

# Luxon Ion Source<sup>®</sup>

Enter a new era of high-throughput mass spectrometry



Phytronix

Compatible with  
 SHIMADZU

# Bring your lab up to speed

## Based on the patented **LDTD<sup>®</sup>** technology

Couple the **Luxon Ion Source<sup>®</sup>** to your Shimadzu mass spectrometer and reach an analysis runtime of less than 1 second. This apparatus is the second-generation sample introduction and ionization source based on the **LDTD<sup>®</sup>** technology for mass spectrometry.

Versatile multicomponent system adjustable to your bench setup:



Stack up to 10 plates or use a robotic arm to insert the LazWell plates in the Luxon with our Lazwell infeed System

Stay informed on the progress of your analysis with these flashy LEDs

Stretch or collapse the Luxon to fit to the height of your mass spectrometer

Easily move it around to swap out instruments


# Your mass spec workflow has never been this fast


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Here's what you get by switching your LC or immunoassay workflow to **Luxon Ion Source**<sup>®</sup>


 Super fast ROI (days rather than months)


 Plug-and-play

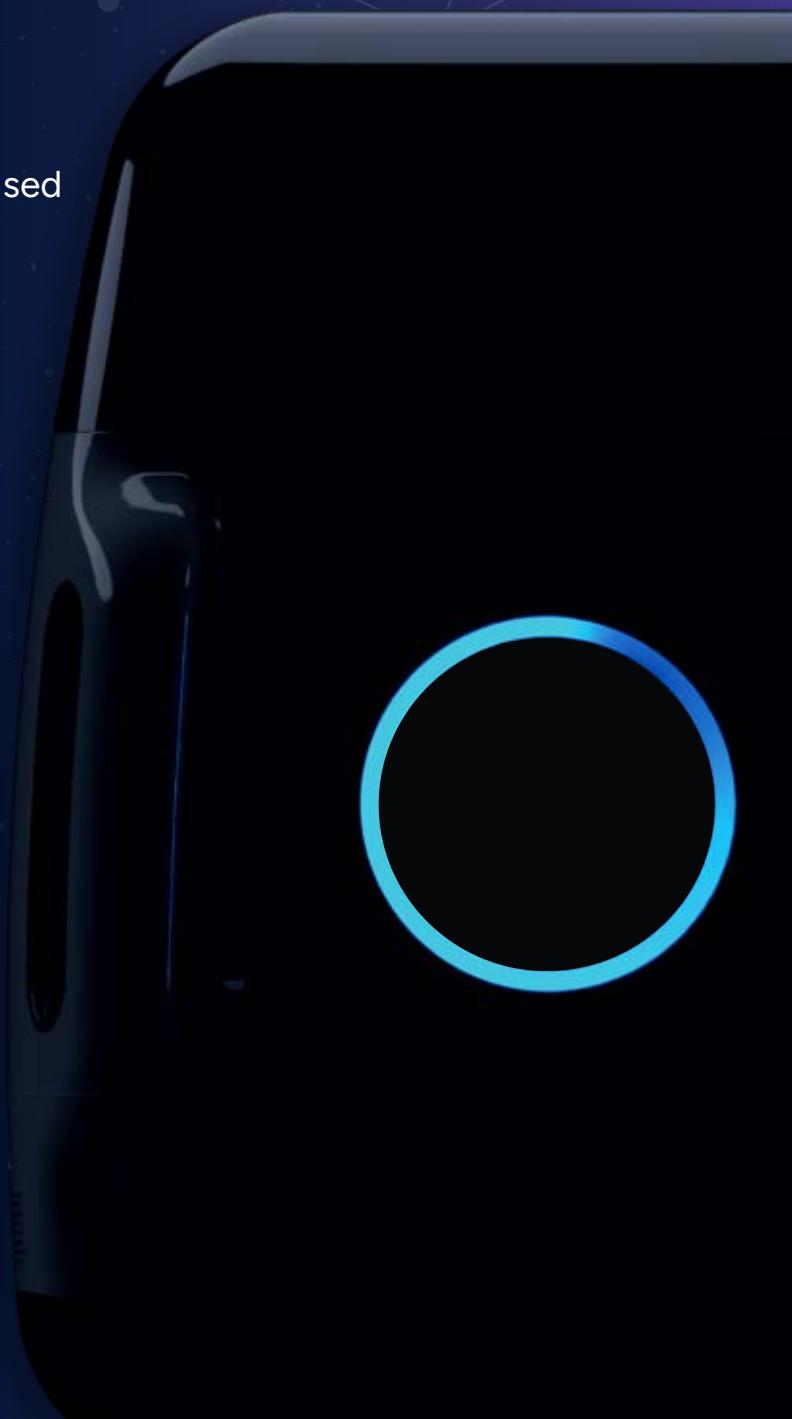
 10x less solvents and consumables used

 Robust process

 Possibility for 24/7 runtime

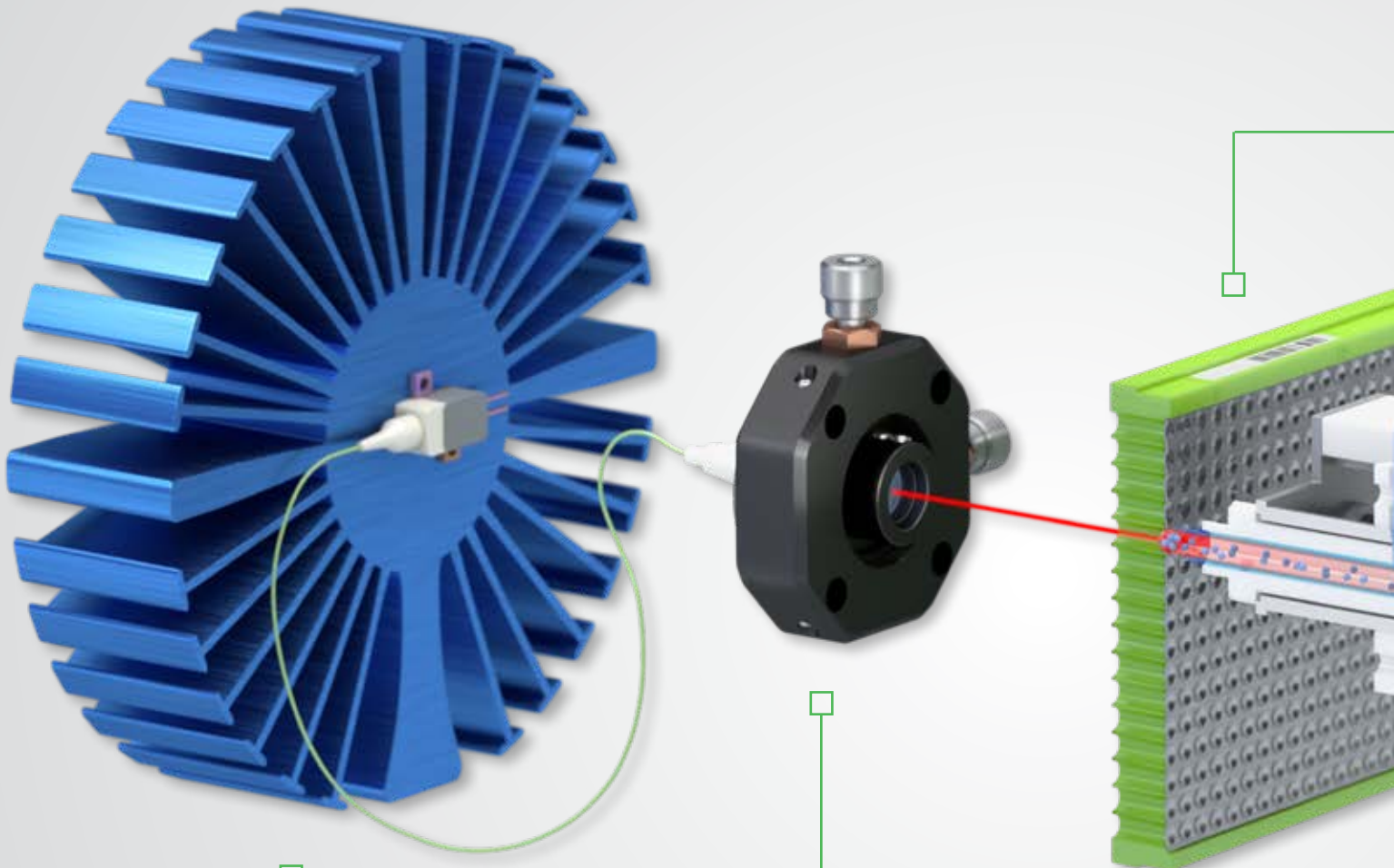
 Virtually no false positives

 As sensitive as your LC analysis



# With that kind of speed...

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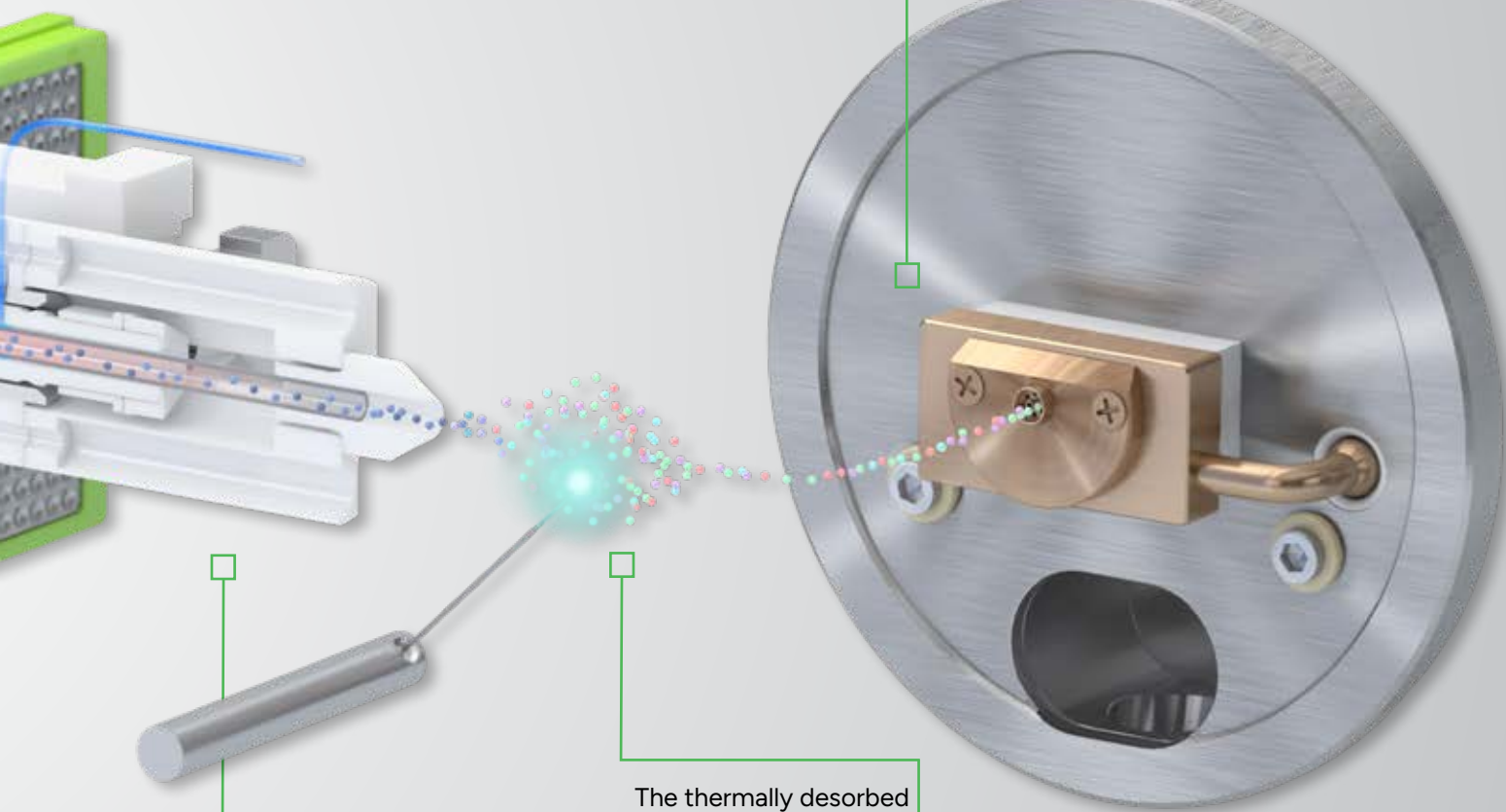
