



LEAP Microfraction Collector (MFx Collector)

<https://tinyurl.com/LEAPMFx>

info@leaptec.com



Part of the  TRAJAN Family

NO LOSS, NO DRIP™ High-throughput Fraction Collection

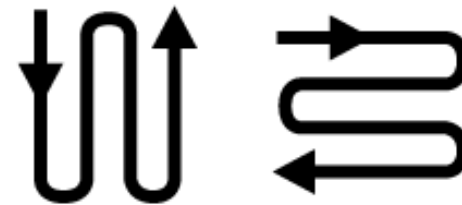
- New, unique fluidics design
- 2s/well collection periods
- 48 plate capacity
- Flexible software
- Dedicated user interface
- Fast, optimized electronics



MFx Collector



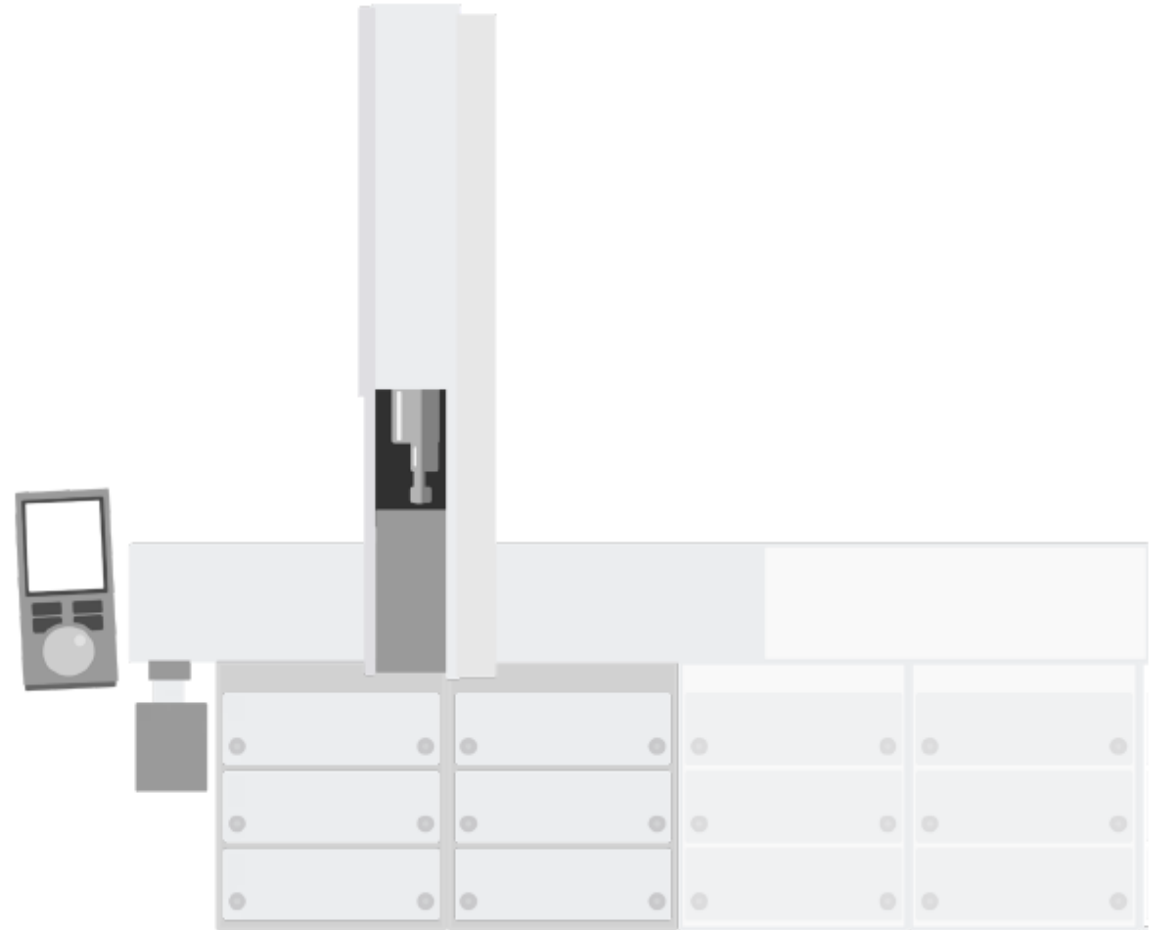
- Collect into plates or tubes
- Can pierce covers and septa
- 4 time windows per sample
- Configurable collection modes



*Options provided for both serpentine
by columns or serpentine by rows.*

Configurable for up to 48 plates

- Deep or shallow well capabilities
- 96 wells, 384 wells or vials
- With or without fraction cooling
- Collect only the peaks of value



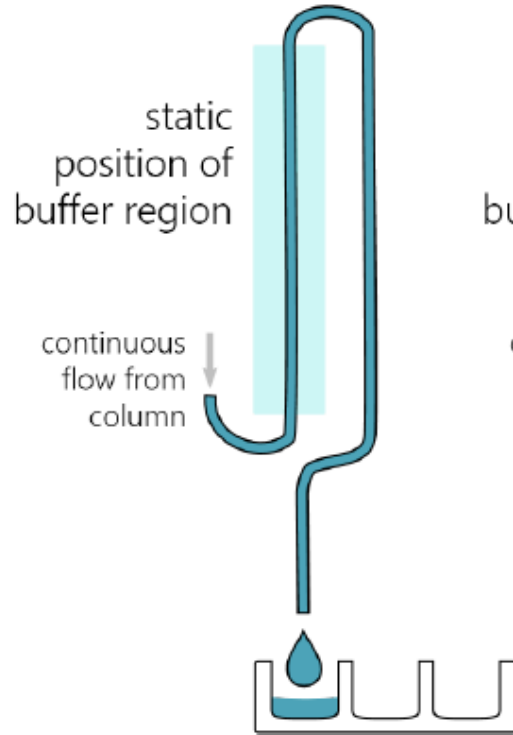
Dynamic Flow Reservoir

- The high-precision and long-lasting Dynamic Flow Reservoir (DFR) enables the LEAP MFX system to collect chromatographic flow while moving between wells, resulting in zero-loss sample recovery
- The design achieves a drip free, zero dead-volume (fully swept) collection without cross-contamination or peak dilution

