



Standard Test Methods for Instrumental Measurement of Distinctness-of-Image Gloss of Coating Surfaces¹

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 This test method describes the measurement of the distinctness-of-image (DOI) gloss of coating surfaces using electro-optical measuring techniques. The coatings must be applied to planar rigid surfaces. The scale values obtained from the alternative methods cited do not agree.

1.2 Three test methods are covered as follows:

1.2.1 *Test Method A*—Gloss reflectance factor measurements are made on the specimen at the specular viewing angle and at an angle slightly off the specular viewing angle. The values obtained are combined to provide a DOI value. Very narrow source and receptor aperture angles are used in the measurements.

1.2.2 *Test Method B*—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.

1.2.3 *Test Method C*—The light through a pattern is projected on the specimen surface and its reflected image intensity is measured directly to provide a value of image clarity.

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

2. Referenced Documents

2.1 *ASTM Standards*:²

D523 Test Method for Specular Gloss

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.

Current edition approved July 1, 2012. Published August 2012. Originally approved in 1995. Last previous edition approved in 2004 as D5767 – 95 (2004). DOI: 10.1520/D5767-95R12.

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.

D823 Practices for Producing Films of Uniform Thickness of Paint, Varnish, 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

2.2 *Other Standards*:

ISO 10216 Anodized Aluminum and Aluminum Alloys—Instrumental Determination of Image Clarity of Anodic Oxidation Coatings—Instrumental Method³

3. Terminology

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

3.2 *Definitions*:

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

3.2.1.1 *Discussion*—This quality is sometimes called Image Clarity.

3.2.2 *gloss reflectance factor, R_g, 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

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

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

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.