

DART MS

Direct Analysis in Real Time Mass Spectrometry

Broadening the reach of mass spec both in and outside the lab.

From "swab and detect" of one sample in seconds, to screening of thousands, DART empowers mass spectrometry to go where it has never gone before.



Visit ionsense.com or request a quote sales@ionsense.com
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Analyze More. Faster.

Unlike chromatography, DART instruments analyze a variety of analytes (including solids, liquids and gases) in their native form, providing the means to rapidly identify samples, including many that don't ionize well using other methods.



Increase Productivity:

Don't wait for answers your analysis, get your answers where and when you need it.



Be More Efficient:

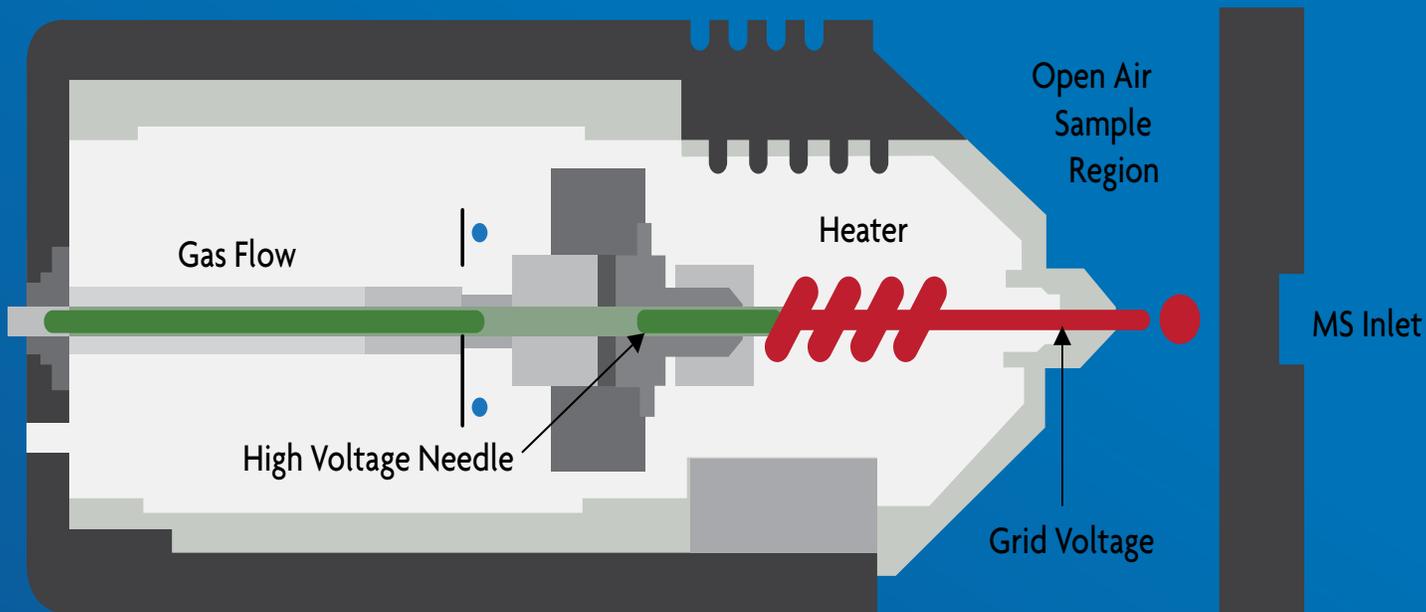
DART enables a simple workflow requiring little to NO sample prep. Just swap, spot, dip or scan and detect.



Save time:

Analyze a single sample in seconds, to a 384 well plate in less than 25 minutes.

The insight of mass spec measurements
where and when you need it



Technology

Direct analysis in real time mass spectrometry (DART-MS) is an established technique for rapid mass spectral analysis of a large variety of samples. It analyzes the sample at atmospheric pressure. It can be applied to compounds that have been deposited or adsorbed onto surfaces or that are being desorbed into the atmosphere.

The combination of the DART ionization source and interface can be customized in multiple geometries and with various accessories to adapt the setup as required. Analysis by DART-MS relies on a gas-phase ionization mechanism. Initial generation of the ionizing species is by a corona discharge with helium or nitrogen which delivers excited gas atoms that, upon their release into the atmosphere, initiates a cascade of gas-phase reactions. This results in reagent ions created from atmospheric water or (solvent) vapor in the vicinity of the surface subject to analysis where they affect a chemical ionization process. DART ionization processes can generate positive or negative ions, predominantly even-electron species.

