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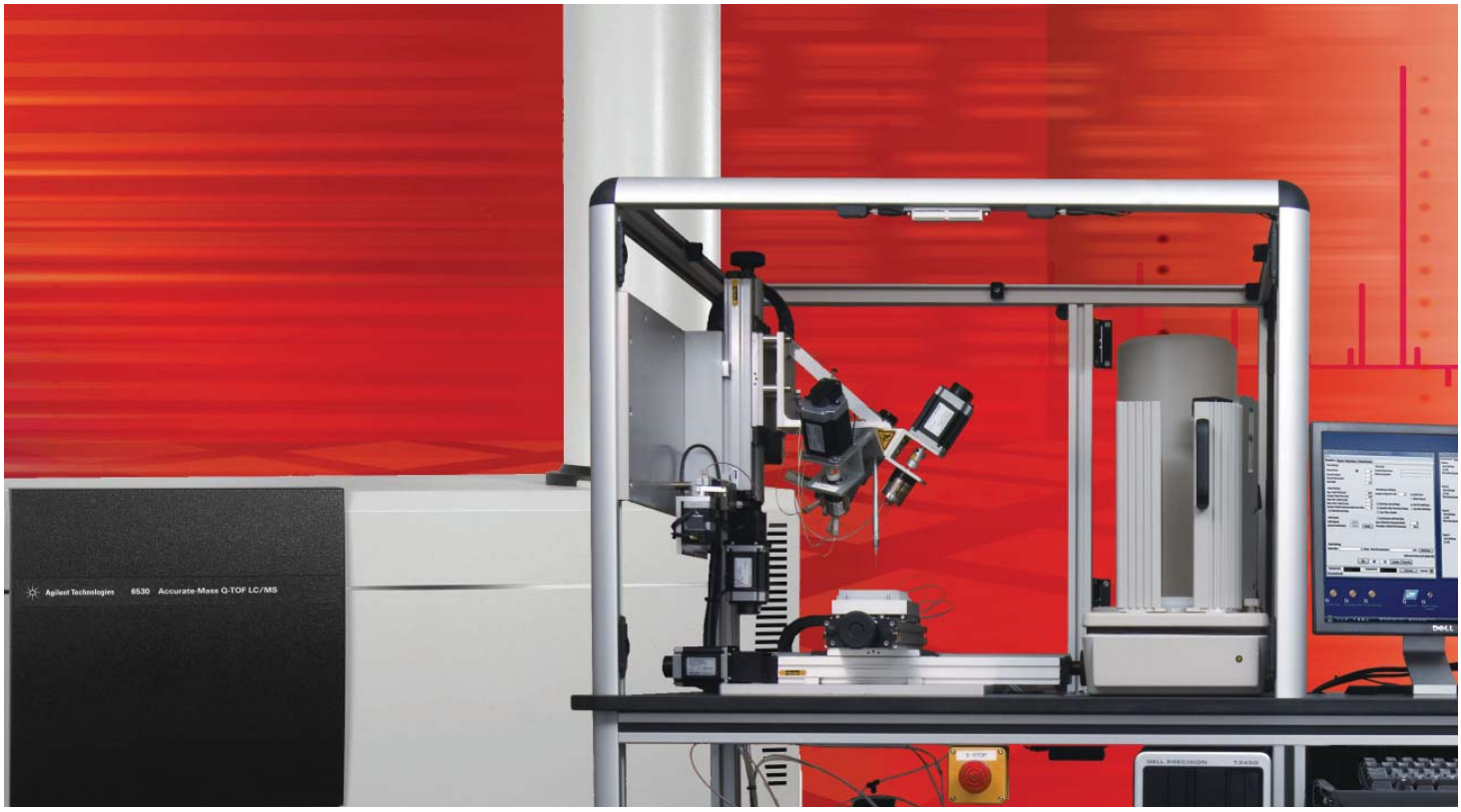
RapidFire®

