



SLOVENSKI STANDARD
SIST EN 60094-3:1999/A3:1999

01-april-1999

Magnetic tape sound recording and reproducing systems -- Part 3: Methods of measuring the characteristics of recording and reproducing equipment for sound on magnetic tape - Amendment A3 (IEC 60094-3:1979/A3:1996)

Magnetic tape sound recording and reproducing systems -- Part 3: Methods of measuring the characteristics of recording and reproducing equipment for sound on magnetic tape

Systeme für Tonaufzeichnung und -wiedergabe auf Magnetband -- Teil 3: Meßverfahren zur Bestimmung der Eigenschaften von Aufnahme- und Wiedergabegeräten

Systèmes d'enregistrement et de lecture du son sur bandes magnétiques -- Partie 3: Méthodes de mesure des caractéristiques des matériels d'enregistrement et de lecture du son sur bandes magnétiques

Ta slovenski standard je istoveten z: EN 60094-3:1996/A3:1996

ICS:

33.160.30 Avdio sistemi Audio systems

SIST EN 60094-3:1999/A3:1999 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60094-3:1999/A3:1999](https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-05617f8701f4/sist-en-60094-3-1999-a3-1999)

<https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-05617f8701f4/sist-en-60094-3-1999-a3-1999>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60094-3/A3

April 1996

ICS 33.160.30

Descriptors: Sound system equipment, sound recording and reproduction, magnetic tape, characteristic, measurement, test condition

English version

**Magnetic tape sound recording and reproducing systems
Part 3: Methods of measuring the characteristics of recording
and reproducing equipment for sound on magnetic tape
(IEC 94-3:1979/A3:1996)**

Systèmes d'enregistrement et de lecture
du son sur bandes magnétiques
Partie 3: Méthodes de mesure des
caractéristiques des matériels
d'enregistrement et de lecture du son
sur bandes magnétiques
(CEI 94-3:1979/A3:1996)

Systeme für Tonaufzeichnung
und -wiedergabe auf Magnetband
Teil 3: Meßverfahren zur Bestimmung
der Eigenschaften von Aufnahme- und
Wiedergabegeräten
(IEC 94-3:1979/A3:1996)

[SIST EN 60094-3:1999/A3:1999](https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-05617f8701f4/sist-en-60094-3-1999-a3-1999)

<https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-05617f8701f4/sist-en-60094-3-1999-a3-1999>

This amendment A3 modifies the European Standard EN 60094-3:1996; it was approved by CENELEC on 1996-03-05. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Page 2
EN 60094-3:1996/A3:1996

Foreword

The text of document 60A/177/FDIS, future amendment 3 to IEC 94-3:1979, prepared by SC 60A (transformed into SC 100B, Recording, of IEC TC 100, Audio, video and multimedia systems and equipment), was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A3 to EN 60094-3:1996 on 1996-03-05.

The following dates were fixed:

- latest date by which the amendment has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 1996-12-01
- latest date by which the national standards conflicting
with the amendment have to be withdrawn (dow) 1996-12-01

Endorsement notice

The text of amendment 3:1996 to the International Standard IEC 94-3:1979 was approved by CENELEC as an amendment to the European Standard without any modification.

iteh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60094-3:1999/A3:1999](https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-05617f8701f4/sist-en-60094-3-1999-a3-1999)

<https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-05617f8701f4/sist-en-60094-3-1999-a3-1999>

NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
94-3

1979

AMENDEMENT 3
AMENDMENT 3

1996-02

Amendement 3

**Systèmes d'enregistrement et de lecture
du son sur bandes magnétiques –**

Troisième partie:

Méthodes de mesure des caractéristiques des
matériels d'enregistrement et de lecture du son
sur bandes magnétiques

[SIST EN 60094-3:1999/A3:1999](https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-05617f8701f4/sist-en-60094-3-1999-a3-1999)

[https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-](https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-05617f8701f4/sist-en-60094-3-1999-a3-1999)

[05617f8701f4/sist-en-60094-3-1999-a3-1999](https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-05617f8701f4/sist-en-60094-3-1999-a3-1999)

Amendment 3

**Magnetic tape sound recording and
reproducing systems –**

Part 3:

Methods of measuring the characteristics of
recording and reproducing equipment for sound
on magnetic tape

© CEI 1996 Droits de reproduction réservés — Copyright — all rights reserved

Bureau Central de la Commission Electrotechnique Internationale 3, rue de Varembe Genève, Suisse



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

J

Pour prix, voir catalogue en vigueur
For price, see current catalogue

FOREWORD

This amendment has been prepared by sub-committee 60A: Sound recording, of IEC technical committee 60: Recording.

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

FDIS	Report on voting
60A/177/FDIS	100B/17/RVD

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

Page 9

1 Scope

Delete, in the last sentence "(in preparation)".

iTech STANDARD PREVIEW
(standards.iteh.ai)

Page 15

8.3 Interface data

SIST EN 60094-3:1999/A3:1999

<https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-05617f8701f4/sist-en-60094-3-1999-a3-1999>

Page 17

Fifth line: delete "dB" at the end of the sentence.

Sixth line: replace " U_0 " by " U_R ".