A cooled Fiber-Coupled Laser Diode Array and a heatsink to disregard room temperature variations.

The Fiber Optic Collimator allows unmatched thermal uniformity at the back of the LazWell plate without having to directly interact with the sample.

# ... you'll be laughing your mass off!

A low-volume sample (50nl-10 $\mu$ l) is deposited on the LazWell plate and then fully dried. The patented LazWell design allows for the formation of a precisely centered nanolayer on the well surface.

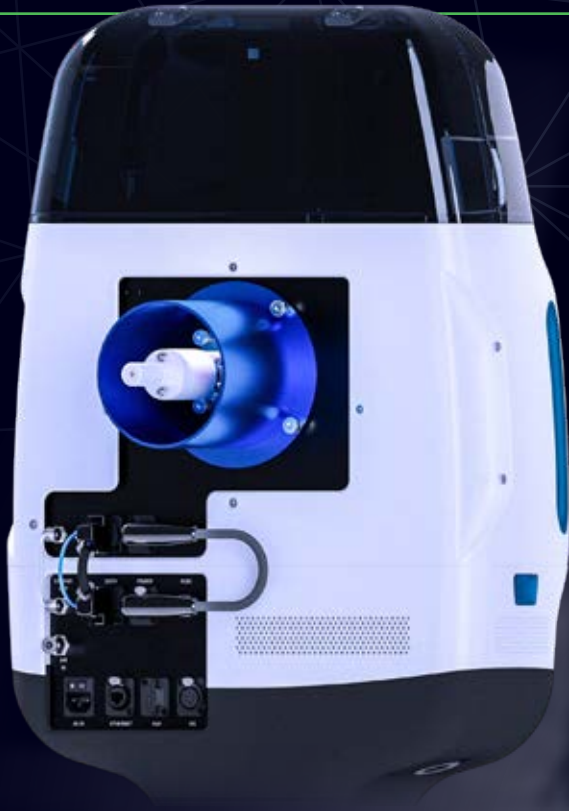
High-efficiency protonation and strong resistance to ionic suppression characterize this type of ionization and is the result of the absence of solvent and mobile phase.