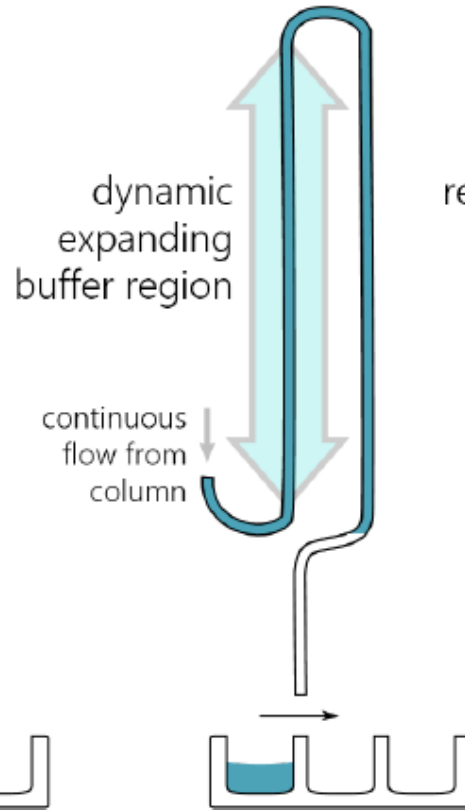


Collection steps

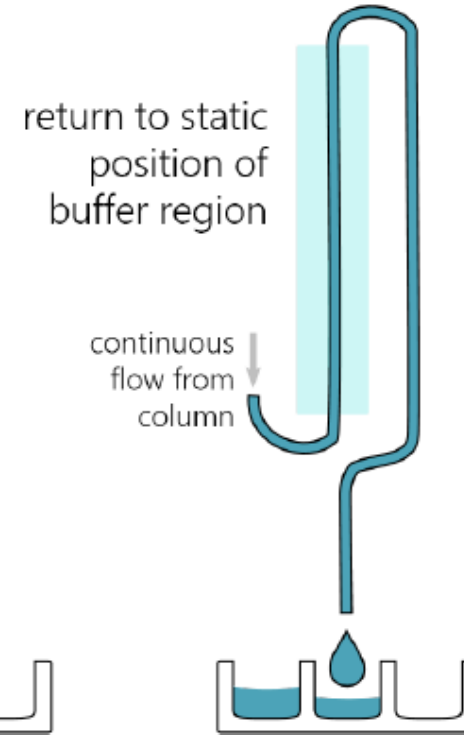
During well filling



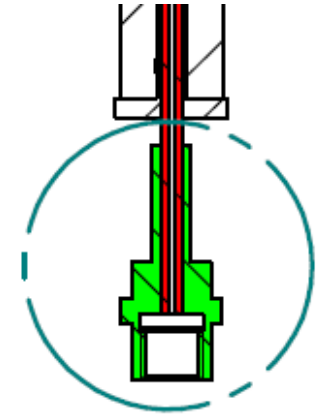
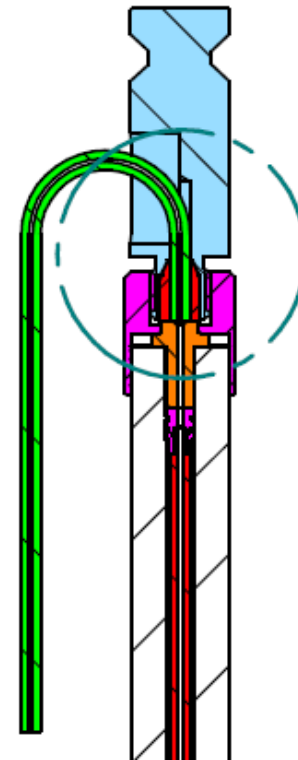
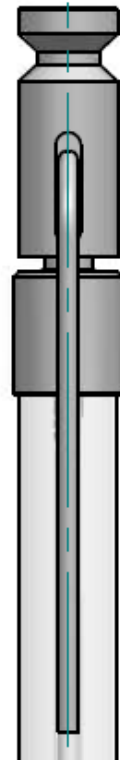
During movement



Resuming well filling



100% of sample flow is collected, with zero-loss.



