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Road vehicles — Ergonomic and performance aspects of Camera Monitor Systems — Requirements and test procedures

Véhicules routiers — Aspects ergonomiques et de performance des caméras embarquées — Exigences et procédures d'essai



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Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 Vehicle related terms and definitions.....	2
3.2 Mirror related terms and definitions.....	3
3.3 Camera related terms and definitions.....	12
3.4 Monitor related terms and definitions.....	15
3.5 Camera Monitor System based terms and definitions.....	23
4 Symbols and abbreviated terms	32
5 General information and use case definitions	36
6 Requirements	40
6.1 Intended use.....	40
6.1.1 Default view.....	40
6.1.2 Adjusted default view.....	40
6.1.3 Temporary modified view.....	40
6.1.4 Luminance and contrast adjustment.....	41
6.1.5 Overlays.....	41
6.2 Operating readiness (system availability).....	41
6.3 Field of view.....	42
6.4 Magnification and resolution.....	42
6.4.1 Average magnification factor.....	42
6.4.2 Minimum magnification factor.....	42
6.4.3 Resolution (MTF).....	43
6.5 Magnification aspect ratio.....	44
6.6 Monitor integration inside the vehicle.....	44
6.7 Image quality.....	45
6.7.1 Monitor isotropy.....	45
6.7.2 Luminance and contrast rendering.....	46
6.7.3 Colour rendering.....	46
6.7.4 Artefacts.....	47
6.7.5 Sharpness and depth of field.....	48
6.7.6 Geometric distortion.....	48
6.7.7 Further image quality requirements.....	48
6.8 Time behaviour.....	49
6.8.1 Frame rate.....	49
6.8.2 Image formation time.....	49
6.8.3 System latency.....	49
6.9 Failure behaviour.....	49
6.10 Quality and further ergonomic requirements.....	49
6.10.1 Needs of older persons.....	49
6.11 Influences from weather and environment.....	50
7 Test methods	50
7.1 System documentation.....	50
7.2 Intended use.....	50
7.2.1 Default view.....	50
7.2.2 Adjusted default view.....	50
7.2.3 Temporary modified view.....	50
7.2.4 Luminance and contrast adjustment.....	50
7.2.5 Overlays.....	51
7.3 Operating readiness (system availability).....	51

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7.4	Field of view	52
7.5	Magnification and resolution.....	52
	7.5.1 Average magnification factor	52
	7.5.2 Minimum magnification factor	53
	7.5.3 Resolution (MTF)	55
7.6	Magnification aspect ratio.....	57
7.7	Monitor integration inside the vehicle	57
7.8	Image quality	58
	7.8.1 Monitor isotropy.....	58
	7.8.2 Luminance and contrast rendering	60
	7.8.3 Colour rendering.....	69
	7.8.4 Artefacts	72
	7.8.5 Sharpness, resolution, and depth of field	73
	7.8.6 Geometric distortion	75
	7.8.7 Further Image quality requirements.....	75
7.9	Time behaviour	75
	7.9.1 Frame rate.....	75
	7.9.2 Image formation time.....	75
	7.9.3 System latency	75
7.10	Failure behaviour.....	76
7.11	Quality and further ergonomic requirements.....	77
	7.11.1 Needs of older persons.....	77
7.12	Influences from weather and environment	77
8	Functional safety	77
Annex A	(normative) Standard application on class II and IV mirrors in commercial vehicles.....	78
Annex B	(informative) Formula applications, explanations, and guidelines	83
Annex C	(informative) Calculation of the dimensional magnification and of a correction factor to obtain the angular magnification	117
Annex D	(informative) Complementary information for resolution measurement.....	122
Annex E	(informative) Correlation between Resolution (MTF) and spatial frequency measured using SFR method for depth of field evaluation or sharpness evaluation.....	131
Annex F	(informative) Complementary charts and method for long distance measurements.....	136
Annex G	(informative) Distortion measurement.....	139
Bibliography	146

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: [Foreword — Supplementary information](#).

The committee responsible for this document is ISO/TC 22, *Road vehicles*, Subcommittee SC 35, *Lighting and visibility*.

Introduction

The purpose of this International Standard is to give minimum safety, ergonomic, and performance requirements and test methods for Camera Monitor Systems (CMS) to replace mandatory inside and outside rearview mirrors for road vehicles (e.g. classes I to IV as defined in UN REGULATION NO. 46). This International Standard can follow updates of referred national regulations that influence the included contents.

Where possible, the requirements established for a CMS providing a specific legally prescribed field of view are based on the properties of conventional state of the art mirror systems providing that field of view.

The CMS is treated as a functional system in regards to requirement definitions and performance tests.

This International Standard outlines general requirements and test methods regarding the basic aspects of CMS; e.g. intended use, operating readiness, field of view, magnification, etc.

Furthermore, this International Standard outlines requirements and test methods regarding the necessary object size and resolution provided by the CMS. Besides the properties of the mirror system to be replaced, those requirements are also based on physical aspects of the human operator (e.g. visual acuity).

The given requirements follow the assumption, that the CMS provides an ideal mapping of the real world scene. To correspond to reality, this International Standard also provides requirements and test methods for all relevant parameters that worsen the ideal mapping (e.g. isotropy or artefacts).

Finally, this International Standard gives requirements and test methods regarding the aspects of time behaviour and failure behaviour.

All requirements are established to be as generic as possible, i.e. that these are possible to apply to any of the covered rearview mirrors. If additional or specific information is required for certain mirrors, these are provided in separate annexes.

This International Standard declares that CMS replacing legally prescribed mirrors have to be considered as safety-relevant systems and therefore, relevant safety standards (e.g. ISO 26262) have to be considered.