

# INFORMATION SHEET

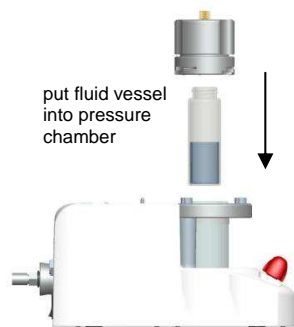
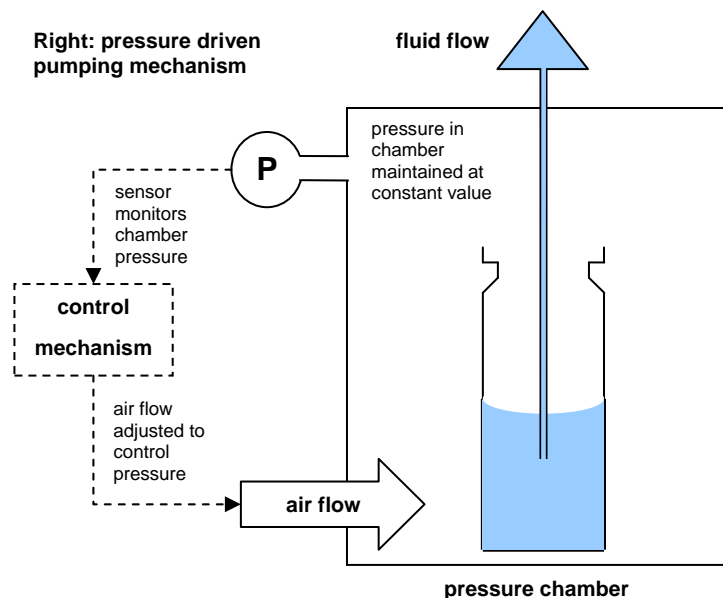
Part name	Mitos P-Pump (pulseless pressure pump)	Part number	3200016
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## Description

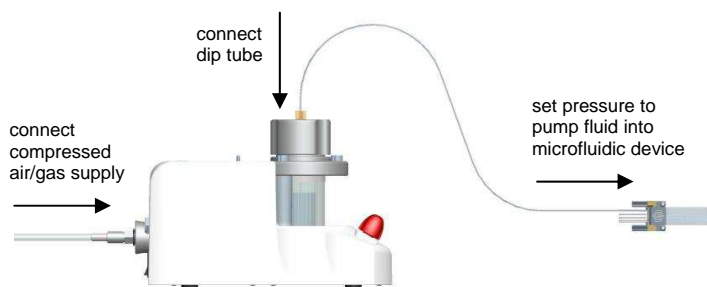
The Mitos P-Pump provides pulseless liquid flow with a precise pressure driven pumping mechanism. It operates over a wide pressure range (0 – 10 bar) with excellent response time and accuracy. The design features a lockable pressure chamber for safety, which is easy to access and accommodates a wide range of fluid vessels. User control is via an intuitive twist-and-click knob and display. Pressure driven flow is ideal for microfluidic systems where highly stable flow is required in the nl/min to µl/min range for applications such as droplet formation.



**Right: pressure driven pumping mechanism**



put fluid vessel into pressure chamber



connect compressed air/gas supply

connect dip tube

set pressure to pump fluid into microfluidic device

**Above: how to use the P-Pump**

## Benefits

- Pulseless pumping performance
- Fast response time
- Wide pressure range enabling use with systems of high fluidic resistance
- Accommodates a wide range of fluid vessels (standard and non-standard)
- Quick and easy to set-up and run, with intuitive control
- Works with laboratory N<sub>2</sub> or Ar supply, gas bottle or compressor
- Uses samples direct from your container – no mess and no waste

	<b>P-Pump specification</b>	<b>Value</b>
1	Pressure range	0 – 10 bar (0 – 145 psi) gauge
2	Pressure resolution	0.001 bar (0.01psi)
3	Pressure stability	0.1% of system pressure; min $\pm$ 0.002 bar
4	Response and settling time (1 bar step) <sup>1</sup>	< 3 s
5	Response and settling time (5 bar step) <sup>1</sup>	< 4 s
6	Time for initial pressure response <sup>2</sup>	10 ms
7	Maximum rate of response <sup>3</sup>	3 bar/s (44 psi/s)
8	Pressure supply connection	Quick connect port to $\varnothing$ 6 mm OD tube
9	Maximum supply pressure	11 bar (160 psi) gauge
10	Chamber dimensions	$\varnothing$ 30 x H 88 mm
11	Sample volume	Accepts a wide range of vials and vessels from 100 $\mu$ l to 30 ml (higher on request)
12	Dip tube size	1/16" OD; 250 $\mu$ m ID
13	Product size	L 239 x W 93 x H 146 mm
14	Wetted materials	User selected vessel and dip tube (e.g. glass and PTFE)

1) Time for pressure to rise and settle within 5% of target pressure. Dependent on operating conditions.