Detection + Screening. Chemical Identification. Quality Control

Forensics

Our powerful range of DART products for forensics applications provide you with the critical data you need. Contact us today to learn more about how we can support implementing DART MS analysis:

- Seized drugs (traditional drugs, NPS, psychoactive plants, e-liquids, steroids, and supplements)
- Toxicology
- Explosives, gunshot residue/propellants, and fire debris/ignitable liquids
- Inks and documents, and automotive paint
- Lubricants



Food Safety

Safety and quality of food are a critical concern to consumers, governments, and food manufacturers. DART enables food laboratories to:

- Identify diverse chemical compounds
- Identify number of food contaminants such as pesticides, mycotoxins or packaging additives
- Authentication
- Ensure public safety



Security

Quickly detect explosives, whether they're pre- or post-blast, with the benefit of no extensive sample preparation or significant analysis time. Speed is critical in time-sensitive situations, such as those immediately following a blast from an improvised explosive device (IED). A prompt response is possible with the rapid and accurate identifications of the explosives or components used provided by DART-MS. DART-MS is also suitable for high throughput demands such as airport screening.





Pharmaceuticals

IonSense helps pharmaceutical and biopharmaceutical companies meet and exceed the demands for new and life-saving therapies. DART mass spectrometry provides rapid analytical support of process and pharmaceutical development. It analyzes both active pharmaceutical ingredients (APIs) and intermediates without sample preparation or the development of LC-based separations, providing critical experimental results with minimal time required for method development.

- **High Throughput drug discovery screens**
- **Analysis of high-throughput catalyst screens**
- **Preparative-scale chromatography fractions**
- **Impurity determination**

Chemicals and Manufacturing

Manufacturers are pressured to produce quality, differentiated products while also controlling costs. To ensure profitability and growth, they require cutting edge laboratory technologies that focus on efficiency. IonSense's DART products for the characterization of chemical materials help manufacturers:

- **Inspection of raw materials**
- **Accelerate the development of new products**
- **Improve the efficiency of manufacturing**
- **Processes ensure final product quality**



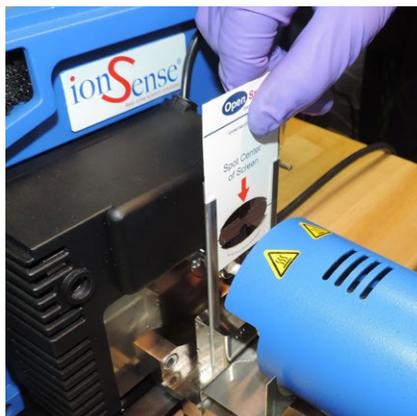
Environmental

Governments and businesses require the most effective analytical techniques to detect and identify chemical contaminants in the environment. DART solutions address a range of environmental contamination challenges:

- **Increasing sample throughput trace detection**
- **Analyzing complex matrices**

Comprehensive Solutions for Every Workflow

DART®-OS



Simple native sample analysis of solids liquids and gases.

Rapid mass spec measurements with little to no sample prep where and when you need it.

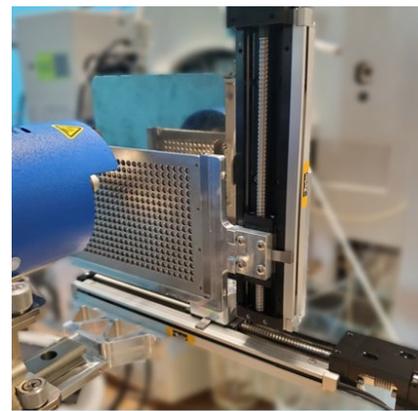
JumpShot®



Efficient analysis with the addition of automation modules.

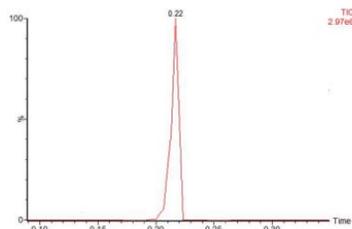
Increase efficiency and flexibility of sample analysis with sample introduction modules.

