

Programmable Perfusion System (PPS)

Fully automated and highly accurate



Programmable Perfusion System (PPS)

Scientifica's PPS combines full computer control of ten pinch valves and a high performance peristaltic pump, allowing the user to conduct fully automated and highly accurate perfusion. The PPS is contained within electronically isolated stainless steel housing with a magnetic base for simple and stable mounting.



Complete PC control

The pump and valves can be controlled via a module of Scientifica's free, LinLab software, enabling a "hands-free" approach for the user to manually start and stop the flow, engage any of the pinch valves and change the flow rate.

Alternatively, experimental sequences can be programmed, saved and recalled (perfusion protocols). This helps speed up time consuming routines such as cleaning and repeated assays or replicating difficult sequences.

Ten-channel perfusion

The PPS features 8 inflow and 2 outflow pinch valves which smoothly control and match the flow rate both in and out of the bath. As a result, up to eight solutions can be transferred to your preparation, and back into a waste container or recirculated.

LED's on the unit and in the graphical display of the PC software conveniently indicates the status of each valve. Scientifica offers both a 10 roller peristaltic pump option as well as 4 rollers.

TTL output

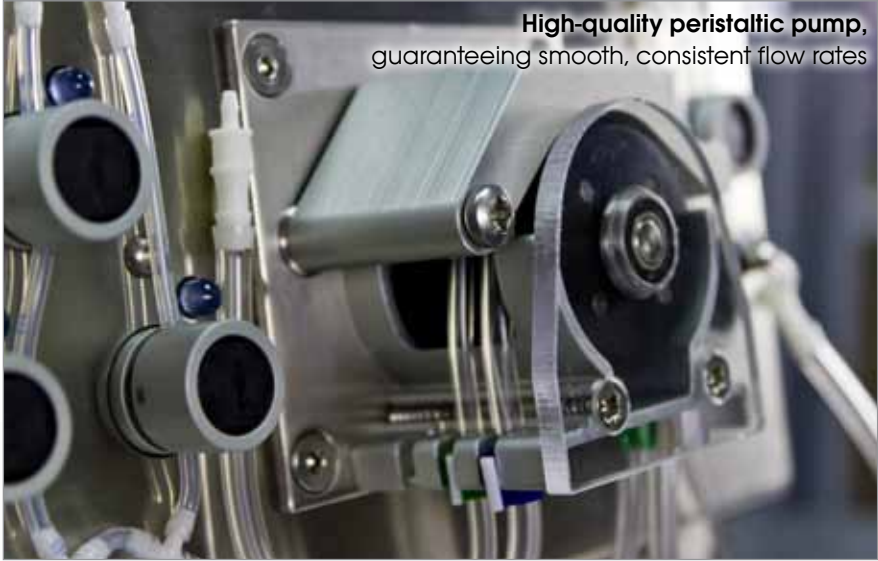
As perfusion inputs are often applied to influence cell behaviour, the PPS has been designed to interface with DAQ systems, such as pClamp.

This means that the timing of perfused stimuli can be precisely and automatically linked to cell responses.

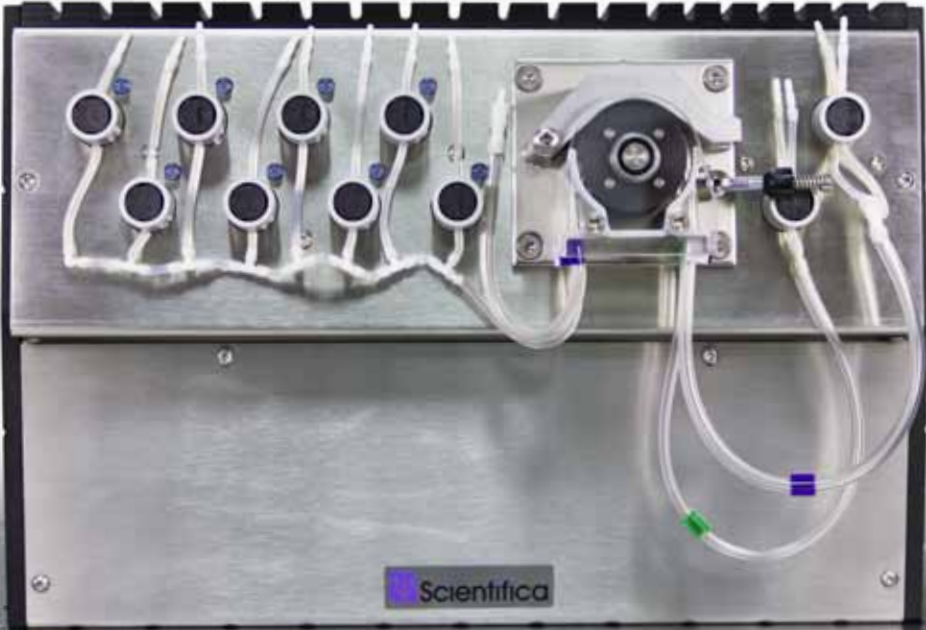
Ultra-low noise electronics

The PPS has been carefully shielded to prevent electrical noise interfering with sensitive recordings.

