

Standard Test Method for Commercial Coffee Brewers¹

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1. Scope

1.1 This test method covers the evaluation of the energy consumption, brewing, and holding performance of commercial coffee brewing machines (here after referred to as coffee brewers) used in commercial and institutional facilities. The operator can use this evaluation to select a coffee brewer and characterize its energy use and performance. This test method does not cover residential coffee brewers, “urn” coffee brewers (*Type III*), or espresso machines.

1.2 This test method applies to single cup (*Type I*) and batch (*Type II*) coffee brewers. The coffee brewer will be tested for the following (where applicable):

- 1.2.1 Maximum energy input rate,
- 1.2.2 Heavy use brewing energy consumption,
- 1.2.3 Production capacity,
- 1.2.4 “Ready-to-Brew” (Standby/Idle) energy rate, and
- 1.2.5 “Energy Save Mode” (Low power) energy rate.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 *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

F2988 Specification for Commercial Coffee Brewers

2.2 ASHRAE Standard:

ASHRAE Guideline 2–1986 (RA90) Engineering Analysis of Experimental Data

¹ This test method is under the jurisdiction of ASTM Committee F26 on Food Service Equipment and is the direct responsibility of Subcommittee F26.06 on Productivity and Energy Protocol.

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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. Terminology

3.1 Definitions:

3.1.1 *coffee brewer, n*—commercial appliances designed to heat water and brew coffee.

NOTE 1—Cold water is poured into a separate chamber (manually or automatically), which is then heated up to just below the boiling point, and directed through the filter. This process is also called *automatic drip-brew*.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *brew cycle, n*—the total time required to dispense a single cup (*Type I*) or batch (*Type II*) of coffee, starting with the initiation of a brew event by the user, and including the time needed for the machine to recover to a “ready to brew” state.

3.2.2 *brew event, n*—the sequence of brewing a single cup (*Type I*) or batch (*Type II*) of coffee, starting with initiation by the user, and including the time for the remaining water to drip through the filter.

3.2.3 *brew energy, n*—energy consumed by coffee brewer during a brew cycle.

3.2.4 *warmer energy, n*—the energy consumed by the plate warmer while maintaining the delivered brew volume at serving temperature.

NOTE 2—Warmers may not be an applicable feature of single serving Type I machines.

3.2.5 *ready-to-brew (standby/idle) energy, n*—energy required by the coffee brewer to maintain “ready to brew” conditions including energy required to keep the reservoir tank at the brew set temperature.

3.2.6 *energy save mode, n*—an optional low power mode (different from the ready-to-brew state) that is designed by the manufacturer to use less energy while the coffee brewer still remains “on.”

NOTE 3—Energy Save Modes are typically specified by the manufacturer and outlined in the user manual. Some examples may include an automatic reduction of tank holding temperature (for example, 140°) or burner temperature after a certain period of machine un-use. The manual turning off of accessories is not considered to be an Energy Save Mode unless specified by the manufacturer.

3.2.7 *production capacity, n*—calculated maximum volume of coffee that can potentially be brewed in one full hour and expressed in gal/h (L/h).