



TC 7/SC 5/p 1 CD1 for Revision of OIML 129 - Participating country comments			
Comments on: TC 7/ SC 5/p 1 CD1 OIML R129 “Multi-dimensional measuring instruments”			
TC 7/SC 5/p 1 Secretariat: Australia		Date of circulation: May 29, 2015 Comments due date: September 4, 2015	
Organization:		National Measurement Institute (NMI) Legal Metrology Policy	
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No.	Country Code	Page	Clause	General / Technical / Edit	Comment	Reason for comment	Secretariat's response
	AU		Scope	General	Added specific statement with respect to instruments that use two different measurement methods.	These instruments are not directly addressed in the document.	Secretariat change
	AU		2.1.1.1 – 2.1.1.3	General	Redefined length, width and height to make them as least limiting as possible while retaining meaning.	These terms are not defined in the VIM, VIML or G 18.	Secretariat change
	AU		2.1.12 and 2.1.13	General	Definitions added to accommodate instruments where measurements are affected by means of relative movement between the object and the instrument and the requirements of 5.3.1(f)	This is consistent with the inclusion of maximum dimension (max) and minimum dimension (min) definitions	Secretariat change
	AU		5.1.5	General	Truncated sentence in (a) to avoid confusion since “operate negatively with respect to the zero or ready condition” could imply adding a negative measurement to create a longer object.		Secretariat change
	AU		6.4.5	General	Added comment regarding frequently encountered irregularly-shaped test objects.	This is linked to comment #76.	Secretariat change
1	PL			General	Poland has no comments regarding this document.	Thank you for the feedback.	
2	CZ			General	Czech Republic has no comments regarding this document.	Thank you for the feedback.	
3	FR			General	France has no comments regarding this document.	Thank you for the feedback.	
4	US-1			General	We are unclear why the “1CD package” of R129 was <u>not</u> posted on the “Committee Drafts” page of the OIML website. https://www.oiml.org/en/technical-work/committee-drafts		Now that the new OIML submission process is bedded down and functional the Secretariat will ensure all future CDs are submitted via the new process.
4	US-2			General	The pdf document on the website entitled “OIML R 129 1 CD with track changes” did <u>not</u> show the changes and edits from the previous WD draft. Maybe the visibility of the “track changes” was lost when the document was converted from MS word to a pdf document. (?) Not seeing the changes made it much more difficult to follow/understand the changes that had been made from the WD document.		Now that the new OIML submission process is bedded down and functional the Secretariat will ensure all future CDs are submitted in the correct format.
5	NL-1	6	Scope	Edit	Replace “girth” with “circumference”	Girth could be misunderstood	Rejected - VIM, VIML and G 18 do not reference either term. “Circumference” implies perimeter of a round object; “girth” implies perimeter of an object of any shape. Macquarie dictionary - Both interchangeable, but circumference “esp. circular object.”

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6	US-3			General	<p>“type approval” and “type evaluation” have become the more modern/accepted terms to replace “pattern approval” and “pattern evaluation”</p> <p>If the sentence is about testing requirements or testing procedures the terms “type evaluation testing” ... “type evaluation requirements” ... or ... “type evaluation procedures” should be used.</p> <p>There are at least 3 places to change these things in the “Scope,” but the whole document should be checked to make this change.</p>		Accepted
7	NL-2	6	Scope etc.	Edit	Change “pattern approval” to “type evaluation” on all occurrences	Adaption to VIML 2.04	
8	CA-1	6	2.1.1	Technical	<p>Alter 2.1.1 to read:</p> <p>“Multi-dimensional measuring instrument</p> <p>Measures the dimensions an object and determines the length (L), width (W) and height (H) of the smallest rectangular parallepiped (rectangular box) which fully encloses that object.”</p>	This is a more succinct definition of a multi-dimensional measuring instrument which does not treat rectangular boxes and irregular objects separately. This definition starts with the hardest possible object (irregular) and then the special case of a rectangular box not the other way around.	Accept CA-1 – with modification to accommodate comment #9 (NL-3).
9	NL-3	6	2.1.1	General	In the way defined it is not possible to replace the term only by its definition. It is required to amend the definition to allow such replacement	Terminology definition is not in agreement with the mandatory requirements in B6-2 Annex A	
10	RU-1	6	2.1.1.1	Technical	It is said that length is defined as the X-coordinate. However, depending on the measurement task, other geometry parameters of the measured object can be located along the x-axis, not necessarily the length.	There exists a class of measuring instruments, for example, horizontal length gages, which constructively have only one measuring axis for any geometry parameter of the object: length, width, height, diameter, chord, center distance, etc.	Amended by secretariat – new definitions developed.
11	RU-2	7	2.1.1.2	Technical	The same as in 2.1.1.1 for Y-coordinate.	It is reasonable to define the width with reference to Y-axis only if previously, in the same coordinate system the length has already been defined through X-axis.	
12	CA-2	7	2.1.1.1 – 2.1.1.4	Technical	<p>2.1.1.1 - 2.1.1.4 Definition of length, width, height, depth</p> <p>Not sure of the usefulness of these definitions since they are defined differently by the manufacturer. The definition of “depth” should be removed.</p>	Terms are defined by the manufacturer and in many cases the definition of the “length” measurement is not used in the same manner in all cases. The term “depth” is not used in the document.	
13	NL-4	7	2.1.1.4	Edit	Delete definition depth	The word is not used in the document and is confusing	
14	NL-5	7	2.1.2	General	Adapt to OIML D 11 (2013): 3.3 or discuss	Terminology definition is not in agreement with the mandatory requirements in B6-2 Annex A: A.1.2	
15	CA-3	7	2.1.3	Technical	The word instrument should be defined as a “machine, device, apparatus” and not use the same term in the definition.	The term you are trying to define should not be used in its own definition.	Secretariat note – modified consistent with definition in VIM (3.1).
16	NL-6	7	2.1.3	General	<p>This is not the unique definition of this term.</p> <p>Replace by OIML V002 200 (2012) 3.1 and may be add a note to indicate the use in the recommendation</p>	Terminology definition is not in agreement with the mandatory requirements in B6-2 Annex A: A.1.2	
17	UK-1	7	2.1.3	Edit	<p>2 TERMINOLOGY</p> <p>2.1.3 measuring instrument</p> <p>Instrument, incorporating a measuring device, intended to measure the dimensions of an object. The measuring device, which may include electronics, provides a signal to the processor from which the associated quantities are calculated.</p>	For consistency with 2.1.4 processor - contains all the necessary information and receives all the necessary signals from the measuring device	

