Overview

The new Agilent RapidFire 400 is an integrated system for fast and rapid sample clean-up and introduction to mass spectrometry (MS) for high-throughput laboratories. The RapidFire 400 reduces sample injection times from minutes down to seconds, and adds optional sample cooling and controller consolidation. It is further designed to be integrated with the Ultivo LC/TQ MS, therefore reducing lab space required to accommodate the system. The RapidFire 400 system includes a new robotic arm plate handler that speeds up plate loading and improves usability.

As users increasingly require innovative systems to help them be confident in the quality of their results, the RapidFire 400 produced by Agilent aims to address this need by ensuring quality is met through the instrument’s key features, such as a large sample capacity and the ability to store samples for longer without compromising integrity. The new RapidFire 400 also provides laboratories with the reliability and accuracy to help them advance their research with an increased pace as for example, testing for forensic compounds can be accelerated with the system.

Key use:

- Typical applications for the Agilent RapidFire 400 include:
  - Pharma/biopharma drug discovery
  - Forensic toxicology
  - Clinical research and metabolomics processing
  - Large numbers of samples while benefiting from the power of MS analysis
Key features:

- **Large sample capacity**
  The RapidFire 400 plate handling stage has been completely redesigned to be compatible with 1536-well plates for greater sample capacity and improved flexibility and improved usability during sample plate introduction. The longer runs can be processed unattended, with storage for over 98,000 samples. It is beneficial for compound screening, verification or identification of samples.

- **Integrated Ultivo LC/TQ MS**
  The overall system footprint has been optimized to accommodate an Ultivo LC/TQ MS without the need for additional space. For labs, this means more bench space and improved usability, as the RapidFire 400 and connected mass spectrometry are now controlled from the same computer.

- **Barcode reader**
  A new barcode reader helps simplify batch configuration by reading samples directly and ensures the integrity and tracking of the sample throughout the whole process.

- **Fast data acquisition**
  Helping unleashing the power of mass spectrometry, the RapidFire 400 reduces data acquisition from minutes down to 8 seconds, through the elimination of chromatography altogether.

- **Optional temperature-controlled plate storage**
  The RapidFire 400 introduces an optional temperature-controlled plate storage, improving support for thermal samples that break down when exposed to high temperatures, without compromising integrity.

Benefits for laboratory managers

The features of the new Agilent RapidFire 400 help achieve users with identifying small molecule and protein drug candidates faster. The benefits of receiving the results faster without compromising integrity produces an increase of productivity for lab managers as they are able to run more samples for longer and at a larger capacity. The system further allows for accelerated testing for forensic compounds, while also building cost-effective workflows for absorption, distribution, metabolism and excretion (ADME) analyses.

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