REVISION OF OIML D 11 (1994)

Status of revision, and comments on changes in the numbering of IEC Publications

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OIML International Document D 11 (1994) *General requirements for electronic measuring instruments* is an important guide for all those who draft OIML Recommendations for electronic instruments or measuring instruments with electronic devices, and facilitates appropriate referencing to international standards, in particular IEC Publications.

As many readers of the OIML Bulletin will know, D 11 is currently under revision and the Dutch National Working Group (OIML TC 5/SC 1 Secretariat) is preparing revision proposals.

The NWG convened on 17 January, 11 February, 6 March and 5 April 2000 to further discuss revisions to this Document. On 5 April the 5th draft revision was reviewed; besides some editorial changes, the most important proposals currently under preparation at this stage are:

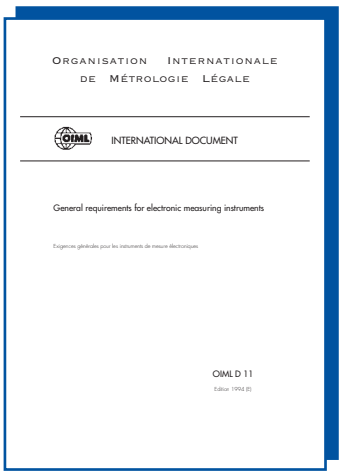
- to bring D 11 into line with the current versions of IEC Publications, including the influence of hand-held wireless telephones;
- to introduce a test for power frequency magnetic field (50/60 Hz) according to IEC 61000-4-8;
- to make a clear distinction between equipment powered by "small" built-in batteries (non-rechargeable/rechargeable) and external (car etc.) batteries; and
- elaboration of the tests for equipment powered by batteries in cars etc., based on ISO 7637-0, -1, -2 and -3.

Since the publication of D 11, many IEC Publications have been revised and their numbering system has also been changed. This article lists the updated references to be utilized in the development and/or revision of OIML Documents and Recommendations.

As from 1997 all new IEC publications and parts, as well as new editions, revisions and amendments to existing publications, are being issued with a designation in the 60000 series. Therefore, "60000" has been added to all existing base numbers. The IEC databases accessed via IEC's web site (and the IEC catalogue in particular) take account of this renumbering, but users should be aware that older publications (i.e. printed before 1997) will continue to carry the old series of numbers on printed copies until they are revised, but that they are classified by their respective 60000 numbers both in bibliographic reference material and on invoices.

Besides these changes in the numbers, many IEC Publications have also been revised since the current version (1994) of D 11 was originally drafted. The table on the following pages gives an overview of the actual situation, compared to the "Notes and Bibliography" on pages 30–31 of D 11, sorted by Reference number [...]. For completeness, ISO 7637 has also been included.

Note: By the time this article is published, the proposals for revision will have been distributed to the P- and O-Members of OIML TC 5/SC 1, as well as to Liaison Organizations.


ORGANISATION INTERNATIONALE
DE MÉTROLOGIE LÉGALE

INTERNATIONAL DOCUMENT

General requirements for electronic measuring instruments

Exigences générales pour les instruments de mesure électroniques

OIML D 11

Edition 1994 (E)

OIML D 11 (1994) is under revision. The tables on the following pages give the updated IEC Publication references