Hollow Plunger Connector

Streamlined Trajan, SGE, DFR Tool & Connector parts

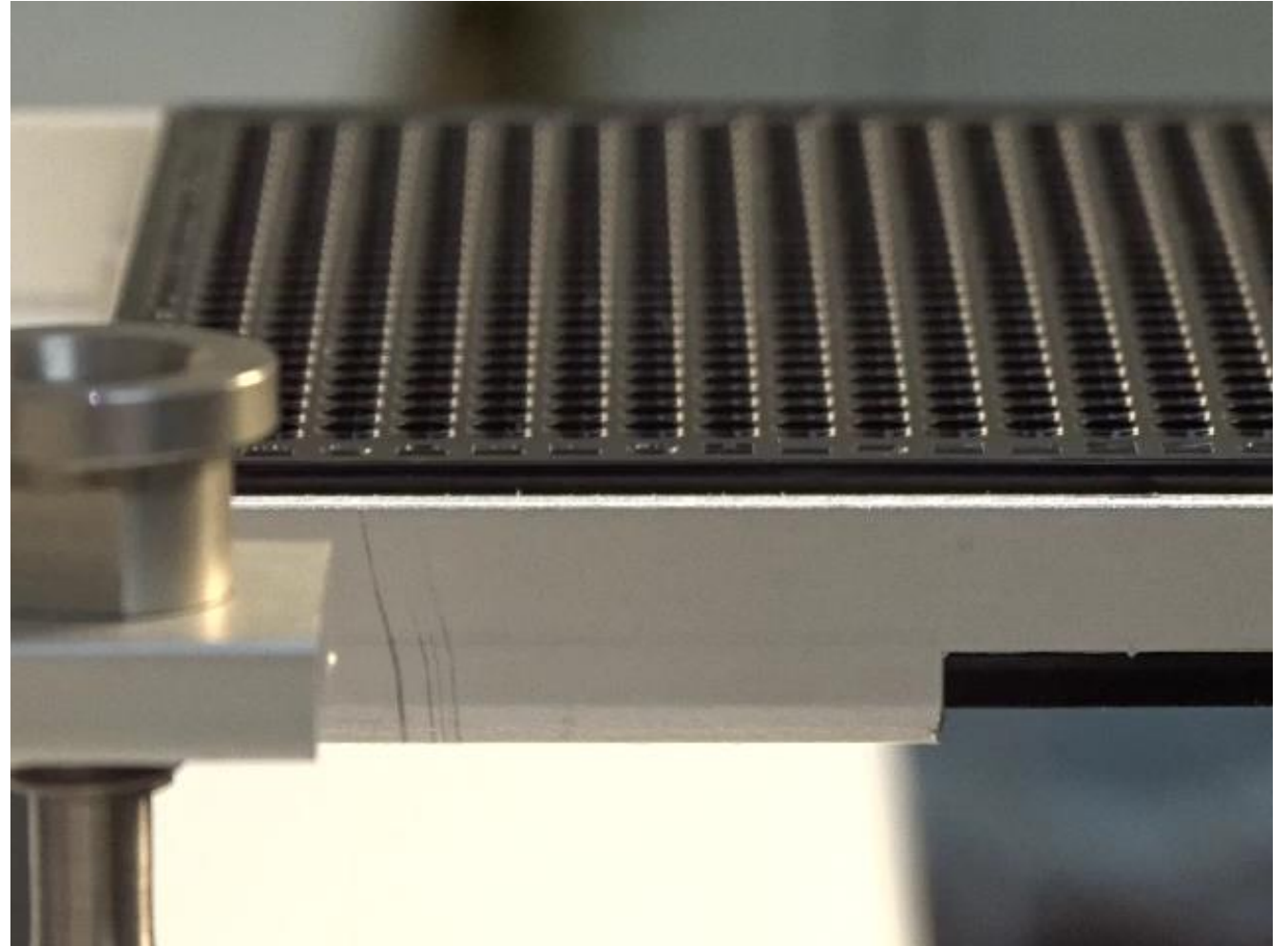
Collection to 96 well plates

- DFR touch down before collection begins to verify plates are present
- <2 second dwell per fraction
- Configurable for 96, 384 wells or vials
- With or without fraction cooling
- Collect only the peaks of value

