SLOVENSKI STANDARD
SIST EN 60856:1999/A2:1999

01-april-1999

Laser vision 50Hz/625 lines PAL - Amendment A2 (IEC 60856:1986/A2:1997)

Pre-recorded optical reflective videodisk system Laser vision 50 Hz/625 lines - PAL

System für bespielte, optisch reflektierende Videoplatten Laser-Vision 50 Hz/625 Zeilen - PAL

Système de vidéodisque optique réfléchissant préenregistré Laser vision 50 Hz/625 lignes - PAL

Ta slovenski standard je istoveten z: EN 60856:1993/A2:1997

ICS:

33.160.40	Video sistemi	Video systems

SIST EN 60856:1999/A2:1999   **en**

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60856/A2

July 1997

ICS 33.160.40

Descriptors: Optical recording, video recording, videodisk, videodisk reproducing equipment, laser, test conditions, characteristics, requirements

English version

Pre-recorded optical reflective videodisk system "Laser vision" 50 Hz/625 lines - PAL
(IEC 60856:1986/A2:1997)

Système de vidéodisque optique
réfléchissant préenregistré "Laser
vision" 50 Hz/625 lignes - PAL
(CEI 60856:1986/A2:1997)

System für bespielte, optisch
reflektierende Videoplatten
"Laser-Vision" 50 Hz/625 Zeilen - PAL
(IEC 60856:1986/A2:1997)

This amendment A2 modifies the European Standard EN 60856:1993; it was approved by CENELEC on 1997-07-01. 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

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Foreword

The text of document 100B/47/FDIS, future amendment 2 to IEC 60856:1986, prepared by 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 A2 to EN 60856:1993 on 1997-07-01.

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) 1998-04-01

- latest date by which the national standards conflicting
  with the amendment have to be withdrawn   (dow) 1998-04-01

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Endorsement notice

The text of amendment 2:1997 to the International Standard IEC 60856:1986 was approved by CENELEC as an amendment to the European Standard without any modification.

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NORME
INTERNATIONALE

INTERNATIONAL
STANDARD

CEI
IEC

60856

1986

AMENDEMENT 2
AMENDMENT 2

1997-05

Amendement 2

Système de vidéodisque optique réfléchissant préenregistré «Laser vision» 50 Hz / 625 lignes – PAL

Amendment 2

Pre-recorded optical reflective videodisk system "Laser vision" 50 Hz / 625 lines – PAL

CODE PRIX
PRICE CODE

R

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

FOREWORD

This amendment has been prepared by subcommittee 100B: Recording, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

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

FDIS	Report on voting
100B/47/FDIS	100B/66/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.

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Add the title of clause 13 as follows:

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13   Implementation of a digital audio signal (standards.iteh.ai)

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4   Mechanical parameters

Add, after subclause 4.1.2, the following new subclause 4.1.3:

Characteristics to be specified	Requirements	Methods of measurement and/or conditions
4.1.3 Thickness of single disk (T), figure 1	min. = 1,1 mm, see figure 1a max. = 1,4 mm	

Replace the existing subclause 4.4 by the following:

Characteristics to be specified	Requirements	Methods of measurement and/or conditions
4.4 Label (E), figure 1	A label on both sides of a double and a single disk is allowed. The label of a single disk on the transparent side is optional, but the label on the protective layer side is mandatory	
4.4.1 Inside diameter of label (F), figure 1	min. = 35 mm max. = 38 mm	
4.4.2 Outside diameter of label (G), figure 1	min. = 86 mm max. = 100 mm	

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Characteristics to be specified	Requirements	Methods of measurement and/or conditions
4.4.3 Outside diameter of the label (G), figure 1 of a single disk on the protective layer side	min. = 86 mm max. = 300 mm	
4.4.4 Thickness of label (H), figure 1	So that thickness of disk in clamping area (subclause 4.5.3) is within specification	
4.4.5 Position of label	Should not overlap either centre hole or, in case of a single disk, the outer diameter of the protective layer side	

