



Standard Practice for Determining Energy Consumption of Facsimile Machines¹

This standard is issued under the fixed designation F 1707; 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 (€) indicates an editorial change since the last revision or reapproval.

€¹ NOTE—Keywords were added editorially in January 2008.

1. Scope

1.1 This procedure provides a method by which electrophotographic, direct-thermal, thermal transfer, or ink-jet facsimile machines can be tested for energy consumption.

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.*

2. Referenced Documents

2.1 *ASTM Standards:*²

F 335 Terminology Relating to Electrostatic Imaging

F 757 Test Method for Determining Energy Consumption of Copier and Copier-Duplicating Equipment³

2.2 *ANSI Standard:*

C 12.10 Electromechanical Watthour Meters⁴

3. Terminology

3.1 For definitions of terms used in this practice, see Terminology **F 335** and Test Method **F 757**.

3.2 *cycle out*—the condition that exists when the machine has finished sending or receiving a page, and has returned to a stand-by mode.

3.3 *idle time*—the amount of time that the machine is not sending or receiving when testing sending or receiving energy.

3.4 *job*—receiving or sending one or more pages without interruption or delay between pages.

3.5 *machine energy*—the energy consumed by a facsimile machine that is plugged in 24 h/day and turned on 10.5 h (see **Note 1**), but is not sending, receiving, or making copies.

NOTE 1—Some users may want to adjust this time if they do not turn off their facsimile machines. Therefore, the test should be performed for the plug-in and warm-up modes, but won't be included in the calculations. If the user wants to include these modes in the calculations, the tester should recalculate the numbers used in Section 10.

3.6 *nominal facsimiles received per day*—the number of standard facsimiles received on a single machine during a standard work day.

3.7 *nominal facsimiles sent per day*—the number of standard facsimiles sent on a single machine during a standard work day.

3.8 *receiving*—the machine condition that exists from the beginning to the end of the cycle that receives a page from an outside source and prints that page while receiving.

3.9 *receiving energy*—the energy consumed during a designated receiving mode exclusive of stand-by and plug-in energy.

3.10 *sending*—the machine condition that exists from the beginning to the end of the cycle that sends a page to an outside source.

3.11 *sending energy*—the energy consumed during a designated sending mode exclusive of stand-by and plug-in energy.

3.12 *sending receiving time*—the amount of time that the nominal jobs are run when testing sending and receiving energy.

3.13 *stand-by*—the condition that exists when the machine is not sending, receiving, or copying, has reached operating conditions, but has not yet entered into energy-saver mode.

3.14 *warm-up mode*—the condition that exists when the machine is turned on from a plug-in mode and prior to sending, receiving, or copying.

4. Summary of Test Method

4.1 The standard energy consumption rating is determined for a facsimile machine while the machine is in a simulated customer installation performing one eighth of a typical day's jobs (using a watt-hour meter). The typical day's jobs (size and number of pages) are based on a standard volume (see **Table 1**). The simulated customer installation can be calculated with actual usage data, or can be based on the following assumptions, that the printer will typically:

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 Withdrawn.

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