CSA Group

C22.2 No. 250.7-07
(reaffirmed 2017)

Extra-low-voltage landscape lighting systems

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CANADIAN STANDARDS ASSOCIATION

Update No. 1
C22.2 No. 250.7-07
May 2008

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Title: *Extra-low-voltage landscape lighting systems* — originally published November 2007

The following revisions have been formally approved and are marked by the symbol delta (Δ) in the margin on the attached replacement pages:

Revised	Table 6.11.3
New	None
Deleted	None

CSA C22.2 No. 250.7-07 originally consisted of **62 pages** (xi preliminary and 51 text), each dated **November 2007**. It now consists of the following pages:

November 2007	iii–xi, 1–8, and 11–51
May 2008	9 and 10

- Update your copy by inserting these revised pages.
- Keep the pages you remove for reference.

6.11.2.2 Double insulation

The following parts shall be provided with double insulation between them. Clearance and creepage shall be not less than the values shown in Table 6.11.2 between

(a) uninsulated live parts in a primary circuit and accessible non-current-carrying metal parts that are not bonded to ground; and
(b) uninsulated live parts in a primary circuit and accessible uninsulated electrical parts in a secondary circuit operating at not more than 30 V rms or 42.4 V peak.

6.11.2.3 Reinforced insulation

The following parts shall be provided with reinforced insulation between them. Clearance and creepage shall be not less than the values shown in Table 6.11.3 between

(a) uninsulated live parts in a primary circuit and accessible non-current-carrying metal parts that are not bonded to ground; and
(b) uninsulated live parts in a primary circuit and accessible uninsulated electrical parts in a secondary circuit operating at not more than 30 V rms or 42.4 V peak.

6.11.2.4 Basic insulation

The following parts shall be provided with basic insulation between them. Clearance and creepage shall be not less than the values shown in Table 6.11.4 between

(a) uninsulated live parts in a primary circuit and inaccessible non-current-carrying metal parts that are bonded to ground, such as an internal protective earth ground shield and the core of a transformer;
(b) uninsulated live parts in a primary circuit and accessible uninsulated electrical parts in a secondary circuit that operates at not more than 30 V rms or 42.4 V peak and relies on a suitably internal earth ground shield for its integrity;
(c) uninsulated live parts in a primary circuit and inaccessible uninsulated live parts in a secondary circuit; and
(d) parts that require basic insulation as an element of double insulation.

6.11.2.5 Supplementary insulation

The following parts shall be provided with supplementary insulation between them. Clearance and creepage shall be not less than the values shown in Table 6.11.5 between

(a) accessible non-current-carrying metal parts and other metal parts that could become live parts in the event of a failure of basic insulation; and
(b) parts that require supplementary insulation as an element of double insulation.

6.11.2.6 Operational insulation

The following parts shall be provided with operational insulation between them. Clearance and creepage shall be not less than the values shown in Table 6.11.6 between

(a) uninsulated electrical parts operating at not more than 30 V rms or 42.4 V peak and non-current-carrying metal parts that are bonded to ground; and
(b) uninsulated electrical parts of different circuits operating at not more than 30 V rms or 42.4 V peak.

Table 6.11.2
Minimum spacings — Clearances through air and creepage distances for double insulation

(See Clauses 6.11.2.1, 6.11.2.2, 17.103.5.2, and 17.103.6.1.)

Voltage range, rms volts	Voltage range, peak volts or dc	Clearance through air		Creepage distance	
		mm	(in)	mm	(in)
0–50	0–71	4.0	(0.158)	4.0	(0.158)
51–100	72–141	4.0	(0.158)	4.0	(0.158)
101–125	142–177	4.0	(0.158)	4.0	(0.158)
126–150	178–212	4.0	(0.158)	4.0	(0.158)
151–200	213–283	4.0	(0.158)	4.0	(0.158)
201–250	284–354	4.0	(0.158)	5.0	(0.197)
251–300	355–420	4.0	(0.158)	6.4	(0.252)
301–400	421–566	6.4	(0.252)	8.0	(0.315)
401–600	567–848	6.4	(0.252)	12.6	(0.496)
601–1000	849–1414	8.4	(0.331)	20.0	(0.787)

Table 6.11.3
Minimum spacings — Clearances through air and creepage distances for reinforced insulation

(See Clauses 6.11.2.1, 6.11.2.2, 17.103.5.2, and 17.103.6.1.)

