions .....	19
7.1 For lamps operated with (integral) starter .....	19
7.2 For lamps operated without starter .....	21
7.3 For lamps operated without starter (North American practice) .....	21
8 Lamp power and current .....	21
8.1 For lamps operated with (integral) starter .....	21
8.2 For lamps operated without starter .....	23
9 Circuit power-factor .....	23
10 Supply current .....	23
11 Maximum current in any lead to a cathode .....	23
12 Current waveform .....	25
13 Magnetic screening .....	25
14 Impedance at audio-frequencies .....	25
Annex A (normative) Tests .....	27
A.1 General conditions for tests .....	27
A.2 Additional requirements for testing reference ballasts .....	29
A.3 Selection of reference lamps .....	31
A.4 Measurement of open-circuit voltage .....	39
A.5 Measurements of pre-heating conditions .....	39
A.6 Measurement of lamp power and current .....	39
A.7 Measurement of maximum current in any lead to a cathode .....	45
A.8 Measurement of current waveform (Figure 9) .....	47
A.9 Measurement of impedance at audio-frequencies .....	49
Annex B (informative) Series operation of two fluorescent lamps .....	55

Annex C (normative) Reference ballasts .....	57
C.1 Marking .....	57
C.2 Design characteristics.....	57
C.3 Operating characteristics .....	57
Annex D (normative) Reference lamps.....	61
Bibliography.....	63
Figure A.1 – Circuit for measurement of voltage/current ratio.....	29
Figure A.2 – Circuit for measurement of power factor .....	29
Figure A.3 – Circuit for selection of reference lamps (without separate cathode heating) .....	33
Figure A.4 – Circuit for selection of reference lamps (with separate cathode heating) .....	35
Figure A.5 – Circuit for calibration of cathode transformers.....	37
Figure A.6 – Measurement of power and current output (lamps with starter) .....	41
Figure A.7 – Measurement of power and current output (lamps without starter) .....	45
Figure A.8 – Measurement of maximum current in any lead to a cathode .....	47
Figure A.9 – Measurement of current waveform .....	49
Figure A.10 – Measurement of impedance at audio-frequencies – Method A.....	51
Figure A.11 – Measurement of impedance at audio frequencies – Method B .....	53