Multiplexing Technology
Thermo Scientific Transcend LX System

- Accelerates results—quadruple mass spectrometer throughput
- Enhances productivity—analyze more samples per hour
- Improves efficiency—mass spectrometer idle < 4%
- Increases flexibility—4 different assays, simultaneously

The massive quantities of samples analyzed by liquid chromatography-mass spectrometry (LC-MS/MS) in pharmaceutical research has driven the search for ways to increase throughput. However, increased throughput is only valuable when not sacrificing quality. Only the Thermo Scientific Transcend LX systems significantly increase throughput by multiplexing LC separations – without sacrificing selectivity or sensitivity and without requiring extensive training.

The LX-2 system doubles the productivity of your mass spectrometer by achieving the throughput of two separate LC/MS systems with a single MS.

Each LX system enables multiple assays to be run parallel into a single MS. This removes expensive downtime associated with setting up each individual assay. Setup is only required once – then you can run the method when needed. The built-in software intelligence ensures operation of multiple channels. If one channel goes down it will automatically move the samples to another channel of the same method.

Mass spectrometers in LC/MS workflows may be productive less than 25% of the time due to the analytes eluting...
for only a small portion of the entire run time. Using an LX-4 system, which has four parallel LC channels, throughput can be quadrupled. Running four methods simultaneously and staggering the elution timings, the MS approaches 100% productivity. With an LX system, the MS is dedicated to the eluting sample, so there is no loss of data or quality.

**Aria Operating Software**

Thermo Scientific Aria operating software schedules staggered, parallel operations of each independent LC system so the user can run a single method or multiple methods simultaneously into one MS. Aria software works with all major mass spectrometer platforms allowing almost any existing HPLC or UHPLC method to be multiplexed on a Transcend LX system.

These unique benefits do not come at the cost of data quality. Because the operation of each multiplexed LC system is staggered and parallel, the mass spectrometer is dedicated solely to a single sample stream during the critical elution step, maintaining sensitivity and data quality for all channels.

Aria operating software controls the autosampler, all pumping operations, valve switching, cleaning and gradient procedures on the Transcend system. The windows-based software is intuitive, so methods can be quickly created. Run a single batch or as many as four different batches simultaneously. The exclusive software allows both Thermo Scientific TurboFlow methods and LC methods to run on one Transcend system, injection to injection. One screen is all you need to set and monitor the method conditions.

Aria OS automates online operation of the Transcend system:

- Seamless LC/MS interface
- Flexible setup and data handling
- Greater reproducibility of data
- Simplified training

**Flexible Upgrade Options**

In most cases, existing HPLC/UHPLC equipment can be re-used when upgrading to an LX multiplexing system. In addition, all components of an existing LX-2 system can be re-used when upgrading to an LX-4 system – to achieve four times the throughput of a single LC system.

For complex samples, labs can upgrade to a TLX system which incorporates TurboFlow™ automated online sample preparation technology, allowing direct injection of complex matrices, such as biological fluids and food. The TLX systems virtually eliminate up-front sample preparation and deliver reliable analysis in a fraction of the time and cost required for offline methods.