

STN	Obrazové sledovacie systémy na používanie v bezpečnostných aplikáciách Časť 5: Špecifikácie údajov a charakteristiky kvality zobrazenia kamerových zariadení	STN EN IEC 62676-5
		33 4592

Video surveillance systems for use in security applications - Part 5: Data specifications and image quality performance for camera devices

Táto norma obsahuje anglickú verziu európskej normy.

This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/19

Obsahuje: EN IEC 62676-5:2018, IEC 62676-5:2018

128087

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 62676-5

August 2018

ICS 13.320

English Version

Video surveillance systems for use in security applications - Part
5: Data specifications and image quality performance for camera
devices
(IEC 62676-5:2018)

Systèmes de vidéosurveillance destinés à être utilisés dans
les applications de sécurité - Partie 5: Spécifications des
données et performances de la qualité d'image pour les
dispositifs de caméra
(IEC 62676-5:2018)

Videoüberwachungsanlagen für Sicherungsanwendungen -
Teil 5: Leistungsbeschreibung und
Bildqualitätseigenschaften für Kameras
(IEC 62676-5:2018)

This European Standard was approved by CENELEC on 2018-07-10. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 62676-5:2018 (E)**European foreword**

The text of document 79/607/FDIS, future edition 1 of IEC 62676-5, prepared by IEC/TC 79 "Alarm and electronic security systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62676-5:2018.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2019-04-10
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2021-07-10

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62676-5:2018 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

- IEC 62676-2-1 NOTE Harmonized as EN 62676-2-1
- IEC 62676-2-2 NOTE Harmonized as EN 62676-2-2
- IEC 62676-2-3 NOTE Harmonized as EN 62676-2-3
- IEC 62676-4 NOTE Harmonized as EN 62676-4

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60825-1	-	Safety of laser products -- Part 1:EN 60825-1 Equipment classification and requirements	EN 60825-1	-
IEC 61146-1	-	Video cameras (PAL/SECAM/NTSC) -EN 61146-1 Methods of measurement -- Part 1: Non-broadcast single-sensor cameras	EN 61146-1	-
IEC 62471	-	Photobiological safety of lamps and lamp systems	EN 62471	-
IEC 62676-1-2	2013	Video surveillance systems for use in security applications -- Part 1-2: Video transmission & General video transmission - requirements	EN 62676-1-2	2014
IEC 62676-3	-	Video surveillance systems for use in security applications - Part 3: Analog and digital video interfaces	+ AC EN 62676-3	2015
ISO 14524	-	Photography – Electronic still picture-cameras – Methods for measuring optoelectronic conversion functions (OECFs)		-
ITU-R Recommendation BT.601-5	-	Encoding parameters of digital television-for studios		-
ITU-R Recommendation BT.709	-	Parameter values for the HDTV* standard-for production and international program exchange		-



IEC 62676-5

Edition 1.0 2018-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Video surveillance systems for use in security applications –
Part 5: Data specifications and image quality performance for camera devices**

Systèmes de vidéosurveillance destinés à être utilisés dans les applications de sécurité –

Partie 5: Spécifications des données et performances de la qualité d'image pour les dispositifs de caméra





THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2018 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
 3, rue de Varembé
 CH-1211 Geneva 20
 Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing 21 000 terms and definitions in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Catalogue IEC - webstore.iec.ch/catalogue

Application autonome pour consulter tous les renseignements bibliographiques sur les Normes internationales, Spécifications techniques, Rapports techniques et autres documents de l'IEC. Disponible pour PC, Mac OS, tablettes Android et iPad.

Recherche de publications IEC - webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

Electropedia - www.electropedia.org

Le premier dictionnaire en ligne de termes électroniques et électriques. Il contient 21 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalelement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

67 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.



IEC 62676-5

Edition 1.0 2018-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Video surveillance systems for use in security applications –
Part 5: Data specifications and image quality performance for camera devices**

Systèmes de vidéosurveillance destinés à être utilisés dans les applications de sécurité –

Partie 5: Spécifications des données et performances de la qualité d'image pour les dispositifs de caméra

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 13.320

ISBN 978-2-8322-5763-0

Warning! Make sure that you obtained this publication from an authorized distributor.

Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

CONTENTS

FOREWORD	7
INTRODUCTION	9
1 Scope	10
2 Normative references	10
3 Terms, definitions and abbreviations	11
3.1 Terms and definitions	11
3.2 Abbreviations	21
4 Description of video surveillance camera specification items	22
4.1 General	22
4.2 Camera	22
4.2.1 Image sensor	22
4.2.2 Maximum resolution	25
4.2.3 Minimum illumination	25
4.2.4 Signal to noise ratio (SNR, S/N ratio)	26
4.2.5 White balance	26
4.2.6 Electronic shutter	27
4.2.7 Electronic sensitivity up (Slow shutter)	27
4.2.8 Dynamic range (DR)	28
4.2.9 Visible dynamic range (VDR)	28
4.2.10 Infra-red illumination operating view distance	28
4.2.11 Day/Night mode (D/N)	29
4.2.12 Internal image processing performance	29
4.3 Lens	30
4.3.1 Focal length	30
4.3.2 Relative aperture (F-number)	30
4.3.3 Field of view	30
4.3.4 Image distortion	31
4.3.5 Iris control	31
4.3.6 Mount type	31
4.3.7 Image flare	32
4.4 Input / Output	32
4.4.1 Video output	32
4.4.2 Auto-iris lens output	32
4.5 Video output format	33
4.5.1 Image format standard	33
4.5.2 Colour representation	33
4.5.3 Output image pixel number	33
4.5.4 Output image resolution	34
4.6 Pan and tilt	34
4.6.1 Rotation angle	34
4.6.2 Rotation speed	34
4.6.3 Preset position function	35
4.6.4 Preset position accuracy	35
4.6.5 Audible noise	35
4.7 Network	36
4.7.1 Network interface	36
4.7.2 Image and video compression format	36

4.7.3	Bit rate control	36
4.7.4	Maximum frame rate	37
4.7.5	Maximum number of encoding streams	37
4.7.6	Multicast streaming	38
4.7.7	Maximum number of connections	38
4.7.8	Total encoding performance	38
4.7.9	Image stream delay (Latency)	38
4.7.10	Camera storage (Local storage)	39
4.7.11	Audio function	39
4.7.12	Network protocol	39
4.7.13	Camera time synchronization and localization	40
4.8	Network security	40
4.8.1	General description	40
4.8.2	Network authentication	40
4.8.3	Video authentication and watermarking	41
4.9	Other specifications	41
5	Measurement methods of video surveillance camera specification items	41
5.1	Setting of standard shooting condition	41
5.1.1	General	41
5.1.2	Common standard shooting condition	42
5.2	Video signal quantization level	44
5.2.1	General	44
5.2.2	Digital video signal quantization level	44
5.2.3	Other quantization levels	44
5.3	Measurement environment	44
5.3.1	General	44
5.3.2	Test chart	45
5.3.3	Software for measurement	48
5.4	Measuring methods	48
5.4.1	General	48
5.4.2	Resolution	48
5.4.3	Minimum illumination	56
5.4.4	Dynamic range	59
5.4.5	Visible dynamic range (VDR)	67
5.4.6	Infra-red illumination operating view distance	70
5.4.7	Image distortion	73
5.4.8	Image flare	77
5.4.9	Capture frame rate	84
Annex A (normative)	Sine wave star test chart	88
Annex B (informative)	Infra-red illuminator safety requirements according to IEC 62471	91
B.1	General	91
B.2	Declaration of the hazard distance	91
B.3	Other information to be declared	92
B.4	Item indication	92
B.5	Content indication	92
Annex C (informative)	Low light performance method	93
C.1	General	93
C.1.1	General	93

