

Fluid metering



PULSELESS NANOLITER DISPENSING

Precision Microfluidic Control

TRYTON® Pumps deliver highly accurate, continuous nanoliter-level dosing for microfluidic and analytical systems that require smooth flow, precision control, and long-term stability. Built on proven CeramPump® technology, it eliminates pulsation and mechanical wear limitations associated with traditional syringe pumps, enabling consistent and repeatable performance.

Engineered for Stable, Continuous Operation

Featuring a compact linear drive with only three moving components and a zero-backlash mechanism, TRYTON Pump ensures smooth, predictable flow without software compensation. Its chemically inert ceramic components provide exceptional chemical resistance and durability for repeatable performance in demanding life science and OEM applications. Designed for long service life, TRYTON Pumps often match or exceed the lifetime of the instrument.



KEY BENEFITS

Continuous, Pulse-Free Flow

- Delivers smooth, uninterrupted flow to improve consistency in sensitive microfluidic and analytical processes—eliminating pulsation-related variability.

Syringe Pump Precision Without Consumables

- Delivers syringe-pump-level accuracy while eliminating disposable syringes and reducing routine maintenance.

Compact, Integration-Ready Architecture

- Small footprint and streamlined design accelerate OEM integration and simplify instrument development.

High-Resolution Motion Control

- Integrated encoder feedback enables precise positioning and repeatable performance for sub-microliter fluid handling.

Simplified, Low-Maintenance Design

- Removes consumables and reduces mechanical complexity compared to syringe pumps, lowering maintenance demands and improving system uptime.

OEM Engineering Support

We offer support for dispense volume, flow rate, pressure, material compatibility, system integration, and configuration optimization. Contact us to discuss your project and explore a solution designed for your specific needs.



Fluid Metering's facility is certified to the ISO 9001:2015 international standard. Product components are manufactured to meet EU RoHS and REACH compliance requirements.



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PUMP SPECIFICATIONS



WETTED MATERIAL OPTIONS:

Piston: Zirconia
Pump Housing: PVDF
Seals: UHMW-PE, FKM

PORTS:

1/4-28 UNF Threaded Ports

DISPENSE VOLUME:

For 3 μL

Accuracy of $\pm 2\%$

Precision (CV) < 1%

For 150 μL

Accuracy of $\pm 0.1\%$

Precision (CV) < 0.1%

TYPICAL ACCURACY:

1 $\mu\text{L} \pm 2\%$

DISPENSE RESOLUTION:

0.031 μL /Full Step

MAXIMUM STANDARD OPERATING PRESSURE:

100 psig

FLOW RATE:

Minimum: 0.105 $\mu\text{L}/\text{sec}$ @ 1 rpm

Maximum: 125.6 $\mu\text{L}/\text{sec}$ @ 1200 rpm

¹ The performance of Fluid Metering pumps may vary based on specific application conditions and individual user setups. We recommend speaking with one of our engineering experts for guidance tailored to your specific needs.

MOTOR/DRIVER SPECIFICATIONS

RATED CURRENT:

1.5 A

MOTOR FRAME:

Linear: NEMA 17 (43 mm)

STEP ANGLE:

1.8° Full Step

MOTOR SPEED:

Up to 1200 rpm

MOTOR DIRECTION:

Aspirate: Clockwise

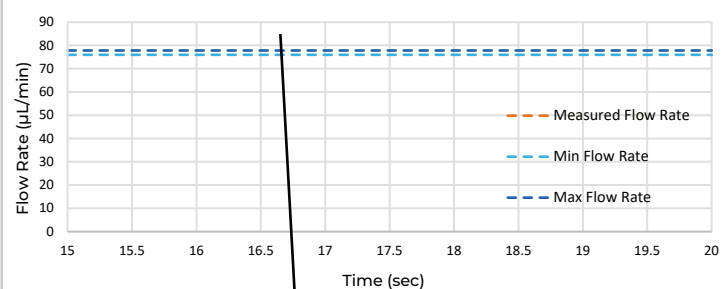
Dispense:

Counterclockwise

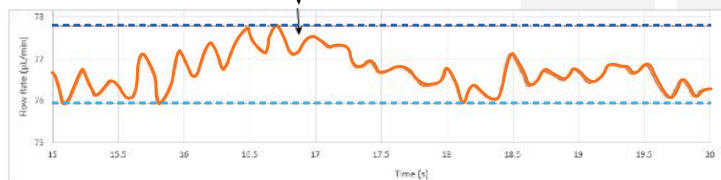
OPERATING TEMPERATURE:

-20°C to 50°C

TRYTON Pulseless Flow Data



(see below enlarged image)



CUSTOMIZED FLUIDIC SOLUTIONS

Be it a small tweak to existing technology or a full development project, our pumps and dispensers can be customized to accommodate dispense volume, flow rate, temperature, pressure, materials, and more.

Contact Us Today!

Rapid prototyping available within 10 business days*

*Prototype requests are subject to availability of parts and materials. Fluid Metering will confirm availability within 2 business days and provide an estimated shipping date.