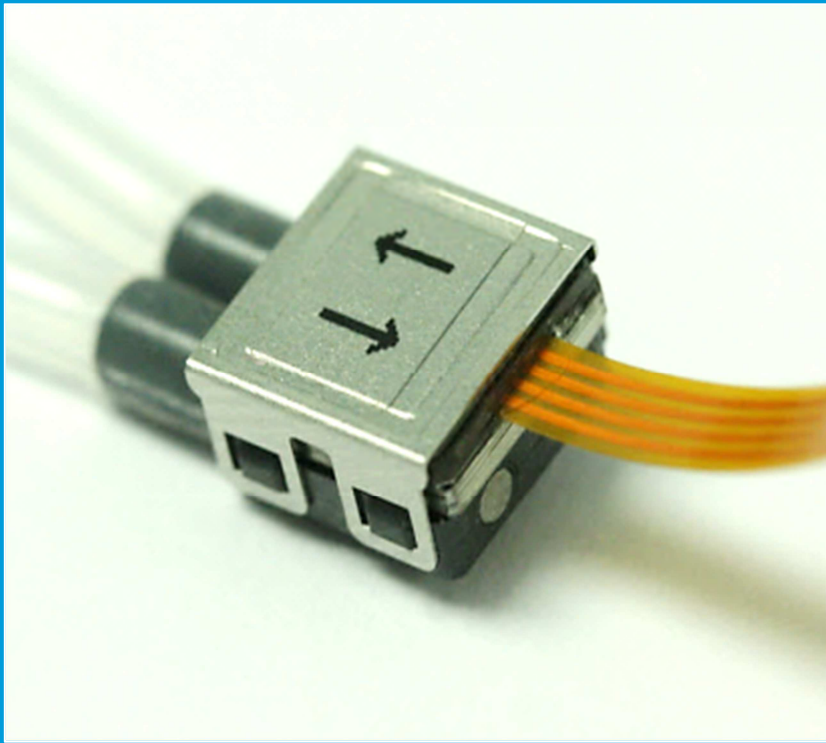


Stainless Steel Piezoelectric Pumps

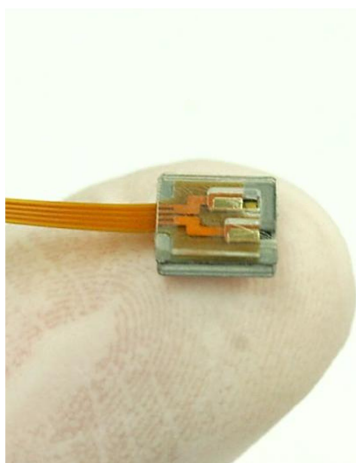


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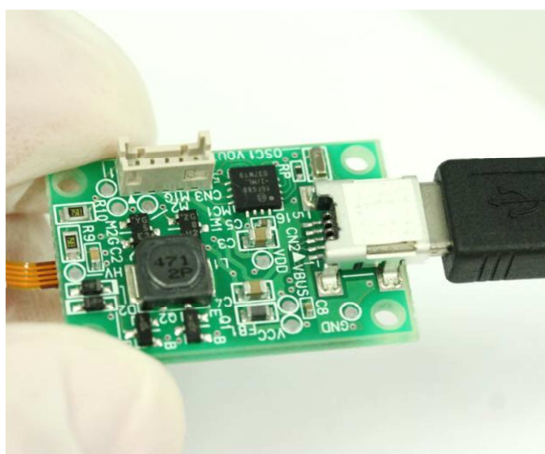
Part name	Part number
Stainless Steel Piezoelectric Pump	3200311
Stainless Steel Piezoelectric Pump with Tube Barbs	3200312
Stainless Steel Piezoelectric Pump Control Board	3200313
Stainless Steel Piezoelectric Pump Surface Mount	3200315

Description

The Stainless Steel Piezoelectric Pump is a miniature, low power, and chemically resistant stainless steel diaphragm pump with piezoelectric actuation mechanism. These features make the Piezoelectric Pump ideal for integration into experimental set-ups and instruments. There are 3 versions of the pump to meet a wide range of requirements. The pump control board controls the pump from a PC USB port facilitating quick experimental set ups. The flow rate output can be varied by adjusting the applied voltage and frequency.



