

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

AMENDMENT 1  
AMENDEMENT 1

Lamp controlgear –  
Part 1: General and safety requirements

Appareillages de lampes –  
Partie 1: Exigences générales et exigences de sécurité

<https://standards.iteh.ai/en/standards/iec/61347-1-2010-07-amd1-2010>

STANDARD PREVIEW  
(standards.iteh.ai)

WithDRAWN



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## FOREWORD

This amendment has been prepared by subcommittee 34C: Auxiliaries for lamps, of IEC technical committee 34: Lamps and related equipment.

The text of this amendment is based on the following documents:

FDIS	Report on voting
34C/916/FDIS	34C/918/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

### 1 Scope

*Add the following note to Clause 1:*

NOTE It can be expected that lamp control gear which comply with this standard will not compromise safety between 90 % and 110 % of their rated supply voltage in independent use and when operated in luminaires complying with the safety standard IEC 60598-1 and the relevant part IEC 60598-2-xx and with lamps complying with the relevant lamp standards. Performance requirements may require tighter limits.

### 2 Normative references

*Add the following reference to the existing list:*

IEC 60384-14, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

### 9 Provisions for protective earthing

*Replace the last paragraph of Clause 9 by the following:*

The voltage drop between the earthing terminal or earthing contact and the accessible metal part shall be measured and the resistance calculated from the current and the voltage drop. In no case shall the resistance exceed 0,5 Ω.

## 11 Moisture resistance and insulation

Replace the 6<sup>th</sup> paragraph of this clause by the following:

Insulation resistance shall be not less than 2 MΩ for basic insulation and 4 MΩ for reinforced insulation between live parts and the body.

Replace the existing item b) by the following:

- b) between live parts and outer metal parts, including fixing screws and metal foil in contact with outer insulating parts;

## 14 Fault conditions

Add, after the 6<sup>th</sup> paragraph, the following new paragraph:

Filter capacitors directly connected to the mains supply do not need to be tested if they comply with IEC 60384-14 and are classified X1 or X2 for the relevant voltage.

Replace the existing Subclause 14.5 by the following new subclause:

**14.5** Compliance with 14.1 to 14.4 shall be checked by operating the lamp controlgear at the rated supply voltage according to the test circuit procedure given in 14.6, with the lamp(s) connected and the lamp controlgear case at  $t_c$ . Each of the fault conditions outlined in 14.1 to 14.4 inclusive shall then be applied in turn.

NOTE For the purpose of this clause the test voltage may be at any value within the supply voltage range of the control gear, or within  $\pm 5\%$  where only single rated supply voltage is given. This is to allow the high supply current capacity require of this test.

The tests shall be carried out on three samples for each fault condition, consisting of one or more items submitted for the purpose of the type test. If one of the samples fails, the test shall be repeated with three new samples none of which shall fail.

The test shall be continued until stable conditions are obtained. The lamp controlgear case temperature shall then be measured.

NOTE Components such as resistors, capacitors, semiconductors, fuses, etc. might fail. Such components may be replaced so as to continue the test.

After the tests, when the lamp controlgear has returned to ambient temperature, the insulation resistance measured at approximately 500 V d.c. shall be not less than 1 MΩ.

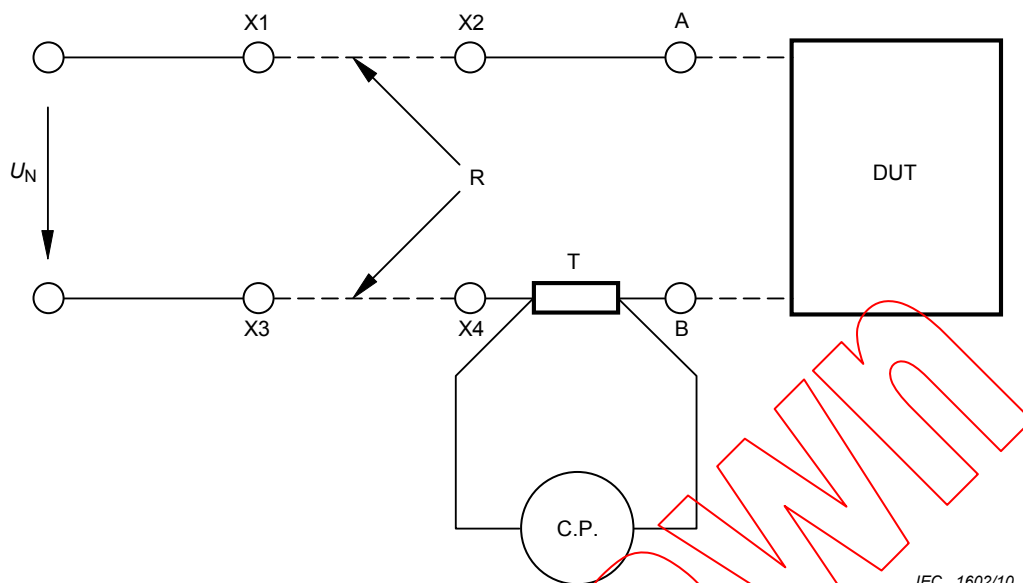
To check whether gases liberated from component parts are flammable or not, a test with a high-frequency spark generator shall be made.

