

LEWA lab – high performance products for fluid metering in laboratories and pilot plants

LEWA lab is an innovative approach to solving your laboratory and pilot plant scale metering requirements. LEWA lab products include pumps, controllers, flow meters and accessories for total metering capability. It is a broad, coherent program designed to provide you with the best possible technology for fluid metering.

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Benefits of LEWA lab metering pumps

All pumps have hydraulically actuated, metal diaphragms (1)

Metal diaphragms (stainless steel or Hastelloy) are corrosion-resistant to nearly all metered fluids, and eliminate the process fluid diffusion problem common with PTFE-coated elastomer diaphragms.

Long life and pressure stiff, even at high pressures

The hydraulically actuated diaphragm minimizes the effect of pressure on the metered flow rate, and the resultant hydraulic balancing ensures long service life, even at high pressures.

Leak-free and safe in operation (2)

With a hermetically sealed operating chamber, there is zero emission, and valve operation cannot be impaired by particles from packing abrasion. There is no contact between the fluid metered and the atmosphere.

Reliable, service-free

Metal diaphragms are designed for fatigue-free operation. The displacer pistons are packless, and operate under optimal lubricating conditions in hydraulic oil (3).

Accurate

Zero play drive units with precision stroke length adjustment, the rapid displacer piston acceleration of the solenoid drive, and valves (4) of optimal design and material selection, combine to guarantee excellent metering accuracy.

For a complete range of accessories for LEWA lab metering pumps, see page 9.

Benefits of LEWA lab metering systems

Safe, reliable and precise micrometering

The metering flow is constantly measured, and deviations or transient disturbances are compensated for in the closed-loop control system. The main problem of micrometering, variations caused by contamination or vaporization in the metering fluid, are eliminated.

Accurately record disturbances, and annunciate failures

When a LEWA metering system with its built-in internal control system can no longer balance a disturbance or deviation, or when the control procedure is no longer plausible, an alarm is triggered.

Can meter undiluted, original concentrations

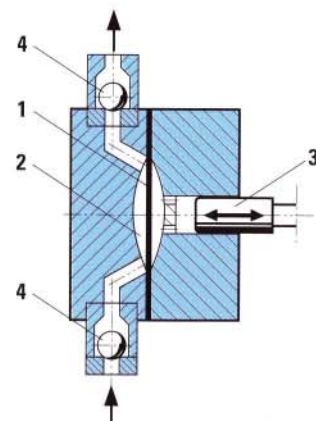
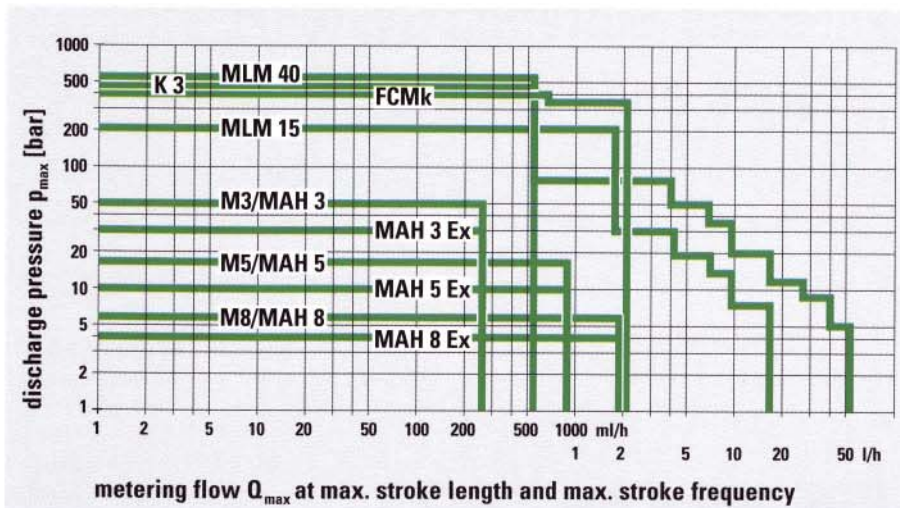
The high precision and hermetically sealed design of LEWA lab metering systems often enables the elimination of carrier fluids and their associated environmental problems.

Enable fully automated experiments

Standard interfaces make it possible to integrate the micrometering system into larger systems, such as with PLC's and data recording equipment.