The rapid and robust pneumatic design ensures that the gas-phase neutral molecules are carried from the LazWell plate to the mass spectrometer inlet while sealing the transfer tube to avoid any sample loss.

The thermally desorbed neutral molecules are carried into a corona discharge region to undergo ionization.

# Other features of Luxon Ion Source®



## Plug-and-play

*Light-weight and easy to use*

With the Luxon Ion Source® you can now easily switch between your LC and Luxon within minutes! It is simple to install and remove which allows you to run your mass spectrometer and analyze your data as usual. The Luxon Ion Source® provides a robust walk away solution.

## Traceability

*Luxon follows your samples for you*

The Luxon Ion Source® contains an incorporated barcode reader for an optimal traceability of your samples which makes it an ideal solution for regulated environments. The Luxon Ion Source® driver is supported by most Shimadzu® mass spectrometers.

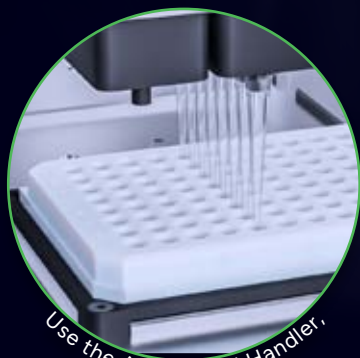


All *LazWell™* plates are automatically scanned by Luxon to insure traceability

## 24/7 Process for mass spectrometry

*Luxon takes care of your samples while you're away*

The Luxon Ion Source® can be coupled with a robotic arm and a liquid handler for a completely automated solution, allowing you to run millions of samples without interruption and in a record time. It can also be delivered with a fully-integrated software workflow solution - from liquid handling batch files to the LIMS.



Use the Azeo Liquid Handler,



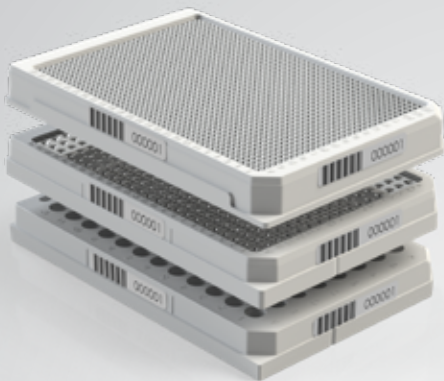
pair it with a robotic arm



and let it feed your samples to Luxon Ion Source®

# LazWell™ plates

Our patented LazWell™ plates work exclusively with the LDTD® technology to provide accurate and reproducible results at incredible speed with microvolumes to decrease the cost per sample dramatically. Manufactured in a highly controlled environment, all LazWell™ models are barcoded on three sides ensuring a perfect fit with the volume-dispensing precision and sample traceability of conventional liquid handling systems.

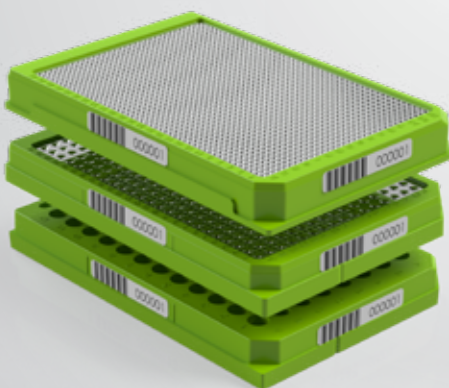
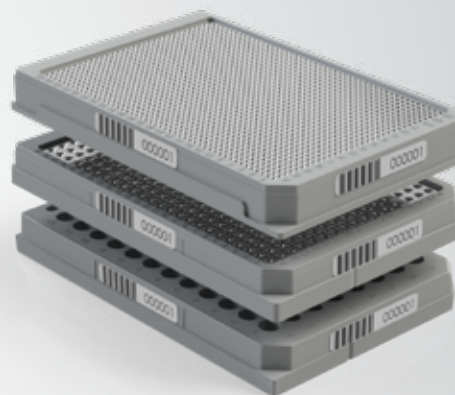


## LazWell™

The LazWell™ plate is the standard model used in most analysis. As for all other types of plates, it is available in 96-, 384- and 1536-well formats.

## LazWellAD *Acid Desorption*

The LazWellAD (Acid Desorption) plate is used to desorb acidic molecules found in loaded matrices. It is very efficient for drug tests.