Ref. in D 11 (1994)	*IEC Publication, as it appears in the present 1994 edition of D 11*	*Current IEC Publication*	*Short description of the contents of the current IEC Publication*	*Remarks and actual situation (April 2000)*
[1]	IEC 68-1 (no year mentioned) Appendix B	IEC 60068-1 (1988-06) IEC 60068-1-am1 (1992-04) Environmental testing Part 1: General and guidance	Enumerates a series of environmental tests and appropriate severities, and prescribes various atmospheric conditions for measurements for the ability of specimens to perform under normal conditions of transportation, storage and operational use.	(*) (1)
[2]	IEC 721-3-3 (1987) Classification of groups of environmental parameters and their severities - Stationary use at weatherprotected locations	IEC 60721-3-3 (1994-12) IEC 60721-3-3-am1 (1995-06) IEC 60721-3-3-am2 (1996-11) Classification of environmental conditions Part 3: Classification of groups of environmental parameters and their severities Section 3: Stationary use at weatherprotected locations	Classifies groups of environmental parameters and their severities to which products are subjected when mounted for stationary use at weatherprotected locations.	(1)
[2]	IEC 721-3-4 (1987) Classification of groups of environmental parameters and their severities - Stationary use at non-weatherprotected locations	IEC 60721-3-4 (1995-01) IEC 60721-3-4-am1 (1996-11) Classification of environmental conditions Part 3: Classification of groups of environmental parameters and their severities Section 4: Stationary use at non-weatherprotected locations	Classifies groups of environmental parameters and the severities to which a product may be exposed under use conditions, including periods of erection work, downtime, maintenance and repair, when mounted for stationary use at locations that are non-weatherprotected.	(1)
[3]	IEC Committee Draft 77 (Secretariat) 118 Classification of electromagnetic environments	IEC 61000-2-5 (1995-09) Basic EMC publication Electromagnetic compatibility (EMC) Part 2: Environment Section 5: Classification of electromagnetic environments	This publication is a technical report intended for guidance, not as a specification, for those who are in charge of writing immunity standards for an equipment or system. Its purpose is to classify electromagnetic environments and help improve the specification of the immunity requirements of an item containing electrical or electronic parts, and consequently obtain electromagnetic compatibility. It also gives basic guidance for the selection of immunity levels. The data are applicable to any equipment, subsystem or system making use of electromagnetic energy and operating in a specific location as defined by this report.	(1)

(*) Only the number has been changed (1) Situation in April 2000: No work in progress (2) Situation in April 2000: Work in progress. For details refer to http://www.iec.ch

This list is based on the index of IEC Publications on the Internet (as published in April 2000): http://www.iec.ch

Ref. in D 11 (1994)	*IEC Publication, as it appears in the present 1994 edition of D 11*	*Current IEC Publication*	*Short description of the contents of the current IEC Publication*	*Remarks and actual situation (April 2000)*
[4]	IEC 68-2-2 (1974) Basic environmental testing procedures, Part 2: Tests, Test Bd: Dry heat for heat-dissipating specimen with gradual change of temperature	IEC 60068-2-2 (1974-01) IEC 60068-2-2-am1 (1993-02) IEC 60068-2-2-am2 (1994-05) Environmental testing Part 2: Tests. Test B: Dry heat	Contains Test Ba: Dry heat for non-heat-dissipating specimen with sudden change of temperature; Test Bb: Dry heat for non-heat-dissipating specimen with gradual change of temperature; Test Bc: Dry heat for heat-dissipating specimen with sudden change of temperature; Test Bd: Dry heat for heat-dissipating specimen with gradual change of temperature. The 1987 reprint includes IEC No. 62-2-2A.	(*) (1)
[4], [5]	IEC 68-3-1 (1974) + Supplement (1978) Background information, Section 1: Cold and dry heat tests	IEC 60068-3-1 (1974-01) IEC 60068-3-1A (1978-01) Environmental testing Part 3: Background information Section 1: Cold and dry heat tests	Gives background information for Tests A: Cold (IEC 68-2-1), and Tests B: Dry heat (IEC 68-2-2). Includes appendices on the effect of: chamber size on the surface temperature of a specimen when no forced air circulation is used; airflow on chamber conditions and on surface temperatures of test specimens; wire termination dimensions and material on surface temperature of a component; measurements of temperature, air velocity and emission coefficient. Supplement A gives additional information for cases where temperature stability is not achieved during the test.	(*) (*) (1)
[5]	IEC 68-2-1 (1974) + Supplement A (1976) Basic environmental testing procedures, Part 2: Tests, Test Ad: Cold for heat-dissipating specimen with gradual change of temperature	IEC 60068-2-1 (1990-05) IEC 60068-2-1-am1 (1993-02) IEC 60068-2-1-am2 (1994-06) Environmental testing Part 2: Tests Test A: Cold	Concerns cold tests on both non-heat-dissipating and heat-dissipating specimens.	(2)
[6]	IEC 68-2-3 (1969) Basic environmental testing procedures, Part 2: Tests - Test Ca: Damp heat, steady state	IEC 60068-2-3 (1969-01) Environmental testing Part 2: Tests Test Ca: Damp heat, steady state	Describes a continuous test at a steady temperature of 40 °C and a relative humidity of 90–95 %. The standard test duration is 4 to 56 days.	(*) (1)
[6]	IEC 68-2-56 (1988) Test Cb Environmental testing - Part 2: Tests. Test Cb: Damp heat, steady state, primarily for equipment	IEC 60068-2-56 (1988-12) Environmental testing Part 2: Tests Test Cb: Damp heat, steady state, primarily for equipment	Determines the suitability of electrotechnical products, principally equipment, for use and storage under conditions of high humidity.	(*) (1)
[6], [7]	IEC 68-2-28 (1980) Guidance for damp heat tests	IEC 60068-2-28 (1990-03) Environmental testing Part 2: Tests. Guidance for damp heat tests	Determines the ability of electrotechnical products to withstand the stresses occurring in a climate of high relative humidity, with or without condensation, with special regard to electrical and mechanical characteristics.	(1)