Accessible parts shall be tested in accordance with Annex A to determine whether they have become live.

To check whether emission of flames or molten material might present a safety hazard, the test specimen shall be wrapped with a tissue paper, as defined in 4.187 of ISO 4046-4, and the latter shall not ignite.

Add a new Subclause 14.6, as follows:

**14.6** Connect the controlgear under test to a high-power a.c. supply capable of passing a fault current of at least 160 A  ${}_{-0}^{+10}\%$ , as shown in Figure 3. Apply the relevant fault condition.



**Key**

$U_N$	supply voltage
DUT	device under test
R	additional wiring or resistor for current tuning
T	shunt 10 m $\Omega$
X1, X2, X3, X4	terminals for the additional wiring or resistor
A, B	terminals for the short circuit and the lamp controlgear
C. P.	current probe

**Figure 3 – Test circuit for controlgear**

Carry out the test procedure as follows.

- a) Short circuit terminals A and B.  
Test current calibration with additional wire or resistor between the terminals X1 – X2 and X3 – X4. Current value shall be at least 160 A  $\begin{matrix} -0 \\ +10 \end{matrix}$  %.
- b) Remove the short circuit.  
Connect the controlgear to terminals A and B.
- c) Test the controlgear.

**Annex B – Particular requirements for thermally protected lamp controlgear**

Add, in Clause B.1, first paragraph, second sentence, after “class P”, the following new text:

(according to B.9.2)

Add, in Clause B.1, second paragraph, first sentence, after “temperature declared thermally protected lamp controlgear”, the following new text:

(according to B.9.3, B.9.4 and B.9.5)

Replace, in Subclause B.7.2, “Clause B.6” by “B.6.2”.

Replace the existing Subclause B.9.5 by the following new subclause:

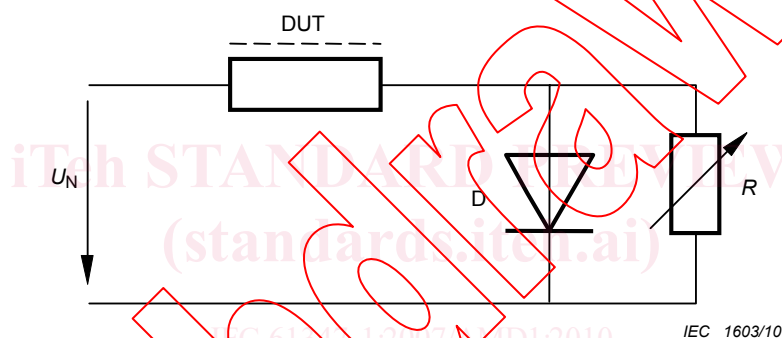
## B.9.5 Temperature declared thermally protected lamp control gear as specified in IEC 61347-2-9

### B.9.5.1 General

The lamp controlgear shall be equipped with a thermal protector. When tested in accordance with the requirements given in B.9.5.1 to B.9.5.3, using the test circuit shown in Figure B.1, the highest temperature of any part of the lamp control gear surface shall not exceed the marked value of  $t_c$ , except within 15 min of the thermal protector operating, when an overshoot of 10 % of the marked value of  $t_c$  is permitted.

Series capacitors, if any, shall be short-circuited during the tests.

During the test, the winding temperature and the highest temperature of any part of the lamp controlgear surface shall be continuously measured.