For this reason, the PPS can be placed close to the experimental setup and inside a faraday cage. This makes it convenient to operate, but also vastly reduces the dead volumes of expensive solutions due to the reduced amount of tubing required.



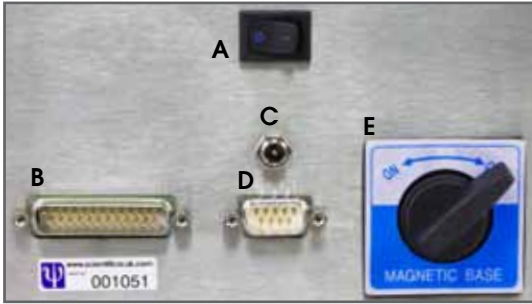
High-quality peristaltic pump, guaranteeing smooth, consistent flow rates



Scientifica

System overview

Rear panel



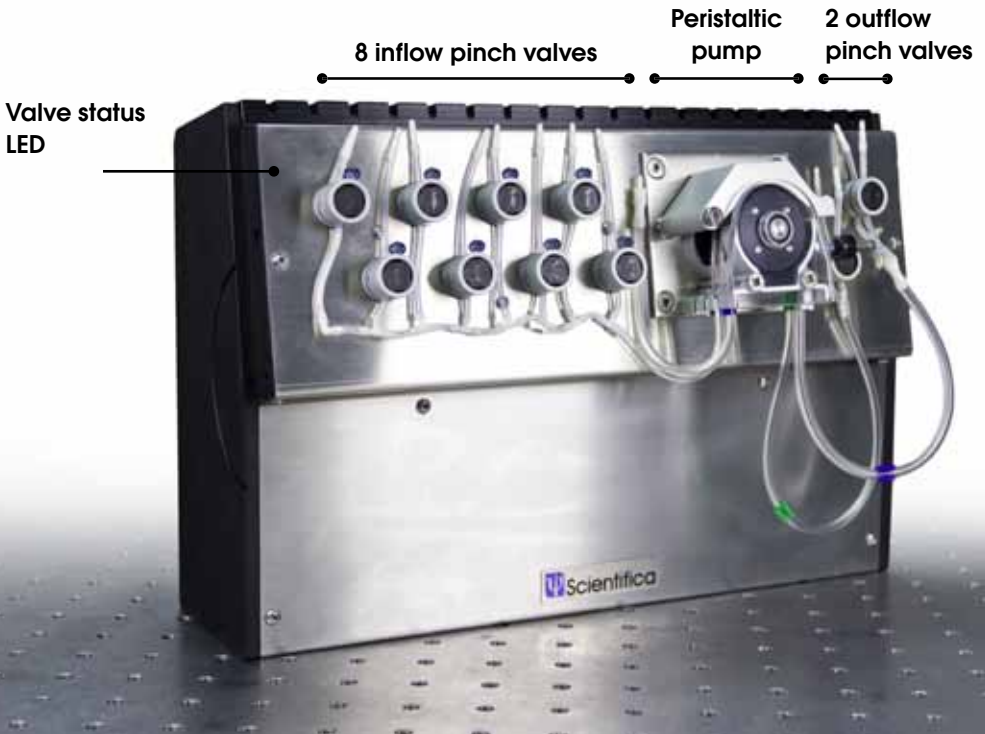
A: On-off switch

B: 25-way Serial TTL output

C: Power input

D: Serial PC connectivity

E: Activation of mounting magnets

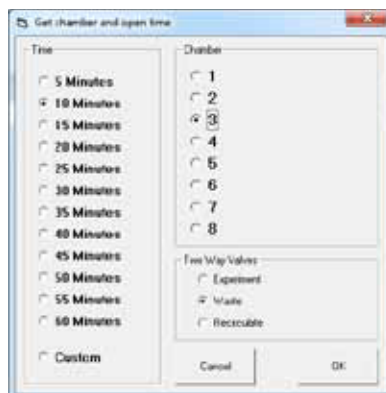
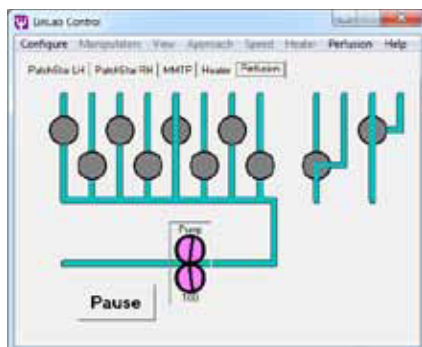


Software

Intuitive, convenient control

The PPS is operated using a module within Scientifica's 'LinLab' software, which is supplied free of charge.

