



Standard Test Method for Measurement of Nighttime Chromaticity of Pavement Marking Materials Using a Portable Retroreflection Colorimeter¹

This standard is issued under the fixed designation E2367; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers measurement of the nighttime chromaticity coordinates (x , y) of horizontal pavement markings, such as traffic stripes and surface symbols, using a portable retroreflection colorimeter that can be placed on the road delineation to measure the chromaticity at a prescribed geometry.

1.2 The entrance and observation angles of the retroreflection colorimeter affect the readings. As specified by the European Committee for Standardization (CEN EN 1436), the entrance and observation angles shall be 88.76° and 1.05° , respectively.

1.3 This test method is intended to be used for field measurement of pavement markings but may be used to measure the chromaticity of materials on sample panels before placing the marking material in the field.

1.4 The portable retroreflection colorimeter may integrate measurement of the coefficient of retroreflected luminance R_L in accordance with Test Method E1710 and thus be an integrated retroreflectometer/ retroreflection colorimeter.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

D6628 Specification for Color of Pavement Marking Materials

E284 Terminology of Appearance

E308 Practice for Computing the Colors of Objects by Using the CIE System

E811 Practice for Measuring Colorimetric Characteristics of Retroreflectors Under Nighttime Conditions

E1710 Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer

2.2 Other Standard:

CEN EN 1436 Road Marking Materials—Road Marking Performance for Road Users³

3. Terminology

3.1 The terminology used in this test method generally agrees with that used in Terminology E284. The definitions given in Test Method E1710 and Practice E811 apply in this test method as well.

3.2 Definitions:

3.2.1 *reflection colorimeter, n*—an instrument that illuminates a specimen and applies a colorimeter to the light reflected.

3.2.2 *retroreflection colorimeter, n*—a reflection colorimeter for which the illumination (influx) and reception (efflux) directions are within a few degrees of each other.

4. Summary of Test Method

4.1 This test method involves the use of portable retroreflection colorimeters for determining the chromaticity coordinates (x , y) of horizontal coatings materials used in pavement markings.

4.2 The entrance angle is fixed at 88.76° (co-entrance angle e of 1.24°).

4.3 The observation angle is fixed at 1.05° (co-viewing angle a of 2.29°).

4.4 The presentation angle shall be 0° (azimuthal angle b of 180°).

¹ This test method is under the jurisdiction of ASTM Committee E12 on Color and Appearance and is the direct responsibility of Subcommittee E12.10 on Retroreflection.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from European Committee for Standardization (CEN), Avenue Marnix 17, B-1000, Brussels, Belgium, <http://www.cen.eu>.