SLOVENSKI STANDARD
SIST EN 61237-1:1999

01-april-1999

Broadcast video tape recorders - Methods of measurement -- Part 1: Mechanical measurements (IEC 61237-1:1994)

Broadcast video tape recorders - Methods of measurement -- Part 1: Mechanical measurements

Meßverfahren für Videobandgeräte für den Rundfunk -- Teil 1: Mechanische Messungen

Magnétoscopes de radiodiffusion -- Méthodes de mesure -- Partie 1: Mesures mécaniques

Ta slovenski standard je istoveten z: EN 61237-1:1994

ICS:

33.160.40 Video sistemi Video systems

SIST EN 61237-1:1999 **en**

EUROPEAN STANDARD EN 61237-1

NORME EUROPEENNE

EUROPÄISCHE NORM July 1994

UDC 621.397.452:621.317.08

Descriptors: Electroacoustics, video recording, recording apparatus, video tape recorders, radiocommunications, mechanical measurements, compatibility

ENGLISH VERSION

Broadcast video tape recorders
Methods of measurement
Part 1: Mechanical measurements
(IEC 1237-1:1994)

Magnétoscopes de radiodiffusion
Méthodes de mesure
Partie 1: Mesures mécaniques

(CEI 1237-1:1994)

Meßverfahren für
Videobandgeräte für den
Rundfunk
Teil 1: Mechanische Messungen
(IEC 1237-1:1994)

This European Standard was approved by CENELEC on 1994-03-08. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Ref. No. EN 61237-1:1994 E

FOREWORD

The text of document 60B(CO)158, as prepared by Sub-Committee 60B: Video recording, of IEC Technical Committee 60: Recording, was submitted to the IEC-CENELEC parallel vote in April 1993.

The reference document was approved by CENELEC as EN 61237-1 on 8 March 1994.

The following dates were fixed:

- latest date of publication of an identical national standard	(dop)	1995-06-01
- latest date of withdrawal of conflicting national standards	(dow)	1995-06-01

Annexes designated "normative" are part of the body of the standard. Annexes designated "informative" are given only for information. In this standard, annexes A and ZA are normative and annex B is informative.

ENDORSEMENT NOTICE

The text of the International Standard IEC 1237-1:1994 was approved by CENELEC as a European Standard without any modification.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

NOTE : When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC Publication	Date	Title	EN/HD	Date
347	1982	Transverse track video recorders	HD 451 S1	1984
461	1986	Time and control code for video tape recorders	HD 507 S1	1988
1055-1	1991	Measurement techniques and operational adjustments of broadcast VTRs - Part 1: Operational adjustments on analogue composite broadcast VTRs (Report)	-	-
1055-2	1991	Part 2: Special mechanical measurements and alignments (Report)	-	-
1105	1991	Reference tapes for video tape recorder systems	EN 61105	1993

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
1237-1

Première édition
First edition
1994-06

Magnétoscopes de radiodiffusion – Méthodes de mesure –

Partie 1: Mesures mécaniques

Broadcast video tape recorders – Methods of measurement –

Part 1: Mechanical measurements

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE P

Pour prix, voir catalogue en vigueur
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

BROADCAST VIDEO TAPE RECORDERS – METHODS OF MEASUREMENT –

Part 1: Mechanical measurements

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

International Standard IEC 1237-1 has been prepared by sub-committee 60B: Video recording, of IEC technical committee 60: Recording.

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

DIS	Report on voting
60B(CO)158	60B(CO)169

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

Annex A forms an integral part of this standard.

Annex B is for information only.

BROADCAST VIDEO TAPE RECORDERS – METHODS OF MEASUREMENT –

Part 1: Mechanical measurements

1 Scope

This part of IEC 1237 describes the mechanical measurement methods on video tape recorders relating to the compatibility parameters for recording and measuring methods of the recorded tape.

The allowable tolerances for the rated values for acceptable performance are not given in this standard, but may be derived from the specifications for the related system i.e. appropriate publications, manufacturers' specifications, etc.

The necessary reference and calibration tapes are either mentioned in the specific IEC publication of the equipment under test or included in IEC 1105.

This standard deals with special mechanical measurement techniques for broadcast VTRs. It does not, however, cover the special mechanical measurements of the earlier transverse track video recorder standard (IEC 347). For those measurements see IEC 1055.

The methods are applicable to acceptance tests, performance comparison and, as far as possible, for routine checks.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 1237. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 1237 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 347: 1982, *Transverse track video recorders*

IEC 461: 1986, *Time and control code for video tape recorders*

IEC 1055-1: 1991, *Measurement techniques and operational adjustments of broadcast VTRs – Part 1: Operational adjustments on analogue composite broadcast VTRs (Report)*

IEC 1055-2: 1991, *Measurement techniques and operational adjustments of broadcast VTRs – Part 2: Special mechanical measurements and alignments (Report)*

IEC 1105: 1991, *Reference tapes for video tape recorder systems*

3 General

To ensure that the results obtained at a specific time and at a specific place are comparable to other measurements, it is advisable to specify the test signals, measuring devices and types of tapes used together with the results obtained.

4 Test conditions

If not otherwise stated, all measurements shall be carried out at the following atmospheric conditions:

- temperature 20 °C ± 1 °C;
- relative humidity 50 % ± 2 %;
- air pressure 86 kPa to 106 kPa;
- conditioning before testing 24 h.

5 Measuring equipment

5.1 *Mechanical measurements*

For some measurements, precision micrometers or dial indicators with 1 µm resolution are sufficient. Instruments with electrical read-out should be preferred.

For drum geometry measurements a three-coordinate measuring device with an accuracy below 1 µm is recommended.

5.2 *Optical measurements*

Measurements are made by a high power microscope equipped with an X-Y-table and a scaled Z-axis.

For measurements in the µm area the microscope objective shall have a magnification of 50x and a numerical aperture of 0,85. The eye-piece, equipped with cross-hairs shall have a magnification ≥10x. A video camera/monitor system with electronic cross-hairs gives better reproducible results. The X-Y-table shall have a measuring range of at least 100 mm x 50 mm. The measuring accuracy in X-, Y- and Z-axis shall be ≤ 1 µm.

For data acquisition and processing a computer is recommended.

6 Recorder measurements

6.1 *Diameter of drum*

The drum is measured by means of a precision micrometer or a multicoordinate measuring system. Measurements are made at several points of the drum, and these points shall be specified by the appropriate standard or the manufacturer.