Stainless Steel Piezoelectric Pump
(Part No. 3200311)



Stainless Steel Piezoelectric Pump Control Board
(Part No. 3200313)

Benefits

- Very compact and lightweight
- Very low power consumption
- Quiet during operation
- Self-priming
- Variable flow rate output
- Pump control board available for research and development

Pump Specification

Specification	Stainless Steel Piezoelectric Pump (Part No. 3200311)	Stainless Steel Piezoelectric Pump with Tube Barbs (Part No. 3200312)	Stainless Steel Piezoelectric Pump Surface Mount (Part No. 3200315)
Maximum flow rate ¹	3,500µl/min (Frequency: 200Hz, Back pressure: 0kPa)		
Maximum pump pressure ¹	90kPa (Frequency: 200Hz, Flow rate: 0 µl/min)		
Maximum suction pressure ¹	-10kPa (Frequency: 200Hz, Flow rate: 0 µl/min)		
Applied voltage range	0 – 120V _{p-p}		
Waveform	Rectangular		
Applied frequency range	1 – 200Hz		
Power consumption ¹	7.5mW (Frequency: 200Hz, Back pressure: 0kPa, Control Board not incl.)		
Operating temperature	5 – 50°C		
Storage temperature	0 – 60°C		
Wetted materials	Pump: SS304 Gasket: Silicone rubber	Pump: SS304 Barbs: PPS (1130T6) Gasket: Silicone rubber	Pump: SS304
Body dimensions	7 x 7 x 2mm	7 x 7.5 x 4mm	9 x 9 x 2mm
Connection (mm)	Gasket to custom interface	Barbs: OD 2, ID 1, Length 4.5	Gasket to custom interface
Weight (approximate)	0.38g	0.7g	0.7g
Operating noise level	25.1dB		
Recommended Chemicals	Pure water, Ethanol, Methanol, Acetone, Phenol		

1) Values specified found using distilled water at Room temperature

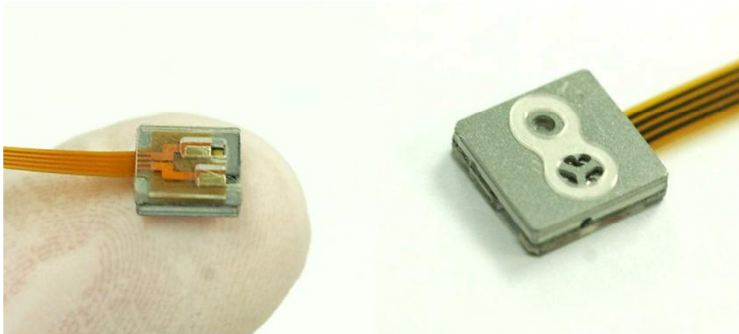
Note:

Please pre-filter all fluids with a 5µm filter (or less) before use. The Stainless Steel Piezoelectric Pumps can be damaged if foreign particles of greater than 10µm enter the pump.

Stainless Steel Piezoelectric Pump (Part No. 3200311)

The Stainless Steel Piezoelectric Pump is designed to be integrated into compact fluidic systems. Fabricated from layers of bonded stainless steel foils, the pump is particularly suited to being supplied in high volume.