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18	NL-7	7	2.1.4	General	In the way defined it is not possible to replace the term only by its definition. It is required to amend the definition to allow such replacement	Terminology definition is not in agreement with the mandatory requirements in B6-2 Annex A	Accepted
19	CA-4	7	2.1.5	Edit	Change the definition of indicator from 2.1.5 indicator displays the dimensions measured and the associated quantities calculated by the processor. It may or may not be associated with the processor. to 2.1.5 indicator displays the measured dimensions and the associated quantities calculated by the processor. It may or may not be associated with the processor.	Better flow	Accepted, with modification based on definition from R129: 2000, 2.5 referred to in G 18.
20	NL-8	7	2.1.5	General	In the way defined it is not possible to replace the term only by its definition. It is required to amend the definition to allow such replacement	Terminology definition is not in agreement with the mandatory requirements in B6-2 Annex A	
21	NL-9	7	2.1.6	General	In the way defined it is not possible to replace the term only by its definition. It is required to amend the definition to allow such replacement Suggestion to instead use ancillary device and thus copy V001-2013 5.06 and add the examples in the note	Terminology definition is not in agreement with the mandatory requirements in B6-2 Annex A	Accepted
22	UK-3	7	2.1.8	Edit	2.1.8 automatic instrument measuring instrument that does not require the intervention of an operator but automatically determines the results	Clarity with 2.1.7	Accepted
23	NL-10	7	2.1.9	Edit	Correct the definition by making the definition singular	Terminology definition is not in agreement with the mandatory requirements in B6-2 Annex A: A.2.3	Accepted
24	CA-5	8	2.2.3	Edit	Unless the comment for 2.1.5 is implemented then 2.2.3 should be removed. 2.2.3 measured dimensions length (L), width (W) or height (H), measured by the instrument, of the smallest rectangular box which fully encloses the object.	Term never used in document	Rejected – on account of comment #20 and #29 being implemented.
25	CA-6	8	2.2.4	Technical	Definition of Volume should be modified: 2.2.4 volume (vol) volume of the smallest rectangular box which fully encloses the object, that is the product of the indicated values of length (L), width (W) and height (H). changed to 2.2.4 dimensional volume (vol) volume of the smallest rectangular box which fully encloses the object, that is the product of the indicated values of length (L), width (W) and height (H).	Should be called “dimensioned, cuboid, calculated volume. Only in the case of a rectangular box is the volume of the smallest box the actual volume of the object being measured.	Accepted with modification to abbreviation.
26	NL-11	8	2.2.4	General	Volume is a physical property. It should not be redefined and restrict. moreover the definition contains the complete term, which is not allowed in terminology (creates a never-ending definition) It is suggested to define the abbreviation “vol” and as the volume of the smallest rectangular box	Terminology definition is not in agreement with the mandatory requirements in B6-2 Annex A	
27	NL-12	8	2.2.5	General	Delete. This is not a definition but a requirement on how to measure the weight and is formulate as a never-ending definition. Moreover weight is self-explanatory and concerns a force	Terminology definition is not in agreement with the mandatory requirements in B6-2 Annex A: A.1.3.9	Accepted

