

# Elevate Your Laboratory Standards

ISO standards for calibration of liquid handling devices

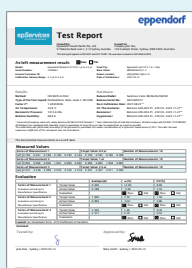


## Understanding ISO 8655, ISO 23783 and ISO/IEC 17025

ISO 8655, ISO 23783 and ISO/IEC 17025 standards together form a comprehensive framework for precision, safety, and excellence in laboratory operations, enhancing liquid handling accuracy, operational efficiency, and trust in your results.

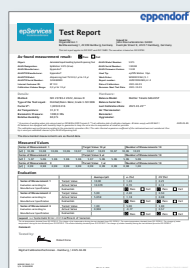
### ISO 8655

establishes essential international standards for calibrating and conformity testing of manual piston-operated volumetric devices



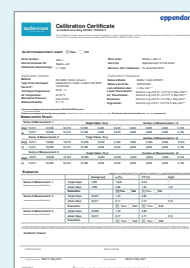
### ISO 23783

offers comprehensive guidelines to ensure the safety and accuracy of automated liquid handling systems



### ISO/IEC 17025

is the worldwide benchmark for testing and calibration labs, ensuring their competence and reliability



# Ensuring Precision, Safety and Competence



**ISO 8655**

**For manual liquid handling devices:**  
Eppendorf Reference®, Eppendorf Movelt®, Eppendorf Research®, Eppendorf Xplorer®, etc.



**ISO 23783**

**For automated liquid handling systems:**  
epMotion® dispensing tools, heads and blocks, etc.



**ISO/IEC 17025**

**For accredited calibration facilities:**  
e.g. Eppendorf Calibration Center

## Purpose

Focus is on calibration, testing, verification and routine test procedures for piston-operated volumetric apparatus (POVA) such as pipettes, burettes, dilutors, and dispensers.

Focus is on automated liquid handling systems, replacing ISO/IWA 15:2015.

Ensures testing and calibration laboratories operate competently, producing valid and reliable results.

## Process

- > Involves gravimetric, photometric, and titrimetric calibration methods
- > Requires at least 10 measurements for each volume
- > Requires tip exchange during replicate measurements to detect variability
- > Determining of quality acceptance criteria (max. permissible error limits)
- > Includes reporting requirements and data evaluation

- > Includes photometric, fluorescence, gravimetric, and hybrid calibration methods
- > Requires at least 10 measurements for each volume
- > Includes estimation of measurement uncertainty of measurement results
- > Includes reporting requirements and data evaluation

- > Includes quality manuals/procedures
- > Training of staff on ISO 8655 / ISO 23783 compliance procedures
- > Requires regular internal audits for adherence
- > Applying for and achieving accreditation certification
- > Requires regularly updates and improving of processes

## Who Benefits

- > Manufacturers
- > Test houses
- > Pipetting device users
- > Other bodies as a basis for independent calibration, testing, verification, and routine tests

- > Automated Liquid Handling System (ALHS) users
- > Manufacturers of ALHS
- > Test houses for calibration, verification, and quality control

- > Labs gain recognition and trust
- > Clients receive reliable results with uninterrupted traceability, and compliance with regulatory requirements
- > Regulatory bodies ensure standardized data
- > Industry benefits from consistent testing quality
- > Enables interlaboratory comparisons

## Environment & Conditions

Requires acclimated equipment, controlled humidity, and temperature during calibration, and skilled calibration staff.

Factory acceptance and site acceptance testings are tailored to environmental conditions.

Labs must maintain competence and a quality management system, operate impartially with adequate resources.

## More Information

[www.eppendorf.link/article-iso-8655](http://www.eppendorf.link/article-iso-8655)  
[www.eppendorf.link/pipette-service](http://www.eppendorf.link/pipette-service)

<https://www.eppendorf.link/article-iso-23783>  
<https://www.eppendorf.link/automation-service>

[www.eppendorf.link/article-iso-17025](http://www.eppendorf.link/article-iso-17025)

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