

Alarm systems — CCTV surveillance systems for use in security applications —

Part 7: Application guidelines

The European Standard EN 50132-7:1996 has the status of a British Standard

ICS 13.320

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The preparation of this British Standard was entrusted to Technical Committee GW/1, Electronic security systems, upon which the following bodies were represented:

- Association of British Insurers
- Association of Chief Police Officers of England and Wales
- Association of Security Consultants
- British Security Industry Association
- British Telecommunications plc
- Consumer Policy Committee of BSI
- Department of the Environment (Security Facilities Executive (SSG))
- Department of the Environment (Building Research Establishment)
- Electrical Contractors' Association
- Electrical Installation Equipment Manufacturers' Association (BEAMA Ltd.)
- European Association of Security Equipment Manufacturers
- Fire Brigades Union
- National Approval Council for Security Systems
- Security Systems and Alarms Inspection Board

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- British Gas plc
- Home Office Crime Prevention Centre
- Metropolitan Police
- Post Office
- Security Industry Training Organization

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National foreword

This British Standard has been prepared by Technical Committee GW/1 and is the English language version of EN 50132-7 *Alarm systems — CCTV surveillance systems for use in security applications Part 7: Application guidelines*, published by the European Committee for Electrotechnical Standardization (CENELEC).

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 18, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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Descriptors: Warning systems, security devices, inspection devices, television systems, motion-pictures, cameras, definition, performance evaluation, design, categories, installation, maintenance

English version

Alarm systems — CCTV surveillance systems for use in security applications

Part 7: Application guidelines

Systèmes d'alarme — Systèmes de surveillance CCTV à usage dans les applications de sécurité
Partie 7: Directives d'application

Alarmanlagen CCTV-Überwachungsanlagen für Sicherungsanwendungen
Teil 7: Anwendungsregeln

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

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Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 79, Alarm systems.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50132-7 on 1995-11-28.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1996-11-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-11-01

EN 50132 will consist of the following Parts, under the general title *Alarm systems — CCTV surveillance systems for use in security applications*.

- *Part 1: System requirements;*
- *Part 2-1: Black and white cameras;*
- *Part 2-2: Colour cameras;*
- *Part 2-3: Lenses;*
- *Part 2-4: Ancillary equipment;*
- *Part 3: Local and main control unit;*
- *Part 4-1: Black and white monitors;*
- *Part 4-2: Colour monitors;*
- *Part 4-3: Recording equipment;*
- *Part 4-4: Hard copy equipment;*
- *Part 4-5: Video motion detection equipment;*
- *Part 5: Video transmission;*
- *Part 6: (free);*
- *Part 7: Application guidelines.*

NOTE Except for this Part 7, all Parts of the EN 50132 series are still under consideration.

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Introduction

The purpose of this standard is to provide guidance to ensure that closed circuit television (CCTV) system functions and their performance are fully met.

This standard will prove useful to those responsible for establishing operational requirements, writing specifications, selecting, installing, commissioning, using and maintaining a CCTV system.

Closed circuit television, in its simplest form, is a means of providing images from a television camera for viewing on a monitor via a private transmission system. There is no theoretical limit to the number of cameras and monitors which may be used in a CCTV surveillance installation but in practice this will be limited by the efficient combination of control and display equipment and the operator's ability to manage the system.

The successful operation of a CCTV system requires the active co-operation of the user in carrying out the recommended procedures.

1 Scope

This standard gives recommendations for the selection, planning and installation of closed circuit television systems comprising of camera(s) with monitor(s) and/or video recorder(s), switching, control and ancillary equipment for use in security applications.

The objectives of this standard are:

- a) to provide a framework to assist customers, installers and users in establishing their requirements;
- b) to assist specifiers and users in determining the appropriate equipment required for a given application;
- c) to provide means of evaluating objectively the performance of an installed system.

2 Normative references

Related standards for systems and equipment using CCTV in security applications are:

CCIR report 624-4, Characteristics of television systems.

CCIR recommendation 567-3, Transmission performance of television circuits.

