

## Calibration and statutory testing of fuel gas meters



### Calibration of all types of flowmeters under COFRAC accreditations n° 2-5411 & 2-59

- Turbine
- Rotating pistons
- Vortex
- Ultrasonic
- Coriolis
- Thermal
- Pressure reduction (orifice plate, Venturi, nozzle, V-cone...)
- Sonic nozzles
- Other flowmeters on request...

### Statutory testing of fuel gas meters

The installation at CESAME-EXADEBIT is accredited by COFRAC Legal Metrology and has LNE (French National Test Laboratory) certification allowing us to carry out statutory tests on fuel gas meters. The accreditation associated with authorisation from DIRECCTE (the French ministry for Business, Competition, Consumer protection, Work and Employment) authorises us to perform periodic inspections (VPE) whereas the LNE certification authorises us to perform inspections following repairs (VPAR).

### Technical facilities

The test rig uses dry air under pressure and allows us not only to carry out tests under pressure but also to deal with significant flow rates at low pressures.

Critical flow sonic nozzles, used as a reference, allow us to obtain low uncertainties.

### Flow and pressure specifications

Volume flow: 5 to 50000 Nm<sup>3</sup>/h

Mass flow: 0.003 to 20 kg/s

Diameter: DN25 to DN400

Pressure : 1 to 45 bar

Uncertainty: 0.2 to 0.3%

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### Who are we?

CESAME-EXADEBIT is an internationally-known laboratory in the field of gas flow measurement. With a strength coming from more than 30 years' experience in this area, CESAME-EXADEBIT holds the national reference for the cubic meter of gas under high pressure and carries out tests for various industries - gas, chemical, aeronautics, mechanical...

### Our national and international vision

Since 2004, CESAME-EXADEBIT is the Designated Institute of LNE the French National Metrology Institute for high pressure gas flow metering, and referred as "LNE-LADG" for this purpose. Within this framework, CESAME's vision is to maintain and improve the flow unit standard.

The performances of the tests rigs are regularly verified by carrying out inter-comparisons within national, European and international frameworks, under the aegis of the BIPM.

In addition, CESAME-EXADEBIT is since 2004 a member of the EUREGA harmonisation group, which aims to define an equivalent primary reference in Germany, the Netherlands, Denmark and France.

### Our Services

- Tests and certification of valve assemblies
- Calibration of all types of valves
- Training in flow measurement
- Repair of gas flow meters undergoing testing for the following manufacturers (Itron, Elster, Instromet, Dresser, Romet...).
- Statutory testing for gas volume meters
- Tests under high flow/high pressure according to the client's specification
- Research & Development within the field of flow measurement

### Our facilities

CESAME-EXADEBIT benefits from a significant and unique infrastructure for the production and storage of compressed air (100 m<sup>3</sup> at 200 bar), which allows a wide range of measurements of flow and pressure.

For calibration of flowmeters :

- . Mass flow: 4.10<sup>-4</sup> to 30 kg/s
- . Pressure: 1 to 45 bar
- . Uncertainty: 0.2 to 0.3%

For tests of valves :

- . Mass flow: 10 kg/s @ 40 bar,  
3 kg/s @ 180 bar
- . Pressure : 1 to 180 bar
- . Uncertainty: 1 to 2 %

This rig has been developed with French CETIM.

The traceability chain put into place is made up of:

- A primary test rig PVTt for the calibration of sonic nozzles
- Secondary test rigs, on which sonic nozzles are used as transfers standards

### Our Accreditations