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28	CA-7	8	2.2.7	Technical	Definition of minimum dimensions should be modified. 2.2.7 minimum dimension (min) value of the dimension for each axis below which the measuring result may be subject to an excessive relative error. Changed to 2.2.7 minimum dimension (min) value of the smallest measured dimension for each axis, determined as a function of the division size.	The reason for the minimum dimension does not need to be indicated.	Accepted
29	CA-8	8	2.2.8	Technical	Definition should be modified from 2.2.8 dimensional weight (Dim Wt or DW) calculated value obtained by applying a conversion factor to the object's volume (see 2.2.4) or dimensions (see 2.2.3). to 2.2.8 dimensional weight (Dim Wt or DW) calculated value obtained by applying a conversion factor to the object's dimensioned volume (see 2.2.4) or measured dimensions (see 2.2.3).	see definition of volume above 2.2.4 and 2.2.3	Accepted – linked to and consistent with CA-6.
30	NL-13	8	2.2.10	General	In the way defined it is not possible to replace the term only by its definition. It is required to amend the definition to allow such replacement	Terminology definition is not in agreement with the mandatory requirements in B6-2 Annex A	Accepted
31	NL-14	8	2.2.11	General	Delete while not applied in the draft	Terminology definition is not in agreement with the mandatory requirements in B6-2 Annex A: A 1.1.5	Accepted – term is not used other than in the definition
32	UK-2	8	2.2.11 – 2.2.13	Edit	2.2.11 electronic multi-dimensional measuring instrument; 2.2.12 electronic device; and 2.2.13 electronic sub-assembly	Are not MEASUREMENT TERMS Suggest moving into section 2.1 GENERAL TERMS	Accepted – deleted 2.2.11 (see comment #31/NL-14) and moved 2.2.12 and 2.2.13
33	NL-15	9	2.3.4	Edit	Term and definition should be singular	Terminology definition is not in agreement with the mandatory requirements in B6-2	Accepted
34	UK-4	9	2.3.5	Edit	2.3.5 fault difference between the error of indication and the intrinsic error of a measuring instrument. [VIML 5.12] <i>Note:</i> Principally a fault is the result of an undesired change of data contained in, or flowing through, an electronic measuring instrument.	The NOTE implies that a fault is only applicable to an electronic measuring instrument.	Rejected – the definition as provided, and with note 2, is the definition included in the VIML (5.12)
35	UK-5		A.3.5	Technical	RFI testing, both in section 3.5, the field strength has been increased to 10 V/m from 3 V/m for RF electromagnetic fields, and for conducted is set at 10 V, this is E2 levels, (I know D11 suggests this) seems a tad harsh for something in a post office or warehouse, OIML E1 levels is 3 V/m and 3V, with 10 V/m for the mobile phone range: taken from R117-2.		Rejected – MDMLs are also frequently used in light and heavy industrial environments where they may be exposed to high RF electromagnetic fields

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36	CA-9	10	4.1.1	Edit	<p>Section 4.1.1. should be removed however if not removed it should be changed :</p> <p><i>Note:</i> Where a manufacturer can meet a lower minimum dimension limits, it can be specified by the manufacturer according to 5.3.1.</p> <p>to</p> <p><i>Note:</i> Where a device can meet a lower minimum dimension limits, it can be specified by the manufacturer according to 5.3.1.</p>	<p>It is not a manufacturer that meets a minimum dimension limits it is the device.</p> <p>Also, The "lower limit" specified in the table should never be breached. This ratio of the tolerance to object dimension becomes far too large below this limit to call the device "accurate". This isn't a question of whether or not the device is capable of measuring smaller objects, it is instead how much percentage error in the objects dimensions is tolerable. A +/- 1d tolerance on a dimension with a nominal value smaller than 10d represents an error tolerance greater than 10%, which is excessive. Even if the device is perfectly accurate below 10d, simple rounding of the dimensions would represent an error in excess of 5%.</p> <p><u>Recommend Removal</u></p>	<p>Reject removal of note – in order to accommodate the compromise to meet Japan's postal office needs raised in the feedback to CD1 by the UK (CD1 comment #24).</p> <p>Accept modification of wording from "manufacturer" to "instrument"</p>
37	NL-16	10	4.1.1	Technical	Delete Note	Smaller min will cause the relative error to become too large. Moreover: a note should not undermine a requirement while it cannot contain a requirement and a requirement cannot be manufacturer specs dependent. Only national authorities may be in a position to allow a deviation	
38	NL-17	10	4.1.1	General	Make min 10 d for all scale intervals	There is no reason for min to increase when a scale interval increases	Rejected – any individual country can specify a tighter requirement at their discretion.
39	UK-6	11	4.1.5	Edit	<p>4.1.5 Calculated quantities</p> <p>For all calculated quantities included in the transaction, the indicated quantity shall equal the quantity obtained by using the indicated values included in the calculation together with any rounding applied. If the indicated, calculated quantity is rounded it shall be rounded to ± 0.5 scale intervals.</p>	The punctuation mark is incorrectly positioned	Accepted
40	CA-10	11	4.1.6	General/ Technical	<p>4.1.6 Rules for the determination of errors</p> <p><i>The rules for the determination of errors are as follows:</i></p> <p><i>(a) When a test is conducted, the expanded uncertainty (coverage factor $k = 2$) of the determination of the errors on indications of dimensions shall not be greater than one-third of the mpe specified (see GUM).</i></p> <p><i>[Secretariat: Is this clause currently used in assessing the uncertainty of error in the indication of measurement or uncertainty associated with test objects (see clause 6.1.4.2) more relevant?]</i></p>	Discussion needed or more details needed to answer secretariat's question.	Accept #41/NL-18 – this modification brings expanded uncertainty into line with the accuracy requirements of 6.4.2 Test objects.
41	NL-18	11	4.1.6 (a)	Technical	It is suggested to change to read: The expanded uncertainty (coverage factor $k = 2$) of the reference(s) used to determine the errors on indications of dimensions shall not be greater than one-fifth of the mpe specified (see GUM).	<p>Please take into account the contents and progress on the OIML Document on uncertainty in testing which is in production by OIML TC 3/SC 5 and yet is in approval stage.</p> <p>Make required uncertainty equal to value of 6.4.2.</p>	

