Nederlands Meetinstituut

CERTIFICATE

Certificate number : 39330864
Project number : 711247

Applicant	Impulse Pumps B.V. Schooltinkweg 12 7021 MC Zelhem The Netherlands
Submitted	A liquid flow meter.

Manufacturer	: Impulse
Type	: Digi-flow 4"
Serial number	: SMPL 0711001001
Q_{max}	: 200 m³/h

The meter is provided with a digital display.

Calibration method	The deviation of the meter as a function of flow rate has been determined by direct comparison with the Dutch National Standard for liquid quantity measurements(reference meters). Tests have been carried out using water with a pressure up to $3.2*10^5$ Pa and a mean temperature of 17.8°C (± 0.5°C).
Date of calibration	17 December 2007.
Results	The results of the calibration are presented on page 2 of 2.
Traceability	The results of the calibration services of NMi VSL are traceable to primary and/or (inter)nationally accepted measurement standards.

Dordrecht, 21 December 2007
NMi Van Swinden Laboratorium B.V.

F.M. Smits
Section Liquid Flow & Volume

This certificate is consistent with Calibration and Measurement Capabilities (CMCs) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures (CIPM). Under the MRA, all participating institutes recognize the validity of each other's calibration and measurement certificates for the quantities, ranges and measurement uncertainties specified in Appendix C (for details see http://kcdb.bipm.fr).

CIPM MRA

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Results

Flow-rate [m^3/h]	Deviation [%]
39.2	+0.5
78.7	+0.2
150.5	-0.1

N.V. Van Swinden Laboratorium B.V.

The flow meter was not adjusted.

$$\text{Deviation [\%]} = \frac{\text{Indicated flow-rate} - \text{Reference flow-rate}}{\text{Reference flow-rate}} * 100\ \%$$

The uncertainty in the deviation is less then or equal to 0.20%.
The reported uncertainty of measurement is based on the standard uncertainty of measurement multiplied by a 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 the Guide to the Expression of Uncertainty in Measurement (GUM).