2) Time for mechanical system to respond to software command.

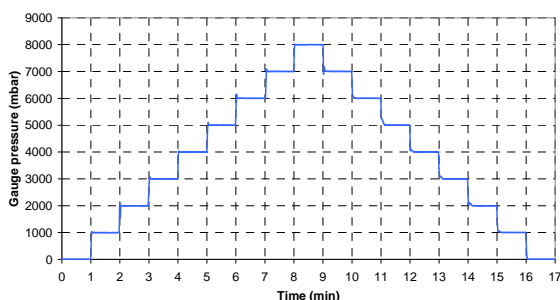
3) Maximum rate of response is obtained with maximum supply pressure.

## Software Features

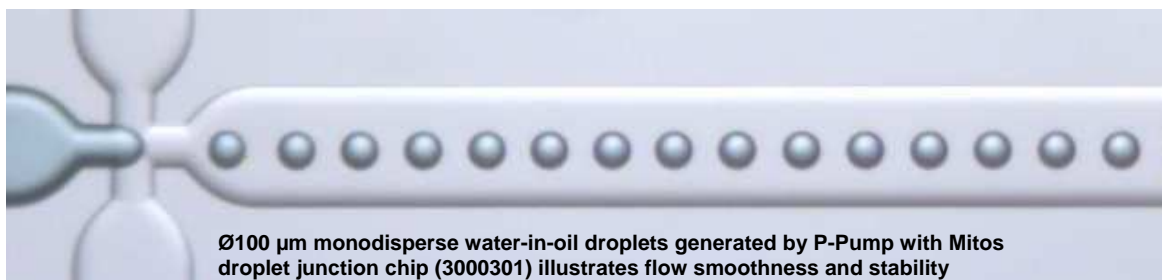
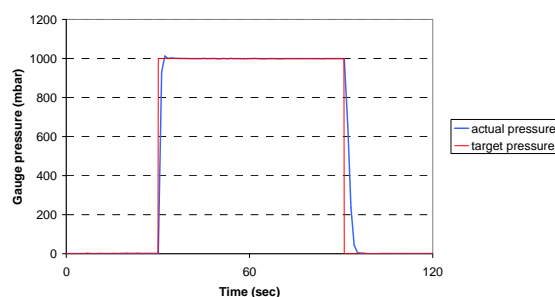
- Set pressure target and view change in actual pressure
- Quick vent function to stop flow at the touch of a button
- Countdown timer to pump for a desired period of time (ideal for dispensing small liquid volumes)
- Moving mode where the user dynamically controls the pressure target using the twist-and-click knob and the P-Pump follows this moving target (useful for precise control of liquid movement on-chip or observing the effect of small pressure changes on a system)
- Option to operate in pressure units of mbar, bar or psi
- USB data export to allow pressure control data to be viewed on a PC

## Performance

Graph showing pressure control and accuracy



Graph showing response and settling time





## Contents

The pump will be supplied with the following items:

- User manual
- Pneumatic supply tubing: 6 mm OD, 1 m length, quick connect fitting
- Tubing FEP 250 µm ID, 1/16" OD, 2 m length
- Power supply
- Mains IEC lead

## Accessories

The following accessories are available for use with the pump:

- 3200033 Mitos P-Pump flow starter kit
- 3200034 Mitos P-Pump pneumatic connector kit
- 3200017 Mitos P-Pump vessel holders kit
- 3200026 – 3200027 Mitos P-Pump compressor kit
- 3200028 – 3200032 Mitos P-Pump flow resistors

## Custom Options

Please contact Dolomite if the P-Pump specification does not meet your requirements. If you require a greater reservoir volume, temperature and humidity control, flow sensor feedback, PC interface or an OEM module, Dolomite will work with you to provide a solution.