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42	UK-7	11	4.1.6	Edit	(d) The initial intrinsic error is found at reference conditions of 20 °C ± 5 °C, atmospheric ambient pressure , nominal voltage and 50 % ± 15 % relative humidity.	Reword: (d) The initial intrinsic error is found at reference conditions of 20 °C ± 5 °C, ambient atmospheric pressure , nominal voltage and 50 % ± 15 % relative humidity.	Accepted
43	UK-8	11	4.2.1	Technical/ Edit	4.2.1 Rated operating conditions Voltage variation is not an "environmental condition"	Consistency (e.g. with section 4.3) 4.2.1 Influence Factors under rated operating conditions Additional wording: The indication for the same input shall remain within the mpes when applied at reference conditions before and after the test (see 4.1.6(d)) and when applied at the test conditions specified in (a) A.2.4 and (b) A.2.2.	Accepted
44	CA-11	11	4.2.1	Technical	Alter fourth sentence in 4.2.1 to read: "An electronic instrument powered by direct current shall either continue to function correctly or not indicate any quantity when the voltage is below the manufacturer's specified nominal voltage."	This extends the requirement to all direct current sources, not just batteries.	Accepted
45	UK-9	11	4.2.2		4.2.2 Humidity All measuring instruments shall be subjected to the damp heat steady state test described in A. A.2.2.3. The indication for the same input shall remain within the mpes when applied at reference conditions before and after the test (see 4.1.6(d)) and when applied at the test conditions specified in A.2.2.3 after 48 h at these conditions.	4.2.2 Humidity All measuring instruments incorporating electronics shall be.... Incorrect reference A.2.2 Static temperatures test, A.2.3 Test procedure for Damp heat, steady-state (non-condensing)	Rejected – static temperature tests renumbered to A.2.1
46	CA-12	11	4.2.2	Edit	Change reference from A.2.2 to A.2.3 4.2.2 Humidity All measuring instruments shall be subjected to the damp heat steady state test described in A.2.3.	Test for dry heat is A.2.2, Test for Damp Heat is A.2.3	Rejected – static temperature tests renumbered to A.2.1
47	NL-19	11	4.2.2	Edit	Add to 4.2.1: (c) relative humidity of 85% at high temperature limit and delete 4.2.2	This makes reference to A.2.2 (which should be A.2.3) not necessary and make a clear requirement, the procedure is described in A.2.3	Submitted as question to the PG.
48	UK-10	12	4.3.3	Edit	4.3.3 Tests for disturbances; severity levels Instruments shall be tested as to withstand the appropriate disturbances as listed in Table A.1. The severity levels of the disturbances are given in A.3.	The sentence does not make grammatical sense, suggest alternative wording: Instruments shall be tested so as to determine if they will withstand the appropriate disturbances as listed in Table A.1 when subjected to the applicable severity levels given in A.3.	Accepted
49	NL-20	12	4.3.3	Edit	Delete "be tested as to"	Avoid "tested" in the requirements; testing is a means to verify the compliancy to a requirement it cannot be part of the required performance statement (requirement)	Rejected – title of Table A.1 is "Applicable tests"
50	NL-21	12	4.3.4	Edit	Change to: Instruments based on light or acoustic measuring techniques shall remain within the mpe when subjected to the applicable light or acoustic disturbances described in A.4.	Avoid "tested" in the requirements	Accepted
51	NL-22	12	5.1.2	Edit	Replace "service" with "operation"	To avoid confusion because service could be understood as maintenance	Accepted
52	NL-23	12	5.1.3	Technical	Include the possibility for higher resolution	This could ease the creation of test objects (no need for multiples of d)	Rejected – this would create the requirement for higher resolution test objects to test the accuracy of higher resolution instruments

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53	NL-24	13	5.1.5	General	We doubt whether including requirements for tare devices is relevant	We have never met such a tare device in relation to the R 129 topic	Rejected – the Secretariat has encountered instruments that include a tare function.
54	UK-11	13	5.1.6	Edit	5.1.6 Warm-up As soon as the instrument indicates or transmits the measurement results after the warm-up period after following switch-on, the indications shall be within mpes.	Clarity and easier reading	Accepted
55	NL-25	13	5.2.1 (a)	Technical	An instrument shall either have at least one indicator or printer which displays or prints the measurement results on which the transaction is based being the dimensions or volume, or these data shall be transmitted and stored and preserved in such a way that the measurement result can durably be reconstructed from the stored data.	Especially in cases where the instrument is combined with a weighing instrument the display or printer is shared, but would not also the possibility to allow for transmission and durable storage of the applicable data be sufficient ?	Accepted – with secretariat formatting
56	JP-1	13	5.2.1(e) Indication and printing devices /general	Technical	Change the sentences as shown below. <i>(e) The previous displayed indications shall not persist for longer than 1 s after a new object is detected in the measurement area. The indication shall remain however until the next new object is detected.</i>	The maximum time of 1s should be extended to assist reading of the indication only in the case there is no detection of a new object.	Accepted – with secretariat formatting
57	NL-26	13	5.2.3	Technical	Add: the unit of measurement shall be the same for each axis	In conjunction with 5.2.4 to prevent scale intervals like x (10 cm) y (10 cm) z (0,2 m)	Accepted
58	NL-27	13	5.2.3	Edit	.. <i>anyone</i> indication ? Probably “each” or “any” is meant	grammar issue	Accepted with comment #57 redundant in light of comment #59.
59	UK-12	13	5.2.3	Edit	5.2.3 Units of measurement For any one indication of a quantity only one unit of measurement for that quantity shall be used, for example cm only, not m and cm.	Space added between the words “any” and “one”.	
60	UK-13	14	5.2.4	Edit	5.2.4 Value of the scale interval (c) variable (for example multi-interval) on one or more axes provided that: • if all three axes are multi-interval, then $dx_1 = dy_1 = dz_1$, $dx_2 = dy_2 = dz_2$, ... , $dx_r = dy_r = dz_r$;	Remove 2nd bullet (which is related to 1st bullet)	Accepted
61	UK-14	14	5.2.5	Edit	5.2.5 Decimal numbers If the indication is expressed in a decimal form, there shall be at least one zero preceding the decimal mark for values less than one. The decimal mark on tickets shall be printed out with the measured value by the printer, with at least one zero preceding the decimal mark for values less than one.	Clarity & consistency	Accepted
62	UK-15	14	5.2.6	Edit	5.2.6 Limits of indication Indications or printing of a dimension above the maximum dimension + 9 d shall either: (a) be blank; or (b) be identified by an obvious difference in the display and, if applicable, the print out.	Clarity & consistency	Accepted as a component of comment #63.