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[7]	IEC 68-2-30 (1980) Basic environmental testing procedures, Part 2: Tests, Test Db and guidance: Damp heat, cyclic (12 + 12 hour cycle), test variant 1	IEC 60068-2-30 (1980-01) IEC 60068-2-30-am1 (1985-01) Environmental testing Part 2: Tests Test Db and guidance: Damp heat, cyclic (12 + 12-hour cycle) Amendment No. 1 replaces the third paragraph of Clause 8, Recovery	Determines the suitability of components, equipment and other articles for use and/or storage under conditions of high humidity when combined with cyclic temperature changes.	(*) (1)
[8]	IEC 68-2-34 (1973) Test Fd: Random vibration wide band - General requirements **Withdrawn in 1999**	**Replaced by:** IEC 60068-2-64 (1993) IEC 60068-2-64 Corr.1 (1993-10) Environmental testing Part 2: Test methods Test Fh: Vibration, broad-band random (digital control) and guidance	Determines the ability to withstand specified severities of broad-band random vibration. Applies to specimens which may be subjected to vibration of a stochastic nature by transportation or operational environments, for example in aircraft, space vehicles and land vehicles. Has the status of a basic safety publication in accordance with IEC Guide 104.	(1)
[8]	IEC 68-2-36 (1973) + Amendment 1 (1983) Basic environmental testing procedures, Part 2: Tests, Test Fdb: Random vibration wide band - Reproducibility Medium **Withdrawn in 1999**			
[9]	IEC 68-2-6 (1982) + Amendments 1 and 2 (1985) Basic environmental testing procedures, Part 2: Tests, Test Fc and guidance: Vibration (sinusoidal)	IEC 60068-2-6 (1995-03) IEC 60068-2-6 corr.1 (1995-03) Environmental testing - Part 2: Tests - Test Fc: Vibration (sinusoidal)	Gives a method of test which provides a standard procedure to determine the ability of components, equipment and other articles to withstand specified severities of sinusoidal vibration. Has the status of a basic safety publication in accordance with IEC Guide 104.	(1)
[9]	IEC 68-2-47 Environmental testing - Part 2-47: Test methods - Mounting of components, equipment and other articles for vibration, impact and similar dynamic tests	IEC 60068-2-47 (1999-10) Environmental testing Part 2-47: Test methods Mounting of components, equipment and other articles for vibration, impact and similar dynamic tests	Provides methods of mounting components, and mounting requirements for equipment and other articles, for the families of dynamic tests in IEC 60068-2, that is impact (Test E), vibration (Test F) and acceleration, steady-state (Test G).	(1)
[10]	IEC 68-2-31 (1969) + Amendment 1 (1982) Basic environmental testing procedures, Part 2: Tests - Test Ec: Drop and topple, primarily for equipment-type specimens (Procedure 2.a: Dropping on to a face)	IEC 60068-2-31 (1969-01) IEC 60068-2-31-am1 (1982-01) Environmental testing Part 2: Tests Test Ec: Drop and topple, primarily for equipment-type specimens	Determines the effect on a specimen of simple standard treatments which are representative of the knocks and jolts likely to occur during repair work or rough handling on a table or bench. Has the status of a basic safety publication in accordance with IEC Guide 104.	(*) (*) (1)