3 Definitions and abbreviations

3.1 Definitions

For the purpose of this standard, the following definitions apply:

3.1.1

CCTV system; CCTV surveillance system

a system consisting of camera equipment, monitoring and associated equipment for transmission and controlling purposes, which may be necessary for the surveillance of a defined security zone

3.1.2

CCTV surveillance installation

an installation consisting of the hardware and software components of a CCTV system, fully installed and operational for monitoring a defined security zone

3.1.3

CCTV camera

a unit containing an imaging device producing a video signal from an optical image

3.1.4

CCTV camera equipment

a unit containing a CCTV camera plus appropriate lens and necessary ancillary equipment

3.1.5

camera housing

an enclosure to provide physical and/or environmental protection of the camera, lens and ancillary equipment

3.1.6

composite video signal (CVS)

the video output signal of a black and white (b/w) camera comprising the picture component (video), black reference (blanking) and the synchronisation components (synchronisation)

3.1.7

composite colour video signal (CCVS)

the video output signal of a colour camera comprising the burst and colour information (colour) the picture luminance component (video), black reference (blanking) and the synchronisation components (synchronisation)

3.1.8

external synchronisation

a method of feeding reference timing signals to all connected devices to ensure that their video output signals are synchronous

3.1.9

camera sensitivity

imaging device illumination necessary to produce a defined composite (colour) video signal amplitude with a defined signal to noise ratio

**3.1.10
imaging device illumination**

the level of illumination (illuminance) at the photosensitive surface of the imaging device

**3.1.11
imaging device**

a device that converts an optical image into an electrical signal

**3.1.12
image sensor size**

the size of the light sensitive surface of the imaging device

NOTE The value is expressed in inches and refers to the diameter of the glass tube from which the camera tubes are constructed.

Some examples of sizes are:

- 1-inch for $12,8 \times 9,6$ mm (16 mm diagonal)
- 2/3-inch for $8,8 \times 6,6$ mm (11 mm diagonal)
- 1/2-inch for $6,4 \times 4,8$ mm (8 mm diagonal)
- 1/3-inch for $4,8 \times 3,6$ mm (6 mm diagonal)

**3.1.13
scene illumination**

the level of illumination (illuminance) on the area to be kept under surveillance

**3.1.14
scene reflectance**

the proportion of the scene illumination reflected by that scene

**3.1.15
electronic shutter**

an arrangement in the camera changing its sensitivity by electronically controlling its exposure time

**3.1.16
electronic iris**

an automatic electronic shutter which varies the camera sensitivity in relation to the varying light conditions in order to maintain the video output signal within defined limits

**3.1.17
lens**

an optical device for projecting an image of a desired scene onto the photo sensitive surface of the imaging device

**3.1.18
focal length (f)**

a property of a lens, expressed in mm, giving the angle of view for a given sensor size

**3.1.19
zoom lens**

a lens with adjustable focal length, in which the image of the scene remains in focus as the focal length is changed

**3.1.20
aperture number of the Lens (F)**

the index of the theoretical light gathering power of the lens, expressed as the ratio of the effective diameter of the lens (entrance pupil) to the focal length

**3.1.21
transmission number of lens (T)**

the index of the actual light gathering power of the lens

**3.1.22
ramping**

a characteristic of some zoom lenses whereby the effective aperture of the lens decreases as the focal length is increased

**3.1.23
iris**

a variable aperture mechanism which regulates the amount of light passing through the lens onto the imaging device of the CCTV camera

**3.1.24
CCTV control unit**

equipment for controlling and monitoring the required operational functions of the CCTV system

**3.1.25
video matrix**

a unit for connecting several input video signals to several outputs

**3.1.26
video switcher**

a unit for switching a number of video input signals to one or more outputs manually or automatically or on receipt of an external signal

**3.1.27
pan and tilt unit**

a motorised unit permitting the vertical and horizontal positioning of the camera equipment

**3.1.28
preset shot**

a function in pan and tilt units and/or zoom lenses, which allows automatic return to one or more predetermined positions