



Designation: E 287 – 02

Standard Specification for Laboratory Glass Graduated Burets¹

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1. Scope

1.1 This specification covers requirements for glass burets of precision and general-purpose grades suitable for laboratory use.

1.1.1 *Class A*—Each buret of precision grade may be marked with the letter “A” to signify compliance with applicable construction and accuracy requirements in Table 1 and Table 2. Each buret may be marked with a permanent serial number at the option of the manufacturer.

1.1.2 *Class B*—General purpose burets are of the same basic design as Class A burets. However, volumetric tolerances for Class B burets shall be within twice the specified range allowed for Class A burets. These burets need not be marked with their class designation or serial number. See Table 1 and Table 3 for tolerances and dimensional requirements.

NOTE 1—The Twelfth General (International) Conference on Weights and Measures redefined the litre as a “special name for the cubic decimetre,” but agreed to permit continuance of the terms litre, millilitre, and mL, except in association with measurements of the highest precision. For volumetric glassware the difference between the old and new meanings of litre is negligible. Therefore, either mL or cm³ may be marked on ware covered by this standard.

1.1.3 Product with a stated capacity not listed in this standard may be specified Class A Tolerance when product conforms to the tolerance range of the next smaller volumetric standard product listed in Table 1.

2. Referenced Documents

2.1 *ASTM Standards*:

D 664 Test Method for Neutralization Number by Potentiometric Titration²

E 438 Specification for Glasses in Laboratory Apparatus³

E 542 Practice for Calibration of Volumetric Ware³

E 675 Specification for Interchangeable Taper-Ground Stopcocks and Stoppers³

E 694 Specification for Volumetric Ware³

¹ This specification is under the jurisdiction of ASTM Committee E41 on Laboratory Apparatus and is the direct responsibility of Subcommittee E41.01 on Apparatus.

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² *Annual Book of ASTM Standards*, Vol 05.01.

³ *Annual Book of ASTM Standards*, Vol 14.04.

E 911 Specification for Glass Stopcocks with Polytetrafluoroethylene (PTFE) Plugs³

E 920 Specification for Commercially Packaged Laboratory Apparatus³

E 921 Specification for Export Packaged Laboratory Apparatus³

E 1133 Practice for Performance Testing of Packaged Laboratory Apparatus United States Government Procurement³

E 1157 Specification for Sampling and Testing Reusable Laboratory Glassware³

3. General Requirements

3.1 *Calibration*—Burets shall be calibrated to deliver the intended volume at 20°C. No after-drainage period is allowed. Volumetric tolerances shall be within the limits specified in Table 1.

4. Design

4.1 *Shape*—This specification covers 10, 25, 50 and 100-mL straight burets with single-bore stopcock; 10, 25, 50 and 100-mL straight burets with 3-way stopcock; 100-mL burets with 50-mL bulb (intermediate bulb style); and 10, 25, 50 and 100-mL self-zeroing burets.

4.1.1 Self-zeroing burets shall have an ungraduated, tapered, interior extension that terminates with an overflow orifice. The exterior of the buret shall extend reasonably beyond the terminal point of the interior overflow orifice. An exterior outlet tube positioned below the overflow orifice shall also be provided for drainage of overflow. End of outlet tube shall be slightly enlarged and bulbous for attachment to flexible tubing.

4.1.2 A cross section of the graduated portion of all buret styles taken in a plane perpendicular to their longitudinal axis shall be circular.

4.2 *Filling Tube*—Burets may be equipped with a filling tube as described below.

4.2.1 For Class A burets, filling tubes may either be attached to the underside of a 3-way stopcock or mounted onto the lower ungraduated body of those burets having straight bore stopcocks. Filling tubes which are mounted onto the body of Class A burets must utilize a separate stopcock integral with the filling tube. When a separate stopcock is used, positioning of