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**Road vehicles — Test devices for  
target vehicles, vulnerable road users  
and other objects, for assessment of  
active safety functions —**

**Part 3:  
Requirements for passenger vehicle  
3D targets**

*Véhicules routiers — Dispositifs d'essai pour véhicules cibles, usagers  
de la route vulnérables et autres objets, pour l'évaluation de fonctions  
de sécurité active —*

*Partie 3: Exigences pour cibles de véhicules particuliers 3D*



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Published in Switzerland

# Contents

Page

<b>Foreword</b>	<b>v</b>
<b>Introduction</b>	<b>vi</b>
<b>1 Scope</b>	<b>1</b>
<b>2 Normative references</b>	<b>1</b>
<b>3 Terms and definitions</b>	<b>1</b>
<b>4 Abbreviated terms</b>	<b>3</b>
<b>5 Vehicle target specifications</b>	<b>4</b>
5.1 Vehicle classes and target applicability	4
5.2 Reference dimensional measurements	4
5.3 Safety considerations	4
5.4 Repairability and robustness	4
5.5 Environmental conditions	5
5.6 Reference coordinate system	5
5.7 Speed classes	5
<b>6 Vehicle target response to sensing technologies</b>	<b>6</b>
6.1 General	6
6.2 Optical requirements	6
6.2.1 General	6
6.2.2 Reference measurements	6
6.2.3 Stability of dimensions for optical recognition	6
6.2.4 Viewing angles	6
6.2.5 Features related to optical requirements	7
6.3 Radar requirements	7
6.3.1 Reference measurements of radar properties	7
6.3.2 Reference measurements	7
6.3.3 Radar cross section, static measurements and requirements	8
6.3.4 Radar recognition features of vehicle target	8
6.3.5 Stability of dimensions for radar recognition	8
6.4 Thermal requirements for Far Infrared vision systems	8
6.4.1 General	8
6.4.2 Reference measurements	8
6.4.3 Thermal characteristics	8
6.5 Calibration	8
6.6 Field verification	9
<b>7 Motion and positioning during test for VT including target carrier system</b>	<b>9</b>
7.1 General requirements	9
7.2 Longitudinal positioning	9
7.2.1 Speed range for operation	9
7.2.2 Accelerations	9
7.3 Lateral positioning	9
7.3.1 General	9
7.3.2 Yaw rate	9
7.3.3 Lateral position	10
7.3.4 Lateral acceleration	10
7.3.5 Turning diameter	10
7.4 Vertical positioning	10
7.4.1 General	10
7.4.2 Pitch angle	10
7.4.3 Vertical motions	10
<b>Annex A (informative) Vehicle classes and dimensions</b>	<b>11</b>

<b>Annex B (normative) Visual and near infrared sensor-specific recognition properties and measurements</b>	<b>16</b>
<b>Annex C (normative) Radar-specific recognition properties and measurements</b>	<b>21</b>
<b>Annex D (informative) Measurement of position, speed and acceleration of the vehicle target</b>	<b>49</b>
<b>Annex E (informative) Field verification of vehicle target properties</b>	<b>50</b>
<b>Bibliography</b>	<b>51</b>

## 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](http://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](http://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 of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 33, *Vehicle dynamics and chassis components*.

A list of all parts in the ISO 19206 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

ADAS (advanced driver assistance systems) and active safety systems are designed to support decision-making for the driver, extend the driver's awareness of the traffic situation with advanced warnings, improve the behaviour of the vehicle, and even take over vehicle control in an emergency situation. The goal is to completely avoid an accident or at least reduce the severity of an accident.

The surrogate target is an essential component in the evaluation of ADAS/active safety functions and different levels of automated driving systems, in all situations where a collision with the target may occur.

The characteristics of targets must be trustworthy and a vehicle target must be recognized as a real vehicle by the various sensing technologies.

This document addresses the specification of vehicle 3D test targets.

It is important that a surrogate vehicle target represents a real vehicle in terms of detectability and movement from all directions. It should also provide safety for the subject vehicle and test operators if contact is made between the subject vehicle and the target. Crashworthiness and durability requirements for the vehicle target require that the material and construction of the vehicle target are adapted to fit the purposes.

Test cases usually address both stationary and moving targets and, as such, the physical construction of the target accommodates a target carrier system capable of mimicking realistic motions. This document includes requirements on the target carrier system as applicable.

Targets described in the ISO 19206 series can be used for system development or applied in conjunction with existing standards, or standards under development, for assessment of ADAS and active safety functions of vehicles.

# Road vehicles — Test devices for target vehicles, vulnerable road users and other objects, for assessment of active safety functions —

## Part 3: Requirements for passenger vehicle 3D targets

### 1 Scope

This document specifies performance requirements for surrogate targets used to assess the system detection and performance of active safety systems.

This document specifies the properties of an omni-directional multi-purpose vehicle target for assessment of interaction in a variety of traffic scenarios.

This document specifies the properties of a vehicle target that will allow it to represent a passenger vehicle in terms of size, shape, reflection properties, etc. for testing purposes. This document addresses the detection requirements for a vehicle target in terms of sensing technologies commonly in use at the time of publication of this document, and where possible, anticipates future sensing technologies. It also addresses methodologies to verify the target response properties to these sensors, as well as performance requirements for the target carrier.

The vehicle targets specified in this document reflect passenger cars and, in particular, the smaller and more common B and C segment cars.

This document does not address the test procedures in terms of speeds, positions, or timing of events. Performance criteria for the active safety system are also not addressed.

### 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.

ISO 8855, *Road vehicles — Vehicle dynamics and road-holding ability — Vocabulary*

ISO 8608, *Mechanical vibration — Road surface profiles — Reporting of measured data*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8855 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

#### 3.1

##### subject vehicle

SV

vehicle with active safety system to be tested