Voltage range, rms volts	Voltage range, peak volts or dc	Clearance through air		Creepage distance	
		mm	(in)	mm	(in)
0–50	0–71	4.0	(0.158)	4.0	(0.158)
51–100	72–141	4.0	(0.158)	4.0	(0.158)
101–125	142–177	4.0	(0.158)	4.0	(0.158)
126–150	178–212	4.0	(0.158)	4.0	(0.158)
151–200	213–283	4.0	(0.158)	4.0	(0.158)
201–250	284–354	4.0	(0.158)	5.0	(0.197)
251–300	355–420	4.0	(0.158)	6.4	(0.252)
Δ 301–400	421–566	6.4	(0.252)	8.0	(0.315)
401–600	567–848	6.4	(0.252)	12.6	(0.496)
601–1000	849–1414	8.4	(0.331)	20.0	(0.787)

Standards Update Service

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Extra-low-voltage landscape lighting systems

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Preface

This is the first edition of CSA C22.2 No. 250.7, *Extra-low-voltage landscape lighting systems*. This Standard is one of a series of Standards issued under the *Canadian Electrical Code, Part II*. This Standard replaces the extra-low-voltage landscape lighting system requirements of TIL B-58B, *Landscape Lighting Systems.*

This Standard contains specific requirements for extra-low-voltage landscape lighting systems and is intended to be used together with the requirements for luminaires contained in CSA C22.2 No. 250.0-04, *Luminaires*.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was prepared by the Integrated Committee on Lighting Products, under the jurisdiction of the Technical Committee on Consumer and Commercial Products and the Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the Technical Committee. It will be submitted to the Standards Council of Canada for approval as a National Standard of Canada.

Interpretations: The Strategic Steering Committee on Requirements for Electrical Safety has provided the following direction for the interpretation of standards under its jurisdiction: "The literal text shall be used in judging compliance of products with the safety requirements of this Standard. When the literal text cannot be applied to the product, such as for new materials or construction, and when a relevant committee interpretation has not already been published, CSA's procedures for interpretation shall be followed to determine the intended safety principle".

November 2007

Notes:

(1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*

(2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*

(3) *This publication was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this publication.*

(4) *CSA Standards are subject to periodic review, and suggestions for their improvement will be referred to the appropriate committee.*

(5) *All enquiries regarding this Standard, including requests for interpretation, should be addressed to Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6.*

Requests for interpretation should

(a) define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;

(b) provide an explanation of circumstances surrounding the actual field condition; and

(c) be phrased where possible to permit a specific "yes" or "no" answer.

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization *and are published in CSA's periodical* Info Update*, which is available on the CSA Web site at www.csa.ca.*

C22.2 No. 250.7-07
Extra-low-voltage landscape lighting systems

1 Scope

1.1
This Standard applies to extra-low-voltage landscape lighting systems and associated components that are intended for cord-connected, direct plug-in, or permanent connection to a branch circuit of not more than 150 volts-to-ground in accordance with the *Canadian Electrical Code, Part I*.

1.2
This Standard only covers extra-low-voltage landscape lighting systems where the maximum output circuit is 300 VA or 25 A, whichever is less, from each of the secondary circuits operating at not more than 30 V rms or 42.4 V peak.

1.3
Extra-low-voltage landscape lighting systems covered by this Standard are intended for gardens, walkways, patio areas, or similar outdoor locations, and for specific indoor locations such as atriums and shopping malls in accordance with the marking on the product.

1.4
This Standard applies to the following associated components:
(a) the isolating-type power supply;
(b) one or more luminaire assemblies of the incandescent, fluorescent, LED, or HID type; and
(c) flexible cable and associated connectors intended for use in the secondary circuit.

1.5
The values given in SI (metric) units are the standard. Where values are given in parentheses, they are for information only.

1.6
In CSA Standards, "shall" is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; "should" is used to express a recommendation or that which is advised but not required; "may" is used to express an option or that which is permissible within the limits of the standard; and "can" is used to express possibility or capability. Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material. Notes to tables and figures are considered part of the table or figure and may be written as requirements. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.