



## Mettler-Toledo S.A.E.

Laboratorio de Calibración

Sede Laboratorio  
Miguel Hernández, 77  
08908 L' Hospitalet del Llobregat  
Tel. 902 32 00 23  
laboratorio.calibracion@mt.com



ITEM Piston operated burette

MANUFACTURER Mettler Toledo

MODEL DV 1020 NOMINAL VOLUME 20 ml

IDENTIFICATION B435972442

APPLICANT METTLER-TOLEDO PAC RIM AG-TAIWAN  
2F., No 17, Lane 171, Sec. 2 , Jiuzong Rd  
11494 Taipei City Taiwan

Calibration date 07 May 2021

Autorized Signatory

*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.

ENAC es firmante del Acuerdo de Reconocimiento Mutuo (MLA) de calibración de European Cooperation for Accreditation (EA) y de International Laboratory Accreditation Cooperation (ILAC).

*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.*

*ENAC is one of the signatories of the Multilateral Agreement of the European Cooperation for Accreditation (EA) and the International Laboratories Accreditation Cooperation (ILAC).*

**Instrument information**

Burette	DV 1020
Serial number	B435972442
Nominal volume	20 ml

**Calibration procedure**

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

**Calibration conditions**

Ambient temperature	Min. 20,1 °C	Max. 20,1 °C
Relative humidity	51,7 % Hr	
Pressure	1012,4 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	MOT01	T50
Water temperature	TER89	0,1 °C resolution
Ambient conditions	REG02	(air Temp, rH)
Class III water	2012002831	

The reference water density is referred to the ISO/TR 20461 (2000) tables.

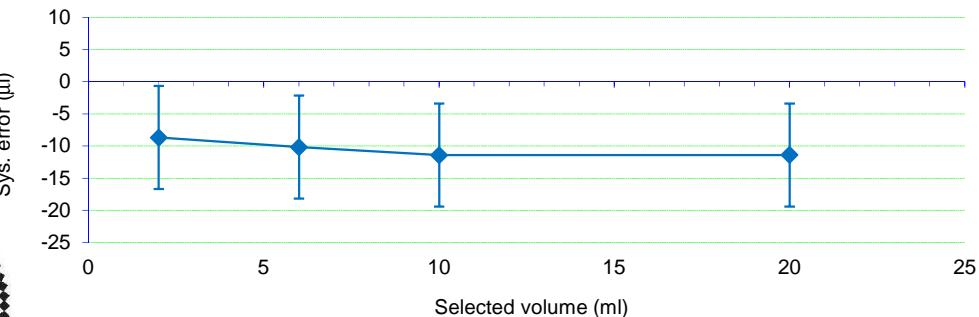
The traceability of measurements are referred to laboratories accredited by recognized ILAC organisms or national laboratories EUROMET participants.

**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 EAL publication EAL-R2.

**Calibration results (after maintenance)**

	10%	30%	50%	100%	
<b>Selected volume</b>	<b>2</b>	<b>6</b>	<b>10</b>	<b>20</b>	<b>ml</b>
Water temperature	20,0	20,0	20,0	20,0	°C
Measured volume	1991,3	5989,8	9988,6	19988,6	µl
<b>Systematic error</b>	<b>-8,7</b>	<b>-10,2</b>	<b>-11,4</b>	<b>-11,4</b>	<b>µl</b>
Relative error at selected volume	-0,43%	-0,17%	-0,11%	-0,06%	
Relative error at nominal volume	-0,04%	-0,05%	-0,06%	-0,06%	
<b>Measurement uncertainty</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>µl</b>
<b>Max. Permissible Sys. Error (ISO 8655)</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	
<b>Evaluation</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	



Technician: D. Gallardo

Remarks:

**Mettler- Toledo S.A.E.**

Central Address: Miguel Hernández 69-71  
08908 L'Hospitalet (Barcelona)