Platform Profile

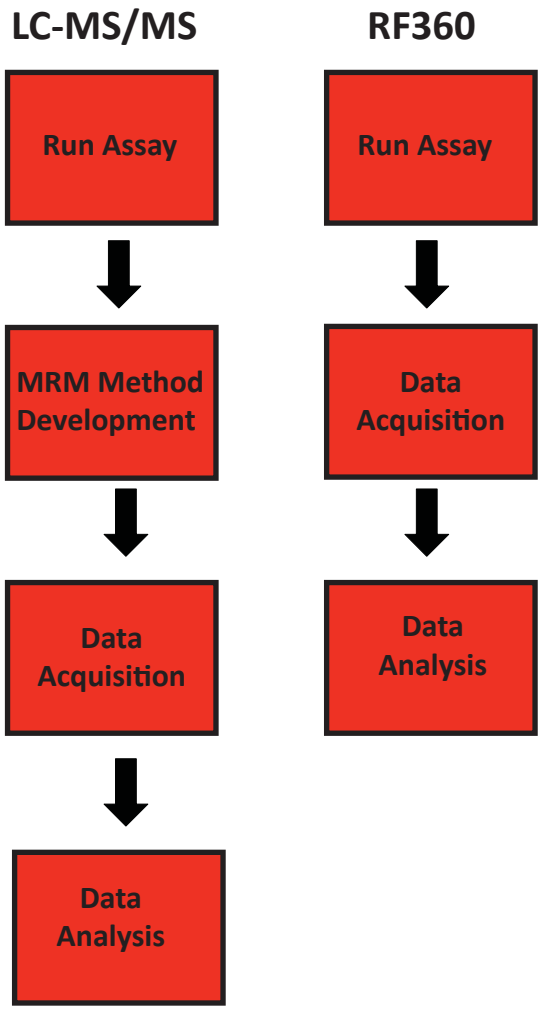
# RF360 High-Resolution System




## Realize truly efficient ADME analysis

Combining the accurate mass capabilities of time-of-flight mass spectrometry (TOF-MS) and the high-throughput processing speeds of RapidFire® technology; the RF360 Hi-Res System revolutionizes *in vitro* ADME analysis. Only the RF360 synergizes the unprecedented sample processing speed of RapidFire with the high resolution of TOF-MS, thereby eliminating the lengthy method development required for the analysis of metabolic stability, plasma protein binding, PAMPA, Caco-2 and other *in vitro* ADME assays. Without the bottleneck of MRM method development during ADME assay analysis, workflow is significantly streamlined and researchers are free to concentrate on other tasks. Data turn-around is achieved at exceptional speeds because the RF360 processes a 96 well plate in about 15 minutes —without any compromise in data quality.

# *Streamline workflows by eliminating MRM method development*




## Elimination of MS method development

Most ADME assays require test compound-specific mass spec MRM method development. With the RF360 Hi-Res System, the proprietary software integration of the RapidFire and TOF-MS removes this time-consuming step from the process, revolutionizing the speed at which samples can be processed.

## Integrated sample prep

RapidFire technology requires no up-front sample preparation, enabling the system to sample directly from quenched assay plates. Off-line solid phase extraction, desalting or any other sample pre-processing is unnecessary.

## Automated cartridge changer

The six cartridge capacity RapidFire cartridge changer enables true walk away automation. Once a cartridge has been used to its full extent, the system automatically switches to the next cartridge. Alternatively, this function facilities the use of multiple cartridge chemistries within a run for certain method development applications.

## Full integration with Agilent TOF

The RF360 fully integrates with Agilent's Mass Hunter software via the RF*Integrator*™ software. Large volumes of data are easily processed and presented in a format that is straightforward and efficient.

## Speed & efficiency

With processing speeds of less than 10 seconds per sample, the high-throughput RapidFire system can process a 96 well plate in approximately 15 minutes. Unattended operation and loading up to 18 plates per run supports laboratory efficiency and helps to eliminate backlogs.

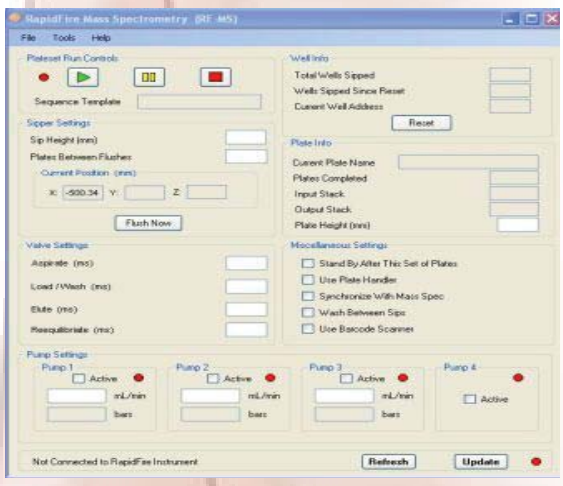
# RF360 High-Resolution System Features

## Hardware Details

The RapidFire System features an end-to-end PEEK flow path which minimizes carryover effects. Washing of the sample interface, or sipper tube, between samples with subsequent aqueous and organic wash solutions further limits sample-to-sample carryover. Sample tracking is accomplished by RapidFire's integrated universal barcode reader – a barcode number is associated with each unique plate file as samples move throughout the system. All procedures are actively monitored during standard operation. The optical sensor and liquid detection functions of the RF360 system ensure uninterrupted instrument operation.