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[11]	IEC 1000-2-1 Electromagnetic compatibility (EMC) - Part 2: Environment - Section 1: Description of the environment - Electromagnetic environment for low-frequency conducted disturbances and signalling in public power supply systems	IEC/TR3 61000-2-1 (1990-05) Electromagnetic compatibility (EMC) Part 2: Environment Section 1: Description of the environment - Electromagnetic environment for low-frequency conducted disturbances and signalling in public power supply systems	Has the status of a technical report, and gives information on the various types of disturbances that can be expected on public power supply systems. The following disturbance phenomena are considered: harmonics - inter-harmonics - voltage fluctuations - voltage dips and short supply interruptions - voltage unbalance - mains signalling - power frequency variation - d.c. components.	(*) (1)
[11]	IEC 1000-2-2 Electromagnetic compatibility (EMC) - Part 2: Environment - Section 2: Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems	IEC 61000-2-2 (1990-05) Electromagnetic compatibility (EMC) Part 2: Environment Section 2: Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems	Gives compatibility levels to be considered in public low-voltage supply systems with regard to the above-mentioned phenomena. Compatibility levels are intended to serve as reference values for trouble-free operation for equipment installed in public power supply systems.	(*) (2)
[11]	IEC 1000-4-1 Electromagnetic Compatibility (EMC) - Testing and measurement techniques - Overview of immunity tests	IEC 61000-4-1 (1992-12) Basic EMC Publication Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques Section 1: Overview of immunity tests.	Considers immunity tests for electric and/or electronic equipment (apparatus and systems) in its electromagnetic environment. Both conducted and radiated phenomena are considered including immunity tests for equipment connected to power, control and communication networks. Replaces IEC 60801-1 (1984-11).	(*) (2)
[12]	IEC 654-2 (1979) Operating conditions for industrial-process measurement and control equipment (under revision)	IEC 60654-2 (1979-01) IEC 60654-2-am1 (1992-09) Operating conditions for industrial-process measurement and control equipment Part 2: Power	Gives the limiting values for power received by land-based and offshore industrial-process measurement and control systems or parts of systems during operation. Maintenance and repair conditions are not considered.	(*) (1)
[13]	IEC 801-4 (1988) Electromagnetic compatibility for industrial-process measurement and control equipment, Part 4: Electrical fast transient/burst requirements (Work in progress: Amd. 1 and 2) **Withdrawn in 1995**	**Replaced by** IEC 61000-4-4 (1995-01) Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 4: Electrical fast transient/burst immunity test. Basic EMC Publication	Relates to the immunity requirements and test methods for electrical and electronic equipment to repetitive electrical fast transients. Additionally defines ranges of test levels and establishes test procedures. The object of this standard is to establish a common and reproducible basis for evaluating the performance of electrical and electronic equipment when subjected to repetitive fast transients (bursts), on supply, signal and control ports. The test is intended to demonstrate the immunity of electrical and electronic equipment when subjected to types of transient disturbances such as those originating from switching transients (interruption of inductive loads, relay contact bounce, etc.). The standard defines test voltage waveform, range of test levels, test equipment, test set-up and test procedure.	(2)