C.1.2	Test chart	93
C.1.3	Creation of the coloured dead leaves structure	94
C.1.4	Capturing a reference image.....	94
C.1.5	Capture of the test images.....	94
C.1.6	Image quality aspects affected by low light	94
C.1.7	Presentation of the results	96
C.2	Example for generating a single performance value from measured results.....	96
C.3	Description of test chart example	97
C.3.1	General	97
C.3.2	Chart sizes and background	98
C.3.3	Sine wave modulated starburst patterns	98
C.3.4	OECF patches	98
C.3.5	Colour patches	98
C.3.6	Dead leaves	100
C.3.7	Slanted edges and visual structures	101
C.3.8	Small sine wave modulated starburst patterns	101
C.3.9	Centre marks.....	101
Annex D (informative)	Streaming bit rate (bit-stream).....	102
D.1	General.....	102
D.2	Description	102
D.3	Uncompressed and compressed video streams.....	102
D.4	Content indication	103
D.4.1	General	103
D.4.2	Video streaming in a system	103
D.4.3	Network traffic analysis (NTA)	103
D.5	Measuring the video streaming	104
D.5.1	General	104
D.5.2	The procedure of measuring streaming bit rate in a system	104
Annex E (informative)	IP video latency measurement.....	107
E.1	General.....	107
E.2	Description	107
E.3	Visual perception of the latency	109
E.4	Measurement procedure for IP video latency	109
E.5	Content indication	110
Annex F (informative)	Motion blur measurement	111
F.1	General.....	111
F.2	Description	111
F.3	Projected pixel shift (PPS) due to moving objects	111
F.4	Content indication	111
F.5	Calculating the projected pixel shift of moving objects	112
F.6	Calculating the projected pixel shift of moving objects at various angles	113
F.7	Acceptable PPS	113
F.8	Test chart measuring of moving objects	114
Annex G (informative)	SD/HD test target example.....	118
Annex H (informative)	UL test chart implementations	119
Annex I (informative)	Explanation of image flare from light source within and outside of camera field of view	120
I.1	Image flare of light source within the field of view	120

I.2 Image flare of light source outside of the field of view	120
Bibliography.....	122
 Figure 1 – Test set-up for reflective test chart.....	45
Figure 2 – Test set-up for transparent test chart	46
Figure 3 – Test set-up for fixture with lamps	47
Figure 4 – Alignment of the camera with the target plane using a mirror	48
Figure 5 – IEC 61146-1 No. 4 and No. 5 (Resolution chart).....	49
Figure 6 – ISO 12233:2000 Resolution test chart	50
Figure 7 – Sine wave modulated starburst pattern test chart	51
Figure 8 – The star is divided into eight segments for the analysis.....	53
Figure 9 – The star is analysed radius by radius, equivalent to frequency by frequency	53
Figure 10 – The pixels along a specific radius are located	54
Figure 11 – Digital code values as a function of the angle.....	54
Figure 12 – Calculation of the contrast of the sine curve	55
Figure 13 – Example of grey scale test chart	57
Figure 14 – Example of OECF transparent test chart	57
Figure 15 – Signal difference between white area and black surrounding.....	58
Figure 16 – Example of lamp fixture.....	60
Figure 17 – Possible arrangements of luminance levels	61
Figure 18 – Graphical presentation of results	67
Figure 19 – Example of signal level	69
Figure 20 – Graphical presentation of results	70
Figure 21 – White chart.....	71
Figure 22 – Camera positioning	71
Figure 23 – Video level	72
Figure 24 – Conversion measurement using electronic shutter.....	73
Figure 25 – Regular grid (solid lines) in the scene is distorted and the red diamonds mark the position of the intersections in the image produced by the camera	74
Figure 26 – Line grid pattern chart	75
Figure 27 – Schematic drawings for measuring the horizontal line distortion	77
Figure 28 – Schematic drawings for measuring the vertical line distortion	77
Figure 29 – Example test chart with multiple black areas (“Dot pattern chart”)	79
Figure 30 – Set-up of image flare device	80
Figure 31 – Image flare lamp for cameras with small field of view (large focal length)	81
Figure 32 – Image flare lamp for cameras with large field of view (short focal length)	81
Figure 33 – Evaluation area	83
Figure 34 – Frame rate test target.....	85
Figure A.1 – Sine wave test chart (multiple target version).....	88
Figure C.1 – An example for a multipurpose test chart with frame rate tester	93
Figure C.2 – An example for a multipurpose test chart	98
Figure D.1 – Network connection for video streaming measurement	105
Figure D.2 – An example graph of network traffic.....	106
Figure E.1 – Comparison of image compression and video compression.....	107