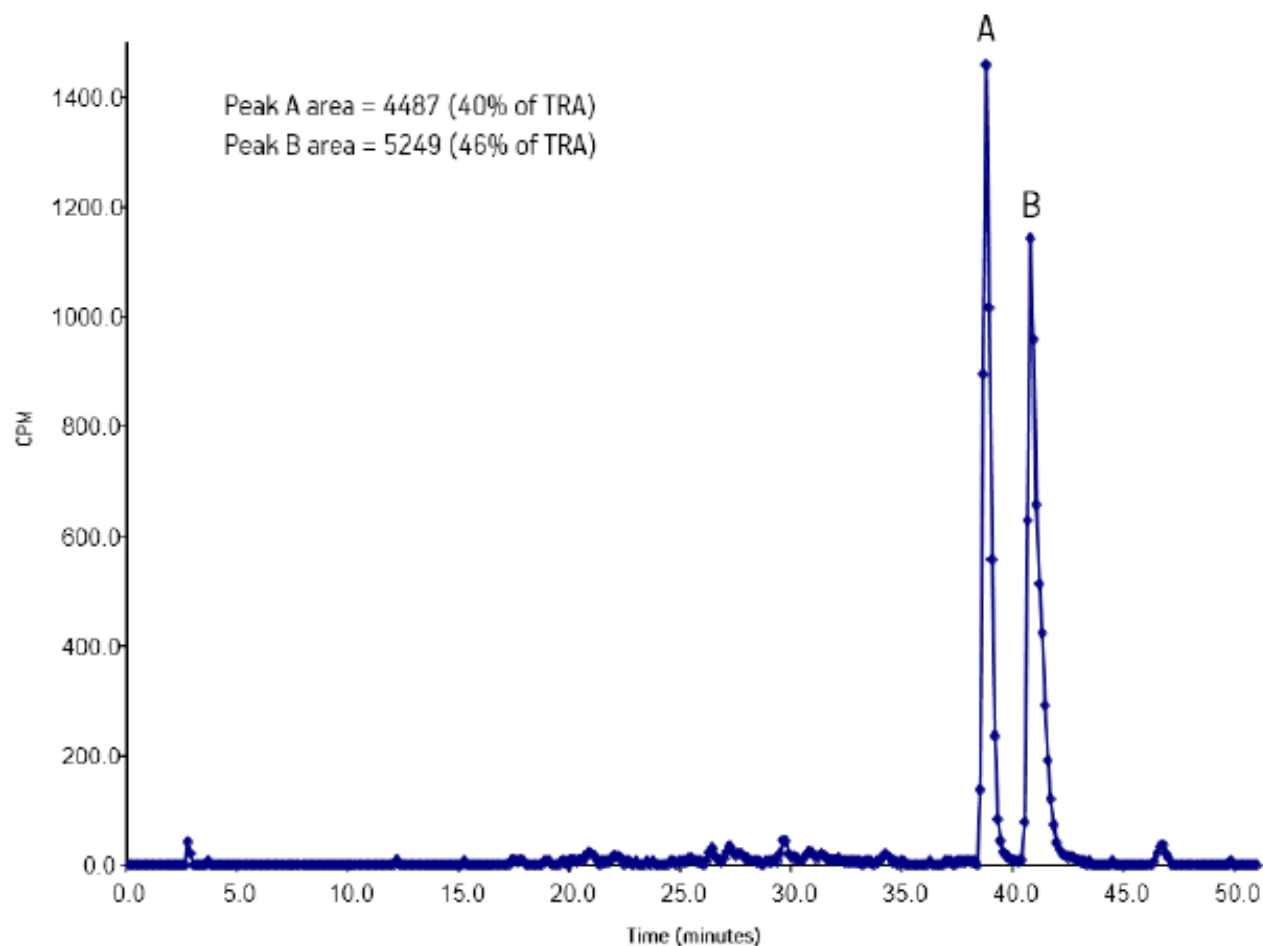


Collection to 384 well plates

- Dwell time is set dependent upon flow rate for maximum data points across peaks
- Fractions not dispensed are retained to the DFR during movement
- No-Loss No-Drip fraction Collection



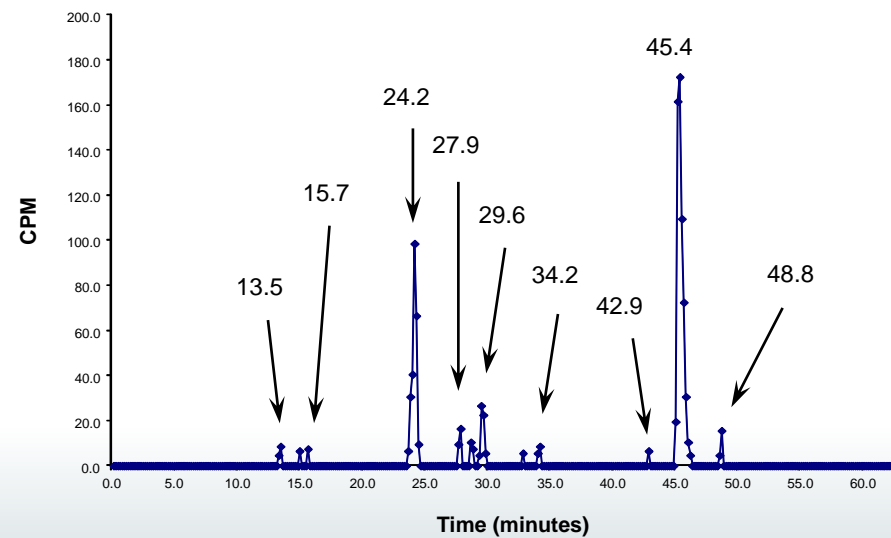
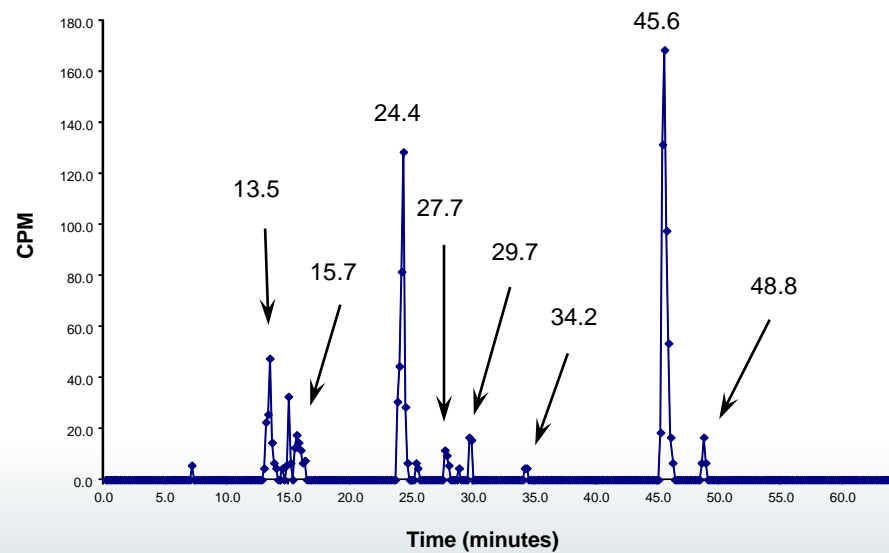
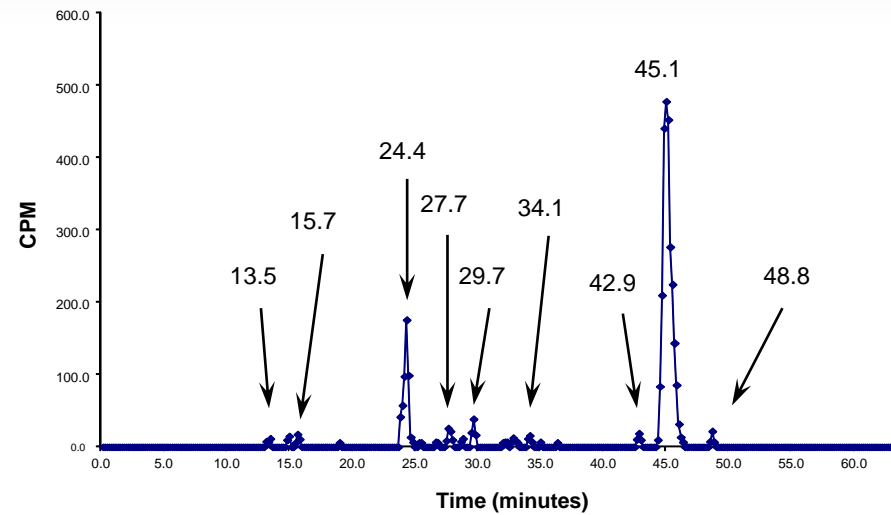
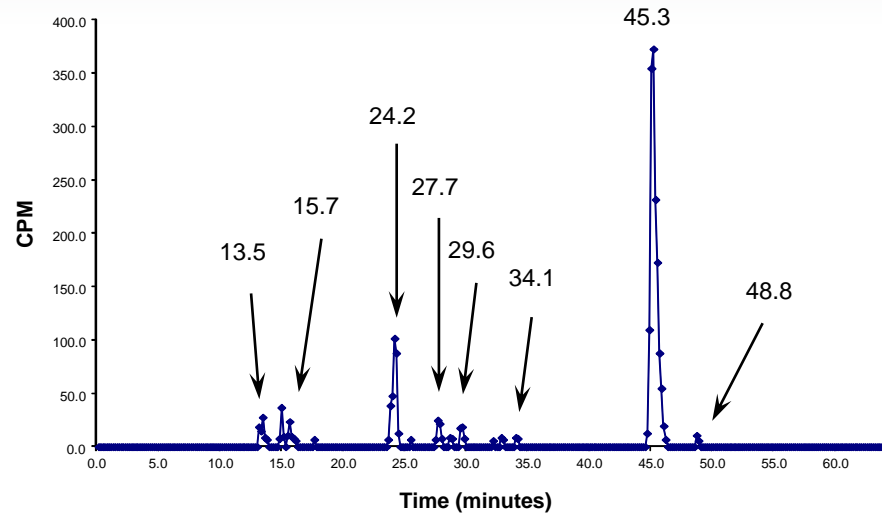
Excellent peak integrity