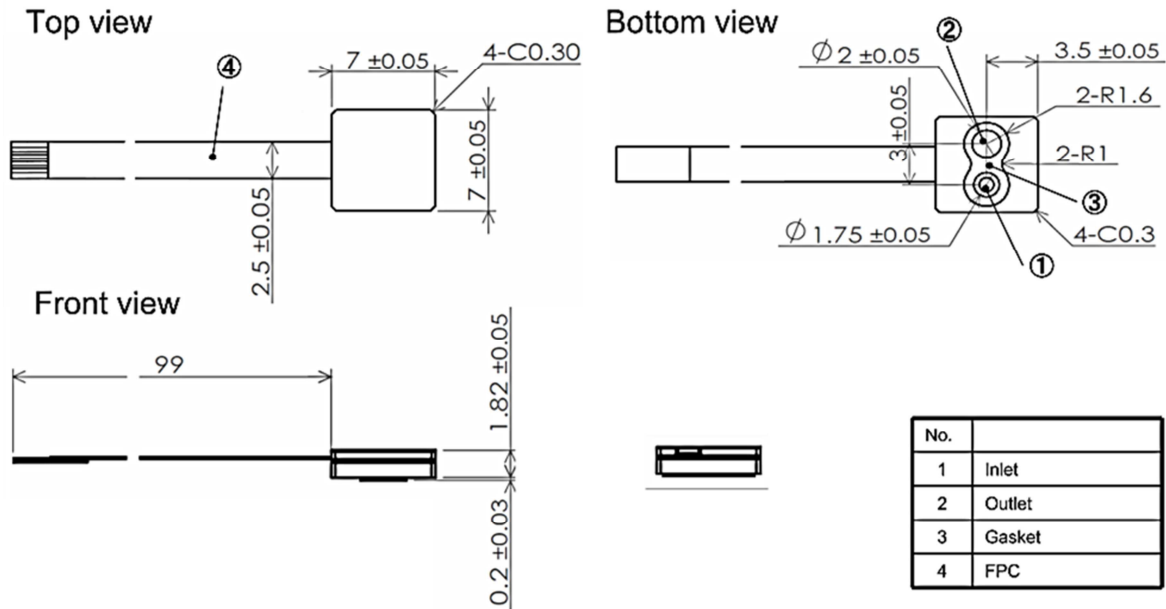
Fluidic connections are made through a custom device; however the pump does come with a floating silicone gasket.



Stainless Steel Piezoelectric Pump (Part No. 3200311)

Left: shows electrical connection to the pump

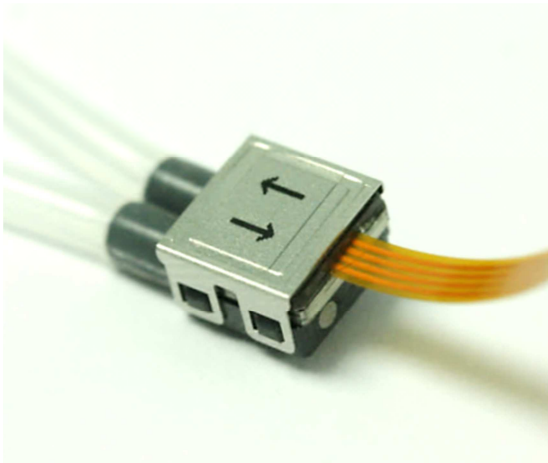
Right: shows the opposite face with inlet and outlet surrounded by a gasket



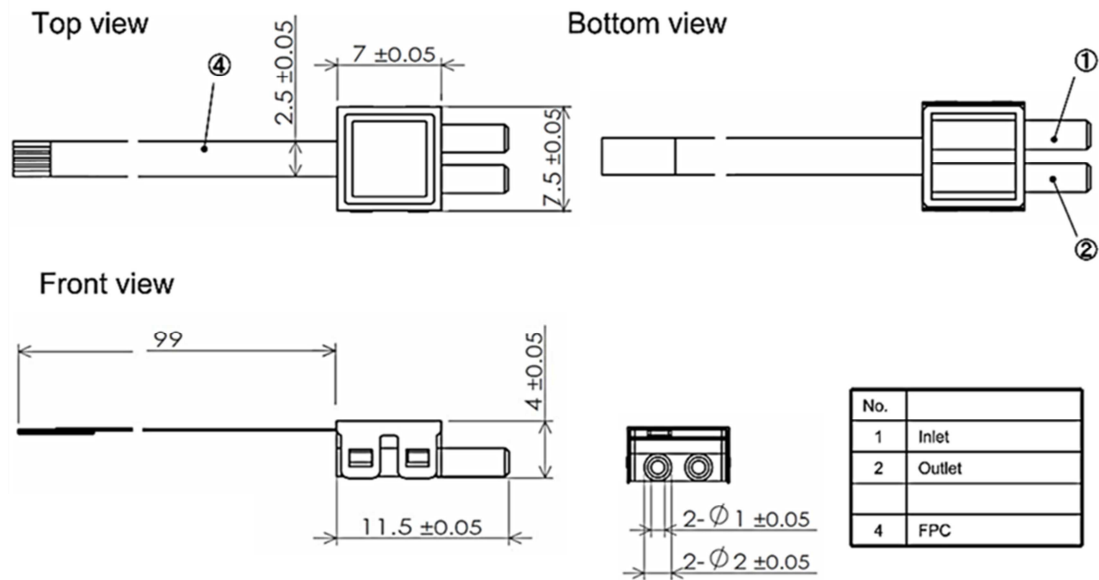
Stainless Steel Piezoelectric Pump with Tube Barbs (Part No. 3200312)