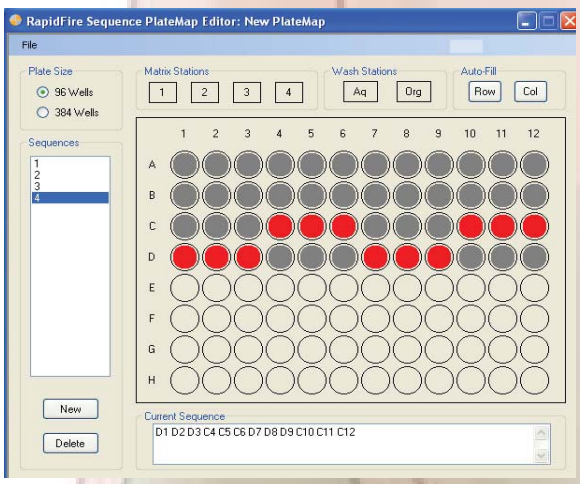
- Weight: 700 lbs (320 kgs)
- Footprint: 60 in wide x 72 in high x 30 in deep (152 cm x 183 cm x 76 cm)
- Electrical: 115V, 15 AMP circuit-North America; 230V, 10AMP circuit-Europe
- Warranty: 1-year parts, labor and travel

## RF Software

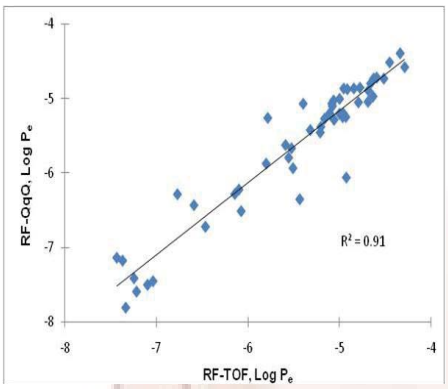


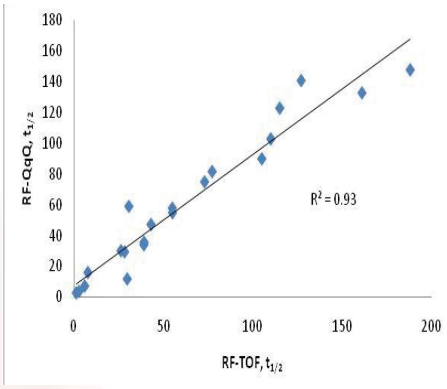

RapidFire control software has a straight-forward and intuitive user interface. The software's pre-developed methods ensure simple and fast configuration and run initiation.

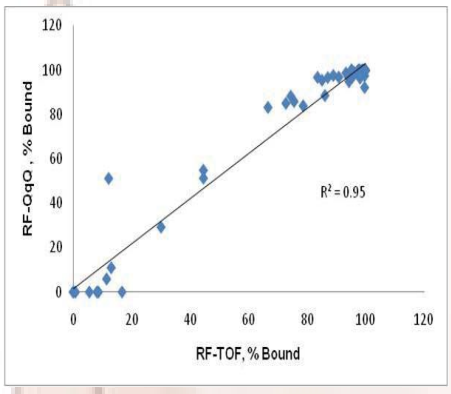
## RF Platemap




The RapidFire platemap editor enables sequence-based functionality. The ability to generate and save custom sequences further enhances the RF360 system's efficiency.