## LazWellIDEC

### *Desorption Enhancing Coating*

The LazWellIDEC (Desorption Enhancing Coating) plate is designed to enhance analysis of polar compounds, whether acidic or basic.

Models	Lazwell™	LazWellAD	LazWellIDEC
Luxon SH-960 fits with	LazWell96	LazWell96-AD	LazWell96-DEC
Luxon SH-3840 fits with	LazWell384	LazWell384-AD	LazWell384-DEC
Luxon SH-HTS fits with	LazWell1536	LazWell1536-AD	LazWell1536-DEC

# Combine the Luxon Ion Source®

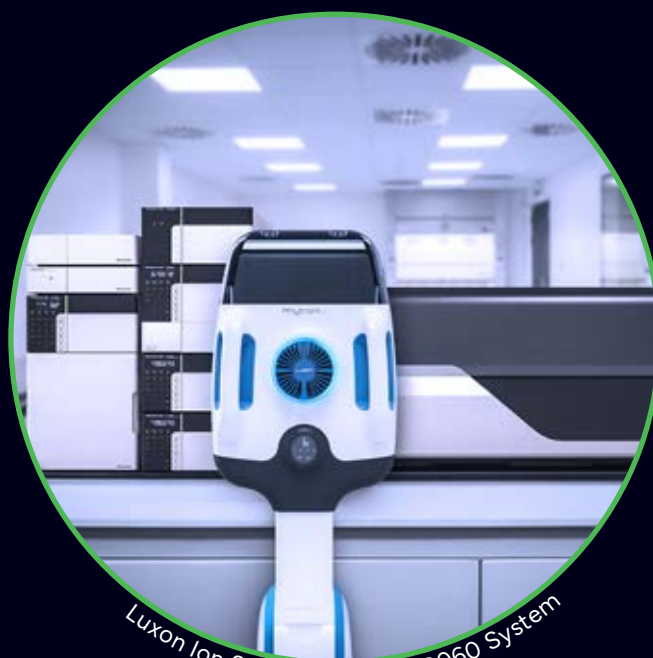
with Shimadzu's Triple Quadrupole LCMS-8050, 8060 or 8060NX and Q-TOF Mass Spectrometers

The Luxon Ion Source® is fully integrated on Shimadzu 8050, 8060, 8060NX and Q-TOF mass spectrometers and is **the ultimate solution** for ultra high-throughput in quantitative and qualitative analyses.

**Luxon Ion Source® is completely integrated on :**

- **Triple Quadrupole LCMS-8050, 8060 and 8060NX Mass Spectrometers:** Combine the speed of the Luxon Ion Source® with the sensitivity of Shimadzu® Triple Quadrupole mass spectrometer and attain unmatched runtime without compromise for your lab automation.

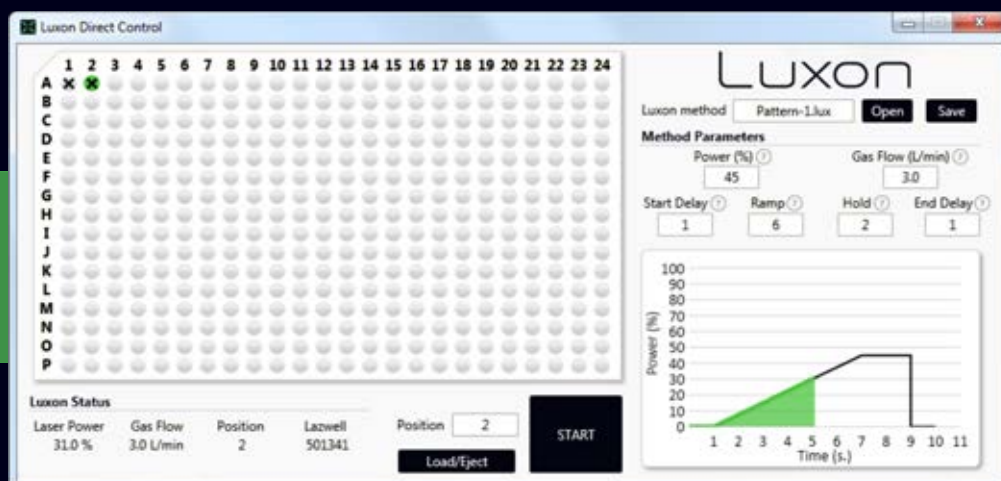
- **Q-TOF Mass Spectrometers:** The disruptive power and speed of Luxon Ion Source® redefines the high resolution accurate mass Q-TOF. With Luxon Ion Source®, you no longer need to tune MRM transitions.