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63	CA-13	14	5.2.6	Edit	<p>Currently:</p> <p>Section 5.2.6 Limits of indication</p> <p>Indications or printing of a dimension above the maximum dimension + 9 d shall either:</p> <p>(a) be blank; or</p> <p>(b) be identified by an obvious difference in the display.</p> <p>Proposed</p> <p>Section 5.2.6 Limits of indication</p> <p>Indications or printing of a <u>any</u> dimension <u>must be inhibited, or indicate an error message with its measurement registration, if the object being measured above the maximum dimension + 9 d shall either:</u></p> <p>(a) be blank; or</p> <p>(b) be identified by an obvious difference in the display.</p> <p>(a) is smaller than the minimum <u>dimensions</u> marked on the device;</p> <p>(b) is larger than the maximum <u>dimensions</u> marked on the device plus 9 d; or</p> <p>(c) has <u>dimensions</u> that exceed the measurement capability of the device.</p>	The current definition only makes reference to over indications and nothing about below minimum dimensions.	Accepted – with reference to the “axis” being measured instead of the “object” being measured.
64	CA-14	14	5.2.7	Edit	<p>Change the following:</p> <p>5.2.7 Multi-interval instruments</p> <p>For each partial measuring range, the following apply:</p> <p>(a) scale intervals $d1 < d2 < d3 \dots < dr$; and</p> <p>(b) $\min = \min1$, $\max = \max1$, $\max1 = \max1$, etc.</p> <p>With this :</p> <p>5.2.7 Multi-interval instruments</p> <p>For each partial measuring range, the following apply:</p> <p>(a) scale intervals $d1 < d2 < d3 \dots < dr$; and</p> <p>(b) $\min = \min1$, $\max = \max r$, $\max1 = \min2$, etc.</p>	Edit error	Accepted
65	UK-16	14	5.2.8	Edit	<p>5.2.8 Multi-instrument system</p> <p>A number of measuring devices may be connected to one indicating device to form a multi-instrument system. The following requirements apply.</p> <p>If the indicator is not within adequate proximity to each measuring device to allow easy testing, a mobile test indicator shall be provided.</p>	Consistency –delete mobile	Accepted
66	UK-17	15	5.2.9	Edit	<p>5.2.9 Printed and display information</p> <p>Note 2: When the customer is not present during the measurement process the above information need not be displayed or printed out at the time but shall be available on request, e.g. retrievable from a data storage device (which shall have sufficient storage capacity for the intended purpose).</p>		Accepted

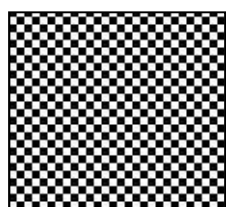
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67	CA-15	15	5.2.10	Edit	5.2.10 Stability Printing or storage of indications for subsequent indication, data transfer, totalizing, etc., shall be inhibited when the equilibrium is not stable. Stable equilibrium is considered to be achieved when, over a period of 5 s after printout or data storage, no more than two adjacent values are indicated, one of which is the printed or stored value.	Backwards to our definition of stability. We say it must be stable before it can print or store data. The text says after it stores data, it is allowed to vary by 2 adjacent values. To be reviewed.	Accepted
68	JP-2	16	5.4.1 Verification mark	Technical	Copy the note in 7.2 of R 76-1 (2006), which is cited below, at the end of this clause. <i>Note: If technical reasons restrict or limit the verification mark(s) to be fixed only in a "hidden" place (e.g. when an instrument – in combination with another device – is integrated in other equipment) this can be accepted if these marks are easily accessible, and if there is a legible notice provided on the instrument in a clearly visible place that points to these marks or if its location is defined in the operation manual, the OIML Certificate and OIML Test Report.</i>	When it is difficult to put a verification mark on a visible surface, it should be allowed to put it on a hidden place under a condition. R76-1 already permits such a case.	Accepted
69	CA-16	17	5.4.2	General	5.4.2 Sealing (e)	We don't feel paragraph (e) is necessary. The paragraph refers to a record, not a seal.	Rejected – paragraphs (c) to (g) refer to a record.
70	JP-3	17	5.6.2 Indication check	Technical	Indication check should be conducted automatically when turning on the power as well as "on demand".	Only a check on demand is not enough. In the present statement, the initial check might not always be conducted.	Accepted
71	JP-4	17	5.6.2 Indication check	Technical	Add the following sentence as a copy from 5.3.1 of R 76-1 (2006) at the end of the clause. <i>This is not applicable for displays on which failure becomes evident, e.g. non-segmented displays, screen-displays, matrix-displays, etc.</i>	Check of indication is unnecessary to the displays on which a failure is evident. We request to copy the statement in R 76-1.	Accepted
72	CA-17	18	6.4.2	Technical/ Edit	6.4.2 Test objects The test shall be carried out using appropriate test objects of various sizes and of stable dimensions. The test objects shall be opaque, rigid and with <u>flat</u> faces and well defined straight edges. Test objects may consist of rectangular boxes with dimensions which are known to an expanded uncertainty (coverage factor $k = 2$) of not more than one-fifth of the mpe.	Edit : flat faces not fiat faces Tech : In Canada, we use 1/3 of the mpe.	Accept "flat" not "fiat". Secretariat posted the question regarding the use of 1/3 or 1/5 mpe under 4.1.6 when circulating CD1. There was generally a lack of response to this question and so for consistency the secretariat is including 1/5 mpe
73	NL-28	18	6.4.2	Edit	Replace "fiat" with "flat"	typo	Accepted
74	NL-29	18	6.4.2	Technical	Add "Dimensions may differ from $N \times d$ if the instrument is provided with a (test) scale interval at least 5 times smaller than d "	Many instruments already have this facility, it makes it easier to select test objects	Does the PG agree with this proposed change?
75	NL-30	19	6.4.3	Edit	Change to $(N \pm 1) \times d$ and delete "whereas ..."	To prevent misunderstanding	Accepted