The Stainless Steel Piezoelectric Pump with Tube Barbs combined with the Stainless Steel Piezoelectric Pump Control Board is ideal for experimental work and evaluation of the pump.

Recommended tubing is Tygon Tubing 1/18" ODX1/16" ID, 2 meters.



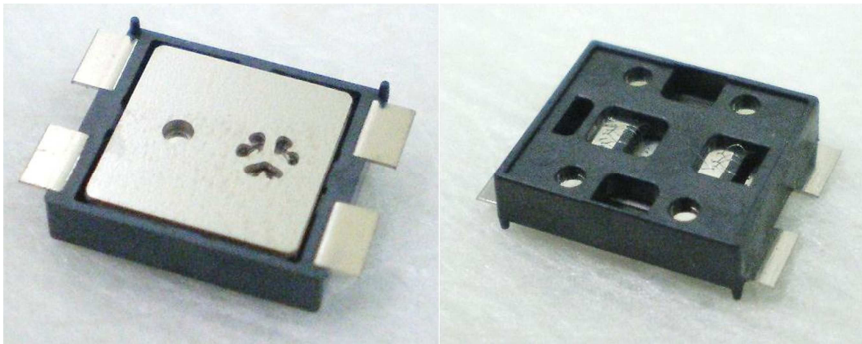
**Stainless Steel Piezoelectric Pump with Tube Barbs
(Part No. 3200312)**



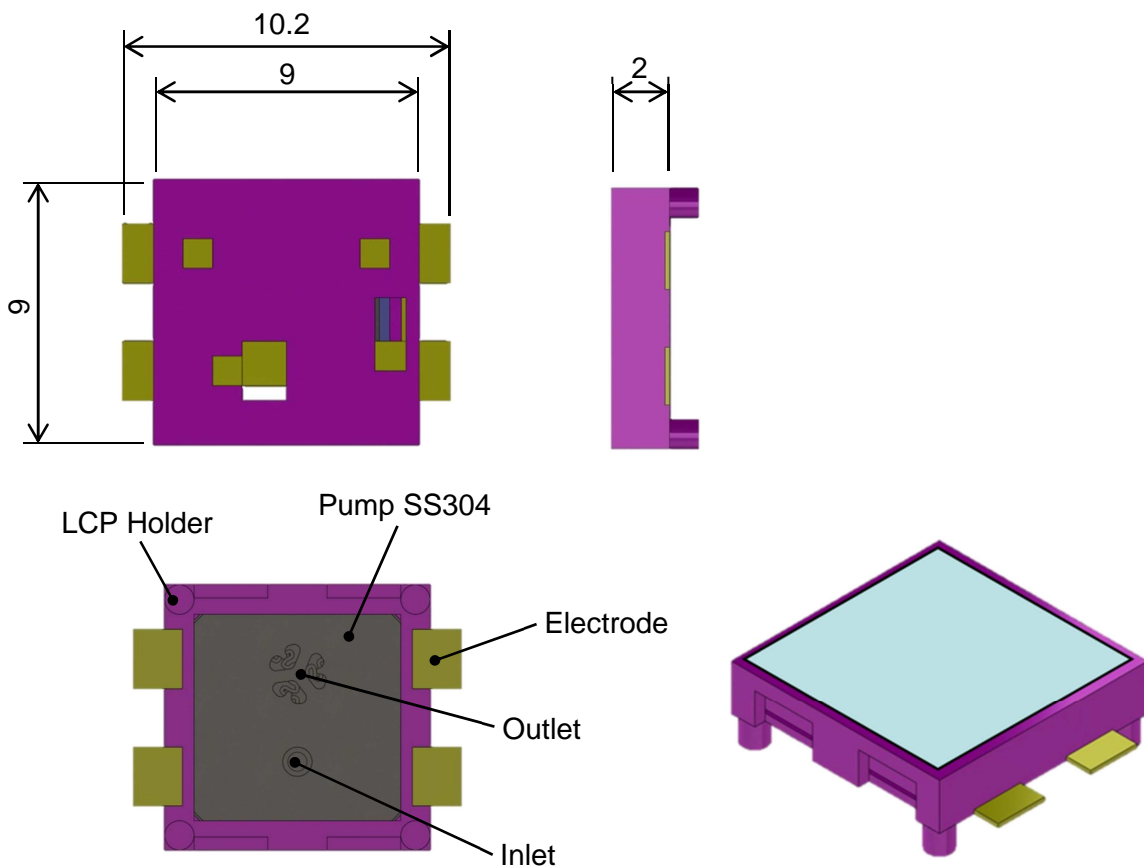
Stainless Steel Piezoelectric Pump Surface Mount (Part No. 3200315)