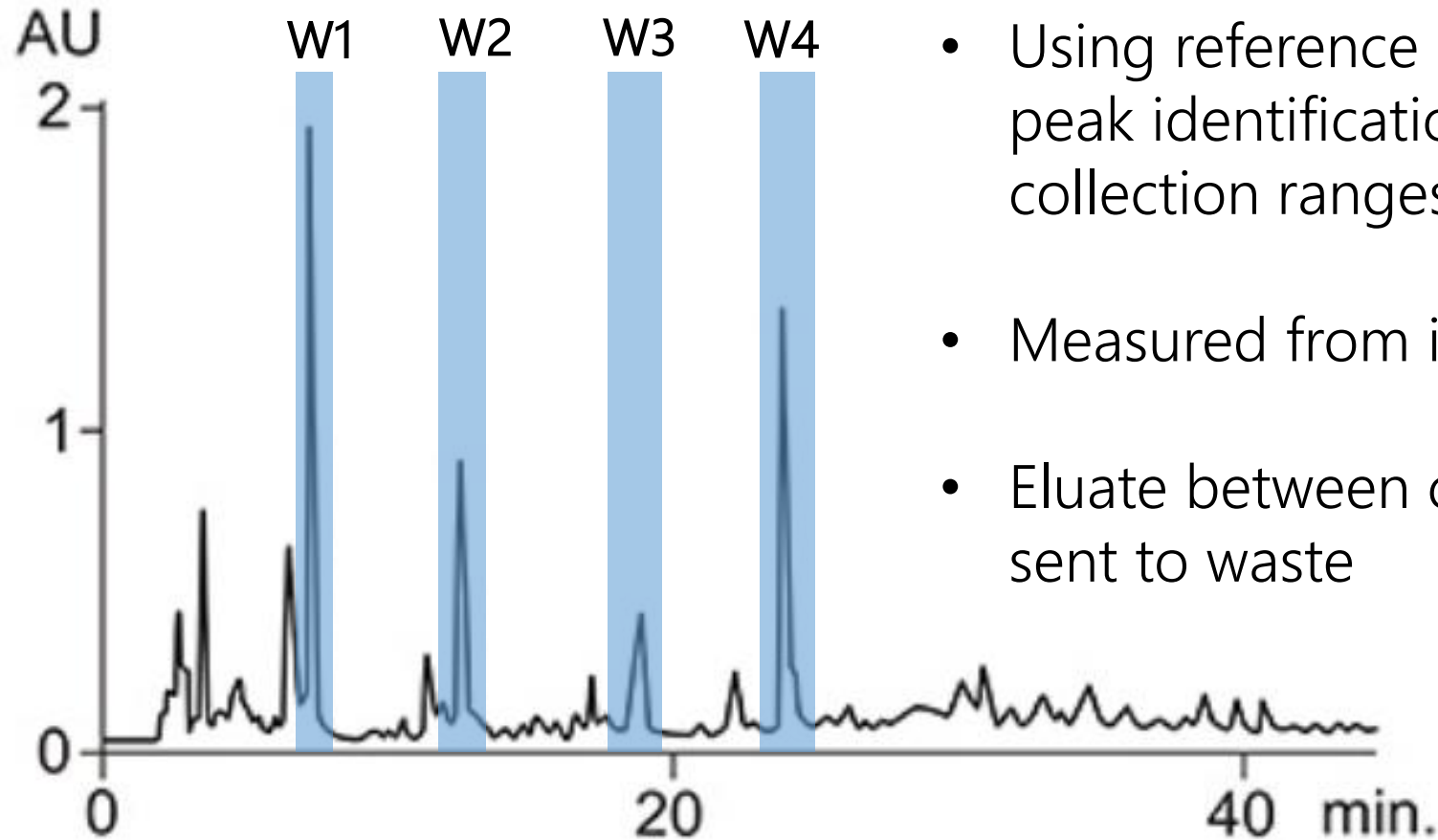
An example of actual sample collection with the MFx Collector, showing baseline resolution and well-defined peaks

