



## Mettler-Toledo S.A.E.

Laboratorio de Calibración

**Sede Laboratorio**

Avda. San Pablo, 28

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**METTLER** **TOLEDO**



**ITEM** Piston operated burette

**MANUFACTURER** METTLER TOLEDO

**MODEL** ME-51107127

**NOMINAL VOLUME**

20 ml

**IDENTIFICATION** ID004028

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

Calibration date 15 October 2018

Autorized Signatory

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 ME-51107127  
 Serial number ID004028  
 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. 20,2 °C	Max. 20,3 °C
Relative humidity	51,8 % Hr	
Pressure	942,8 mbar	

**Traceability**

Standard equipment used

Balance	BAL01	AT201 - 5 decimal places balance
Burette drive	MOT01	T50
Water temperature	TER 68	0,1 °C resolution
Ambient conditions	REG02	(air Temp, rH)
Class III water	1802501863	

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

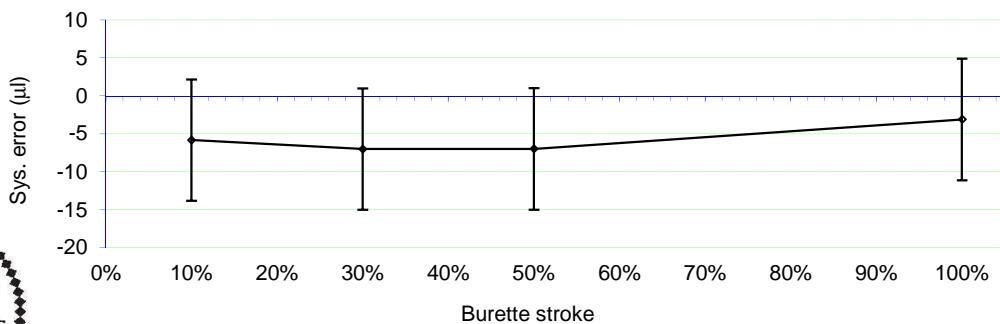
The traceability of measurements are referred to laboratories accredited by recognized ILAC organisms or national laboratories EUROMET participants.

**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**

	10%	30%	50%	100%	
<b>Selected volume</b>	<b>2</b>	<b>6</b>	<b>10</b>	<b>20</b>	ml
Water temperature	19,8	19,8	19,8	19,8	°C
Measured volume	1994,2	5993,0	9993,0	19996,9	µl
<b>Systematic error</b>	<b>-5,8</b>	<b>-7,0</b>	<b>-7,0</b>	<b>-3,1</b>	µl
Relative error at selected volume	-0,29%	-0,12%	-0,07%	-0,02%	
Relative error at nominal volume	-0,03%	-0,04%	-0,03%	-0,02%	
<b>Measurement uncertainty</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	µl



Technician: Pilar Ramos  
 Coslada, 15 October 2018

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