The Stainless Steel Piezoelectric Pump Surface mount is specifically designed for high volume applications, where the pump can be placed into a custom PCB or similar making electrical and fluidic connections simultaneously.

The LCP surround can be customised to suit the exact requirements of a high volume application.

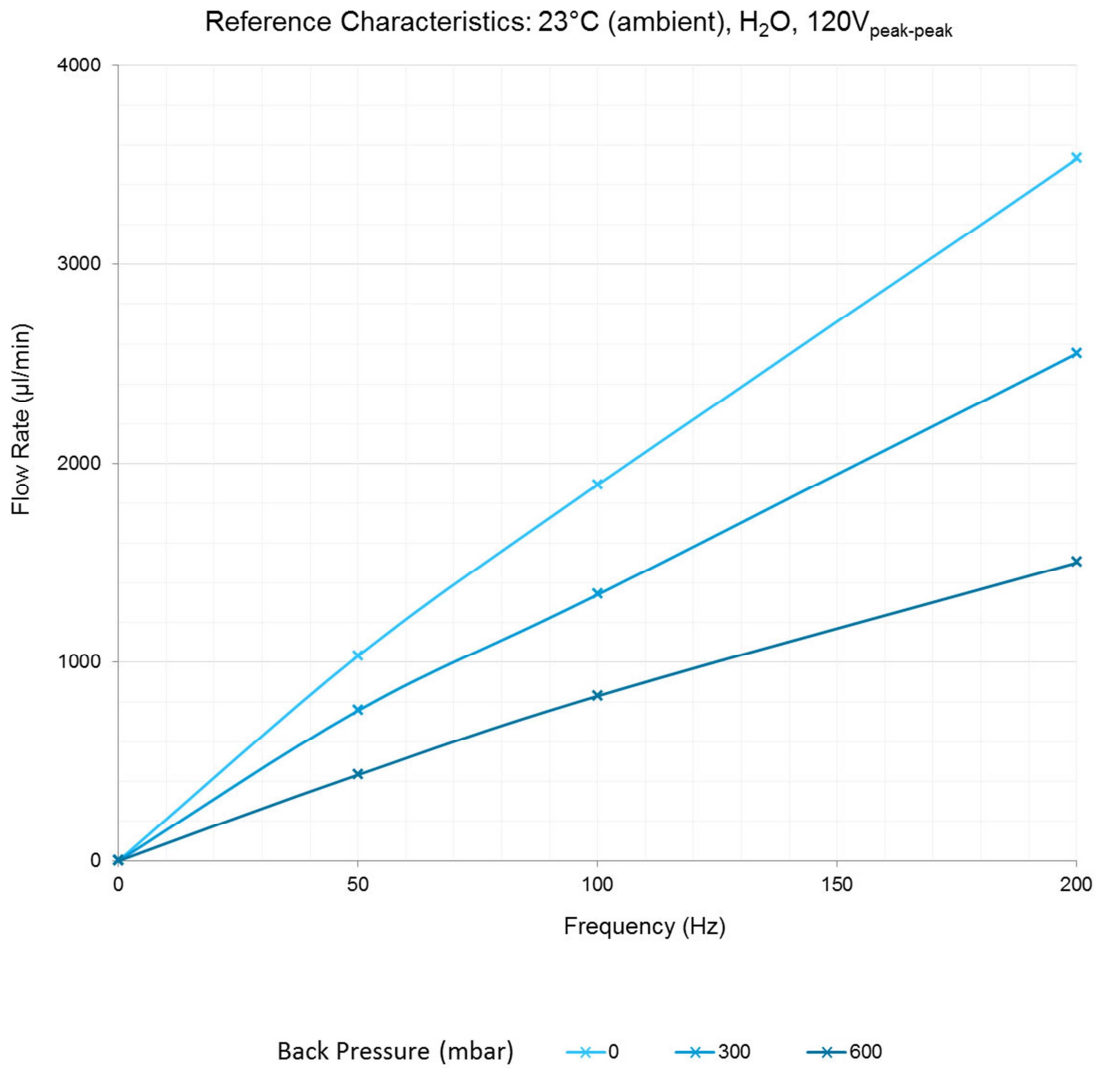


Stainless Steel Piezoelectric Pump Surface Mount (Part No. 3200315)





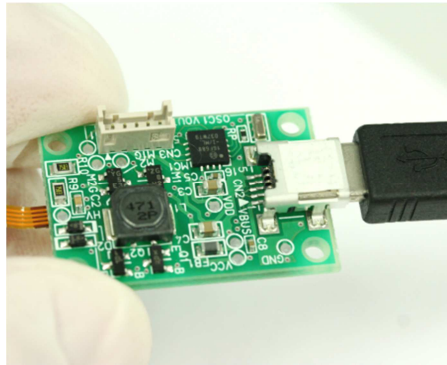
Performance Data



Stainless Steel Piezoelectric Pump Control Board (Part No. 3200313)

Stainless Steel Piezoelectric Pump Control Board provides a compact solution for flexible control of the Stainless Steel Piezoelectric Pump.

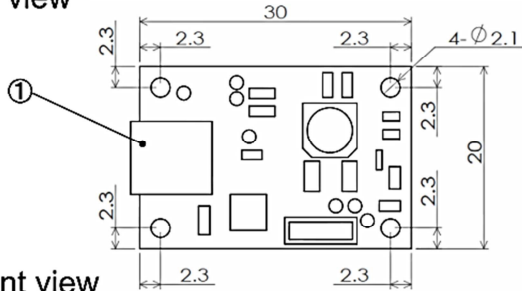
The Control Board is designed to be used and powered through a computer USB port and comes with software and cable included. Please see the Stainless Steel Piezoelectric Pump user guide for information on how to use the pump software.



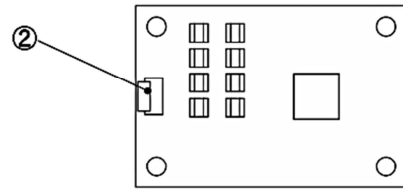
Stainless Steel Piezoelectric Pump Control Board (Part No. 3200313)

Specification	Value
Input voltage	5V (USB bus power)
Output frequency	1 – 350Hz
Output voltage	$\pm 10V - \pm 80V$ (1V resolution)
Drive waveform	Rectangular
Drive modes	Continuous and Intermittent (Variable duty cycle)
Compatible pumps	3200311, 3200312
Power consumption	85mW (Frequency: 100Hz, Voltage: $\pm 60V$)
Operating temperature	0 – 50°C
Storage temperature	-10 – 60°C
Dimensions	30 x 20 x 7mm
Weight	3.3g
Software	Software to enable evaluation of the pumps included

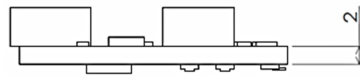
Top view



Bottom view



Front view



No.	
1	Mini USB connector
2	FPC connector

Custom Options

Please contact Dolomite for customisation of the pumps, for example redesign to achieve specific electrical and fluidic connections.



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