



ACCREDITED CALIBRATION LABORATORY

CONFORMING TO STANDARD
UNI EN ISO/IEC 17025



LAT N° 237
Signatory of EA, IAF and ILAC
Mutual Recognition Agreements



Calibration service for liquid flow meters



TECHNOLOGY AND EXPERIENCE AT THE SERVICE OF THE CUSTOMER

The calibration laboratory consists of plants and devices for the calibration of measuring instruments for the following physical quantities:

- Volume (totalized)
- Volume flow
- Mass (totalized)
- Mass flow

8 CALIBRATION LINES

The system consists of eight lines, each calibration line is designed for the hydraulic connection of a group of nominal diameters as indicated in the following table.

CALIBRATION LINES	NOMINALS DIAMETERS
Line 1	DN3
Line 2	DN6, DN10
Line 3	DN15 to DN25
Line 4	DN32 to DN50
Line 5	DN65 to DN100
Line 6	DN125 to DN300
Line 7	DN300 to DN700
Line 8	DN300 to DN3000

The plant consists of 8 calibration lines running on static weight based, direct comparison with a Master Meter or Master Volume method as shown in the below table.

CALIBRATION LINE	CALIBRATION METHOD		
	GRAVIMETRIC STATIC WEIGHT (VOLUME AND MASSA)	DIRECT COMPARISON (MASTER METER) (VOLUME)	VOLUMETRIC PROVING TANKS (VOLUME)
Line 1	•	•	
Line 2	•	•	
Line 3	•	•	
Line 4	•	•	
Line 5	•	•	
Line 6	•	•	
Line 7		•	
Line 8			•

Indirect method for static weighing

The system consists of a calibration system using the static weighing method complying with the norm UNI EN 24185:1994 "Measurement of fluid flow in closed conduits - Weighing Method".

This standard is specific for calibration of the flow rate (in volume and in mass). The same standard is used as a reference for the calibration of the volume and mass totalized.



Calibration lines 1 to 6 for diameters from DN 3 to DN300

Direct method for comparison against reference (Master Meter)

The method involves direct comparison between the instrument to be calibrated and one or more instruments used as reference. The system is designed in such a way as to allow the installation of the measuring tube of the instrument used as reference sample and measuring instrument to be calibrated in series. The two instruments are directly connected by means of a hydraulic line made of steel pipes.

The metrological performance of the measurement is ensured by the possible choice of each line and one of three Master Meters of different nominal diameters.

Volumetric method for direct comparison with volume reference

The method involves direct comparison between the indication of the instrument to be calibrated and the volume of the reference tank between the initial and final levels determined by the calibration. The reference volumetric flow rate is determined by the ratio between the volume and the emptying time.



The flow rates ranges and test volumes per calibration line is as follows (nominal values):

CALIBRATION LINE	PARAMETER	MINIMUM FLOW	MAXIMUM FLOW
	V = Volume M = Mass	Volume: dm ³ /s Mass: kg/s	Volume: dm ³ /s Mass: kg/s
Line 1	V,M	0,0036	0,072
Line 2	V,M	0,0065	0,80
Line 3	V,M	0,0065	4,5
Line 4	V,M	0,025	20
Line 5	V,M	0,08	80
Line 6	V,M	0,5	290
Line 7	V	1	480
Line 8	V	7	4000

SERVICES

Calibration certificates

Issue of Calibration Certificates (CT) according to UNI EN ISO 17025.

Calibration certificates with specific declaration of conformity*

Issue of Calibration Certificates (CT) according to UNI EN ISO 17025 complete with declaration of conformity to specification with limits and decision rule defined with the customer.

Legal metrological verification

Subsequent verification of measuring instruments used for legal measures according to Italian legislation (D.M. 93 – 21 April 2021).

* The Laboratory can issue declarations of conformity to specification upon request to confirm the feasibility and subsequent definition of the necessary requirements (limits and decision rule). Limits and decision-making rule are defined with the customer in written form before calibration operations.

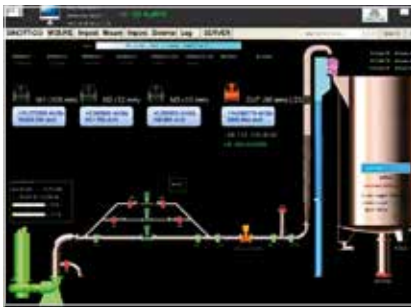


Tanks with electronic balance and emptying valves

Calibration line 8 for diameters up to DN3000

SOFTWARE

Calibration processes activities are completely automated.
The system management software controls all the calibration operations.



Synoptic of lines 1 to 6 for diameters from DN3 to DN300



Synoptic of line 7 for diameters from DN300 to DN700



Synoptic of line 8 for diameters up to DN3000

The management

The management of all calibration orders is fully automated and is directly linked with the software system issuing Certificates of Calibration at the end of the tests.



LAT N° 237
Signatory of EA, IAF and ILAC
Mutual Recognition Agreements



ISOIL Industria SpA
20092 Cinisello B. (MI)
Via F.lli Gracchi, 27

Tel. +39 02 66027.1
Fax +39 02 6123202
sales@isoil.it

www.isoil.it



HEMINA SpA
Divisione Libra
35044 Montagnana (PD)
Via Piemonte, 2
Tel. +39 0429 804424

Fax +39 0429 807329
info@libra-lat237.it
www.libra-lat237.com

