

Australian/New Zealand Standard™

Lamp controlgear

**Part 1: General and safety requirements
(IEC 61347-1:2010, MOD)**



AS/NZS 61347.1:2016

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-041, Lamps and Related Equipment. It was approved on behalf of the Council of Standards Australia on 19 November 2015 and on behalf of the Council of Standards New Zealand on 12 February 2016. This Standard was published on 9 March 2016.

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Department of Industry
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This Standard was issued in draft form for comment as DR AS/NZS 61347.1:2015.

Australian/New Zealand Standard™

Lamp controlgear

Part 1: General and safety requirements (IEC 61347-1:2015, MOD)

Original was AS/NZS 61347.1:2002.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-041, Lamps and Related Equipment to supersede AS/NZS 61347.1:2002, *Lamp controlgear, Part 1: General and safety requirements (IEC 61347-1:2000, MOD)* six months after publication. Until that time, both editions of the Standard will operate in parallel. It is anticipated that the 2002 edition will then be withdrawn. This revision relates to rated voltage requirements, flammability and reference document changes.

The Standard incorporates Amendment No. 1 (March 2018). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

The objective of this Standard is to specify general requirements for controlgear intended for use with luminaires, for operation on d.c. supplies up to 250 V and/or a.c. supplies up to 1 000 V at 50 Hz or 60 Hz. The requirements and related tests of this Standard cover: classification, marking, mechanical construction and electrical construction.

A1 This Standard is an adoption with national modifications as shown in Appendix LZ and has been reproduced from IEC 61347-1, Ed.3.0 (2015), *Lamp controlgear, Part 1: General and safety requirements*, and has been varied as indicated to take account of Australian/New Zealand conditions.

Amendment 1 to this Standard adds requirements for lamp controlgear to address safety issues identified where lamp controlgear is used in close proximity to or under building thermal insulation.

These requirements take into account requirements from AS/NZS 60598.2.2, *Luminaires, Part 2.2: Particular requirements—Recessed luminaires (IEC 60598-2-2, Ed. 3.0 (2011) MOD)*, which apply to recessed luminaires when used in conjunction with building thermal insulation.

The IEC edition includes the following significant technical changes with respect to the previous edition:

- (a) Additional marking requirements.
- (b) Additional requirements for creepage distances and clearances for—
 - (i) working voltages with operating frequencies up to 30 kHz;
 - (ii) working voltages with higher operating frequencies than 30 kHz;
 - (iii) impulse and resonance voltages ignition;
 - (iv) basic, supplementary and reinforced insulation;
 - (v) insulation between circuits; and
 - (vi) connected or potted controlgear.
- (c) Modification of definition of ELV and FELV.
- (d) Modification of schematic drawing, showing the different controlgear classification and insulation requirements.
- (e) Scope extension.
- (f) New Annex A—test to establish whether a conductive part is a live part which may cause an electric shock.
- (g) New Annex M—creepage distances and clearances for controlgear where a higher degree of availability (impulse withstand category III) may be requested.
- (h) New Annex Q—example for U_p calculation.

- (i) New Annex P—creepage distances and clearances and distance through isolation (DTI) for lamp controlgear which are protected against pollution by the use of coating or potting.
- (j) New Annex R—concept of creepage distances and clearances.

A1

[Text deleted.]

This Standard is structured as follows:

- (A) Preface.
- (B) IEC 61347-1, Ed.3.0 (2015) unedited from the first clause to Bibliography.
- (C) Appendix ZZ—(Australian/New Zealand) variations to the source document.

The variations listed in Appendix ZZ address issues including the following:

- (1) Supply voltage.
- (2) Capacitor ratings.
- (3) Requirements for FELV connections.
- (4) Resistance to flame and ignition.

In this Standard, the following print types are used:

- Requirements proper: in roman type.
- *Test specifications: in italic type.*
- Explanatory matter: in smaller roman type.