No.	Country Code	Page	Clause	General / Technical / Edit	Comment	Reason for comment	Secretariat's response
76	CA-18	19	6.4.5	Technical	Alter 6.4.5 to read: "An irregular test object is a compound object constructed using two rectangular parallelepipeds. The rectangular parallelepipeds intersect one another such that the projection of the 3-dimensional compound object onto a flat 2-dimensional surface will not be in the shape of a rectangle for any orientation of the compound object. In addition, none of the edges of one parallelepiped are permitted to be parallel to any of the edges of the second parallelepiped."	The current requirement for the construction of an irregular shaped test object is insufficient. As irregular objects are defined as all objects which are not rectangular parallelepipeds a single obtuse angle does not adequately represent the possible complexity of these objects. Current MDMD configurations are for the most part incapable of measuring truly irregular objects as a complete 3-dimensional view of the object being measured is required. These limitations will not be captured if using the minimum definition of an irregular test object found in 6.4.5.	Rejected – while the secretariat agrees that the requirement for a single obtuse angle does not adequately represent the possible complexity of these objects, any other definition potentially imposes restrictions on what an irregularly-shaped test object should be, of which there is potentially an almost infinite variety. For this reason the secretariat is retaining the current definition and has included an additional amendment that suggests that jurisdictions implement the use of frequently encountered irregularly –shaped test objects as part of the test procedure for instruments in their jurisdiction.
77	NL-31		A.1.1	Edit	Suggest not to use "test severity" in the tables but instead "test level" as is in OIML D 11	See OIML D 11 (2013) "severity" is rather subjective concerning the exposure level and IEC (e.g. IEC 161-04-41) depreciates the use.	Accepted
78	JP-5	21	Table A.1 Applicable tests	Technical	In the table A.1, the row of A.2.4 (battery voltage variation) should be filled with "X" including the cells of "optical measuring device" and "acoustic measuring device".	Test of battery voltage variation should be conducted on all types regardless the principle of operation.	Accepted
79	NL-32	22	A.1.2	Technical	Delete "at least three measurements of"	One measurement of each dimension should be sufficient. The repeatability should be included in a separate requirement and test equivalent to OIML R 76-1 Edition 2006	Do PG members agree with this change?
80	NL-33	22	A.1.2	Edit	Change "(for example L, W and H)" to "(L, W and H)"	In accordance with comment on 2.1.1.4	Accepted
81	UK-20	24	A.2.3	Edit	A.2.3 Test procedure for Damp heat, steady-state (non-condensing) Test procedure in brief The test comprises exposure to the specified high level temperature and the specified constant relative humidity for a certain fixed period of time as defined by the test level chosen.	There are no test levels defined in the Table/ document.	Accepted
82	NL-34	24	A.2.3	General	Add after "climatic environment": " in a closed location"	To indicate it is meant not to be used outside because then the DH cyclic would be appropriate	
83	NL-35	25	A.2.4	Technical	Add after the Note: "If a voltage range is marked the upper limit applies to high level value of the range and the lower limit applies to the low level value of the range."	Equivalent to other OIML Recommendations.	Accepted