LEWA lab metering pumps and LEWA lab metering systems offer the highest possible degree of safety, precision and reliability in the field of micrometering.

LEWA lab metering pumps – performance range



Function of the LEWA lab diaphragm pump head

LEWA lab series MLM metering pumps in two frame sizes and 15 performance ranges – with powerful solenoid drive for pilot plant services.

For higher pressures and capacities than other solenoid driven pumps. Type MLM 15 and MLM 40 are available in Ex protection version. Type MLM 40 provides the broadest performance range.

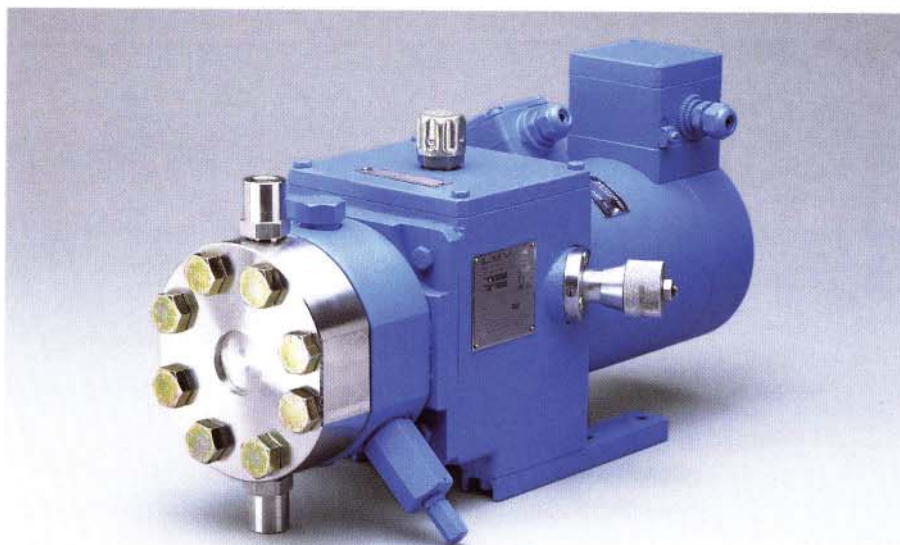
Metering flow control

Stroke length is adjusted with a finely scaled handwheel on the pump. Stroke frequency is controlled by separately installed LEWA lab control system SLK (see page 6).

Diaphragm pumpheads/materials

Hermetically sealed; solid metal. A wide choice of materials for valves and process connections can be made from the versatile LEWA modular program.

(Ask for technical bulletin D2- 021.)



4 LEWA lab MLM 15 metering pump

Technical data

Pump type LEWA lab			MLM 15	MLM 40
Plunger dia Ø [mm]	Swept volume adjustable [ml]	Metering flow ¹⁾ at max. 90 strokes/min. Q_{theor} [l/h]	Head type ²⁾ M210	M210
			Material ⁴⁾ 3/3L/4	3/3L/4
			Max. operating pressure [bar] ³⁾	
3	0 – 0,106	0 – 0,57	212	560
5	0 – 0,294	0 – 1,59	76	205
8	0 – 0,754	0 – 4,07	30	80
10	0 – 1,18	0 – 6,36	19	51
12	0 – 1,70	0 – 9,16	13	35
16	0 – 3,02	0 – 16,3	7,5	20
20	0 – 4,71	0 – 25,4	–	13
25	0 – 7,36	0 – 39,7	–	8,2
30	0 – 10,6	0 – 57,5	–	5,7
Enclosure			IP 54	
Ex-protection			E Ex e II T 4	E Ex e II T 5
Dimensions H x W x D [mm]			230 x 290 x 326	230 x 290 x 394
Weights [kg]			23 – 25	23 – 32

1) Q_{theor} = swept volume x stroke frequency (assumed 100 % efficiency). Actual efficiency, Q_{eff} will be stated on data sheet for operating conditions.

2) Please request design data sheet D2-021 for M210 diaphragm pumphead details.

3) Based on standard DIN or NPT female threaded pumphead connections. ANSI flanged or sanitary (tri-clamp) connections also available.

4) 3 = CrNiMo 18/10/2 stainless steel (1.4571);
 3L = sanitary design;
 4 = Hastelloy C;
 additional metallurgies, e.g., tantalum, nickel, Hastelloy B, titanium also available.