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[14]	IEC 801-2 (1991) Electromagnetic compatibility for industrial-process measurement and control equipment, Part 2: Electrostatic discharge requirements **Withdrawn in 1997**	**Replaced by** IEC 61000-4-2 (1995-01) IEC 61000-4-2 -am1 (1998-01) Basic EMC Publication Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques Section 2: Electrostatic discharge immunity test	This publication is based on IEC 60801-2 (second edition: 1991). It relates to the immunity requirements and test methods for electrical and electronic equipment subjected to static electricity discharges, from operators directly, and to adjacent objects. It additionally defines ranges of test levels which relate to different environmental and installation conditions and establishes test procedures. The object of this standard is to establish a common and reproducible basis for evaluating the performance of electrical and electronic equipment when subjected to electrostatic discharges. In addition, it includes electrostatic discharges which may occur from personnel to objects near vital equipment.	Consolidated edition: IEC 61000-4-2 Ed.1.1 (1999-05) (2)
[15]	IEC 801-3 (1984) Electromagnetic compatibility for industrial-process measurement and control equipment, Part 3: Radiated electromagnetic field requirements (Work in progress: Amd. 2) **Withdrawn in 1995**	**Revision published as** IEC 61000-4-3 (1995-03) IEC 61000-4-3-am1 (1998-06) Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques Section 3: Radiated, radio-frequency, electromagnetic field immunity test	Applies to the immunity of electrical and electronic equipment to radiated electromagnetic energy. Establishes test levels and the required test procedures. Establishes a common reference for evaluating the performance of electrical and electronic equipment when subjected to radio-frequency electromagnetic fields.	Consolidated edition: IEC 61000-4-3 Ed.1.1 (1998-11) (2)
[16]	Intended IEC Publication 801-6 Electromagnetic compatibility for electrical and electronic equipment, Part 6: Immunity to conducted disturbances induced by radio frequency fields above 9 kHz. **Not published**	**Present standard** IEC 61000-4-6 (1996-04) IEC 61000-4-6 Corr.1 (1996-10) Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques Section 6: Immunity to conducted disturbances, induced by radio-frequency fields	Relates to the conducted immunity requirements of electrical and electronic equipment to electromagnetic disturbances coming from intended radio-frequency (RF) transmitters in the frequency range 9 kHz up to 80 MHz. Equipment not having at least one conducting cable (such as mains supply, signal line or earth connection), which can couple the equipment to the disturbing RF fields is excluded. This standard does not intend to specify the tests to be applied to particular apparatus or systems. Its main aim is to give a general basic reference to all concerned product committees of the IEC. The product committees (or users and manufacturers of equipment) remain responsible for the appropriate choice of the test and the severity level to be applied to their equipment.	(2)

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Clauses A.5 B.6.3	ISO 7637-0 (1990) ISO 7637-1 (1990) ISO 7637-2 (1990) Road vehicles - electrical disturbance by conducting and coupling	ISO 7637-0 (1990) Road vehicles - electrical disturbance by conducting and coupling Part 0: Definitions and general	Defines basic terms used in the various parts for electrical disturbance by conduction and coupling. Gives also general information relating to the whole International Standard and common to all parts.	In revision: ISO/CD 7637-1
		ISO 7637-1 (1990) Road vehicles - electrical disturbance by conducting and coupling. Part 1: Passenger cars and light commercial vehicles with nominal 12 V supply voltage - Electrical transient conduction along supply lines only	Specifies test methods and procedures to ensure the compatibility to conducted electrical transients of equipment installed on passenger cars and light commercial vehicles fitted with a 12 V electrical system. It describes bench tests for both the injection and measurement of transients.	In revision: Combined in ISO/CD 7637-2
		ISO 7637-2 (1990) Road vehicles - electrical disturbance by conducting and coupling Part 2: Commercial vehicles with nominal 24 V supply voltage - Electrical transient conduction along supply lines only	Specifies test methods and procedures to ensure the compatibility to conducted electrical transients of equipment installed on commercial vehicles fitted with a 24 V electrical system. It describes bench tests for both the injection and measurement of transients.	