CALIBRATION CERTIFICATE

CALIBRACIÓN
ISO 17025
Nº61 / LC10.038

Number **VG 240028**

Mettler-Toledo S.A.E.
Laboratorio de Calibración

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METTLER TOLEDO

ITEM	Piston operated burette
MANUFACTURER	Mettler Toledo
MODEL	DV 1010
NOMINAL VOLUME	10 ml
IDENTIFICATION	C221094710
APPLICANT	Mettler-Toledo Pac Rim AG, Taiwan 2F, No. 17, Lane 171, Jiu Zong Rd., Sec. 2, Neihu District, Taipei City 11494,
Calibration date	23 January 2024

Autorized Signatory

Firmado digitalmente por David Gallardo
Fecha: 2024.01.23 14:05:37 +01'00'

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Instrument information

Burette	DV 1010
Serial number	C221094710
Nominal volume	10 ml

Calibration procedure

Procedure PEC/MTE/22 based to the ISO 8655 norm and the METTLER TOLEDO manuals.
The measured volume corresponds with delivered volume (Ex) at the reference temperature of 20 ºC.

Calibration conditions

Ambient temperature	Min. 20,4 ºC	Max. 20,4 ºC
Relative humidity	62,2 % Hr	
Pressure	1022,2 mbar	

Maintenance: Before calibration, seals (references 101003 and 25737) and piston have been replaced, and burette glass has been cleaned.

Traceability

Standard equipment used

Balance	BAL01	AT201 - 5 decimal places balance
Burette drive	VAL-T50	T50
Water temperature	TER89	0,1 ºC resolution
Ambient conditions	REG05	(air Temp, rH)
Class III water	2324709812	

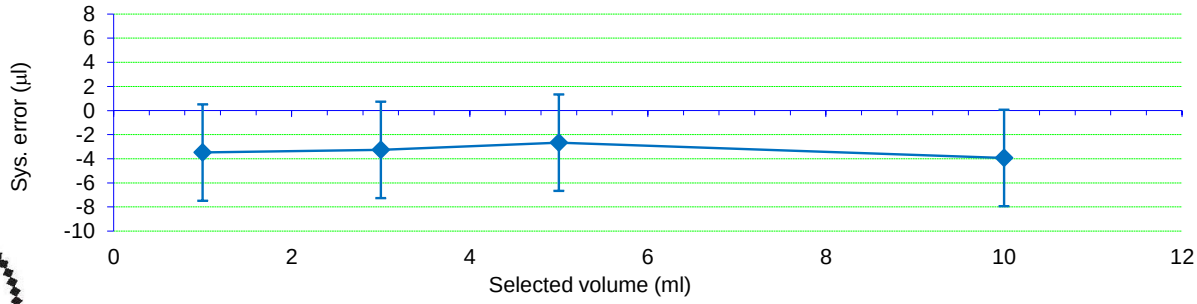
The measured volume has been calculated conform to ISO/TR 20461:2023.
The traceability of measurements are refered to laboratories accredited by ILAC signatories accreditation bodies or national laboratories EURAMET signatories.

Uncertainty

The reported expanded uncertainty of measurement is stated as the Standard uncertainty of measurement multiplied by the coverage factor k = 2, which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with document EA-4/02 M: 2022.

Calibration results (after maintenance)

Burette stroke	10%	30%	50%	100%	
Selected volume	**1**	**3**	**5**	**10**	**ml**
Water temperature	20,5	20,5	20,5	20,5	ºC
Measured volume	996,5	2996,7	4997,3	9996,1	µl
Systematic error	**-3,5**	**-3,3**	**-2,7**	**-3,9**	**µl**
Measurement uncertainty	**4,0**	**4,0**	**4,0**	**4,0**	**µl**
Random error	**0,28**	**0,24**	**0,34**	**0,34**	**µl**
Max. Permissible Sys. Error	20	20	20	20	µl
Max. Permissible Random Error	7	7	7	7	µl
Evaluation*	**Pass**	**Pass**	**Pass**	**Pass**	



* Evaluation and permissible errors from ISO 8655-3:2022. According with this norm, uncertainty is not taken into account.

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Technician: D. Gallardo
Remarks: ---