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Amendment 1 adds additional requirements and test procedures for lamp controlgear used in close proximity to or under building thermal insulation. These are shown in—

- (a) Appendix ZZ; and
- (b) Appendix ZA.

The variations listed in Appendix ZZ and Appendix ZA include the following:

- (i) Classifications and definitions of independent lamp controlgear for use near, or being covered with, building elements or thermal insulation, or both.
- (ii) Tests, including ingress protection tests and thermal tests for normal and abnormal operating conditions, and marking and instructional requirements for the different classifications, with standardized test box temperature limits, and requirements for any thermal protection.

AS/NZS 61347.1:2016 in its unamended form will also remain current for 12 months. After this time it will be superseded by AS/NZS 61347.1:2016 incorporating Amendment 1. Regulatory authorities that reference this standard in regulation may apply these requirements at a different time. Users of this standard should consult with these authorities to confirm their requirements.

As this Standard is reproduced from an International Standard, the following applies:

- (aa) In the source text ‘this part of IEC 61347’ should read ‘this Australian/New Zealand Standard’.
- (bb) A full point substitutes for a comma when referring to a decimal marker.

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References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>		<i>Australian/New Zealand Standard</i>	
IEC		AS/NZS	
60065	Audio, video and similar electronics apparatus—Safety requirements	60065	Audio, video and similar electronic apparatus—Safety requirements (IEC 60065, Ed.7.2 (2011) MOD)
		4782	Double-capped fluorescent lamps—Performance specifications
60081	Double capped fluorescent lamps—Performance specifications	4782.1	Part 1: General (IEC 60081:2000, MOD)
60598	Luminaires	60598	Luminaires
60598-1	Part 1: General requirements and tests	60598.1	Part 1: General requirements and tests (IEC 60598-1, Ed. 7.0 (2008) MOD)
60695	Fire hazard testing	60695	Fire hazard testing
60695-2-10	Part 2-10: Glowing/hot wire based test methods—Glow-wire apparatus and common test procedure	60695.2.10	Part 2.10: Glowing hot wire based test methods—Glow-wire apparatus and common test procedure
60695-2-11	Part 2-11: Glowing/hot-wire based test methods—Glow-wire flammability test method for end-products (GWEPT)	60695.2.11	Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products
60695-11-5	Part 11-5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance	60695.11.5	Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance
IEC		AS/NZS	
60695-11-10	Part 11-10: Test flames—50 W horizontal and vertical flame test methods	60695.11.10	Part 11.10: Test flames—50 W horizontal and vertical flame test methods

Only normative references that have been adopted as Australian or Australian/New Zealand Standard have been listed.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the annex or appendix to which they apply. A ‘normative’ annex or appendix is an integral part of a Standard, whereas an ‘informative’ annex or appendix is only for information and guidance.

CONTENTS

1	Scope	12
2	Normative references	12
3	Terms and definitions	14
4	General requirements	22
5	General notes on tests	22
6	Classification	23
7	Marking	24
7.1	Items to be marked	24
7.2	Durability and legibility of marking	26
8	Terminals	26
9	Earthing	26
9.1	Provisions for protective earthing (Symbol: IEC 60417-5019 (2006-08))	26
9.2	Provisions for functional earthing (Symbol: IEC 60417-5018 (2011-07))	27
9.3	Lamp controlgear with conductors for protective earthing by track on printed circuit boards	27
9.4	Earthing of built-in lamp controlgear	27
9.5	Earthing via independent controlgear	27
9.5.1	Earth connection to other equipment	27
9.5.2	Earthing of the lamp compartments powered via the independent lamp controlgear	28
10	Protection against accidental contact with live parts	28
11	Moisture resistance and insulation	29
12	Electric strength	30
13	Thermal endurance test for winding of ballasts	31
14	Fault conditions	35
15	Construction	39
15.1	Wood, cotton, silk, paper and similar fibrous material	39
15.2	Printed circuits	39
15.3	Plugs and socket-outlets used in SELV or ELV circuits	39
15.4	Insulation between circuits and accessible parts	39
15.4.1	General	39
15.4.2	SELV circuits	40
15.4.3	ELV circuits	40
15.4.4	Other circuits	41
15.4.5	Insulation between circuits and accessible conductive parts	41
16	Creepage distances and clearances	43
16.1	General	43
16.2	Creepage distances	45
16.2.1	General	45
16.2.2	Minimum creepage distances for working voltages	46
16.2.3	Creepage distances for working voltages with frequencies above 30 kHz	46
16.2.4	Compliance with the required creepage distances	47