JumpShot-HTS

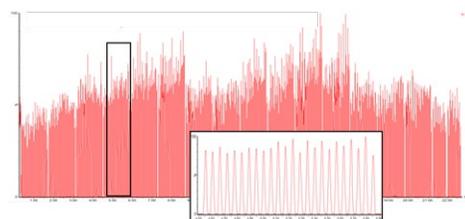


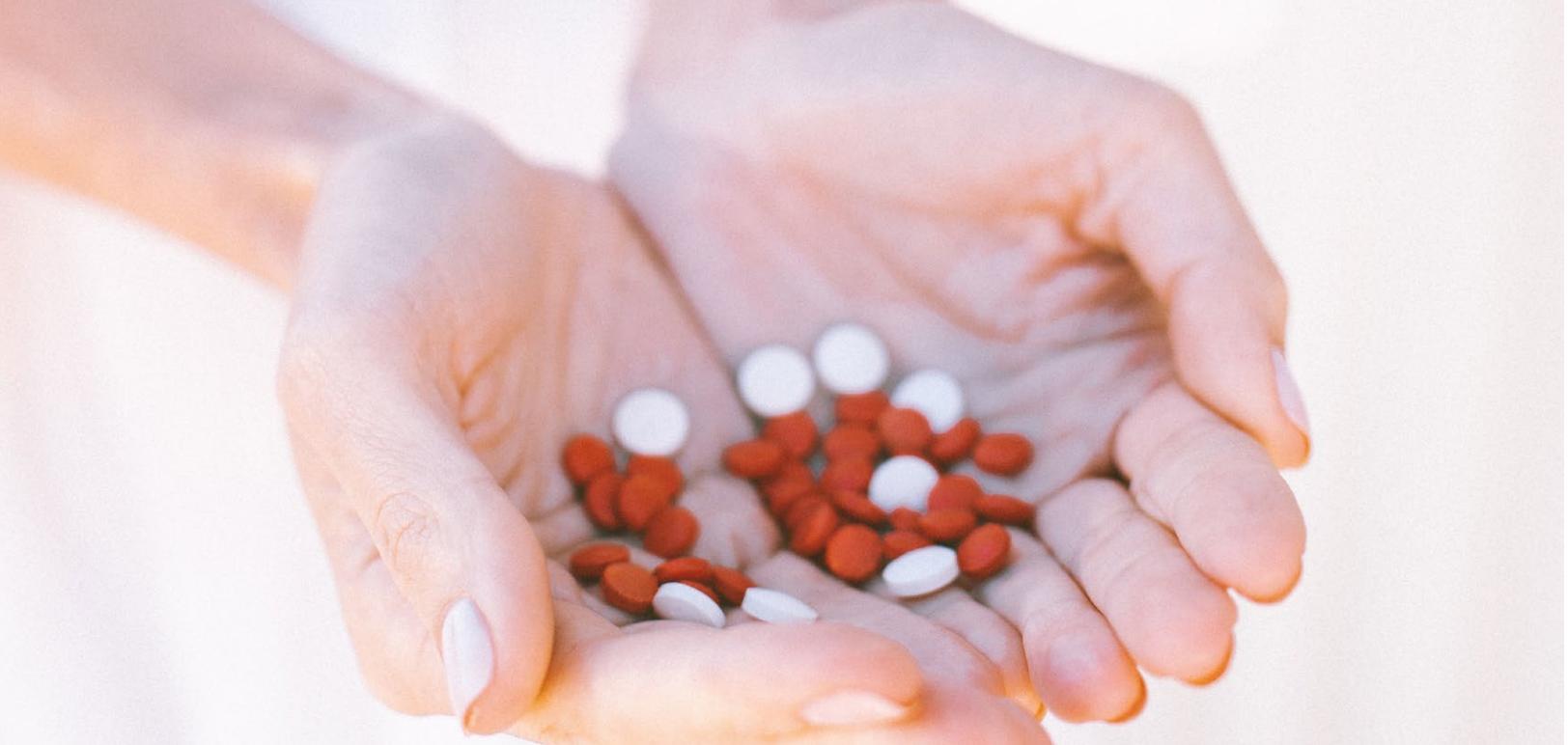
Expanded sample capacity to 96 or 384 well formats.

High throughput mass spec analysis at just a couple seconds per sample. (<25 minute for 384)



From 1 sample in seconds to 384 samples in under 25 minutes





Modules, Software & Consumables

Fast and accurate swab-and-detect screening for threat detection



Thermal Desorber

Fast and accurate "Swab-and-Detect" mass spec measurements with no sample extraction. DART-MS with Thermal Desorber delivers rapid detection in as little as 6-10 seconds.



AnalyzerPro XD Software

A productivity software application for both low and high resolution LC-MS data. It provides sample-to-sample comparison, target component analysis, quantitation and library searching.

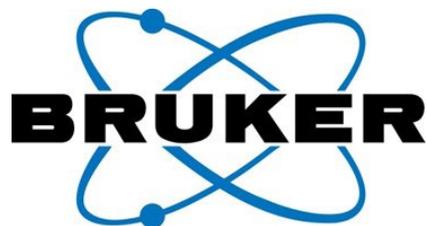


Consumables

Easy-to-use consumables that enable direct analysis in real time. IonSense offers a range of sample cards and Tips that facilitate fast and efficient DART analysis.

DART Integration to LC-MS Systems

DART can be interfaced to any LC-MS system from the major vendors via the VAPUR interface



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