- Rapid collection: < 2 seconds/fraction available
- Adjustable for up to 4 separate LC segments, no need to collect all flow

Retention Time Reproducibility of Representative ADME Radioprofiles



Collection Windows



- Using reference chromatography, accurate peak identification allows up to 4 collection ranges per run
- Measured from injection trigger
- Eluate between collection segments is sent to waste

Dedicated Fraction Collection Software

- Completely new, optimally designed software using the powerful Chronos architecture, exclusive to LEAP Technologies
- Highly efficient scheduling
- Logging of user defined sample parameters, flow rates and per well dispense times
- Responsive operation handling routines – parameters update to changes in user input



Easy Software Setup

- Easy method and sample-list creation
- Collect fractions to multiple well and vial types
- Specify collection ranges up to 4 time-windows
- Schedule selective collection of peaks of interest
- Divert unwanted fractions to waste

Method: Flow Rate: $\mu\text{L}/\text{min}$ Number of Segments

Description: Max Dwell: s

Template Method: Tray Type:

Level Information
 Levels Available: Show Info for Level: Plates per Level Available: Wells per Level Available:

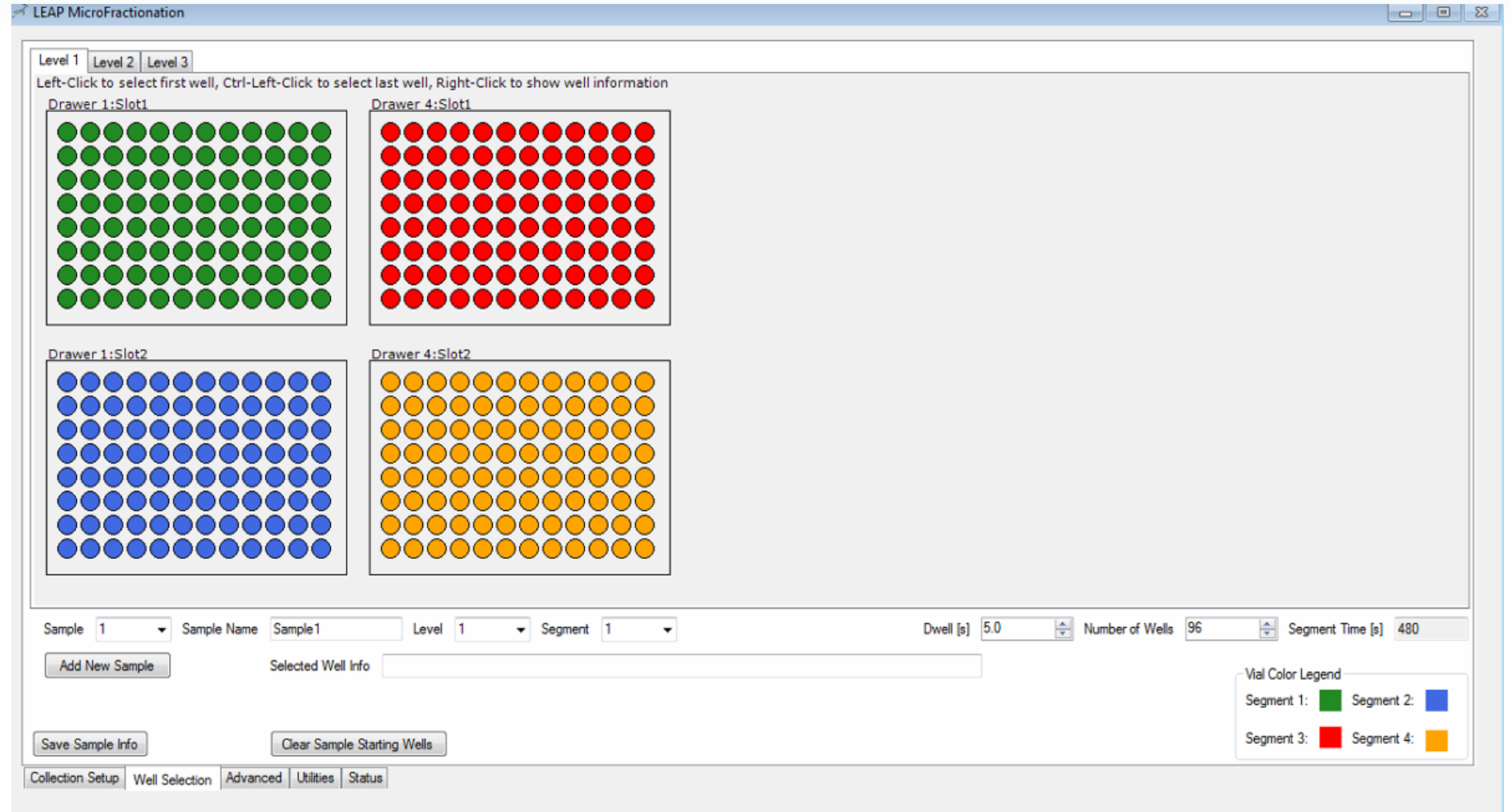
Sample List:

Seg	Segment Name	Seg Time [s]
1	Window1	5
2	Window2	0

Sample Name	Level	PreRun Delay [s]	Starting Well	Dwell [s]	# Wells	Time to Segment	Starting Well (2)	Dwell (2) [s]	# Wells (2)
Sample1	1	5	1	5	48	505	49	5	24
Sample2	1	5	1	5	48	505	49	5	12
Sample3	1	5	27	5	48	505	75	5	12
Sample4	1	5	28	5	48	505	76	5	12
Sample5	2	5	1	5	0	505	1	5	0
Sample6	2	5	28	5	1	505	29	5	0
Sample7	2	5	28	5	1	505	29	5	0
Sample8	2	5	28	5	1	505	29	5	0
Sample9	3	5	28	5	1	505	29	5	0
Sample10	3	5	28	5	1	505	29	5	0
Sample11	3	5	28	5	1	505	29	5	0
Sample12	3	5	28	5	1	505	29	5	0