No.	Country Code	Page	Clause	General / Technical / Edit	Comment	Reason for comment	Secretariat's response
84	CA-19	25	A.2.5	Technical	Title should be changed to: "a.2.5 Test procedure for DC Power variation test" Applicability section should be altered to read: "Applicable to all measuring instruments supplied by direct current." Test Severity section altered to read: "The EUT shall be tested as specified in A.1.2: (a) at nominal voltage; and (b) at various reduced voltages below nominal voltage The nominal voltage is that specified by the manufacturer."	This extends the requirement to all direct current sources, not just batteries.	Accepted
85	UK-21	26	A.3.1	Edit	A.3.1 Test procedure for Short time power reduction test Applicability: Applicable to all measuring instruments supplied by internal battery AC mains voltage. Verification of compliance with the provisions in 4.2.1 and A.1.2 during low battery supply voltage.	Applicability: AC mains voltage	Accepted
86	NL-36	26	A.3.1	Edit	Change "Applying minimum supply voltage." to "Introducing short-time reductions of mains voltage using the test setup defined in the applicable standard."	Copy and paste mistake?	Accepted
87	NL-37	26-	A.3.1 – A.3.3	Edit	Change "Applicable to all measuring instruments supplied by internal battery." to "Applicable to all electronic measuring instruments."	Copy and paste mistake?	Accepted
88	NL-38	26	A.3.1	Edit	Delete "If the EUT is an integrating..."	This is not applicable.	Accepted
89	NL-39	26	A.3.1	Technical	Add wording to indicate that when a voltage range, where maximum exceeds 20% of minimum, is applicable the test should be carried out at minimum and maximum of the voltage range		Accepted
90	UK-22	26	A.3.2	Edit	A.3.2 Test procedures for Electrical bursts test Applicability: Applicable to all measuring instruments supplied by internal battery or AC mains voltage. Verification of compliance with the provisions in 4.2.1 and A.1.2 during low battery supply voltage.	Applicability: All Instruments [which are temporarily or permanently connected to a mains power network while in operation]	Accepted
91	NL-40	26	A.3.2	Edit	Change "Applying minimum supply voltage." to "Introducing transients on the mains power lines."	Copy and paste mistake?	
92	UK-23	27	A.3.3	Edit	A.3.3 Test procedures for Electrostatic discharge test Applicability: Applicable to all measuring instruments supplied by internal battery	Applicability: All instruments [containing active electronic circuits.]	Accepted
93	NL-41	27	A.3.3	Edit	Change "Applying minimum supply voltage." to "Exposure to electrostatic discharge (ESD)."	Copy and paste mistake?	

No.	Country Code	Page	Clause	General / Technical / Edit	Comment	Reason for comment	Secretariat's response
94	JP-6	27	A.3.3 Test procedures for Electrostatic discharge test	Edit	Three items (a)-(c) are given in the row "test severity" in the table of electrostatic discharge test. These items were however originally provided for electrical bursts test and not for discharge test.	Delete the three items (a)-(c) as shown below. <i>The EUT shall be tested as specified in A.1.3 at a test voltage up to and including 6 kV for the contact mode and 8 kV for the air mode.</i> (a) 1 kV for power supply lines; and (b) 0.5 kV for input/output control circuits and communication lines (c) with a repetition frequency of the impulses of 5 kHz \pm 20 %.	
95	UK-24	28	A.3.4.1	Edit	A.3.4.1 Test procedures for surges on AC and DC mains power lines Object of the test Verification of compliance with the provisions in 4.2.1 and A.1.3 during conditions where electrical surges are superimposed on the mains voltage.	Space added between words "and" & "A"	Accepted
96	UK-25	29	A.3.5.1	Edit	A.3.5.1 Test procedures for Radiated RF Electromagnetic fields Test severity The EUT shall be tested as specified in A.1.3 at a field strength of 10 V/m, 80 % AM, 1 kHz sine wave over frequency ranges of 26 MHz to 2 000 MHz for EUT having no mains or other input port available and 80 MHz to 2 000 MHz. for EUT having mains or other input port available	Text missing	Accepted
97	NL-42	30	A.4.1	Technical	Propose to add examples of "uneven light", see below for example.	Now it is up to test laboratory	Question for PG – do members of the PG accept this recommendation? If it is accepted an additional 3 test reports for uneven light (corresponding to Test Reports 2.12.1 – 2.12.3) may need to be added to section A.4.1.

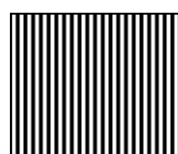
Netherlands - Examples of uneven light:



Minimum size of the blocks projected on the instrument equal to "min" of instrument



and



Minimum distance between the lines blocks projected on the instrument equal to "min" of instrument

98	UK-26	30	A.4.1	Edit	<p>A.4.1 Test procedures for Ambient light test</p> <p>Test severity</p> <p>(m-a) 200 lx to 500 lx (reference);</p> <p>(n-b) 100 lx; and</p> <p>(o-c) 1 000 lx to 1 500 lx.</p> <p>In addition, tests (a) and (c) shall be repeated with uneven illumination.</p> <p>(p-d) The reference light intensity is considered to be 200 lx to 500 lx.</p> <p>(q-e) The levels apply where the object to be measured is normally placed. The luminance can be measured with a photographic light meter (photometer) with the light detecting surface pointing towards the light source.</p> <p>(r-f) The light source for test (a) can be the normal room lighting suitably dimmed.</p> <p>(s-g) The light source for tests (b) and (c) can be a photographic slide projector with a halogen projection lamp. The angle of projection should be at approximately 45° to the axis of the light measurement transducer of the instrument. The specified levels of illuminance can be achieved by placing the projector at different distances from the instrument. Other light sources can be used.</p> <p>(t-h) Uneven light can be achieved by using a masked slide in the slide projector so that light and dark areas cover the test object.</p> <p>(i) If the manufacturer specifies special uses for the instrument outside the severity levels given, tests at those levels shall be carried out (for example at 15 000 lx for sunlight).</p> <p>Acceptance Criteria</p> <p>(u-j) the instrument is either made inoperative automatically or a visual or audible indication is provided automatically when outside the limits; or</p> <p>(v-k) the instrument is provided with a light source to ensure the limited range is maintained. If the light source fails (a) above applies.</p>	Incorrect paragraph referencing	Accepted
99	NL-43	31	A.4.2	Technical	Should the sound intensity level be 100 dB at 1,5 m distance or at the noise source? And is an acoustic chamber necessary? Ultrasound will not reflect easily and due to its wavelength standing waves are not to be expected	Doubt	<p>Secretariat suggests the sound intensity of 100 dB at the noise source.</p> <p>Note that the comment NL-43 was truncated when received.</p>
100	JP-7	34	Table B.1 Applicable object limitations	Technical	In Table B.1, items of B.4 are missing.	Add items of B.4 to Table B.1 as it is in the present R129 (2000 version).	Accepted
101	NL-44	34	Table B.1	Edit	Change "(2) LED unit" to "(2) Laser unit"	In existing instruments this is a LASER which can be a LED	Accepted – with modification to accommodate laser and LED units.
102	NL-45	34	B.2	Technical	Please add examples of objects, see below for example.	Now it is up to test laboratory	Rejected – the variety of possible irregularly shaped objects is simply too great to include all valid examples.

