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Automation Integration

Streamlining your lab

With the myriad tasks that need to be completed in a laboratory, automation can be your best friend. Take a look at some of products below for the newest in lab automation.

Thermo Fisher Scientific has jointly developed its new **Thermo Scientific F5 articulated robot** with **FANUC Robotics**. The F5 has been co-designed and purpose-built for drug discovery applications utilizing FANUC Robotics' core expertise in industrial robotics and Thermo Fisher's extensive knowledge of laboratory automation. Consequently, the new F5 robot combines the superior performance of industrial robotics with the application-driven benefits of a traditional Thermo Scientific robot. The F5 brings a state-of-the-art, 6-axis articulated robot to laboratory automation and features a linear track to service more instrumentation over larger working areas, integrated servo grippers with grip force control for the precise gripping of all plate types and myriad plate storage and peripheral options. A compact controller, together with integrated lab-oriented software, provides reliable performance and increased speed of movement of any plate type and consumable. The ability to set up rapidly with little training further improves operational efficiency.

Porvair announces new microplate sealing workstations that provide cost effective, fully automated plate processing facilities able to handle plates in batches of 100 at a time without manual intervention. Combining the flexibility of a three-position turntable with the convenience of unattended loading and unloading the **TriSeal High Throughput** and **Ultra High**

Throughput (UHTS) systems deliver real productivity and cost savings benefits to busy screening or compound management laboratories. Featuring the tried and tested Scorpion stacker / loader, the TriSeal High Throughput system uses a single Scorpion to both load and unload the TriSeal. As the first plate is sealed inside the TriSeal, a second plate can be automatically added to the turntable prior to the ejected sealed plate being removed by the Scorpion and returned to the 'sealed' stack. A single interface box is used to control the stacker / loader and the TriSeal. In the TriSeal UHTS system, two Scorpion stacker/loaders are employed. In this configuration one Scorpion is dedicated to loading unsealed plates while the second is used only for retrieving and restacking sealed plates. Both Scorpion units and the TriSeal are programmed and controlled from one interface box as before. The TriSeal has been proven to produce an accurate and tight seal on any SBS proposed standard microplate from 5 to 47mm in height. Offering adjustable temperature heat sealing from 50° C up to 185°C the TriSeal is able to operate optimally with most foil and film seals.

Micronic introduces the **Automatic Capmat Sealer** a new easy-to-use device for producing a high integrity seal on 96-tube sample storage racks. With the ever-growing requirement for higher sample throughput in many laboratories the compact Automatic Capmat Sealer enables



The Micronic Automatic Capmat Sealer

significant productivity gains to be made in the sealing of multiple sample storage tubes. Affordably priced, the Automatic Capmat Sealer caps a full (or partially filled) 96-tube rack in less than 5 seconds. Designed to seal all types of sample storage tubes (0.5ml - 1.4ml) the Automatic Capmat Sealer is both easy to install and to use. Robustly designed, the device ensures reliable and reproducible sealing of sample storage tubes each and every time. Operation is safe and user friendly - simply place a rack of tubes into the access tray, position the Capmat or Capcluster on the tubes, close the access tray and push the start button. An innovative controlled pressure system ensures that all tubes are capped in one action with the optimum required pressure to produce a high integrity seal. To complete the operation the user simply has to open the access tray to retrieve the capped rack of tubes.

QIAGEN announces QIAXcel, an innovative automated system that will replace tedious and time-consuming methods of nucleic acid separation in low- to high-throughput laboratories. QIAXcel, which is designed to take the place of traditional slab-gel analysis, is sensitive enough to detect concentrations of nucleic acids as small as 0.1 ng/μl. Nucleic acid separation technologies are widely used for quality control or as an analytical tool, such as to determine the size of DNA fragments, or obtain more information on an organism's genetic composition. Currently, the most commonly used method for nucleic acid separation is gel electrophoresis, using manually poured slab gels. However, this method is highly labor-intensive and exposes users to hazardous chemicals such as ethidium bromide. The



TriSeal High Throughput and Ultra High Throughput (UHTS) system from Porvair

system uses ready-to-go gel cartridges that allow samples to be prepared with minimal hands-on interaction, reducing manual handling errors and avoiding exposure to toxic reagents. QIAXcel can analyze up to 96 samples per run, and 12 protocols can be performed in as little as five minutes. Preprogrammed protocols, in combination with corresponding gel cartridges, allow separation and analysis of a variety of nucleic acids, including singleplex or multiplex PCR fragments, DNA digested with restriction endonucleases, synthesized oligonucleotides, total RNA, and complementary RNA (cRNA). The high detection sensitivity provided by the QIAXcel analyzer enables reproducible results, even with low nucleic acid concentrations. With resolution as low as 3–5 bp, the QIAXcel analyzer delivers greater accuracy than slab-gel analysis and a high degree of confidence in data interpretation.

TTP LabTech introduces the **mosquito nanolitre liquid handler** that uses **disposable positive displacement micropipettes** to facilitate precise compound dilutions and the preparation of assay ready screening plates. Setting mosquito to automatically change the disposable micropipettes between pipetting operations guarantees zero carry-over for sensitive applications. Each micropipette is capable of aspiration, dispense and even mixing for ease of use with serial dilutions. The design of the disposable pipette – only just larger than the maximum volume of 1.2uL and with a stainless steel piston at its core – ensures the pipette is strong enough to pierce foil or plastic seals as a direct function of sample aspiration. Using a disposable piston for positive displacement, rather than a variable air gap, ensures



The new Thermo Scientific F5 articulated robot by Thermo Fisher Scientific and FANUC Robotics

solutions are dispensed accurately and precisely down to 25nL, with no dead volumes, no matter what the liquid viscosity or environmental conditions.

Global Cell Solutions offers to bring both convenience and consistency to assays by custom configuring units of the **BioLevigator** into customers' existing automated platforms with minimal tutorial. Robotic arms handle media changes and each culture is monitored carefully by the BioLevigator units with updates being sent to a main controlling computer. A separate area of the platform can be designated towards assay and processing needs, with robotic arms dedicated to dispensing the cells on GEMs into micro titer plates ready for assay development or cryopreservation. The concept of just-in-time cell culture is a reality with **Global Cell Automation** to improve the continuum of drug discovery and production while complying with the most stringent regulatory environments.

Companies mentioned in this Product Focus:

Global Cell Solutions – www.globalcellsolutions.com
 Micronic – www.micronic.com
 Porvair – www.porvair.com
 QIAGEN – www.qiagen.com
 Thermo Fisher Scientific – www.thermofisher.com
 TTP LabTech – www.ttplabtech.com

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