



Standard Practice for Determination of the Quality of Monochrome Images Produced from Non-Impact Personal Computer Printers¹

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1. Scope

1.1 This practice utilizes a standard test target that is intended for use as a means of comparing the graphic and text output quality from non-impact personal computer printers. The output may be from ink jet, thermal transfer, or electrostatic imaging devices.

1.2 This target can be used by the end-user as a means of determining the suitability of a non-impact printer for use with commercially available software and a predetermined application.

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 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

[F909 Terminology Relating to Printers](#)

[F1125 Terminology of Image Quality in Impact Printing Systems](#)

[F1174 Practice for Using a Personal Computer Printer as a Test Instrument](#)

2.2 *ASTM Adjunct:*

[Image Quality Test Target for Non-Impact PC Printing Systems](#)³

3. Terminology

3.1 *Definitions:*

¹ This practice 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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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 ASTM International Headquarters. Order Adjunct No. [ADJF1423](#). Original adjunct produced in 1992.

3.1.1 *hairline*—the thinnest line a particular printer will print.

3.1.2 *jitter*—deviation in a printed test pattern that is caused by: erratic rotation of the photoreceptor or erratic paper feeding (noticeable in the vertical plane); or erratic scanning or alignment, or both, of the imaging device (noticeable in the horizontal plane). The imaging device can be either a laser diode, ink-jet nozzle(s), or a thermal printhead.

3.1.3 *point*—a typographical term describing the height of a character from top to bottom. One point equals approximately $\frac{1}{72}$ in.

3.1.4 *stairstepping*—the tendency of a printer to produce angular or circular lines, or both, in a series of dots that, when examined closely, resemble stair steps. Ideally a printer should produce angular or circular lines, or both, with a smooth, unnoticeable transition from dot to dot.

3.2 See Terminologies [F909](#) and [F1125](#) for additional definitions related to this practice.

4. Significance and Use

4.1 This test target can be used for control or evaluation of the graphic and text output of imaging products or as a research and development tool.

4.2 This test target can be produced by most non-impact personal computer printers.

5. Interferences

5.1 This test target was generated using commercially available software. Consequently, the quality of the printed test target may not be indicative of the absolute resolution or image quality, or both, that a printer may produce (direct programming of the printer may produce the best results).

5.2 Paper supplies can be purchased from several sources and can affect the image quality of a given system. The user should use only the grade and basis weight of paper recommended by the printer manufacturer when evaluating image quality. All paper supplies should be from the same source and production lot. Some inherent variability within the paper may affect image quality evaluations as will certain unintentional