103	UK-28	12/65 13/65 14/65 15/65 16/65 17/65 18/65 19/65 20/65 21/65 22/65 23/65 24/65 25/65 26/65	2.3.1 2.3.2 2.3.3 2.3.4 2.4.1 2.4.2 2.4.3 2.5.1 2.5.2 2.5.3 2.6.1 2.6.1 2.7 2.8.1 2.8.1	Edit	PART 3 2.3.1 Initial Reference temperature test (A.2.2) 2.3.2 High temperature test (A.2.2.1) 2.3.3 Cold temperature test (A.2.2.2) 2.3.4 Reference temperature test (A.2.2) 2.4.1 Initial reference temperature and 50% relative humidity test (A.2.3) 2.4.2 High temperature and 85% relative humidity test (A.2.3) 2.4.3 End reference temperature and 50% relative humidity test (A.2.3) 2.5.1 Nominal Voltage (A.2.4) 2.5.2 Nominal Voltage + 10% (A.2.4) 2.5.3 Nominal Voltage - 15% (A.2.4) 2.6.1 Nominal Voltage (A.2.5) 2.6.1 Low Voltage (A.2.5) 2.7 Short time Power Reduction Test (A.3.1) 2.8.1 Power supply lines (A.3.2) 2.8.1 Input / Output circuits and communication lines (A.3.2) Sacle Scale Interval (d): {references to} Instrument ID Test object ID {in Table e.g @ Length / Width / Height Also extend Start/End table to include date of test	Spelling error "Reference" error Clarity of when test conducted	Accepted and updated. Images of work sheets replaced without track changes.
104	UK-29	27/65 28/65 30-34/65 35/65 36/65 37/65 39,40,42/65 41,43/65 45/65 46/65 48/65 49/65 50/65 51/65	2.9.1 2.9.2 2.10.1 2.10.2 2.11.1 2.11.2 2.12.1 2.12.2 2.13.1 2.13.2 2.14 2.15 2.16 2.17	Edit	2.9.1 Direct Application (A.3.3) 2.9.2 Indirect Application (A.3.3) 2.10.1 Surges on AC and DC mains power lines (A.3.4.1) [5 pages] 2.10.2 Surges on signal, data and control lines (A.3.4.2) 2.11.1 Radiated RF electromagnetic fields (A.3.5.1) 2.11.2 Conducted RF electromagnetic fields (A.3.5.2) 2.12.1 Reference conditions 200 lx to 500 lx (A.4.1) [2 pages] 2.12.2 Light testing at 100 lx (A.4.1) 2.13.1 Reference sound level (dB) (A.4.2) 2.13.2 100 dB sound level (dB) (A.4.2) 2.14 Shape of the object (A.1.6, 6.1.4.2, B.2) 2.15 Uniform Surface Colour Test (A.1.6, 6.1.4.9, B.3.1) 2.16 Non Uniform Surface Colour Test (A.1.5, 6.1.4.9, B.3.2) 2.17 Contrast of Colour with background colour test (A.1.5, 6.1.4.9, B.3.3) Sacle Scale Interval (d): references to} Instrument ID Test object ID {in Table e.g @ Length / Width / Height Also extend Start/End table to include date of test Also extend Start/End table to include date of test	Spelling error "Reference" error Clarity of when test conducted	Accepted and updated. Images of work sheets replaced without track changes.

105	UK-30	52/65	2.18	E	2.18 Surface Reflectivity and absorption of sound test (A.1.5, 6.1.4.9, B.3.4)	<p>Spelling error</p> <p>"Reference" error</p> <p>Clarity of when test conducted</p>	Accepted and updated. Images of work sheets replaced without track changes.
		53/65	2.19		2.19 Surface Reflectivity and absorption of light test (A.1.5, 6.1.4.9, B.3.5)		
		54/65	2.20		2.20 Uniformity of Density test (A.1.5, 6.1.4.9, B.3.6)		
		55/65	2.21		2.21 Transparency test (A.1.5, 6.1.4.9, B.3.7)		
		56/65	2.22		2.22 Surface Roughness test (A.1.5, 6.1.4.9, B.3.8)		
		57/65	2.23		2.23 Protrusions on Surface Test (A.1.5, 6.1.4.9, B.3.9)		
		58/65	2.24		2.24 Orientation and Position Test (A.1.5, 6.1.4.9, B.4)		
		59/65	2.25		2.25.1 Minimum Speed (A.1.5, 6.1.4.7)		
		60/65	2.26		2.25.2 Maximum Speed (A.1.5, 6.1.4.7)		
					<p>Sacle Scale Interval (d): references to}</p> <p>Instrument ID-Test object ID {in Table e.g @ Length / Width / Height</p> <p>Also extend Start/End table to include date of test</p>		