

CHARACTERISTIC DATA OF MICRO VALVES SMLD WITH VALVE COILS

Characteristic data	Micro valve SMLD 300	Micro valve SMLD 300G
Pressure range	up to 20 bar	up to 50 bar
Life-time	up to 500 million cycles ¹⁾	
Viscosity range	1 - 200 mPa.s	1 - 1000 mPa.s ²⁾
Maximum flow (water, 1 bar)	Nozzle Ø 0.1 mm: 3.3 ml/min Nozzle Ø 0.15 mm: 8 ml/min Nozzle Ø 0.2 mm: 15 ml/min	Nozzle Ø 0.1 mm: 3.3 ml/min Nozzle Ø 0.15 mm: 8 ml/min Nozzle Ø 0.2 mm: 15 ml/min Nozzle Ø 0.3 mm: 38 ml/min Nozzle Ø 0.45 mm: 75 ml/min
Minimal dispensing volume	under 10 nl possible ¹⁾	
Inner volume	25 µl	65 µl
Nozzle diameter	Ø 0.1 mm Ø 0.15 mm (standard) Ø 0.2 mm	Ø 0.1 / Ø 0.15 / Ø 0.2 mm Ø 0.3 mm (standard), Ø 0.45 / Ø 0.6 mm
Valve travel	0.03 mm (standard) 0.06 mm	0.1 mm (standard) 0.03 / 0.06 / 0.15 mm
Built-in filter	Filter 17 µm (standard), without filter on request	Filter 37 µm (standard), without filter on request
Materials in contact with medium	Stainless steels: 1.4305, 1.4301, 1.4310, 1.4113 IM / PEEK, sapphire, ruby	
Typical response time	200 µs ¹⁾	400 µs ¹⁾
Maximum dispensing frequency	up to 4000 Hz ¹⁾	up to 3000 Hz ¹⁾
Coil resistance	11 Ohm	6 Ohm
Coil inductance (valve coil mounted on micro valve)	1.23 mH	0.8 mH
Maximum permissible coil temperature	100° C	
Electric connection	Soldering pins / 300 mm wire, tin-plated or with plug, 2-pin, Molex type 70066-176	
Recommended peak current	1 A / 12 VDC during 150 µs. (For higher voltage, current limitation required)	1 A / 12 V DC during 400 µs. (For higher voltage, current limitation required)
Recommended holding current	0.1 - 0.3 A / 1.1 - 3 V DC no time limit	0.2 - 0.3 A / 1.2 - 2 VDC no time limit
Micro valve weight with valve coil	1.9 g	3.1 g
Repeat accuracy	< 5% CV ¹⁾	
Minimum pattern width	4 mm	6 mm
Dispensable media	Gases, water, reagents, inks, alcohols, DMSO, MEK, other solvents, cells, plasticizers, liquid adhesives, softening agents, lacquer, oils, detergents, UV-varnish, greases, pastes, etc. ¹⁾	

¹⁾ Depending on: Configuration, surroundings and application ²⁾ Heated, depending on the medium, up to 15000 mPa.s