Luxon Ion Source® / LCMS-8060 System

## Luxon Direct Control Software

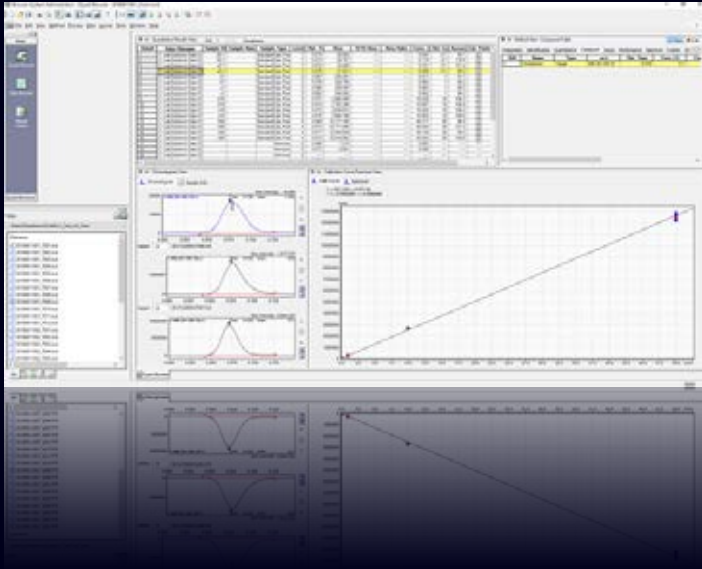
Our Direct Control software offers a fast track for manual tuning while developing a method. Watch your peak take shape in real time!





# Complete integration within Shimadzu Software

Luxon Ion Source® was not only designed to be compatible with Shimadzu's MS hardware, but also to be fully controlled by Shimadzu's software through our Luxon driver.

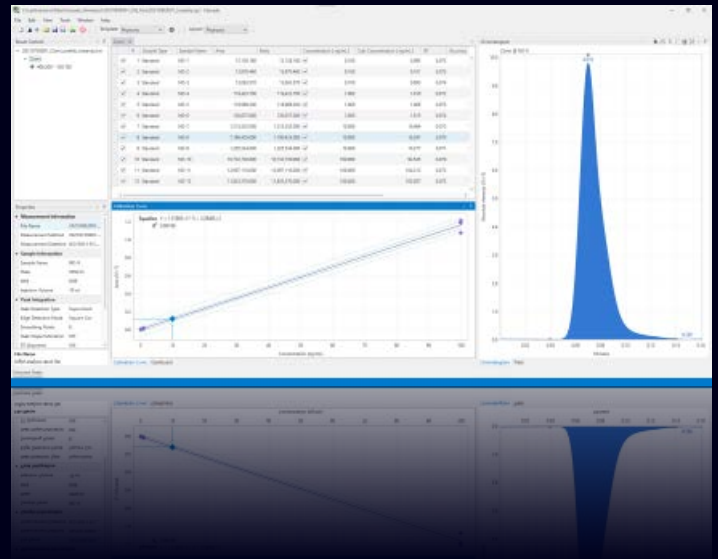


## LabSolutions® Software

Shimadzu® LabSolutions® Software is the single point of control for the Luxon Ion Source®. Your Luxon batch launches will be identical to your HPLC's.

## Cascade for LDTD® Technology Software

The new Cascade for LDTD® Technology Software offers versatility to function at the highest speed possible with the Luxon Ion Source® by using a single run to process a whole LazWell™ plate.



## Exclusive to Shimadzu

The patented Triple Ion Source system allows you to switch from LC to Luxon with a simple click of a button through the System Exchange module from Shimadzu.

# Luxon Ion Source® can be used for various applications such as:

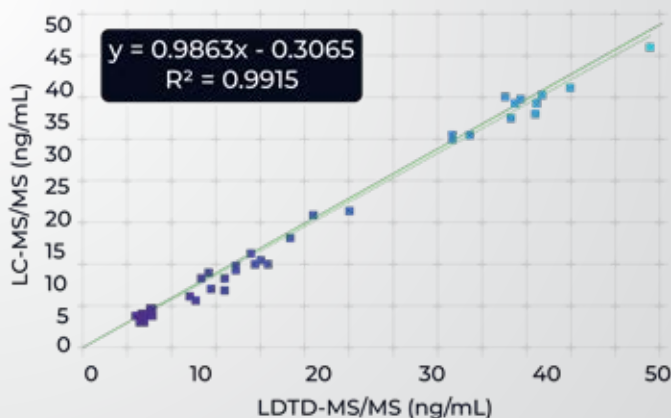
## Clinical Applications

*Immunosuppressants, anti-retroviral, therapeutic drugs, biomarkers etc.*

The Luxon Ion Source® is a robust, rapid and precise solution with your Shimadzu mass spectrometer for clinical applications.

