



UMP3-1

VERSATILE MICROINJECTOR FOR LOW-VOLUME FLUID DELIVERY



PERFECT FOR A WIDE RANGE OF APPLICATIONS

In- and Ex-Vivo Targeted Injection

With the Micro4 controller, the UMP3 can dispense as little as 25 nanoliters repeatably. Syringes may be filled externally and then inserted into the pump. It is recommended to prime your syringe to ensure a gastight environment, and front-fill using the UMP3 for ultimate precision.

For positioning, the UMP3 may be attached to any of several WPI micromanipulators such as the M3301 (manual), DC3001 (motorized), or any stereotaxic setup.

Smart Controller

An Integral component of the UMP3 system is the Micro4 controller, offering an easy-to-use programmable, 4-channel interface. Operating parameters are set with the keypad and are saved upon each startup. The user can select the following functions:

- Set pump to infuse or withdraw
- Set the volume
- Rate
- Syringe type
- Synchronize the run
- Stop any combination of your syringe pumps.

An optional footswitch (#13142) can be used with the controller for hands-free pump operation.

Computer Control—An RS-232 port on the rear of the controller can be used to connect it to a computer for external command triggers/customized protocols.



Fig. 1—The UMP3 accepts a range of micro-syringes from 0.5 μ L to 1 mL, and it can be mounted on a stereotaxic frame.

ULTRAMICROPUMP SPECIFICATIONS

(based on 10 µL syringe)

NORMAL MODE

TRAVEL	62 mm
MINIMUM DISPENSING VOLUME	0.58 nL / step (10 µL syringe)
LINEAR MOTION PER STEP	3.175 microns
WEIGHT	325 g (11.5 oz)
MOUNTING ROD DIAMETERS	7.9 mm (0.31 in.)
MAINS POWER SUPPLY	90-264VAC @ 47-63Hz
DIMENSIONS	Ø 32 mm x 190 mm
.....	(Ø 1.3 in. x 7.5 in.)

MICROSTEPPING MODE

Precision is increased eight-fold

ADDITIONAL ACCESSORIES

NanoFil™ Gastight Syringes

Glass Microliter Syringes for Precision Delivery

Syringe Order Code	Volume	Syringe Type	Syringe Body	Autoclavable/ Gas Sterilizable	Plunger Stroke Length	Plunger Cap Dimensions	Syringe Barrel I.D./O.D.*	Qty	MICRO4/ MICRO2T Syringe Type Selection
NANOFIL	10µL	Gas-tight	Borosilicate glass, Stainless Steel, PTFE	Yes ✓ 10°C/50°F to 80°C/176°F, 1000psig max pressure	60mm	O.D.*: 7.90mm (0.311in)	0.46mm (0.018in)/ 6.40mm (0.252in)	1 EA	L (MICRO4) 5 (MICRO2T)
NANOFIL-100	100µL					Depth: 2.80mm (0.110in)	1.46mm (0.057in)/ 7.75mm (0.305in)	1 EA	

*I.D. = Inner diameter, O.D. = Outer diameter

NanoFil™ Needles

Tip Order Number	Tip O.D.	Tip I.D.	Tip Length	Total Length	Shank O.D.	Bevel Length	Tip Material
NF33BV	210 µm	115 µm	10 mm	40 mm	460 µm	≈348 µm	Stainless Steel
NF34BV	185 µm	85 µm	5 mm	35 mm	460 µm	≈290 µm	Stainless Steel
NF35BV	135 µm	55 µm	5 mm	35 mm	460 µm	≈204 µm	Stainless Steel
NF36BV	120 µm	35 µm	3 mm	33 mm	460 µm	≈156 µm	Stainless Steel
NFQ34-5	160 µm	100 µm	55 mm	75 mm	460 µm	n/a	Quartz
NF33BL	210 µm	115 µm	10 mm	40 mm	460 µm	0	Stainless Steel
NF34BL	185 µm	85 µm	5 mm	35 mm	460 µm	0	Stainless Steel
NF35BL	135 µm	55 µm	5 mm	35 mm	460 µm	0	Stainless Steel
NF36BL	120 µm	35 µm	3 mm	33 mm	460 µm	0	Stainless Steel
Silflex		100 µm		35 cm			
NF26BV	460 µm	140 µm		40 mm	460 µm		