Tenth line: add the following lines:

Rated reproducing output voltage U_0 V

The r.m.s. output voltage across the rated load impedance when reproducing the reference level section from the specified calibration tape. This parameter specifies the setting of adjustable reproduce gain controls, if available.

Page 19

9.2.2 Reproducing performance

Replace "Signal/noise ratio (electronic noise)" by:

Reference level-to-noise ratio of reproducing chain (electric noise).

Replace "Voltage output level at specified total harmonic distortion (preferably at 1 % and 5 %)" by:

Voltage output level at specified total harmonic distortion (electronic).

Page 21

9.2.3 Overall performance

Replace the fifth line by:

Signal level-to-noise ratio using the specified reference tape 12.3.2.1

Add after the fifth line:

Maximum recording level-to-noise ratio using the specified reference tape 12.3.2.2

Page 23

Subclause 10.2

Delete the note.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60094-3:1999/A3:1999](https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-05617f8701f4/sist-en-60094-3-1999-a3-1999)

<https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-05617f8701f4/sist-en-60094-3-1999-a3-1999>

Page 25

11.1.1 Mean deviation from standardized reproduce speed

Replace the note under method B, by:

NOTES

- 1 It is recommended that $f_o = 3\,150$ Hz.
- 2 See also appendix B of IEC 386.

Delete, on page 27, the note under method C.

Page 27

11.1.2 Reproduce speed drift

Replace the existing subclause by the following new subclause:

Definition

The slow variation in speed caused by the simultaneous variation of tape length on the supply and take-up reel when the equipment is in the reproduce mode.

Method

For measurement on reel-to-reel equipment, the largest permissible reels shall be used. A full reel is placed on the supply spindle, and an empty reel is placed on the take-up spindle of the equipment. A full-width sinusoidal signal at the beginning of the full reel is played in the reproduce mode, and the reproduced frequency, f_1 Hz, is measured.

Supply and take-up reels are then interchanged, and the sinusoidal signal is reproduced again, this time resulting in a reproduced frequency of f_2 Hz.

For measurement on cassette equipment, a full-length cassette shall be used. The full reel is placed on the supply spindle. A full-width recorded sinusoidal signal is played in the reproduce mode and the reproduced frequency f_1 Hz, is measured.

Without rewinding, the cassette is turned over (A to B side) and the signal is played again, this time resulting in a reproduced frequency f_2 Hz.

NOTES

- 1 It is recommended that the sinusoidal signal, when reproduced at the relevant standard speed, results in a reproduced frequency of 3 150 Hz.
- 2 See also appendix B of IEC 386.

Result

$$\text{Drift: } \frac{2(f_1 - f_2)}{f_1 + f_2} \times 100 \%$$

SIST EN 60094-3:1999/A3:1999

<https://standards.iteh.ai/catalog/standards/sist/834ffc1f-a56a-4307-8046-650113709404/sist-60094-3-1999-a3-1999>

NOTE - Methods A, B and C of 11.1.1 may also be adopted to measure this parameter.

Page 29

11.2 Steady-state tape tension (reel-to-reel equipment only)

Delete the note of the last paragraph of this subclause.

11.3.1 Maximum start time to record/reproduce speed

Replace the existing subclause by the following new subclause:

Definition

The maximum time that has elapsed between the operation of starting the device and the moment that the tape speed being increased from zero to a reproduce speed that gives a wow-and-flutter reading equal to the nominal value.

Method

A test frequency of 3 150 Hz recorded on the equipment throughout the full reel of tape shall be reproduced on the equipment from the beginning, the middle and the end of the

supply reel. The reproduced test signals shall be fed to a wow-and-flutter meter according to IEC 386 and its amendment 1 and the output from this wow-and-flutter meter fed to a graphic recorder. The time taken from the operation of starting the device to when the trace on the recording assumes the nominal value is noted.

Result

The maximum time derived from various readings shall be quoted.

Page 33

12.2 Reproducing performance

Replace the first sentence of the existing subclause by the following:

If adjustable reproduce gain controls are provided on the equipment, they shall be adjusted to give the rated output voltage U_0 when reproducing the reference level section of the appropriate calibration tape.

Page 35

12.2.2 Signal/noise ratio of reproducing chain (electronic noise)

Replace the existing subclause by the following new subclause:

12.2.2 Reference level-to-noise ratio of reproducing chain (electronic noise)

For all measurements described in this subclause, the adjustable gain and equalization controls (if any) shall be set as determined in 12.2.

Definition

The ratio, expressed in decibels, of the rated voltage U_0 derived when reproducing the reference level section of the appropriate calibration tape to the output voltage derived from noise only when the equipment is in the reproduce mode, and measured via a specified filter.

Method

The reference level section of the appropriate calibration tape shall be reproduced, resulting in the r.m.s. rated output voltage U_0 .

After removal of the tape and its replacement by a non-magnetic antistatic tape, the equipment shall be switched once more to the reproduce mode, and the output voltage U is measured via filters specified below, due allowance being made for the transmission factor of the relevant filter at the relevant frequency.

- a) Unweighted reference level-to-noise ratio: use wideband filter specified in clause 6 of IEC 268-1.