

Smooth Operator

New liquid handling technology

Separation of biologics is an important step in the bioproduction process. Take a look at the new tools below that can be used in various separation applications.

Eppendorf completes their Totally Integrated Pipetting System portfolio with **epT.I.P.S. LoRetention**, featuring 'Pearl Effect' surface technology to ensure maximum sample recovery when dispensing detergent solutions. epT.I.P.S. LoRetention meet a strong market demand from users engaged in PCR, real-time PCR, proteomics and molecular biology applications. As liquids containing detergents wet polypropylene, a film remains on a standard tip's surface following pipetting. This leads to loss of precious sample material, increased consumption of expensive reagents, and poor precision and reproducibility. Unlike some manufacturers' low retention tips, epT.I.P.S. LoRetention have no coating or additive which might affect or bleed into the sample. Instead, Eppendorf's 'Pearl Effect' technology renders the tip surface ultrahydrophobic through a modification at the molecular level. As a result, detergent solutions simply roll off completely and sample is not lost. epT.I.P.S. LoRetention can therefore deliver cost reductions of up to 5% – giving significant savings when using expensive reagents such as qPCR and PCR master mixes.

Tecan introduces the innovative new **Cavro Omni Robot**, a general purpose OEM liquid handling robot for a wide range of applications within clinical diagnostics, life sciences and analytical chemistry. Tecan also supplies the easy-to-use Cavro Integration Kit, providing all necessary items to evaluate any Tecan Cavro component straight out of the box. The Cavro Omni Robot offers the same robustness and reliability that is characteristic of all Tecan Cavro products. The robot is designed to be both easy to install and to operate, and its unique modular design allows the Cavro Omni Robot to be configured for many different customer needs. The robot's closed-loop positioning system provides assurance of knowing exactly where the pipetting probe is located at all times, while its high payload

opens up a broad range of capabilities for automation solutions. The Cavro Omni Robot is encased so that all working parts are hidden to provide a finished professional appearance. Using the Cavro Integration Kit, any Tecan Cavro pump or robot can be set up for evaluation in a matter of minutes. The Cavro Fusion Software included in the Cavro Integration Kit automatically recognizes the device, and pumps and robots can even be operated simultaneously via an intuitive graphical user interface. Tecan Cavro OEM components are designed and manufactured to high quality standards, meeting ISO 13485 requirements and Europe's 2006 RoHS directive.

The new **Liquidator 96** is a powerful personal research tool from **Rainin**. The Liquidator 96 adds outstanding features to high-throughput pipetting, with many applications: plate & mother-daughter replication, reformation from 96- to 384-well, ELISA/EIA and more. Liquidator 96 delivers ultimate performance, precision and accuracy, ensuring reproducible results well-to-well and plate-to-plate, without the need for complicated programming or dedicated technician time. This small footprint system with counterbalanced design and comfortable large handle utilizes the patented Liquidator LTS tips to reduce aspirating and dispensing force to a minimum while ejecting all 96 tips is particularly easy.

An **Injection Manifold Mount System**, which enables the precise injection of a fluid into a flow stream, is the latest addition to the **LEE PRODUCTS** range of miniature components. This new system means any ported Lee VHS (Very High Speed) micro-dispense solenoid valve can be mounted so that the outlet port is in close proximity to the flow stream, ensuring the dual benefit of minimal captive capillary volume and increased injected volume repeatability. The two-way solenoid valves on the Lee VHS are acknowledged as having set the standard for applications requiring very precise liquids control down to microlitre and nanolitre



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The Liquidator 96 from Rainin



The Ecofluidic pump from Ismatec



The Thermo Scientific Liquid Handling Module for the ArrayScan VTI HCS Reader

dispense volumes. As a result, this new mount system will be ideally suited to laboratory, biomedical and chemistry applications, but especially for flow injection analysers (FIA). Key features are captive capillary volume of 0.5 μ L and pressures up to 120 psi. Also, Teflon (ferrule) is the only additional wetted material, so the mounting nut and pressure plate do not contact the fluid and the valves can be rotated after installation without compromising the seal. The manifolds are available in one, two, three and four-place standard options. However, for greater flexibility, and to enable future expansion, boss plugs are available to effectively seal any unused valve ports in the manifold. Valves and plugs can be installed and removed repeatedly as required.