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Replace the existing subclause 4.5.3 by the following:

Characteristics to be specified	Requirements	Methods of measurement and/or conditions
4.5.3 Thickness of disk in clamping area including labels		
4.5.3.1 For double disk (J), figure 1	min. = 2,2 mm max. = 2,9 mm	
4.5.3.2 For single disk (U), figure 1	min. = 1,1 mm, see figure 1b max. = 1,45 mm, see figure 1b	

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Add, after subclause 4.16.4, the following new subclause 4.16.5:

Characteristics to be specified	Requirements	Methods of measurement and/or conditions
4.16.5 Maximum radial angle (θ) between the normal on the surface (not infoside) and the optical axis	± 1°	See figure 2

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Replace the existing subclause 4.20.1 by the following:

Characteristics to be specified	Requirements	Methods of measurement and/or conditions
4.20.1 Minimum		
8 in version	35	
12 in version	35	

Replace the existing subclause 4.21.1 by the following:

Characteristics to be specified	Requirements	Methods of measurement and/or conditions
4.21.1 Minimum		
8 in version	0,18	
12 in version	0,18	

5   Optical requirements

Replace the existing subclause 5.2 by the following:

Characteristics to be specified	Requirements	Methods of measurement and/or conditions
5.2 Birefringence of transparent disk (double pass)	40° max.	

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6   Temperature and humidity requirements

Replace the text in the second column by the following new text:

Requirements
Must satisfy all requirements following exposure to any temperature within the range of 5 °C to 45 °C at any relative humidity within the range of 5 % to 90 % held constant for a period of four days

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9   Video parameters

Replace the existing subclauses 9.1.3 and 9.1.4 by the following:

9.1.3   Vertical interval test signals (VITS)

Vertical interval test signals according to ITU-R Recommendation 473-5, annex I (see figures 7 to 10) may be inserted in the lines 19, 13 or 20, 332 and 326 or 333. The lines 22 and 335 shall be blanked before optical recording, to enable disk noise measurements to be made.

9.1.4   Address signals

In the video signal, lines 6 through 18 and 319 through 331 are reserved for address or data signals. For signal specification, see clause 10. The lines that are not specified have a video content set at blanking level and are reserved for future applications. Lines 20, 21 and 333, 334 may contain subtitle data signals; in that case there are no VITS (see 9.1.3) on lines 20 and 333.

When additional capacity is needed for subtitle data signals, lines 14, 15, 327 and 328 may be used.

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10.1.10   *CLV picture number*

Replace the text of subclause 10.1.10 by the following new text:

On the CLV disk the CLV picture number identifies each video frame and can also be used to detect hang-ups.

Code: 8 X1 E X3 X4 X5

X1 = A to F and X3 = 0 to 9.

X1 and X3 indicate the seconds of the run time together with the hours and minutes of the programme time code.

X4 and X5 are the picture numbers within 1 s, thus:

X4 = 0 to 2 and X5 = 0 to 9.

The CLV picture number shall be inserted into line 16 or 329 depending on which field is the first field of the picture.

The start of the programme time code is zero hour and zero minute, and that of CLV picture number is zero second and zero picture at the beginning of the active programme.

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11.1.2   *Numerical aperture*

Replace the text of subclause 11.1.2 by the following new text:

The numerical aperture of the lens of the readout beam is:

NA = 0,40 ± 0,01.

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12   Operational parameters

Add, after clause 12, the following new clause 13:

13   Implementation of a digital audio signal

This clause specifies the implementation of a digital audio signal as an optional addition to the laser vision system (LV). See sections three and four of IEC 60908.

13.1   *Signal modulation*

13.1.1   *General*

The EFM signal, as defined in IEC 60908, prior to modulation, is filtered by a low-pass filter with a frequency response as detailed in 13.1.2, a high-pass filter with a response as shown in figure 25, and shall have a pre-emphasis as detailed in figure 25. The digital signal is a symmetrical double edge pulse width modulated onto the main carrier and recorded on the disk as shown in figure 23.

