

LDTD™

Enhancing high-throughput analysis
Increasing analytical speed

Phytronix
Technologies

Product Specification

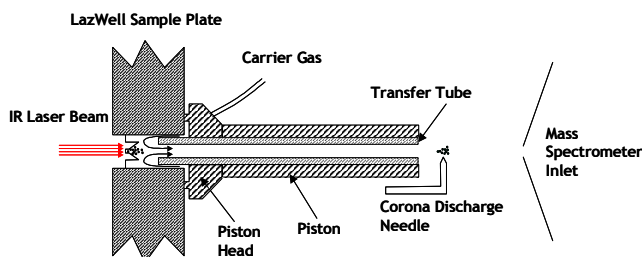


DISCOVER THE ANALYTICAL SPEED OF LIGHT

The Phytronix Technologies Laser Diode Thermal Desorption (LDTD) ionization source for mass spectrometry offers real high-throughput capacities to your laboratory. This new technology allows a sample-to-sample run time as low as 4.5 seconds without compromising your analytical performances. This Patented ionization source offers exceptional analytical performances to pharmaceutical, bioanalytical, forensics, food and environmental industries and performs equally well in other analytical fields.

- **Autonomy of 960 samples**
- **No enhancing matrix needed**
- **No mobile phase**
- **For small to large molecules analysis**
- **Plug and play with most popular mass spectrometer**

This innovative design allows a rapid laser thermal desorption of the sample followed by atmospheric pressure chemical ionization (LDTD-APCI)

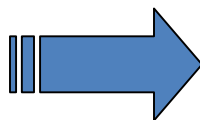
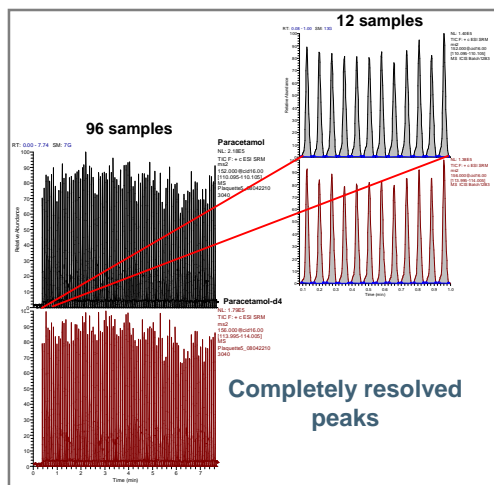


LDTD schematic

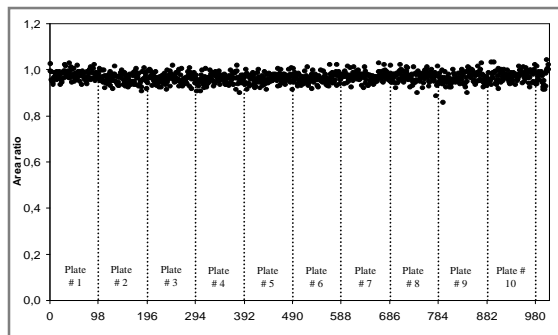
Unlike LC-MS, the LDTD is designed to operate without liquid mobile phase reducing chemical background. Dried samples, from the LazWell 96-sample plate, are thermally desorbed by the laser diode as neutral in gas phase. Neutral species are carried into a corona discharge region to undergo APCI. This thermal desorption process produces intense molecular ions in less than 3 seconds.

Fast, Sensitive and Reproducible

LDTD-MS/MS allows ultra-fast paracetamol thermal desorption in 1.5 seconds with a sample-to-sample run time of 4.5 seconds.



CV of 2.4% over 1008 replicates



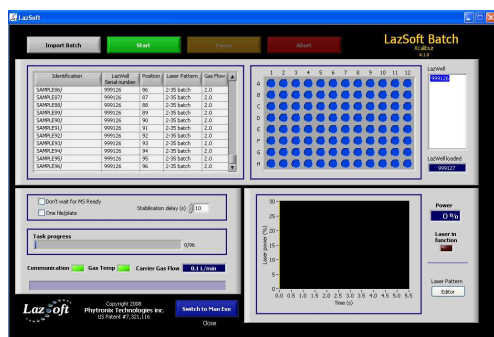
Reproducibility of LDTD on TSQ Quantum Ultra AM

Clean mass spectra

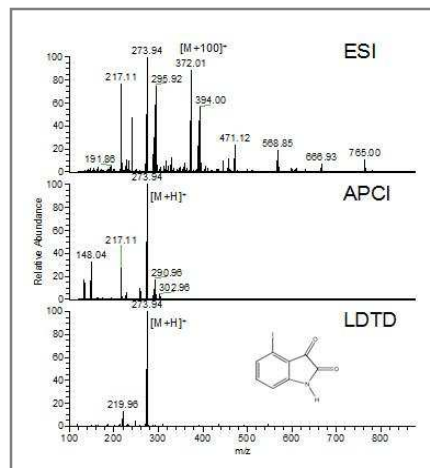
Intense molecular ion and low background of LDTD-MS spectrum are resulting from the absence of any enhancement matrix or liquid mobile phase.

Simple Software

Batch processing is easily performed with LazSoft. Method development is simple and fast. And fully integrated into XCalibur™ from Thermo Scientific.



LazSoft Batch software window



Standard Features

LDTD ionization source

- Plug and Play device; easy to install
- APCI in positive or negative mode
- Loader capacity of 10 LazWell plates; 960 samples
- Direct sample introduction; no carry over and no memory effect
- No enhancement matrix or mobile phase needed
- 20 watts optical power

LazWell plate

- Barcoded for sample traceability
- Low volume delivery (1-10 µL)
- LazWell plates are made in controlled environment
- Compatible with conventional sample preparation system

LazSoft software

- Non-intrusive software
- LazSoft controls all aspects of the thermal desorption
- Barcode reader for sample authentication

Installation Requirements

Power

- 85-264 Vac, 275 VA, 47-440 Hz, single phase, with earth ground, power factor 0.99 typical.

Gas

- High-purity (99%) compressed air, medical grade. Required pressure is 60 to 80 psi. Maximum consumption of compressed air is 10 L/min

Environment

- Optimum operating temperature is 18-25 °C

Dimension and Weight

- LDTD ionization source : 41 x 46 x 60 cm (h x w x d) - 14.5 kg
- LDTD electronic control box : 14 x 42 x 36 cm (h x w x d) - 7.5 kg