



LITREMETER

Specialist flow measurement engineering

Flow Lab Pro

Automated Flow Calibration Rig

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FlowLabPro Overview



Litre Meter has over 40 years experience in successfully designing and manufacturing bespoke flow meters for extreme environments for the most demanding industries and applications.

Litre Meter products are manufactured from the highest grade materials, externally tested for chemical composition and strength for good chemical and environmental resistance and high pressure containment.

We have developed the FlowLabPro internally for calibrating our ultra-low flow range. Our previous calibration rigs were beginning to be outstripped by our meters low flow ability. We sought to overcome the challenge of achieving a flow rate to match our new LF03 meter, and future development of the LF02.

The FlowLabPro is a fully automated volumetric fluid calibration rig, allowing multiple meters to be calibrated on multiple fluids without human interaction. The bespoke software has been designed to allow the user to input a flow range, select a fluid and leave the rig to calibrate.

The FlowLabPro is completely customizable to suit your calibration needs. With different combinations of pumps, liquids and fittings we will ensure you receive a solution that meets your needs and exceeds your expectations.



FlowLabPro Prototype currently in use by Litre Meter Ltd

The FlowLabPro is completely self-contained, easily transportable, with only a 600x1200mm footprint. The FlowLabPro uses standard 110/240V 13A mains power with air controlled valves.

Ideal for calibrating a variety of flowmeters and valves; the system can be customized to your needs with different fittings and pipe lengths available.

The system is temperature controlled to minimize viscosity fluctuation. Using high tech ultrasonic sensors it is a truly volumetric calibration, achieving $\pm 0.1\%$ accuracy with $\pm 0.05\%$ repeatability over the full range.

Currently in full use in our workshop we have been able to significantly reduce manpower needed per calibration.

The FlowLabPro can run 24/7 with minimal human interaction; decreasing lead times and improving efficiency.

FlowLabPro Standard



The FlowLabPro Standard is the entry level version of the calibration rig. Equipped with three fluid reservoirs and capacity for one flowmeter it allow for calibration of one meter at a time.

With two separately controlled pumps it can reach flows from 0.00015 – 10 L/Hr on fluids up to 1000cPs.

Equipped with a 316L stainless steel measuring tube and a state of the art sensor it can measure within $\pm 0.1\%$ accuracy

- Three fluids
- One item under test
- Temperature regulated
- PC and software included
- Built in 10 micron filter
- 0.00015 – 10 L/Hr



FlowLabPro Prototype currently in use by Litre Meter Ltd

FlowLabPro Full

The FlowLabPro Full is the top of the range version of the calibration rig. Equipped with six fluid reservoirs and capacity for five flowmeters it is possible to complete 30 calibrations without any human intervention. (Five meters calibrated on six different fluids.)

With three separately controlled pumps it can reach flows from 0.00015 –250 L/Hr on fluid up to 1000cPs. The FlowLabPro Full is also equipped with Pressure drop transducers and can plot a pressure drop graph in addition to calibrating.

Equipped with a 316L stainless steel measuring tube and a state of the art sensor it can measure with $\pm 0.1\%$ accuracy

- Six fluid reservoirs
- Five items under test
- Temperature regulated
- PC and software Included
- Built in 10 micron filter
- 0.00015 – 250 L/Hr
- Can run 24/7
- Ambient temperature range +10°C to +35°C
- UK standard 110/230V 13A power supply
- Customisable units (L/Gal-Hr/Min)
- 1-1000cPs fluid viscosity range
- Pressure drop calculator

Software



FlowLabPro V1.1

Customer Name: Johnson & Co
Sales Order No: 456681
Flow Range: 0.01 to 10 L/hr

Meter 1: 10001
Meter 2: 10002
Meter 3: 10003
Meter 4: 10004
Meter 5: 10005

Fluid 1:
Fluid 2:
Fluid 3:
Fluid 4:
Fluid 5:
Fluid 6:

Buttons: DRAIN, PRIME, GO, ERROR!, RUNNING, READY

FlowLabPro Prototype software currently in use by Litre Meter Ltd

Every FlowLabPro comes with a dedicated PC preloaded with the control software. This eliminates any potential issues with incorrect or out of date drivers.

The bespoke software has been designed specifically for the calibration rig. Its simple, layout makes it quick to learn and get using.

You simply enter a flow range, select which fluids are to be used, and click GO. The FlowLabPro will then automatically calibrate and produce calibration certificates

The software is fully supported by Litre Meter Ltd.

The FlowLabPro uses a traffic light system to alert staff of its status: green for idle, yellow for busy, and red for error.

FlowLabPro V1.1

Calibration In Progress (20%)

Meter:	10001
Fluid:	1
Flow Range:	0.05 - 5 L/hr
Point:	1/10

Buttons: Pause, Resume

FlowLabPro Prototype software currently in use by Litre Meter Ltd

- Universally compatible CSV output
- Standalone PC supplied with latest software
- National Instruments hardware
- LabVIEW based software
- Software support included
- Customisable to your needs
- Automatically outputs and sorts calibration certificates

Requirements

- 110/230V 13A power supply
- 5 bar compressed air line

- Ambient temperature range +10°C to +35°C
- 600x900mm floor space

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