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13.1.2 Low-pass filter (see figure 24)

a) The frequency response shall be as follows:

    1) up to 1,6 MHz   ±0,5 dB (ref. 0,5 MHz)

    2) 1,75 MHz   (−3 ± 0,5) dB

    3) 2 MHz   (−26 ± 2) dB

    4) >2,3 MHz   < −50 dB

b) The group delay shall be as follows:

    1) <0,5 MHz   (0 ± 20) ns (ref. 0,5 MHz)

    2) 0,8 MHz   (−50 ± 20) ns

    3) 1 MHz   (−100 ± 50) ns

    4) 1,2 MHz   (−180 ± 50) ns

    5) 1,4 MHz   (−350 ± 75) ns

NOTE – This group delay is a predistortion for the low-pass filter of the player.

13.1.3 Pre-emphasis

The EFM signal prior to modulation shall have a pre-emphasis according to figure 25.

13.1.4 High-pass filter

The EFM signal prior to modulation shall be filtered by a high-pass filter according to figure 25.

13.1.5 Modulation of the filtered EFM signal

The filtered EFM signal shall be a symmetrical double edge pulse width modulated on the main carrier.

The level of this modulated EFM signal in the recorded frequency spectrum shall be −27 dB ± 1 dB with respect to the unmodulated main carrier when no audio signal in present during digital silence (see figure 26).

13.1.6 Block error rate (BLER)

13.1.6.1 Definitions

See 11.1.1, section three of IEC 60908.

13.1.6.2 Specification of random errors

BLER averaged over any 10 s shall be $\leq 8 \times 10^{-2}$ with a recommendation of $\leq 3 \times 10^{-2}$.

13.1.6.3 Specification of burst errors

See amendment 1 of IEC 60908, subclause 11.1.3.

13.2 Sample frequency

The audio sample frequency shall be:

$$F_S = \frac{1764}{625} \times F_H \text{ (44,1 kHz nominal)}$$

F_H is the line frequency corresponding to the video signal (50 Hz/625 lines – PAL system).

13.3 Compensation of time delay

Since the digital audio decoder delays the audio signal by 15,3 ms, it is recommended to advance the audio signals, modulated into the EFM signal, relative to the related video signal.

13.4 Analogue audio subcarriers

The analogue audio subcarriers shall not be recorded (status code 0010, see appendix C).

13.5 Control and display of the compact disk system (subcode)

13.5.1 Subcode

The subcode conforms with IEC 60908, section four, clause 17, with the following modifications:

13.5.1.1 ADR

Change "0001: ADR 1, mode 1 for DATA-Q" *to* "0100: ADR 4, mode 4 for DATA-Q".

13.5.1.2 Subclause 17.5.1

Change title "Mode 1 for DATA-Q" *to* "Mode 4 for DATA-Q". *In the first line, change* "ADR = 1 = (0001)" *to* "ADR = 4 = (0100)" *and, in the third line, change* "mode 1" *to* mode 4".

13.5.2 Table of content (TOC)

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The repetitive TOC shall be recorded in such a way that, at the end of the lead-in area, the table of content can be ended with any value of point.

The video system identification code shall be recorded according to IEC 60908-2 (12 cm CD – V).

P frame is 22 = PAL "LV disk" with digital stereo sound

P frame is 23 = PAL "LV disk" with digital bilingual sound.

13.5.2.1 Position lead-in subcode of compact disk

13.5.2.1.1   Start of CD lead-in subcode in accordance with start lead-in code LV in this standard.

13.5.2.1.2 Length of CD lead-in subcode in accordance with this standard.

13.5.2.2 Position lead-out subcode of compact disk

13.5.2.2.1   Start of CD lead-out subcode in accordance with start lead-out code LV in this standard.

13.5.2.2.2 Length of CD lead-out subcode in accordance with this standard.