



# CALIBRATION CERTIFICATE

Number **VG 230374**

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**Mettler-Toledo S.A.E.**  
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## METTLER TOLEDO



ITEM **Piston operated burette**

MANUFACTURER **Mettler Toledo**

MODEL **DV 1010**

NOMINAL VOLUME **10 ml**

IDENTIFICATION **B229124529**

APPLICANT **Tec Instrumental SA**  
**Blas Parera 1007**  
**(B1602CTS) Florida-Vte Lopez**

Calibration date **12 July 2023**

Autorized Signatory

Firmado  
digitalmente por  
David Gallardo  
Fecha: 2023.07.13  
08:49:47 +02'00'

*This certificate in digital format is the original one.  
Any printing will be considered as a copy.*

Este certificado se expide de acuerdo con las condiciones de la acreditación concedida por ENAC, que ha comprobado las capacidades de medida del laboratorio y su trazabilidad a patrones nacionales o internacionales.

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*This certificate is issued in accordance with the conditions of accreditation granted by ENAC which has assessed the measurement capability of the laboratory and its traceability to national or international standards.*

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### Instrument information

Burette DV 1010  
 Serial number B229124529  
 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 °C.

### Calibration conditions

Ambient temperature Min. 20,5 °C Max. 20,5 °C  
 Relative humidity 66,2 % Hr  
 Pressure 1011,1 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 TER128 0,1 °C resolution  
 Ambient conditions REG02 (air Temp, rH)  
 Class III water 2301209810

The measured volume has been calculated conform to ISO/TR 20461:2023.

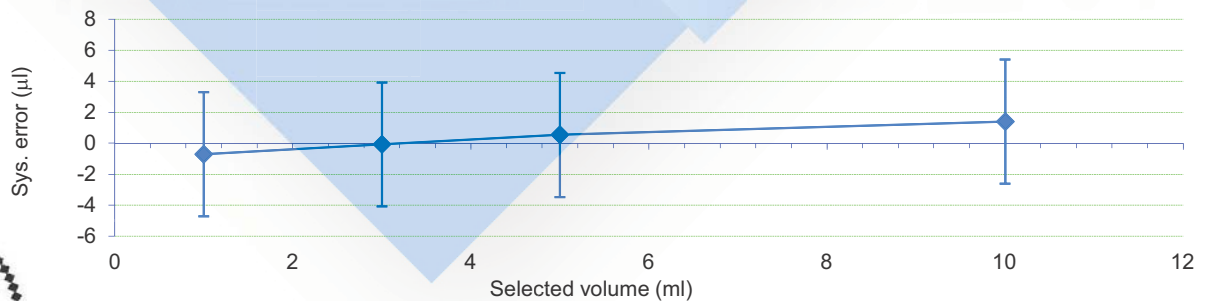
The traceability of measurements are referred to laboratories accredited by ILAC signatories accreditation bodies or national laboratories EURAMET signatories.

### 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)

	10%	30%	50%	100%	
Burette stroke	10	30	50	100	ml
<b>Selected volume</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>10</b>	<b>ml</b>
Water temperature	20,1	20,1	20,1	20,1	°C
Measured volume	999,3	2999,9	5000,5	10001,4	µl
<b>Systematic error</b>	<b>-0,7</b>	<b>-0,1</b>	<b>0,5</b>	<b>1,4</b>	<b>µl</b>
Measurement uncertainty	4,0	4,0	4,0	4,0	µl
Random error	0,36	0,34	0,39	0,44	µl
Max. Permissible Sys. Error	20	20	20	20	µl
Max. Permissible Random Error	7	7	7	7	µl
<b>Evaluation*</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	



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

Technician: D. Gallardo

Remarks: ---

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