



# Standard Test Method for Evaluation of Large Area Density and Background on Office Copiers<sup>1</sup>

This standard is issued under the fixed designation F875; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This test method covers the description and method of use for a density and background test target for office copier image evaluation.

1.2 *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.* For specific precautionary statements, see Section 8.

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

E1347 Test Method for Color and Color-Difference Measurement by Tristimulus Colorimetry

F335 Terminology Relating to Electrostatic Imaging

F360 Practice for Image Evaluation of Electrostatic Business Copies

2.2 *ANSI Standards:*

PH 2.17 Density measurements—Geometric conditions for reflection density<sup>3</sup>

PH 2.18 Density measurements—Spectral conditions<sup>3</sup>

## 3. Terminology

3.1 *Definitions*—For definitions of terms used in this test method, refer to Terminology F335.

## 4. Summary of Test Method

4.1 The standard test target is used to evaluate copy density and background. The method of image evaluation using this test target is given.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee F05 on Business Imaging Products and is the direct responsibility of Subcommittee F05.04 on Electrostatic Imaging Products.

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<sup>2</sup> 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.

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

## 5. Significance and Use

5.1 The copy image quality is affected by many factors; including the copier, supplies, and environmental conditions. The density and background image quality is particularly significant relative to aesthetic appearance, the visual impression of blackness, and the ability to distinguish information from background.

5.2 The test target may also be used to evaluate the copier or supplies.

## 6. Apparatus

6.1 *Reflection Densitometer*, meeting the requirements of ANSI PH 1.17 and PH 1.18, capable of measuring the smallest solid circle (of the test target) which has a diameter of 6 mm.

6.2 *Reflectometer*, meeting the requirements of Test Method E1347.

## 7. Materials

7.1 *Test Target*, for the evaluation of density and background image quality. It shall have the same configuration and layout as shown in Fig. 1.

## 8. Precautions

8.1 This test target can be used to measure density and background for different copier conditions (machine adjustment, machine configuration, supplies, environment, etc.). Careful notation of these conditions should be made so that comparison tests can be made.

8.2 The color and type of copy paper used will affect the density and background measurements.

8.3 The method of fixing (fusing) of the image on the copy may affect the degree of gloss and may affect the difference between the perceived density and measured reflective density.

## 9. Procedure

9.1 Using the test target in 7.1, establish a procedure (Practice F360) for producing copies in a controlled manner. Evaluate the copy system at the site of its proposed installation under the line voltage conditions which normally apply. Read, understand, and follow the manufacturer's instructions on operation of the copier.