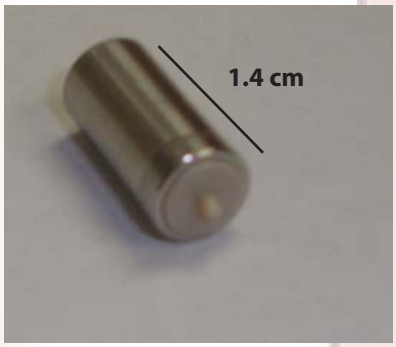


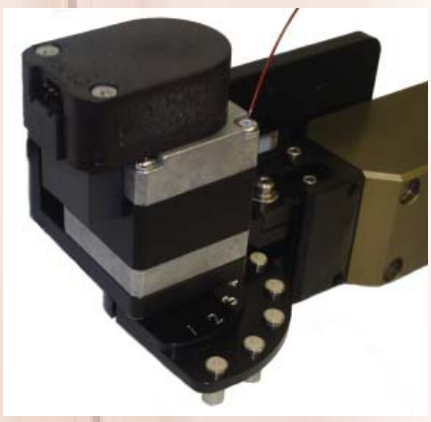



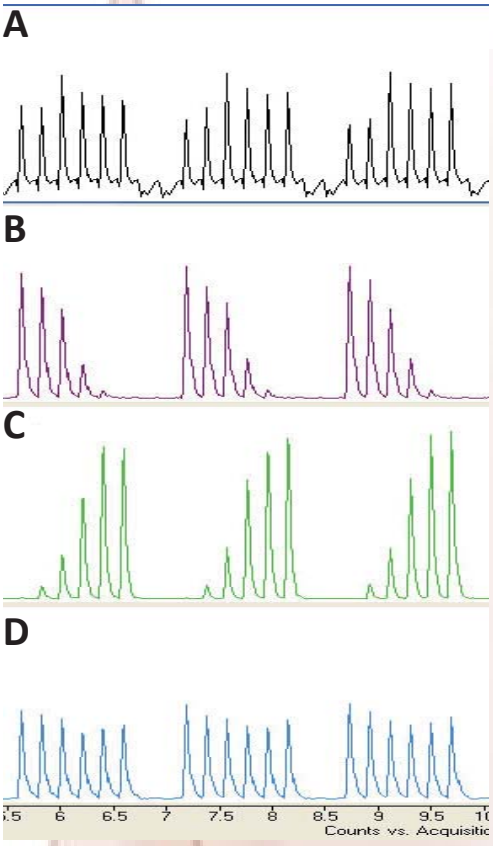

PAMPA, Metabolic Stability and Plasma Protein Binding assays performed with a chemically diverse compound set were analyzed using RapidFire-triple quadrupole(QqQ) MS and RapidFire TOF-MS. The graphs above demonstrate the excellent correlation between data generated using the TOF instrument and that of the QqQ.

| Packing Material | Catalog # |
|---|---|
| C4 | RFCP4A |
| Cyano | RFCP4B |
| C18 | RFCP4C |
| C8 | RFCP4E |
| Phenyl | RFCP4F |
| Client Specified | RFCP4Z |

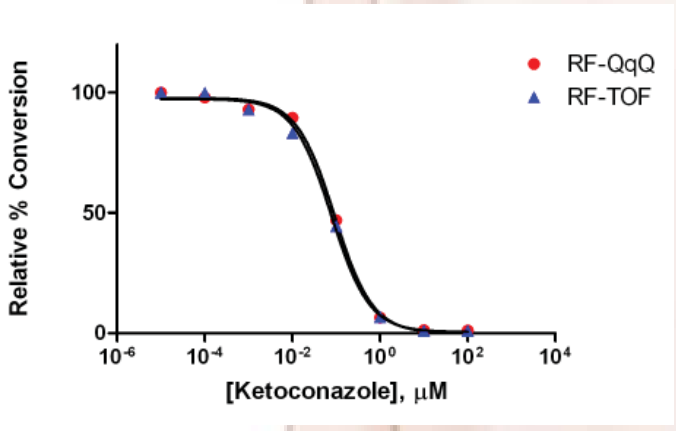


RapidFire cartridges are available in a wide variety of chemistries. Custom packed cartridges are also available. The six cartridge changer enables unattended operation as the system will detect increases in pressure and automatically switch to a new cartridge. Loading the changer with multiple chemistries enables easy RapidFire method development.




Metabolic Stability of Midazolam. The data for each compound of interest was extracted from the TIC of each plate well post-run using accurate masses (A - TIC, B - midazolam, C - hydroxymidazolam, D - internal standard, bupivicaine). Data shown are from triplicate time course experiments (0, 5, 10, 20, 30, & 60 min) using human liver microsomes.




CYP3A4 Inhibition: An $IC_{50}$ curve for ketoconazole, a known inhibitor of CYP3A4 was run using optimized conditions: 0.25mg/ml HLM, 6μM Midazolam, 10 minute incubation at 24°C, quenched with an equal volume of acetonitrile containing internal standard. The calculated $IC_{50}$ values were similar to values reported in the literature.

**The RF360 Hi-Res System accelerates your laboratory workflow by processing ADME analysis at revolutionary speeds. Achieve a competitive advantage by eliminating the bottleneck of MRM method development.**

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**BIOCIUS offers RF360 contract research services as well. For more information, please contact us.**

For information on the RapidFire® 360 System, please contact Sales@BIOCIUS.com