



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

This standard is issued under the fixed designation F 1423; 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 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:

F 909 Terminology Relating to Printers²

F 1125 Terminology of Image Quality in Impact Printing Systems²

F 1174 Practice for Using a Personal Computer Impact Printer as a Test Instrument²

3. Terminology

3.1 Definitions:

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 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 F 909 and F 1125 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 paper defects. Some variability may be encountered from one ream of paper to the next or sometimes encountered within a ream.

6. Apparatus Required to Produce Test Target

6.1 *IBM or IBM Compatible Computer*, running MS-DOS or Windows.

6.2 *PC Compatible Non-impact Personal Computer Printer*.

6.3 Test targets will be available from ASTM³ for HP LaserJet (PCL), PostScript, IBM Quietwriter, and HP DeskJet printers or compatibles. The printer may be equipped with serial or parallel ports; Test Target may be output from one to

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.

Current edition approved May 10, 1997. Published April 1998.

² *Annual Book of ASTM Standards*, Vol 15.09.

³ Test target available from ASTM Headquarters. Order Stock #: ADJF1423.