CIE S 021/E:2011

COMMISSION INTERNATIONALE DE L'ECLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION

Standard

Vehicle Headlighting Systems
Photometric Performance - Method of Assessment

Systèmes d'éclairage des véhicules routiers - efficacité photométric - méthode pour évaluer

Kraftfahrzeugscheinwerfer – Photometrische Leistungsmerkmale - Bewertungsmethode

CIE Central Bureau, Vienna
Kegelgasse 27, A-1030 Vienna, Austria

CIE S 021/E:2011

UDC: 628.971.85
628.971.85:629.113.06

Descriptor: Lighting by lamps attached to the vehicle
Lighting by motor vehicle lamps

CIE Central Bureau
Kegelgasse 27
A-1030 Vienna
Austria
Tel.: +43 1 714 3187 0
Fax: +43 1 714 3187 18
e-mail: ciecb@cie.co.at
www.cie.co.at

Foreword

Standards produced by the Commission Internationale de l'Eclairage are concise documents on aspects of light and lighting that require a unique definition. They are a primary source of internationally accepted and agreed data which can be taken, essentially unaltered, into universal standard systems.

This CIE Standard has been prepared by CIE Technical Committee 4-45[1] "Performance Assessment Method for Vehicle Headlamps" and is derived from CIE 188:2010, which was produced by the same committee.

[1] This TC was chaired by G. Draper (GB) (until 2009), K. Koeth (DE) (until 2010), and G. Langhammer (DE) (from 2011).
Members were: T. Adachi (JP), T. Bauckhage (DE), A. Bissieres (FR), T. Carter (GB), M. Cejnek (CZ), B. Delaunay (BE), L. Dellby (SE), G. Dorleans (FR), K. Fadel (FR), J. Hasegawa (JP), T. Izawa (BE), M. Kleinkes (DE), K. Koeth (DE), M. Kocian (CZ), K. Manz (DE), F. Müller (DE), R. Neumann (DE), H. Scheidegger (FR), O. Schmidt (DE), I. Schneider (DE), T. Spingler (DE), T. Targosinski (PL), S. Troccon (FR), W. van Laarhoven (NL), S. Völker (DE), S. Watson (GB), Y. Yamada (JP).

CONTENTS

Vehicle Headlighting Systems
Photometric Performance - Method of Assessment

1 Scope

This Standard specifies a method to consistently assess the photometric performance of vehicle headlighting systems to enable the performance of different systems to be compared. The requirements are given in relation to road scene illumination and the limitation of glare, and the performance is assessed using parameters relevant to lane guidance and the detection of pedestrians and objects.

The Standard includes a measurement and calculation procedure. It does not specify the format of an assessment report.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including amendments) applies.

CIE 188:2010, *Performance Assessment Method for Vehicle Headlighting Systems,* 2010.

CIE DS 017.2/E:2009, *International Lighting Vocabulary*, 2009.

Federal Motor Vehicle Safety Standard (FMVSS) No. 108, *Lamps, reflective devices, and associated equipment*, US Department of Transportation, National Highway Traffic Safety Administration, 2007.

GTB Working Group Photometry, *Photometry Laboratory Accuracy Guidelines, Edition 3*, 2005.

SAE J1383, *Performance Requirements for Motor Vehicle Headlamps*, 2010.

UNECE Regulation 37, *Uniform Provisions Concerning the Approval of Filament Lamps for Use in Approved Lamp Units on Power-Driven Vehicles and of their Trailers*, available at <http://www.unece.org/trans/main/wp29/wp29regs21-40.html>.

UNECE Regulation 99, *Uniform Provisions Concerning the Approval of Gas-Discharge Light Sources for Use in Approved Gas-Discharge Lamp Units of Power-Driven Vehicles*, available at <http://www.unece.org/trans/main/wp29/wp29regs81-100.html>.

3 Terms and Definitions

For the purposes of this document the terms and definitions given in the International Lighting Vocabulary (CIE DS 017.2/E:2009) and the following apply:

3.1
headlighting system

a full set of headlights as installed to a vehicle

3.2
nearside

for traffic following the right-hand rule of the road, the right side of the vehicle

3.3
offside

for traffic following the right-hand rule of the road, the left side of the vehicle

NOTE With regard to the performance of the passing beam it is necessary to define whether the traffic flow is for right-hand or left-hand rule of the road. For the purposes of this Standard it is assumed that the traffic is following the right-hand rule of the road (as in mainland Europe and USA for example) and all reference to features of the beam pattern and photometric performance is related to this. In the case of traffic following the left-hand rule of the road (as in Japan and the UK for example) a reference to a feature on the right in this document should be transformed to refer to an identical feature translated to the left side.