It is capable of completing the quantification of hundreds of samples, in less than 30 minutes, of a multitude of molecules in various matrices such as :

- Testosterone in plasma
- Vitamins A, C and E in serum
- Cotinine in human plasma
- Biomarker creatinine in serum
- Immunosuppressant drugs



# Up to 3600

Nb of samples/hour

# 17x

Less expensive per sample than EIA

# 2000%

Faster than EIA

## Forensic and Toxicology Applications

*Pain management, doping, forensic, newborn testing and more...*

The Luxon Ion Source® is a quantitative solution for forensic and toxicology laboratories thanks to its many features such as traceability, runtime and low-volumes required for analysis.

Perform quantitative analysis of over 120 compounds with Luxon Ion Source® such as :

- Cannabinoids (Natural and Synthetic)
- Street Drugs (Heroin, Cocaine, etc.)
- Pain Management Drugs (Fentanyl, Oxycodone etc.)
- Antidepressant Drugs
- Explosives

"We have used the Phytronix LDTD source for several years and have reported out over a 1,000,000 combined tests on LDTD/MS-MS instruments, and of course have submitted many proficiency samples with never an error [...] it made a 16-hour run by LC decrease to a 15-minute run for 96 samples, and greatly decreased sample volumes required, so fewer QNS samples ..."

Director of Toxicology Lab

## The more you know...

You can use the Luxon Ion Source to analyze a variety of matrices:

- Hair
- Urine
- Umbilical Cord
- Nails
- Blood
- Meconium
- Swabbed Surfaces

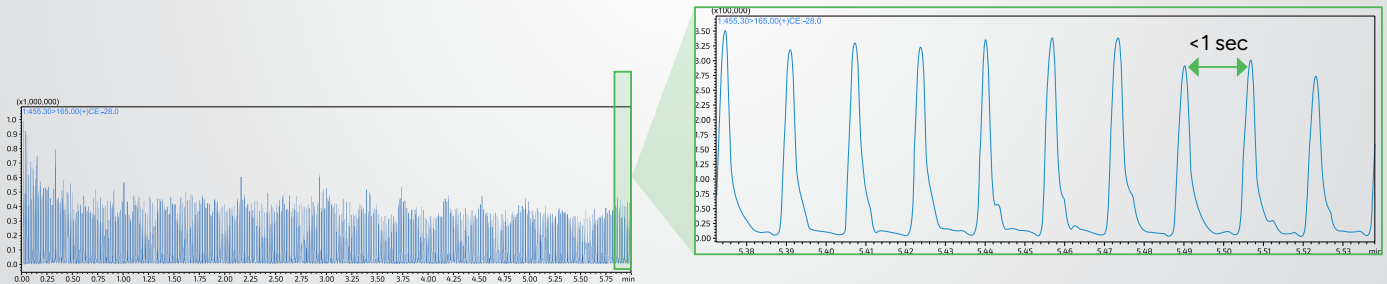
## Pharmaceutical Applications

### Drug discovery and development

The Luxon Ion Source is a quantitative solution for **High-Throughput Screening** environments thanks to its sub-second runtime.

Perform both In Vitro and In Vivo assays such as :

- CYP Inhibition Assays
- Permeability Assays
- Microsomal and Plasma Stability
- Pharmacokinetic Studies (ADME Assays)
- Dried Blood Spot Analysis



## Food and Environment Applications

*Pesticides, pharmaceuticals, steroidal hormones in waste water, trace analysis of explosives in soil and more...*

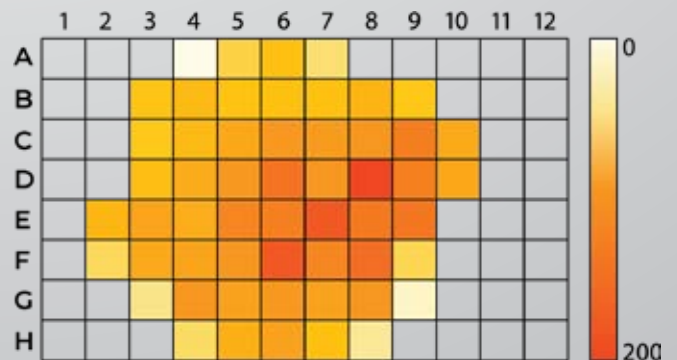
The Luxon Ion Source® meets the industrial needs for quality control in terms of robustness, reproducibility and absence of carryover.