Visual Method Creation

- Select which trays and tray types are to be used
- Click and drag to define sample collection ranges
- Target the wells without guess-work
- Samples split between rows or locations are maintained with the DFR, with zero loss



Running Status Display

- Real time graphic update and sample status readout
- Sample details passed to log file on a per fraction basis
- Location, time, dwell and volume are all recorded in log files for reference

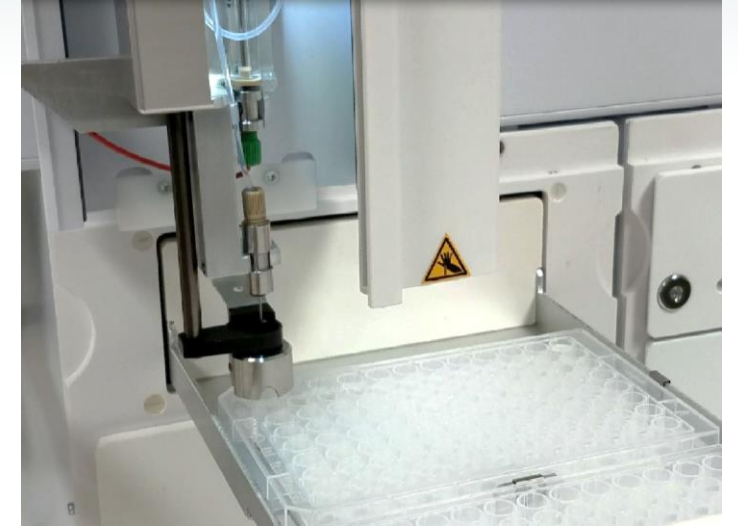


Active running status

Smart features offer convenience & reduce error

Pre check:

- Auto-checking of tray positions before run allows you to have confidence your collection will be successful
- Auto drawer open sensing, correcting human error



Flow Rate & Volume correction;

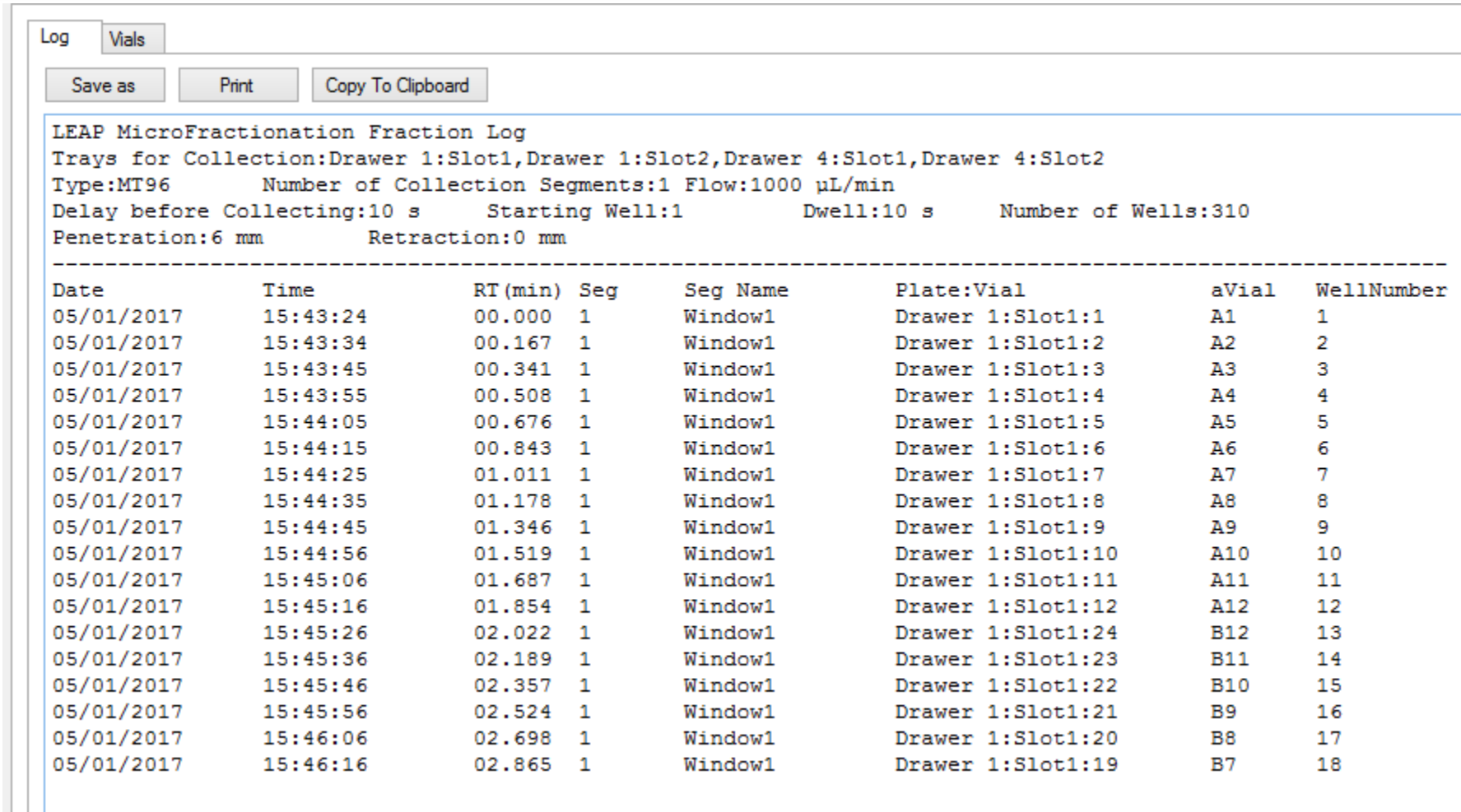
- Built in tubing length/volume and delay calculators help with setup and reduce errors
- Active run graphic display of fraction collection showing real-time status of each fraction position