16.3	Clearances	48
16.3.1	General	48
16.3.2	Clearances for working voltages	49
16.3.3	Clearances for ignition voltages and working voltages with higher frequencies.....	50
16.3.4	Compliance with the required clearances.....	52
17	Screws, current-carrying parts and connections.....	53
18	Resistance to heat, fire and tracking.....	53
19	Resistance to corrosion	54
20	No-load output voltage	54
Annex A (normative) Test to establish whether a conductive part is a live part which may cause an electric shock		55
A.1	General test requirements.....	55
A.2	Limits for measured voltages	55
A.3	Limits for touch current	55
Annex B (normative) Particular requirements for thermally protected lamp controlgear		56
B.1	Introductory remark.....	56
B.2	General.....	56
B.3	Terms and definitions.....	56
B.4	General requirements for thermally protected lamp controlgear.....	57
B.5	General notes on tests	57
B.6	Classification	57
B.6.1	General	57
B.6.2	According to the class of protection	57
B.6.3	According to the type of protection	57
B.7	Marking.....	58
B.8	Thermal endurance of windings	58
B.9	Lamp controlgear heating	58
B.9.1	Preselection test.....	58
B.9.2	"Class P" thermally protected lamp controlgear	59
B.9.3	Temperature declared thermally protected lamp controlgear as specified in IEC 61347-2-8, with a rated maximum case temperature of 130 °C or lower.....	60
B.9.4	Temperature declared thermally protected lamp controlgear as specified in IEC 61347-2-8 with a rated maximum case temperature exceeding 130 °C	61
B.9.5	Temperature declared thermally protected lamp controlgear as specified in IEC 61347-2-9	62
Annex C (normative) Particular requirements for electronic lamp controlgear with means of protection against overheating.....		64
C.1	General.....	64
C.2	Terms and definitions.....	64
C.3	General requirements for electronic lamp controlgear with means of protection against overheating	64
C.4	General notes on tests	65
C.5	Classification	65
C.6	Marking.....	65
C.7	Limitation of heating	65
C.7.1	Pre-selection test.....	65

C.7.2	Functioning of the protection means	65
Annex D (normative)	Requirements for carrying out the heating tests of thermally protected lamp controlgear	67
D.1	Test enclosure	67
D.2	Heating of enclosure	67
D.3	Lamp controlgear operating conditions	67
D.4	Lamp controlgear position in the enclosure	67
D.5	Temperature measurements	68
Annex E (normative)	Use of constant S other than 4 500 in t_w tests	69
E.1	General	69
E.2	Procedure A	69
E.3	Procedure B	69
Annex F (normative)	Draught-proof enclosure	72
Annex G (normative)	Explanation of the derivation of the values of pulse voltages	73
G.1	Pulse voltage rise time T_r	73
G.2	Long-duration pulse voltages	73
G.3	Short-duration pulse voltages	73
G.4	Measurement of short-duration pulse energy	73
Annex H (normative)	Tests	79
H.1	Ambient temperature and test room	79
H.2	Supply voltage and frequency	79
H.2.1	Test voltage and frequency	79
H.2.2	Stability of supply and frequency	79
H.2.3	Supply voltage waveform for reference ballast only	79
H.3	Electrical characteristics of lamps	80
H.4	Magnetic effects	80
H.5	Mounting and connection of reference lamps	80
H.6	Reference lamp stability	80
H.7	Instrument characteristics	80
H.7.1	Potential circuits	80
H.7.2	Current circuits	80
H.7.3	RMS measurements	81
H.8	Inverter power sources	81
H.9	Reference ballast	81
H.10	Reference lamps	81
H.11	Test conditions	81
H.11.1	Resistance measurement delays	81
H.11.2	Electrical resistance of contacts and leads	81
H.12	Lamp controlgear heating	81
H.12.1	Built-in lamp controlgear	81
H.12.2	Independent lamp controlgear	82
H.12.3	Integral lamp controlgear	82
H.12.4	Test conditions	83
Annex I (normative)	Additional requirements for built-in magnetic ballasts with double or reinforced insulation	84
I.1	General	84
I.2	Terms and definitions	84
I.3	General requirements	84
I.4	General notes on tests	85

