This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: D5767 – 18 (Reapproved 2023)

Standard Test Method for Instrumental Measurement of Distinctness-of-Image (DOI) Gloss of Coated Surfaces[1]

This standard is issued under the fixed designation D5767; 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 These test methods describe the measurement of the distinctness-of-image (DOI) gloss of coating surfaces using electro-optical measuring techniques.

1.2 The coatings assessed shall be applied to planar rigid surfaces.

1.3 *Test Method*—The light through a small slit is projected on the specimen surface and its reflected image intensity is measured through a sliding combed shutter to provide a value of image clarity.

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D523 Test Method for Specular Gloss

D823 Practices for Producing Films of Uniform Thickness of Paint, Coatings and Related Products on Test Panels

D2457 Test Method for Specular Gloss of Plastic Films and Solid Plastics

D3964 Practice for Selection of Coating Specimens for Appearance Measurements

D4039 Test Method for Reflection Haze of High-Gloss Surfaces

E284 Terminology of Appearance

E430 Test Methods for Measurement of Gloss of High-Gloss Surfaces by Abridged Goniophotometry

E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

2.2 *ISO Standards:*[3]

ISO 10216 Anodizing of Aluminum and its Alloys—Instrumental Determination of Image Clarity of Anodic Oxidation Coatings—Instrumental Method

ISO 17221 Plastics—Determination of Image Clarity (degree of sharpness of reflected or transmitted image)

ISO 11664–1 Colorimetry Part 1—CIE standard colorimetric observers

ISO 11664–2 Colorimetry Part 2—CIE standard illuminants

3. Terminology

3.1 *Definitions*—Terms and definitions in Terminology E284 are applicable to these methods.

3.1.1 *distinctness-of-image (DOI) gloss, n*—aspect of gloss characterized by the sharpness of images of objects produced by reflection at a surface. **E284**

3.1.1.1 *Discussion*—This quality is sometimes called image clarity.

3.1.2 *gloss reflectance factor, R_s, n*—ratio of the specularly reflected part of the (whole) flux reflected from the specimen to the flux reflected from a specified gloss standard under the same geometric and spectral conditions of measurements. **E284**

3.1.2.1 *Discussion*—The gloss standard may be a black glass or mirror and may be assigned one of a variety of scale values as specified.

3.1.3 *specular angle, n*—angle of reflection equal and opposite to the angle of incidence. **E284**

[1] This test method is under the jurisdiction of ASTM Committee E12 on Color and Appearance and is the direct responsibility of Subcommittee E12.03 on Geometry.

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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 American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

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