Figure E.2 – Example of GOP	108
Figure E.3 – Video latency	110
Figure F.1 – Motion blur due to moving objects	111
Figure F.2 – Calculation of projected pixel shift.....	112
Figure F.3 – Movement in various angles	113
Figure F.4 – Measuring of moving objects	115
Figure F.5 – Example of moving test chart	117
Figure G.1 – SD/HD test target example	118
Figure I.1 – Image flare from a light source within the camera field of view	120
Figure I.2 – Image flare from a light source outside of the camera field of view	121
 Table 1 – Lighting condition	42
Table 2 – Relation of illuminance and luminance.....	43
Table 3 – Standard camera settings.....	43
Table 4 – Digital video signal quantization level	44
Table 5 – Camera settings for resolution	49
Table 6 – Camera settings for minimum illumination	56
Table 7 – Camera settings for dynamic range	59
Table 8 – Example results of dynamic range measurement	65
Table 9 – Camera settings for visible dynamic range	68
Table 10 – Camera settings for IR illumination operating view distance	70
Table 11 – Camera settings for image flare.....	78
Table 12 – Camera settings for capture frame rate	85
Table A.1 – Features of sine wave test chart	89
Table A.2 – Design of sine wave star test chart.....	90
Table C.1 – Results table of an example camera	96
Table C.2 – Results table of an example camera	97

INTERNATIONAL ELECTROTECHNICAL COMMISSION

VIDEO SURVEILLANCE SYSTEMS FOR USE IN SECURITY APPLICATIONS –

Part 5: Data specifications and image quality performance for camera devices

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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 IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62676-5 has been prepared by IEC technical committee 79: Alarm and electronic security systems.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
79/607/FDIS	79/609/RVD

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62676 series, published under the general title *Video surveillance systems for use in security applications*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

IEC Technical Committee 79 in charge of alarm and electronic security systems together with many governmental organizations, test houses and equipment manufacturers has defined a common framework for video surveillance transmission in order to achieve interoperability between products.

The IEC 62676 series of standards on video surveillance systems is divided into five independent parts:

Part 1: System requirements

Part 2: Video transmission protocols

Part 3: Analog and digital video interfaces

Part 4: Application guidelines

Part 5: Data specifications and image quality performance for camera devices

Each part offers its own clauses for the scope, normative references, definitions and requirements.

The purpose of this part of IEC 62676 is to specify representation and measuring methods of performance values to be described in materials such as instruction manuals, brochures and specifications of video surveillance camera equipment, and provide convenience for users, installers, integrators and maintenance companies, etc.

VIDEO SURVEILLANCE SYSTEMS FOR USE IN SECURITY APPLICATIONS –

Part 5: Data specifications and image quality performance for camera devices

1 Scope

This part of IEC 62676 defines recommendations and requirements for representation and measuring methods of performance values to be described in materials such as instruction manuals, brochures and specifications of video surveillance camera equipment.

This document consists of two parts. The first part is requirements for description of video surveillance camera specification items. The second part is requirements for measurement methods of video surveillance camera specification items.

A video surveillance camera's output can be analogue (e.g. composite video such as NTSC or PAL) or digital (e.g. compressed network output, uncompressed SDI (serial digital output), etc.).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*

IEC 61146-1, *Video cameras (PAL/SECAM/NTSC) – Methods of measurement – Part 1: Non-broadcast single-sensor cameras*

IEC 62471, *Photobiological safety of lamps and lamp systems*

IEC 62676-1-2:2013, *Video surveillance systems for use in security applications – Part 1-2: System requirements – Performance requirements for video transmission*

IEC 62676-3, *Video surveillance systems for use in security applications – Part 3: Analog and digital video interfaces*

ISO 14524, *Photography – Electronic still picture cameras – Methods for measuring opto-electronic conversion functions (OECFs)*

ITU-R Recommendation BT.601, *Studio encoding parameters of digital television for standard 4:3 and wide-screen 16:9 aspect ratios*

ITU-R Recommendation BT.709, *Parameter values for the HDTV standards for production and international programme exchange*

koniec náhľadu – text d'alej pokračuje v platenej verzii STN