SELL SHEET

PV830 Microinjector

The Most Accurate, Cost-Effective Cell Transfection System on the Market

Cell transfection is a key application to understanding aspects of growth and development, disease modeling, as well as devising long term therapeutic solutions. Genetic modulation of various animal models in the pre-clinical research space provides a large population availability for high throughput testing, ensuring repeatable results for greater drug efficacy and disease modeling for downstream clinical implementation.

Embryonic injections are primarily executed using a pneumatic-style pump. However, the limitations to these systems in the market mainly is price, reliability, and ease of use. World Precision Instruments' Legacy Pneumatic Microinjectors have been a flagship injection system for over 30 years across thousands of academic, pre-clinical, and government research labs.

WPI's PV830 (WPI #SYS-PV830) offers both pressure and vacuum capability, with hold functionality to add slight positive pressure to avoid capillary action of your aqueous environment. The straightforward user interface of the PV830 paired with its extremely affordable price point, as well the robust availability of peer-reviewed publications for this system for several decades makes for a truly reliable system for your transfection needs. Similar in design to the legacy WPI PV820 PicoPump, the PV830 offers a unique vacuum capability feature.

An analog, solenoid-based pneumatic pump is great for high-throughput aqueous environment-focused injections as it provides a "go-no-go" approach to maintaining a barrier between your sample within your glass pipette tip versus the aqueous environment. As you calibrate your glass pipette tip according to its inner diameter (ID) via adjustment of the injection pressure, injection duration, and hold pressure, when the injection is initiated the solenoid valve quickly opens and snaps closed at the conclusion of the injection. This action essentially re-primes your line—the tubing line from your PV830 down to your capillary holder, and the pipette tip. This differential or theoretical "bolus" created via the hardware offers that level of repeatability so vital for performance repeatability and ultimately, successful genetic modification of your given cell line.

Stable pressure output in your pneumatic pump is critical for sample concentration maintenance, especially with extended tip exposure in an aqueous environment. Any unforeseen variability in pressure (particularly in your hold pressure) affects the composition of genetic material being trafficked into a cell, negating genetic modulation and the desired outcome of your line in question.

Ask a WPI representative what the PV830 can do for your transfection studies!

COMPONENTS

The PV830 System includes the components listed below.

Order code	Description	Quantity
PV830	PicoPump	1
3316 Startup Kit includes:	0.25” female NPT fitting for nitrogen tank regulators	1
	PV830 vacuum connector, silicone	1
	5’ length of hard pressure tubing, 1/4” OD.	1
5430-ALL PicoNozzle kit includes:	PicoNozzle tip assemblies (Handle diameter is 6.25 x 100mm)	2
	10’ tubing	1
	1.0mm pipette gaskets (green)	4
	1.2mm pipette gaskets (black)	4
	1.5mm pipette gaskets (red)	4
	1.65mm pipette gaskets (white)	4

SPECIFICATIONS

Pressure Specification	Value
Pressure Input	0-120 PSI
Pressure Output	0.3-90 PSI
Pressure Burst Timer (10-turn dial)	10 ms to 10 s in Timed mode
Regulator Accuracy	0.1% (20-turn dial)
Regulator Repeatability	0.05 PSI (both hold and eject pressures)
Gauge Accuracy	3% at full scale (both hold and eject pressures)
Input Connector	Quick Connect (1/4" OD tubing)
Output Connector	Barbed (1/16" ID tubing)
Vacuum Specification	**Value**
Vacuum Input	0-30.0" Hg
Vacuum Output	0.2-29.9" Hg
Lowest Regulated Vacuum	3" water
Regulator Accuracy	0.1% (20-turn dial)
Regulator Repeatability	0.03" Hg
Gauge Accuracy	3% at full scale
Input Connector	Quick Connect (1/4" OD tubing)
Output Connector	Barbed (1/16" ID tubing)
Control	Manual
Vent	Atmosphere
Fuse Specification	**Value**
Fuse (2019 models)	120 V: 0.5 A, fast, 5 x 20 mm metric
	230 V: 0.25 A, fast 5 x 20 mm metric
Connections Included	
Input Kit	10' nylon tubing (0.25" OD, 1000 PSI), one 1/2" female NPT adapter
Output Kit	Two PicoNozzle
Physical Specifications	**Value**
Power	95-135 V or 220-240 V, 50/60 Hz
Dimensions	17 x5.25 x 9.5" (43 x 13 x 24 cm)
Shipping Weight	14 lb. (6.3 kg)

USA: 941-371-1003
UK: +44 1462 424700
Germany: +49 6031 67708-0
China & Hong Kong: +86 688 85517