LinLab enables remote operation of the perfusion directly alongside micromanipulators, XY stages, microscope Z-axis movement and temperature control devices.



Set perfusion protocols

As an alternative to manually controlling the features of the PPS, custom protocols can be created, stored and recalled allowing the user to step away from any manual intervention of the PPS and return once the sequence has finished.

This is invaluable when repeated tasks such as cleaning, priming or assay protocols are required, saving time and ensuring consistency.

For added convenience, a data log is written for each experiment for evaluation and optimisation.

Fast manual operation

Using the graphical interface, the user can quickly and easily access the following functions:

- Activate and deactivate each of the inflow valves
- Divert the perfusion flow to the preparation chamber or waste, or recirculate the solution
- Commence and pause the pump
- Alter the pump speed, correlating to adjusted flow rates

Technical Specifications

Specifications	
Housing construction:	Stainless steel
Method of mounting:	Switchable magnetic base
Flow rate:	0.1 to 20 ml per minute
Connectivity:	RS232 PC connection (<i>can be converted to USB connection</i>) 25-way serial port connectivity
Software control:	Scientifica Linlab software, (<i>compatible with Microsoft Windows™ 2000, XP, Vista and 7</i>)

Ordering Information

Product Option	Order number
Programmable Perfusion System (10 roller peristaltic pump)	PPS-1100
Programmable Perfusion System (4 roller peristaltic pump)	PPS-1000
Replacement Tubing for the PPS	PPS-TUBING

All PPS systems ship complete with an exchangeable tubing loom.

Warranty

Scientifica's success is founded on supplying superior support and application of our significant manufacturing experience.

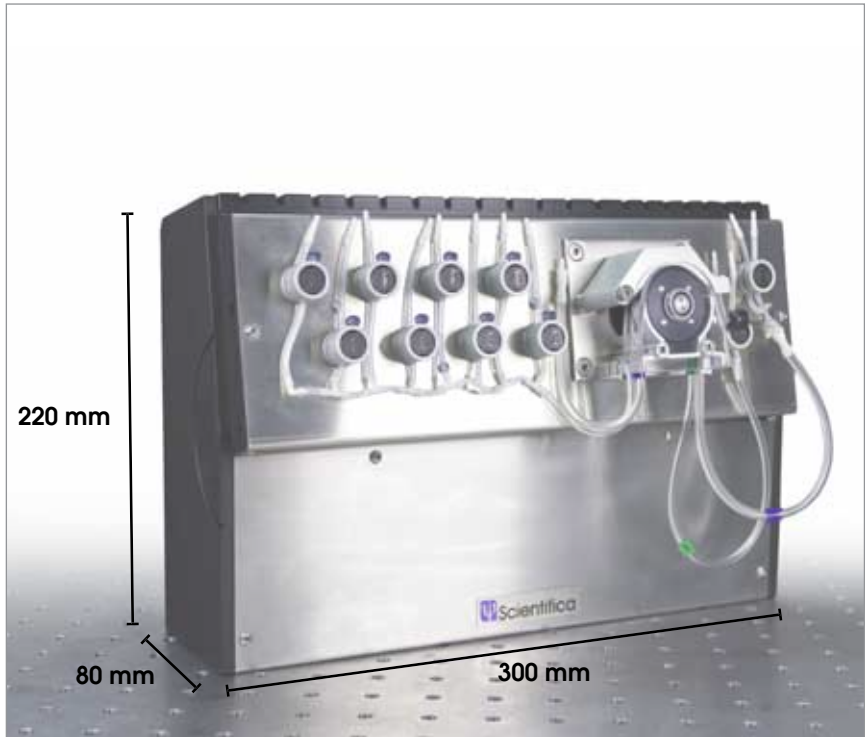
We would therefore really value the opportunity to understand your applications better and to offer no obligation advice on equipment, configurations and compatibility.

All Scientifica instruments are sold with a two-year warranty giving you complete peace of mind.

This covers all defects in manufacturing and materials. In this unlikely event, Scientifica will remedy either by repair or replacement.

Our team of customer support engineers are dedicated to providing you with the very best advice and support, should you experience any difficulties with our products.

Dimensions (in mm)



Find out more about the Scientifica range of products and interviews on our YouTube channel:

www.youtube.com/scientificauk

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Revision 1.2

Tel: +44(0)1825 749933
Fax: +44(0)1825 749934
Email: info@scientifica.uk.com
Web: www.scientifica.uk.com

SCIENTIFICA LTD
Kingfisher Court
Brambleside
Bellbrook Industrial Estate
Uckfield
East Sussex
TN22 1QQ
UK