The **Ismatec** range of tubing pumps, which offer all the important benefits of peristaltic pumping, has recently been extended with the introduction of their new **Ecofluidic** pump. Ecofluidic pumps are designed for low-cost, simple liquid transfer, such as filling canisters and containers and they incorporate some innovative features. For example, a safety switch to ensure the pump only runs when the pump head is closed, a single, multi-function control knob for simple forward and reverse control and an easy-to-use tubing holder for trouble-free operation. The advantages of peristaltic or tubing pumps are particularly relevant to liquids transfer applications in laboratories and other similar 'scientific' applications. They are ideal for handling sensitive, sterile media as, unlike other types of pump, the liquid is safely contained within the tube, ensuring zero contamination. Also, they are especially suited to low pressure, low flow accurate pumping applications, such as dispensing. Ecofluidic pumps are compact,

and durable and versatile, they are made from stainless steel and PPS and deliver flows up to 3.8lit/min at differential pressures up to 1.5bar. They have a single channel, 3 pump rollers and a speed range of between 80 and 670rpm. Ecofluidic pumps are the latest addition to a range of pumps which includes models delivering flows from 0.001ml/min to 13,000ml/min along with a choice of 10 different tubing materials to suit numerous laboratory dispensing applications. Multi-channel pump head options are available with up to 24 channels, where each channel can deliver independently, yet simultaneously, various liquids at different flow rates. The pumps are suitable for dispensing most sensitive and delicate liquids prevalent in many laboratory, pharmaceutical and biotech applications, or wherever reliable, low-cost pumping with optimum sterility is required.

Thermo Fisher Scientific introduces the new **Thermo Scientific Liquid Handling Module** for the ArrayScan VTI HCS Reader. Synchronous dispense-while-imaging capability, combined with kinetic image capture, a market-leading range of image analysis algorithms, and "on the fly" processing, allow the real-time capture of cellular phenotypes and rapid biological responses. Furthermore, multiple aspirate/dispense options enable dye loading, media replacement, incubation and stimulus addition to be fully automated. The Thermo Scientific Cellomics ArrayScan VTI with Liquid Handling Module provides a best-in-class automated solution for pharmacological studies, including GPCR biology, cell pathway analysis, compound pharmacology and *in vitro* toxicology. Ready-to-go, the Thermo Scientific Liquid Handling Module is fully compatible with all ArrayScan VTI models. Seamless

integration with the ArrayScan software provides full use of industry leading functionality such as intelligent acquisition, multiple protocols and automated plate-handling. All functions are easy-to-use and multiple aspirate, dispensing and mixing are available from four deck locations for simple and highly flexible experimental set up. The Liquid Handling Module is also capable of single tip aspirate to any location. Compatible with 96- and 384-well plates, the module utilizes disposable tips with a dispense volume range of 3 – 200 μ L, and an optional disposable tip wash, reducing the risk of cross contamination. Furthermore, pipetting will not interfere with screening or multiple operator use. The Liquid Handling Module joins a host of popular modular options designed to further increase the flexibility and functionality of the ArrayScan VTI HCS Reader Platform. Also available is the Live Cell Chamber, the Brightfield module, a range of optional objectives, the CataLyst Express Plate Handling Robot and the ApoTome.

Companies mentioned in this Product Focus:

Eppendorf – www.eppendorf.com
 Ismatec – www.ismatec.com
 LEE PRODUCTS – www.leeproducts.co.uk
 Rainin – www.rainin.com
 Tecan – www.tecan.com
 Thermo Scientific – www.thermo.com

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