

## PIEZOELECTRIC MICROPUMP MC-L / MC-S

### Features:

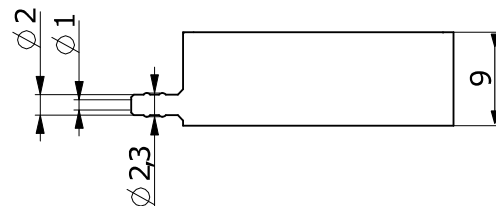
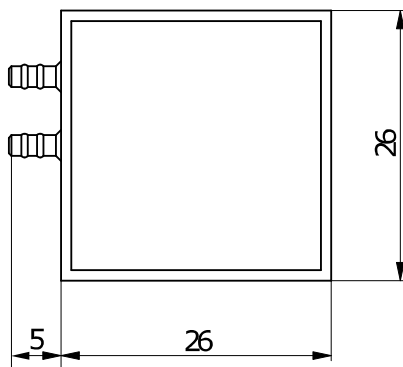
- ✚ PZT actuation
- ✚ active throttle rectifying elements
- ✚ wide range of supported pumping media
- ✚ bubble tolerant (MC-L)
- ✚ self-priming<sup>1</sup>
- ✚ normally opened<sup>2</sup>
- ✚ possibility of integration
- ✚ cell non-destructive operating principle
- ✚ construction materials are jointed without use of adhesives



Specifications	Micropump MC-L	Micropump MC-S	
Dimensions	26 mm x 26 mm x 10 mm	13 mm x 13 mm x 5 mm	
Weight	4.5 g	2 g	
Operating temperature	0 – 50 °C		
Fluidic connectors	Barbed tube connector, outer diameter 2 mm, length 5 mm, suitable for tubing 1/16" x 1/8		
Electrical connector	Flexible flat cable 4P, pitch 1.0mm		
Compatible controller	MM-L	MM-S	
Materials in contact with medium	Thermoplastic polymer ABS, glass, polydimethylsiloxane (PDMS)		
Self-priming	Yes <sup>1</sup>	Yes <sup>1</sup>	
Bubble tolerant	Yes	No	
Typical performance results when driven with dedicated MM controller:			
Gases (air @ 25°C)	Max. flowrate	1.2 ml min <sup>-1</sup>	0.6 ml min <sup>-1</sup>
	Max. backpressure	15 mbar	60 mbar
Liquids (water @ 25°C)	Max. flowrate	2 ml min <sup>-1</sup>	0.08 ml min <sup>-1</sup>
	Max. backpressure	180 mbar	180 mbar

<sup>1</sup>suction pressure for water < 5 mbar

<sup>2</sup>can perform as normally closed valve when DC voltage is applied



MC-L housing (black thermoplastic polymer ABS)

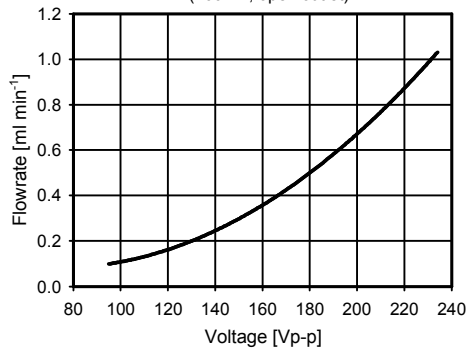
Micropump driving module MM-L in MM-S	
Dimensions	45 x 30 x 22 mm <sup>3</sup>
Power consumption	typ < 500 mW, max = 1.6W
Operating temperature	0 – 70 °C
Power supply	5-11V DC
Excitation signal frequency	DC – 1000 Hz
Excitation signal amplitude	30 – 130V
Electrical connector	FPC FCC 4P, pitch 1.0mm



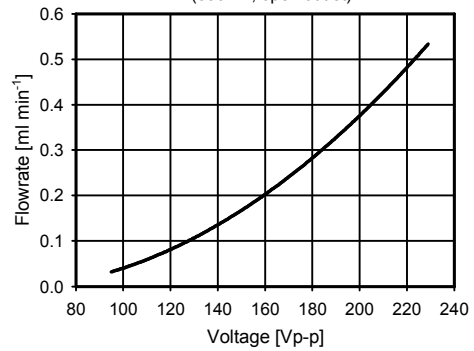
### MC-L

### MC-S

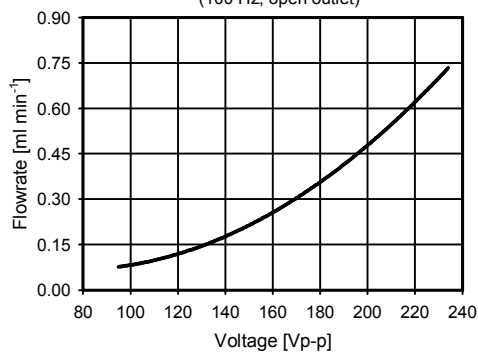
MC-L: Flowrate vs Voltage for Air  
(100 Hz, open outlet)



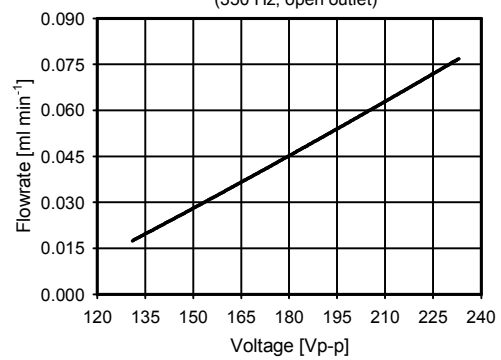
MC-S: Flowrate vs Voltage for Air  
(350 Hz, open outlet)



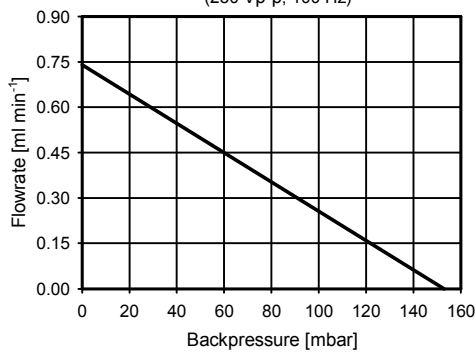
MC-L: Flowrate vs Voltage for Water  
(100 Hz, open outlet)



MC-S: Flowrate vs Voltage for Water  
(350 Hz, open outlet)



MC-L: Flowrate vs Backpressure for Water  
(230 Vp-p, 100 Hz)



MC-S: Flowrate vs Backpressure for Water  
(230 Vp-p, 350 Hz)

