

General Description

The Sensile Medical Micro Pump is a semi disposable positive displacement (piston) pump with a disposable pump engine and a reusable pump drive. The pump volume is defined by just three shape-related

dimensions: difference between two diameters of the piston and stroke. The valves are timed by the rotating piston. The reusable part includes the electromagnetic contactless pump drive as well as positioning sensors.

Features

- High accuracy pumping in sub-µl range
- Few parts (5 in disposable pump engine), designed for high volume cost-effective production
- No mechanical or electrical contacts between drive and engine
- No moving part in the reusable pump drive, design widely adjustable depending on application
- Integrated sensors for malfunction detection
- Independent of ambient pressure influences
- Actively opened valves
- At least 1 seal closed at any time, 2 seals closed in “park position” → safe against free flow
- Safe against inadvertent delivery
- Scalable (down to 500nl and up to 100µl per cycle)
- Can be used with high viscous fluids
- 6σ production capability demonstrated

Fields of application

- Innovative insulin delivery systems
- Infusion pumps (ambulatory and hospital-based)
- Inhalation systems
- Consumer products

Technical Data Pump Engine

Parameter	Value	Unit	Note
Dimensions (ODxH)	ø 22 x 22.5	mm	
Inlet/Outlet (ID)	ø 1.5	mm	
Weight	14	g	
Medical grade materials	USP Class VI	-	Industrial-grade for non-medical applications
Lifetime	100'000	cycles	
Sealing tightness	5	bar	

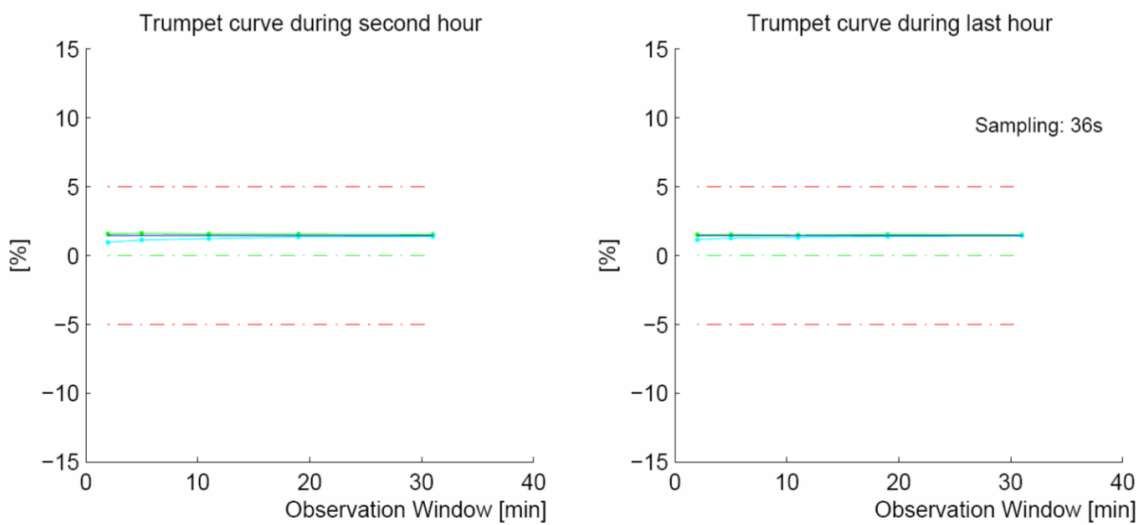
Technical Data Pump Drive

Parameter	Value	Unit	Note
Dimensions (ODxH)	ø 46 x 22	mm	Design depends on application
Weight	60	g	
Sensor technology	Hall	-	Sensors for stroke, commutation and control
Drive mode	Contactless BLDC -		Direct coupling or mechanical drive for special applications

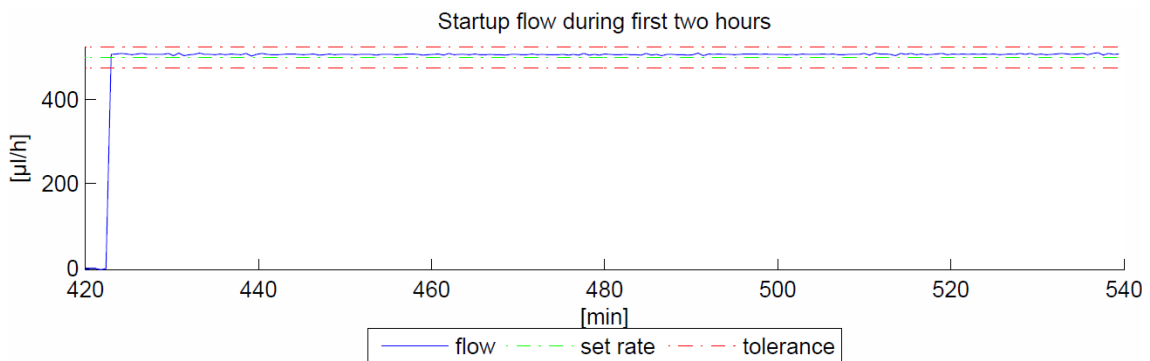
Technical Data System

Parameter	Value	Unit	Note
Delivery accuracy	±5	%	
Maximum operating frequency	20	Hz	
Flow rate	0.005 – 360	ml/hr	
Inlet pressure	-0.4 – 0.5	bar	
Outlet pressure	0 – 1.5	bar	
Liquid viscosity	1 – 500	mPa.s	With suitable adaptations
Power consumption	2	W	
Delivery volume per AAA battery	90	ml	

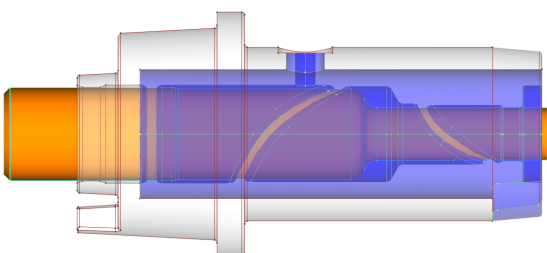
Trumpet curve @ 0.5ml/hr*



Startup flow @ 0.5ml/hr*



*based on international standard IEC 60601-2-24



For further information please visit our website at www.sensile-medical.com

Subject to change without notice.

Sensile Medical AG
 Fabrikstrasse 10
 4614 Hägendorf
 Switzerland

Tel +41 (0) 62 209 71 00
 Fax +49 (0) 62 209 71 01

bd@sensile-medical.com