SLOVENSKI STANDARD
SIST EN 60856:1999/A1:1999

01-april-1999

Pre-recorded optical reflective videodisk system "Laser vision" 50 Hz/625 lines – PAL - Amendment A1 (IEC 60856:1986/A1:1991)

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/A1:1993

ICS:

33.160.40 Video sistemi Video systems

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EUROPEAN STANDARD | EN 60856/A1

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

Amendment A1 to the English version of to EN 60856

Pre-recorded optical reflective videodisk system "Laser vision" 50 Hz/625 lines - PAL
(IEC 856:1986/A1:1991)

Système de vidéodisque optique réfléchissant préenregistré "Laser vision" 50 Hz/625 lignes PAL
(CEI 856:1986/A1:1991)

System für bespielte, optisch reflektierende Videoplatten "Laser-Vision" 50 Hz/625 Zeilen PAL
(IEC 856:1986/A1:1991)

This amendment A1 modifies the European Standard EN 60856:1993. It was approved by CENELEC on 1992-12-09. 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

Ref. No. EN 60856:1993/A1:1993 E

FOREWORD

The CENELEC questionnaire procedure, performed for finding out whether or not amendment 1:1991 to the the International Standard IEC 856:1986 could be accepted without textual changes, has shown that no common modifications were necessary for the acceptance as European Standard.

The reference document was submitted to the CENELEC members for formal vote and was approved by CENELEC as amendment A1 to EN 60856 on 9 December 1992.

The following dates were fixed:

- latest date of publication of an identical national standard	(dop)	1993-12-01
- latest date of withdrawal of conflicting national standards	(dow)	1993-12-01

For products which have complied with EN 60856:1993 before 1993-12-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1998-12-01.

ENDORSEMENT NOTICE

The text of amendment 1:1991 to the International Standard IEC 856:1986 was approved by CENELEC as an amendment to the European Standard without any modification.

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
60856

1986

AMENDEMENT 1
AMENDMENT 1

1991-07

Amendement 1

Système de vidéodisque optique réfléchissant préenregistré
<<Laser vision>> 50 Hz/625 lignes – PAL

Amendment 1

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

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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PREFACE

This amendment has been prepared by Sub-Committee 60B: Video recording, of IEC Technical Committee No. 60: Recording.

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

Six Months' Rule	Report on Voting
60B(CO)106	60B(CO)115

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

INTRODUCTION

IEC Publication 856 which is the current standard for "Laser vision" does not contain a specification for a push-pull radial differential signal. For future applications of the video disk, it is desirable to specify this signal and to add this specification to the current standard.

The specified amplitude variation of the signal represents the state of the art of LV-disk production.

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12. **Operational parameters**

Add, after subclause 12.1.3.1, the following new subclauses:

12.1.4 *Push-pull radial differential signal* (clause 11 does not apply to the case under consideration)

A slightly off-track position of the scanning light spot results in a diffraction pattern that is asymmetrical in the radial direction of the disk. The radial differential (RD) signal is defined as the difference of the optical powers diffracted into the two halves (positioned at opposite sides of the track) of the aperture of the objective lens.

12.1.4.1 *Requirements for the measuring pick-up*

The optical pick-up to be used for disk measurement shall comply with the following requirements:

- wavelength: 780 ± 10 nm;
- circularly polarized light;
- numerical aperture: 0,50 ± 0,01;
- intensity at the rim of the pupil of the objective lens: >50 % of the maximum intensity value;
- diffraction limited performance of the optical system: within the Marechal criterion.

12.1.4.2 *Measurement conditions*

12.1.4.2.1 Time constant: t = 1,8 µs.

12.1.4.2.2 Filtering: low pass.

12.1.4.3 *Characteristic of the RD signal*

See figure 21. The positive zero-crossing corresponds to the correct radial position of the scanning spot. Figure 22 describes the shape of the shallow pits.

12.1.4.4 *Magnitude*

12.1.4.4.1 *Definition*

$P_1 - P_2$ = the optical power difference in the two halves of the reflected beam measured at far field.

P_3 = the sum optical power in the two halves of the reflected beam measured at far field in uncoded reflecting area.

