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# International Standard



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## Laboratory glassware — Burettes — Part 1 : General requirements

*Verrerie de laboratoire — Burettes — Partie 1 : Spécifications générales*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 385/1 was prepared by Technical Committee ISO/TC 48, *Laboratory glassware and related apparatus*.

It cancels and replaces ISO Recommendation R 385-1964, of which it constitutes a technical revision.

# Laboratory glassware — Burettes — Part 1 : General requirements

## 1 Scope and field of application

This part of ISO 385 provides general requirements for an internationally acceptable series of burettes, adequate for general laboratory purposes.

The details specified are in conformity with ISO 384.

NOTE — Particular requirements for different types of burette are specified in ISO 385/2 and ISO 385/3.

## 2 References

ISO 384, *Laboratory glassware — Principles of design and construction of volumetric glassware.*

ISO 385/2, *Laboratory glassware — Burettes — Part 2 : Burettes for which no waiting time is specified.*

ISO 385/3, *Laboratory glassware — Burettes — Part 3 : Burettes for which a waiting time of 30 s is specified.*

ISO 4787, *Laboratory glassware — Volumetric glassware — Methods for use and testing of capacity.*

## 3 Basis of adjustment

### 3.1 Unit of volume

The unit of volume shall be the cubic centimetre (cm<sup>3</sup>), for which the name millilitre (ml) may be used.

NOTE — The term millilitre (ml) is commonly used as a special name for the cubic centimetre (cm<sup>3</sup>), in accordance with the International System of units (SI).

### 3.2 Reference temperature

The standard reference temperature, i.e. the temperature at which the burette is intended to deliver its nominal volume (nominal capacity) shall be 20 °C.

NOTE — When the burette is required for use in a country which has adopted a standard reference temperature of 27 °C (the alternative recommended in ISO 384 for tropical use), this value shall be substituted for 20 °C.

## 4 Volumetric accuracy

There shall be two classes of accuracy :

- class A for the higher grade;

- class B for the lower grade.

In neither class shall the limit of volumetric error exceed the smallest scale division.

## 5 Types of burette

The following two types of burette are specified :

- type I burettes, for which no waiting time is specified, Class A and Class B (see ISO 385/2);
- type II burettes, for which a waiting time is specified, Class A only (see ISO 385/3).

## 6 Limits of volumetric error

6.1 Errors in the delivered volume shall not exceed the limits given in table 1. These limits represent the maximum permitted error at any point and also the maximum permissible difference between the errors at any two points.

Table 1 — Capacities, sub-divisions and limits of error

Nominal capacity ml	Smallest scale division ml	Limits of error	
		Class A ml	Class B ml
1	0,01	± 0,01	± 0,02
2	0,01	± 0,01	± 0,02
5	0,02	± 0,01	± 0,02
10	0,02	± 0,02	± 0,05
10	0,05	± 0,02	± 0,05
25	0,05	± 0,03	± 0,05
25	0,1	± 0,05	± 0,1
50	0,1	± 0,05	± 0,1
100	0,2	± 0,1	± 0,2

NOTE — If burettes are required with nominal capacities and/or sub-divisions other than those listed in this table, it is recommended that they shall conform with the essential requirements of this part of ISO 385.

6.2 The relationship between limits of error and capacity for class A burettes is given in annex A.

6.3 The relationship between limits of error and the meniscus diameter for class A burettes is given in annex B.