I.5	Classification	85
I.6	Marking.....	85
I.7	Protection against accidental contact with live parts.....	85
I.8	Terminals.....	85
I.9	Provision for earthing.....	85
I.10	Moisture resistance and insulation	85
I.11	High-voltage impulse test.....	85
I.12	Thermal endurance test for windings of ballasts.....	86
I.13	Ballast heating.....	86
I.14	Screws, current-carrying parts and connections	86
I.15	Creepage distances and clearances.....	86
I.16	Resistance to heat and fire	86
I.17	Resistance to corrosion	86
Annex J (normative) Schedule of more onerous requirements.....		87
Annex K (informative) Conformity testing during manufacture		88
K.1	General.....	88
K.2	Testing	88
K.3	Additional dielectric strength tests for controlgear with protection against pollution by the use of coating or potting material	90
Annex L (normative) Particular additional requirements for controlgear providing SELV.....		91
L.1	General.....	91
L.2	Terms and definitions.....	91
L.3	Classification	92
L.4	Marking.....	92
L.5	Protection against electric shock.....	93
L.6	Heating.....	93
L.7	Short-circuit and overload protection.....	94
L.8	Insulation resistance and dielectric strength	95
L.8.1	General	95
L.8.2	Insulation resistance	95
L.8.3	Electric strength	95
L.9	Construction	96
L.10	Components	96
L.11	Creepage distances, clearances and distances through insulation	97
Annex M (informative) Dielectric strength test voltages for controlgear intended for the use in impulse withstand Category III.....		98
Annex N (normative) Requirements for insulation materials used for double or reinforced insulation		99
N.1	General.....	99
N.2	Reference document.....	99
N.3	Terms and definitions.....	99
N.4	General requirements	99
N.4.1	Material requirements	99
N.4.2	Solid insulation	99
N.4.3	Thin sheet insulation.....	99
Annex O (normative) Additional requirements for built-in electronic controlgear with double or reinforced insulation		103
O.1	General.....	103

O.2	Terms and definitions.....	103
O.3	General requirements	103
O.4	General notes on tests.....	103
O.5	Classification	104
O.6	Marking.....	104
O.7	Protection against accidental contact with live parts.....	104
O.8	Terminals.....	104
O.9	Provision for earthing.....	104
O.10	Moisture resistance and insulation	104
O.11	Electric strength.....	104
O.12	Thermal endurance of windings	104
O.13	Fault conditions	104
O.14	Construction	105
O.15	Creepage distances and clearances.....	105
O.16	Screws, current-carrying parts and connections	105
O.17	Resistance to heat and fire	105
O.18	Resistance to corrosion	105
Annex P (normative) Creepage distances and clearances and distance through isolation (DTI) for lamp controlgear which are protected against pollution by the use of coating or potting.....		106
P.1	General.....	106
P.2	Creepage distances	106
P.2.1	General	106
P.2.2	Minimum creepage distances for working voltages and rated voltage with frequencies up to 30 kHz.....	106
P.2.3	Creepage distances for working voltages with frequencies above 30 kHz.....	106
P.2.4	Compliance with the required creepage distances	107
P.3	Distance through isolation.....	108
P.3.1	General	108
P.3.2	Compliance tests	109
P.3.3	Preconditioning of the lamp controlgear.....	109
P.3.4	Electrical tests after conditioning	109
Annex Q (informative) Example for U_p calculation		111
Annex R (informative) Concept of creepage distances and clearances.....		112
R.1	Basic concept considerations.....	112
R.1.1	Creepage distances	112
R.1.2	Clearances	112
R.2	Why setting up tables?.....	113
Annex S (informative) Examples of controlgear insulation coordination		114
Annex T (informative) Creepage distances and clearances for controlgear with a higher degree of availability (impulse withstand category III).....		115
T.1	General.....	115
T.2	Clearances for working voltages of lamp controlgear not protected against pollution by coating or potting materials	115
T.3	Clearances for working voltages of lamp controlgear protected against pollution by coating or potting	116
T.4	Distances through insulation – Particular additional requirements for controlgear providing SELV	116
Bibliography.....		118