#### Key

DUT	device under test
D	diode, 100 A, 600 V
R	resistor, 0...200 $\Omega$ (1/2 lamp power)
$U_N$	test voltage

Figure B.1 – Test circuit for thermally protected lamp controlgear

### B.9.5.2 Test sequence

The test sequence for the normal winding temperature conditions and the function of the thermal protector is described as followed:

- a) Test of the normal winding temperature conditions plus 20 K

The lamp controlgear shall be operated at thermal equilibrium, under conditions as specified in Clause H.12, at a short-circuit current (tuned with resistor  $R$ ) producing a winding temperature of  $(t_w + 20) ^\circ\text{C}$ . The thermal protector shall not open under this condition.

The current  $I_{t_w+20}$  shall be recorded as a basic current for the test b).

- b) Function test of the thermal protector – control of the marked  $t_c$  temperature limitation

After the test under normal winding temperature conditions with  $(t_w + 20) ^\circ\text{C}$ , the lamp controlgear shall be operated with an increasing current (in the following steps) until the thermal protector operates.

- Step one with the current of  $I_{tw+20} + 5 \%$
- Step two with the current of  $I_{tw+20} + 10 \%$
- Step three with the current of  $I_{tw+20} + 15 \%$ , etc.

The procedure of increasing the current in steps of 5 % shall be used until the thermal protector operates and switches off the contacts.

Between each step, the time taken for the thermal stabilization of the lamp controlgear shall be observed.

### B.9.5.3 Test cycle

The test cycle for different thermal protected controlgear types is as follows.

- a) Lamp controlgear with automatic resetting thermal protectors according to B.6.2 a) or with a protective method of another type according to B.6.2 e)

For lamp controlgear fitted with automatic resetting thermal protectors, or with a protective method of another type, the test shall be continued until a stable surface temperature is achieved. The automatic setting thermal protector shall work at least three times by switching the lamp controlgear off and on under the given conditions.

- b) Lamp controlgear with a manual resetting thermal protector according to B.6.2 b)

For lamp controlgear fitted with a manual resetting thermal protector, the test shall be repeated three times, allowing a 30 min interval between the tests. At the end of each 30 min interval, the cut-outs shall be reset.

- c) Lamp controlgear with non-renewable, non-resetting thermal protectors according to B.6.2 c) and with renewable types of thermal protectors according to B.6.2 d)

For lamp controlgear fitted with non-renewable, non-resetting type, and for lamp controlgear with renewable types of thermal protectors, only one test shall be carried out.

- d) Lamp controlgear with a combination of the protective devices

For lamp controlgear where a combination of the protective devices mentioned is used, the lamp controlgear shall be tested as for the protective device that provides the primary protection for temperature control, as declared by the manufacturer.

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## AVANT-PROPOS

Le présent amendement a été établi par le sous-comité 34C: Appareils auxiliaires pour lampes, du comité d'études 34 de la CEI: Lampes et équipements associés.

Le texte du présent amendement est issu des documents suivants:

FDIS	Rapport de vote
34C/916/FDIS	34C/918/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cet amendement.

Le comité a décidé que le contenu de cet amendement et de la norme ne seront pas modifiés avant la date de stabilité indiquée sur le site web de la CEI sous "<http://webstore.iec.ch>" dans les données relatives à la publication recherchée. A cette date, la publication sera

- reconduite,
- supprimée,
- remplacée par une édition révisée, ou
- amendée.

### 1 Domaine d'application

Ajouter la note suivante à l'Article 1:

NOTE Il peut être prévu que les appareillages de lampes conformes à la présente norme ne compromettent pas la sécurité entre 90 % et 110 % de leur tension d'alimentation assignée en usage indépendant et lorsqu'ils fonctionnent dans des luminaires conformes à la CEI 60598-1 et la partie correspondante CEI 60598-2-xx, et avec des lampes conformes aux normes correspondantes pour les lampes. Les exigences de performance peuvent demander des limites plus sévères.

### 2 Références normatives

Ajouter la référence suivante à la liste existante:

CEI 60384-14, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains* (disponible en anglais seulement)

### 9 Dispositions en vue de la mise à la terre de protection

Remplacer le dernier alinéa de l'Article 9 par le suivant:

La chute de tension entre la borne de terre ou le contact de mise à la terre et la partie métallique accessible doit être mesurée et la résistance calculée à partir du courant et de la chute de tension. En aucun cas la résistance ne doit être supérieure à 0,5 Ω.