Tubing Volume Calculator				
Tubing Type	ID (in)	ID (µm)	Max Pressure (bar)	Max Pressure (psi)
PEEKsil Orange	0.00098	25	1724	25000
Tube Length (cm)	Volume (µL)		Calculate Volume	
0				

Delay Time Calculator		
Tube Volume (µL)	Flow Rate (µL/min)	Calculate Delay Time (s)
0.00	0.0000	
Delay Time (s)		

Narrow Window of Collection, Simplified Data Correlation

- Highly reproducible time-point control down to 2 seconds/fraction
- Log files are recorded automatically
- Easy export of log to Excel or CSV for simple data correlation and record keeping



Log Vials

Save as Print Copy To Clipboard

LEAP MicroFractionation Fraction Log
Trays for Collection:Drawer 1:Slot1,Drawer 1:Slot2,Drawer 4:Slot1,Drawer 4:Slot2
Type:MT96 Number of Collection Segments:1 Flow:1000 µL/min
Delay before Collecting:10 s Starting Well:1 Dwell:10 s Number of Wells:310
Penetration:6 mm Retraction:0 mm

Date	Time	RT (min)	Seg	Seg Name	Plate:Vial	aVial	WellNumber
05/01/2017	15:43:24	00.000	1	Window1	Drawer 1:Slot1:1	A1	1
05/01/2017	15:43:34	00.167	1	Window1	Drawer 1:Slot1:2	A2	2
05/01/2017	15:43:45	00.341	1	Window1	Drawer 1:Slot1:3	A3	3
05/01/2017	15:43:55	00.508	1	Window1	Drawer 1:Slot1:4	A4	4
05/01/2017	15:44:05	00.676	1	Window1	Drawer 1:Slot1:5	A5	5
05/01/2017	15:44:15	00.843	1	Window1	Drawer 1:Slot1:6	A6	6
05/01/2017	15:44:25	01.011	1	Window1	Drawer 1:Slot1:7	A7	7
05/01/2017	15:44:35	01.178	1	Window1	Drawer 1:Slot1:8	A8	8
05/01/2017	15:44:45	01.346	1	Window1	Drawer 1:Slot1:9	A9	9
05/01/2017	15:44:56	01.519	1	Window1	Drawer 1:Slot1:10	A10	10
05/01/2017	15:45:06	01.687	1	Window1	Drawer 1:Slot1:11	A11	11
05/01/2017	15:45:16	01.854	1	Window1	Drawer 1:Slot1:12	A12	12
05/01/2017	15:45:26	02.022	1	Window1	Drawer 1:Slot1:24	B12	13
05/01/2017	15:45:36	02.189	1	Window1	Drawer 1:Slot1:23	B11	14
05/01/2017	15:45:46	02.357	1	Window1	Drawer 1:Slot1:22	B10	15
05/01/2017	15:45:56	02.524	1	Window1	Drawer 1:Slot1:21	B9	16
05/01/2017	15:46:06	02.698	1	Window1	Drawer 1:Slot1:20	B8	17
05/01/2017	15:46:16	02.865	1	Window1	Drawer 1:Slot1:19	B7	18

Common Microfraction Applications

- ADME
- Metabolomics
- Scintillation counting
- NMR & Xray sample preparation
- Offline analysis of standard LC flow
- Constant manufacturing analysis
- Reactor bioactivity monitoring

Summary of LEAP MFX Capabilities

- High sample capacity - configurable up to 48 trays
- Unique fluidics design; lower dead volume and better peak integrity
- High reproducibility of fraction volume
- Greater flexibility in collection methods with up to 4 time windows
- Sub-ambient temperature control with drawer sensors
- Intuitive software interface – easier to implement collection experiments
- Real time graphic display of collection
- Safeguards against incorrect loading of plates
- Serviceability – DFR components are easy to replace



Designed for Safety and Serviceability

- Allows the use of sealed plates or vials for limiting exposure to hazardous samples
- Sub-ambient storage and large capacities for overnight runs
- Well-plate sensing and no-drip features ensure no-leak dispensing
- Easy to access for quick replacement of DFR components and dispensing needles
- Tubing replacement kits come pre-cut and with all required fittings and ferrules
- CTC – certified service



Specifications

Maximum flow rate	> 5 mL/min
Minimum dwell time	< 2 seconds/well
Collection formats	96 and 384 well plates (deep and shallow), 2 mL and 10 mL vials/tubes
Sealed collection	Can pierce sealed plates and sealed vials
Computer requirements (minimum)	Operating system: Windows 7 SP1 (32 or 64 bit), Windows 8.1 or Windows 10. Hardware: Intel Dual Core 2.0 GHz, 60 GB hard disk, 4 GB RAM, dedicated ethernet port or free location on local private network switch with 1 free USB port for security dongle. Monitor: 1366x768 (recommended 1440x900 or 1920x1080).

	MFx Collector	Competitor 1	Competitor 2
Zero-loss collection (doesn't divert to waste)	✓	x	x
Cooling to 4°C	✓	✓	x
Maximum capacity:			
Deep well plates	24	4	8
Shallow well plates	48	4	8
Vials/tubes	24 trays (up to 1296 tubes/vials)	215 tubes	768 tubes



LEAP MFx Collector, no-drip, no-loss microfraction collection

<https://tinyurl.com/LEAPMFx>

info@leaptec.com

Built on the  SYSTEM



Part of the  TRAJAN Family