Figure 1 – Relation between winding temperature and endurance test duration	33
Figure 2 – Test circuit for controlgear	38
Figure 3 – Example of a controlgear insulation related to Table 6	42
Figure 4 – Application of Table 7 and Table 8	45
Figure 5 – Application of Table 9, Table 10 and Table 11	48
Figure 6 – Application of Table 10 and Table 11	49
Figure B.1 – Test circuit for thermally protected lamp controlgear	62
Figure D.1 – Example of heating enclosure for thermally protected ballasts	68
Figure E.1 – Assessment of claimed value of S	71
Figure G.1 – Circuit for measuring short-duration pulse energy	76
Figure G.2 – Suitable circuit for producing and applying long-duration pulses	78
Figure H.1 – Test arrangement for heating test	83
Figure N.1 – Test arrangement for checking mechanical withstanding of insulating materials in thin sheet layers	102
Figure Q.1 – Example for the calculation of U_p	111
Figure S.1 – Example of schematic drawings, showing the different controlgear insulation coordination	114
Table 1 – Required rated impulse withstand voltage of equipment	21
Table 2 – Working voltage and U_{Out} steps	25
Table 3 – Electric strength test voltage	30
Table 4 – Theoretical test temperatures for ballasts subjected to an endurance test duration of 30 days	34
Table 5 – Minimum creepage distance on printed circuit board	37
Table 6 – Insulation requirements between active parts and accessible conductive parts	43
Table 7 – Minimum creepage distances for working voltage	46
Table 8 – Minimum value of creepage distances for sinusoidal or non-sinusoidal working voltages at different frequency ranges; basic or supplementary insulation	47
Table 9 – Minimum clearances for working voltages	49
Table 10 – Minimum distances of clearances for sinusoidal or non-sinusoidal voltages; inhomogeneous field conditions; basic or supplementary insulation	51
Table 11 – Minimum distances of clearances for sinusoidal or non-sinusoidal voltages; inhomogeneous field conditions; reinforced insulation	52
Table B.1 – Thermal protection operation	60
Table B.2 – Thermal protection operation	61
Table G.1 – Component values for measurement of pulse energy	76
Table K.1 – Minimum values for electrical tests	89
Table L.1 – Symbols for marking if marking is used	93
Table L.2 – Values of temperatures in normal use	94
Table L.3 – Values of insulation resistances	95
Table L.4 – Table of dielectric strength test voltages for controlgears intended for use in impulse withstand Category II	96
Table L.5 – Distances through insulation (DTI) for the impulse withstand category II / material group IIIa (175 CTI < 400)	97

Table M.1 – Table of dielectric strength test voltages for controlgears intended for use in impulse withstand Category III	98
Table N.1 – Electric strength test voltage required during the mandrel test	101
Table P.1 – Minimum creepage distances for working voltages and rated voltages with frequencies up to 30 kHz	106
Table P.2 – Minimum value of creepage distances for sinusoidal or non-sinusoidal working voltages at different frequency ranges; basic or supplementary insulation	107
Table P.3 – Impulse withstand test voltage for products of impulse withstand category II	110
Table T.1 – Minimum clearances for working voltages – Impulse withstand category III	115
Table T.2 – Impulse withstand test voltages of impulse withstand category III for lamp controlgear protected against pollution by coating or potting material	116
Table T.3 – Distances through insulation (DTI) for the impulse withstand category III/material group IIIa (175 CTI < 400)	117