*"In one day, a single analyst can prepare over 50 beverage samples (regulatory samples, calibrants, and quality control samples), analyse all samples in triplicate, and have analytical results by the end of the day. Moreover, LDTDMS/MS method results are consistent with AOAC 979.08 Official Method of Analysis results, allowing accurate results to be obtained with much higher regulatory sample capacity."*

Andersen, W.C., et al. (2019) Food Addit. Contam. Part A, 36:11, 1616-1625

Analyze pathogens in complex matrices such as :

- Boar taint related compounds in pork fat
- Neonicotinoids in honey or water
- Emerging contaminants in wastewater
- Antibiotics in meat
- Mycotoxins in animal feed



Distribution map showing the concentration of HMX in soil

## Bring on data!

*With Luxon Ion Source, you can amass millions of data entries in a couple of weeks. Perfect for ...*

- ▶ The detection of metabolome patterns with machine learning
- ▶ DMPK studies
- ▶ Clinical trials
- ▶ Optimization of bioreactions in food

# Specifications



Max 57.5" (146 cm)  
Min 50.25" (128 cm)



## Dimensions

Weight	116 lbs (52.5 kg)
Height	<ul style="list-style-type: none"> <li>• Max: 57.5" (146 cm)</li> <li>• Min: 50.25" (128 cm)</li> </ul>
Width	19.5" (50 cm)
Depth	<ul style="list-style-type: none"> <li>• 18" (46 cm)</li> <li>• Int. Shimadzu: 4.75" (12 cm)</li> </ul>

## Electrical Requirements

Voltage	100-240 V~
Frequency	50/60 Hz
Power	120 VA (W)
Power cable	Supplied with cable for your country

## Positioning

Height adjustments	<u>Touchscreen:</u> Units can be changed between cm. and in., store 3 heights in memory
Connection to the MS	Uses the Shimadzu interface, moves on 4 lockable wheels

## Loader Capacity

Quantity	10 or ∞ if automated
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## Analysis Speed

Can be reduced to less than one second sample-to-sample

Source

Electronic Controller

Motorized Base



### Environmental Conditions

Operating temperature 15 to 35 °C (59 to 95 °F)

Max relative humidity 80%

### Gas Requirements

Gas Oil-free compressed air

Water content Between 3 and 1800 ppm

Pressure 60-120 psi

Consumption If left at 3L/min. for the workday: 1440 L.

### Computer Requirements

Ethernet port(s) 1 available

Windows 7 (32-bit or 64-bit)

Windows 10 (32-bit or 64-bit)

### Software Requirements

- Shimadzu
- LabSolution 5.91 or later
  - LabSolutions Add-in Software for LDTD/ Luxon 1.10 or later
  - Reyfics Cascade 1.1.0.4471 or later

# Automate your workflow with **Luxon Ion Source®**

EVACUATION TRAP  
FOR SAFE FUME  
REMOVAL



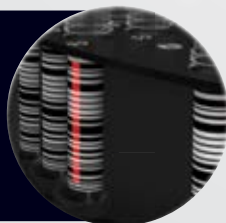
START A PROTOCOL WITH  
THE TOUCHSCREEN AND A  
USER-FRIENDLY APP



REMOVABLE  
CAROUSEL THAT  
HOLDS UP TO 96  
VIALS



- TWO VIAL-BARCODE SCANNERS
- ONE LAZWELL™ PLATE BARCODE SCANNER
- BARCODE INTEGRITY VERIFICATION



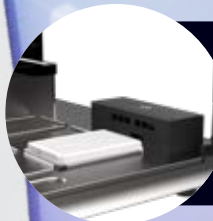
In a single step, upload the .csv sample list directly  
into **LabSolutions®**



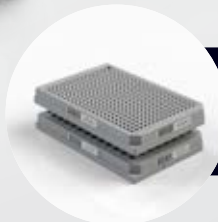
ONE 4-CHANNEL AND ONE 8-CHANNEL PIPETTE TO MAXIMIZE EFFICIENCY



OPTIONAL LUMO VORTEXER ORBITAL PLATE SHAKER



OPTIONAL LAZWELL™ DRYER TO SPEED UP THE EVAPORATION PROCESS



COMPATIBLE WITH 96 OR 384 LAZWELL™ PLATES



Scanned Vials LazWell Barcode: 218292

1	RT000000880	25	RT000000045	49	RT000000036	73	RT000000110
2	RT000000582	26	RT000000040	50	RT000000039	74	RT000000084
3	RT000000001	27	RT000000046	51	RT000000037	75	RT000000009
4	RT000000087	28	RT000000105	52	RT000000060	76	RT000000099
5	RT000000102	29	RT000000049	53	RT000000035	77	RT000000008
6	RT000000125	30	RT000000047	54	RT000000056	78	RT000000007
7	RT000000121	31	RT000000050	55	RT000000059	79	RT000000005
8	RT000000077	32	RT000000063	56	RT000000051	80	RT000000098
9	RT000000096	33	RT000000049	57	RT000000106	81	RT000000113
10	RT000000021	34	RT000000074	58	RT000000062	82	RT000000019
11	RT000000103	35	RT000000064	59	RT000000033	83	RT000000115
12	RT000000034	36	RT000000048	60	RT000000044	84	RT000000033

Phytronix

Luxon

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Phytronix

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