Magnitude $\frac{P_1 - P_2}{P_3}$ at 0,1 µm radial offset.

12.1.4.4.2 *Specifications*

Magnitude: 0,04 – 0,11.

Within one revolution, the variation in magnitude of the tracking signal shall be less than ±15 %.

12.1.4.5 *Noise*

12.1.4.5.1 *Definitions and conditions*

The r.m.s. value of the noise in the residual error signal with the RD signal used for tracking, measured in the closed loop situation in a frequency band from 2,2 kHz to 100 kHz with a radial servo bandwidth of 1,5 kHz.

12.1.4.5.2 *Specification*

The noise value shall correspond to a tracking error ≤0,03 µm.

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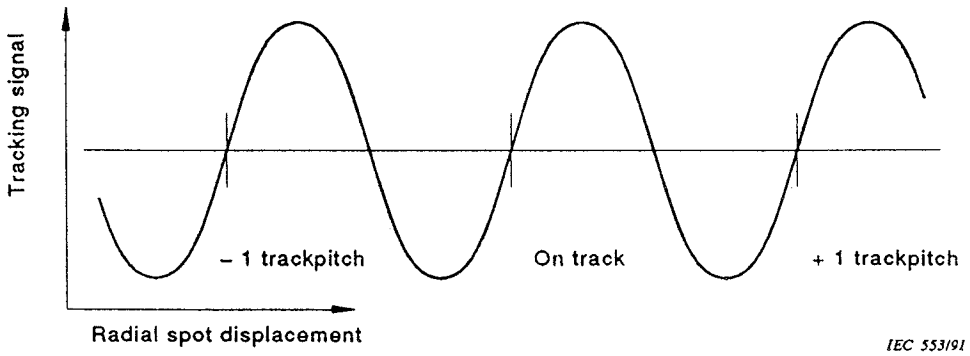
Add, after figure 20, the following new figures 21 and 22:



Typical shape of the error signal for tracking versus radial spot position

Figure 21 – Characteristic of the RD signal

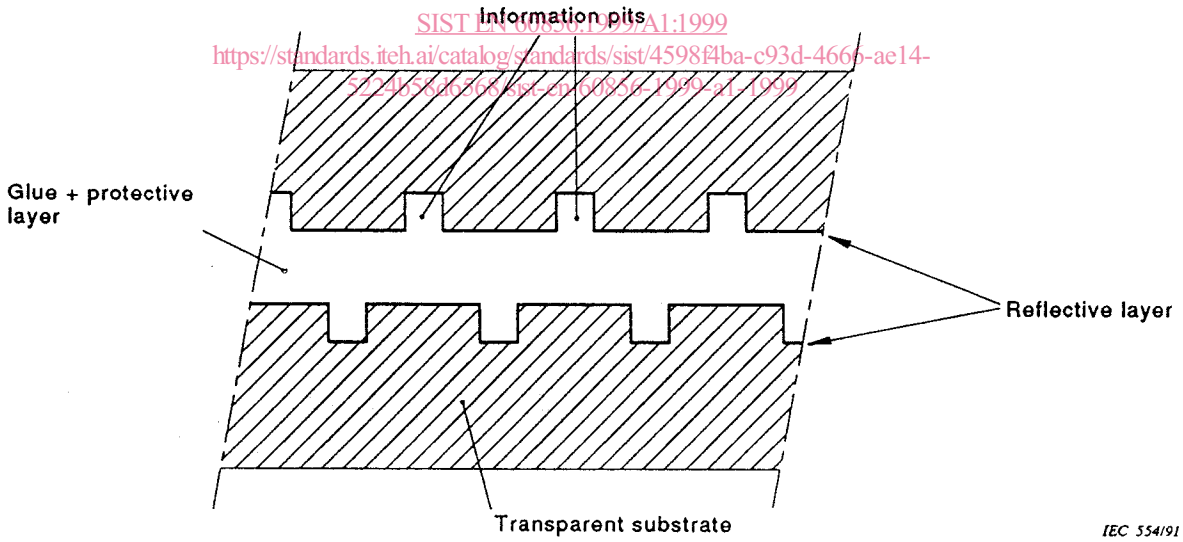


Figure 22 – Material build-up