INTRODUCTION

This part of IEC 61347 provides a set of general and safety requirements and tests which are considered to be generally applicable to most types of lamp controlgear and which can be called up as required by the different parts that make up IEC 61347-2. This Part 1 is thus not to be regarded as a specification in itself for any type of lamp controlgear, and its provisions apply only to particular types of lamp controlgear, to the extent determined by the appropriate Part 2 of IEC 61347.

The parts which make up IEC 61347-2, in referring to any of the clauses of this part, specify the extent to which such a clause is applicable and the order in which the tests are to be performed; they also include additional requirements as necessary. The order in which the clauses of this part are numbered has no particular significance, as the order in which their provisions apply is determined for each type of lamp controlgear by the appropriate Part 2 of the IEC 61347-2 series. All such parts are self-contained and therefore do not contain references to each other.

Where the requirements of any of the clauses of this part of IEC 61347 are referred to in the various parts that make up IEC 61347-2 by the phrase "The requirements of clause n of IEC 61347-1 apply", this phrase will be interpreted as meaning that all requirements of the clause in question of Part 1 apply, except any which are clearly inapplicable to the particular type of lamp controlgear covered by the Part 2 concerned.

Lamp controlgear which complies with the text of this standard will not necessarily be judged to comply with the safety principles of the standard if, when examined and tested, it is found to have other features which impair the level of safety covered by these requirements.

Lamp controlgear employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirement and, if found to be substantially equivalent, may be judged to comply with the safety principles of the standard.

Performance requirements for lamp controlgear are the subject of IEC 60921, IEC 60923, IEC 60925, IEC 60927, IEC 60929, IEC 61047 and IEC 62384 as appropriate for the type of lamp controlgear.

Safety requirements ensure that electrical equipment constructed in accordance with these requirements does not endanger the safety of persons, domestic animals or property when properly installed and maintained and used in applications for which it was intended.

Requirements for electronic lamp controlgear for other types of lamps will be the subject of a separate standard, as the need arises.

Controlgear can consist of a printed circuit board and may incorporate the following:

- controlgear;
- lampholder(s);
- switch(es);
- supply terminals.

The lamp controlgear should comply with this standard.

The lampholders(s), switch(es) and supply terminals should comply with their own standards.

AUSTRALIAN/NEW ZEALAND STANDARD

Lamp controlgear

Part 1:

General and safety requirements (IEC 61347-1:2015, MOD)

1 Scope

This part of IEC 61347 specifies general and safety requirements for lamp controlgear for use on d.c. supplies up to 250 V and/or a.c. supplies up to 1 000 V at 50 Hz or 60 Hz.

This standard also covers lamp controlgear for lamps which are not yet standardized.

Tests dealt with in this standard are type tests. Requirements for testing individual lamp controlgear during production are not included.

Requirements for semi-luminaires are given in IEC 60598-1:2014 (see definition 1.2.60).

Particular requirements for controlgears providing safety extra low voltage (from now on SELV) are given in Annex L.

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

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60065:2001¹, *Audio, video and similar electronic apparatus – Safety requirements*

IEC 60068-2-14:2009, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60081, *Double-capped fluorescent lamps – Performance specifications*

IEC 60085:2007, *Electrical insulation – Thermal classification and designation*

IEC 60112:2003, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60112:2003/AMD1:2009

IEC 60216 (all parts), *Electrical insulating materials – Thermal endurance properties*

IEC 60317-0-1:2013, *Specifications for particular types of windings wires – Part 0-1: General requirements – Enamelled round copper wire*

¹ Seventh edition. This edition has been replaced in 2014 by IEC 60065:2014.