EVOQ DART-TQ+ Mass Spectrometer

Screen Quickly, Validate with Confidence

Innovation with Integrity

One Integrated System – Multiple Workflows

With the first and only fully integrated Direct Analysis in Real Time (DART) ion source, the stunning EVOQ® DART-TQ+ system is built for reliable, routine analysis. From rapid chromatography-free screens or chromatography-free quantitation enabled by DART-MS to conventional LC-MS every aspect is designed to deliver exceptional triple quadrupole analytical performance day in, day out.

R. Scott LaNeve

General Manager, Drugscan, Inc.

"Bruker's EVOQ DART-TQ+ could be a game-changer for us. Cycle time reductions from 6 and 7 minutes to less than 30 seconds and direct costs at about 30% of our standard LC-MS/MS. We are seeing the sensitivity needed to identify these new synthetic drugs, too.

Faster, cheaper, and sensitive enough for what we need. Like I said, these Bruker DARTs could be game-changers."

At the heart of the system is the speed of the advanced electronics engineered to generate the best quality data for rapid high throughput analysis with multiple MRM transitions and monitoring more compounds in less time than ever before.

Design focus guarantees extraordinary ion transmission from the very smallest ion all the way through to the maximum mass range.

Whether running efficient chromatography-free workflows or conventional LC-MS workflows, navigating vast numbers of samples, hundreds of target compounds, stringent turn-around times, and challenging sample matrices, the dependable EVOQ DART-TQ⁺ mass spectrometry system provides fast acquisition, sustained sensitivity and robustness. Quickly screen and confirm your samples with the integrated EVOQ DART-TQ⁺ mass spectrometry system for a more efficient and productive lab.

Small Footprint, Large Performance

With the only fully integrated DART source, the EVOQ DART-TQ+ provides full software control of the source and automation in a single acquisition and processing method with data acquisition traceability for rapid and simple operation. The integrated electrical and gas connections support plug-and-play operation to easily switch from DART to ESI or APCI assuring maximum analysis coverage.

EVOQ® DART-TQ+ ion path

Remote auto-tune and system check

Rugged, reliable consumable-free interface

Next generation analytical high-speed quadrupoles, collision cell with axial acceleration and ultra-fast electronics provide 1000 MRM/sec acquisition rate together with superb low mass fragments sensitivity and stable ion ratio measurements

See it in action

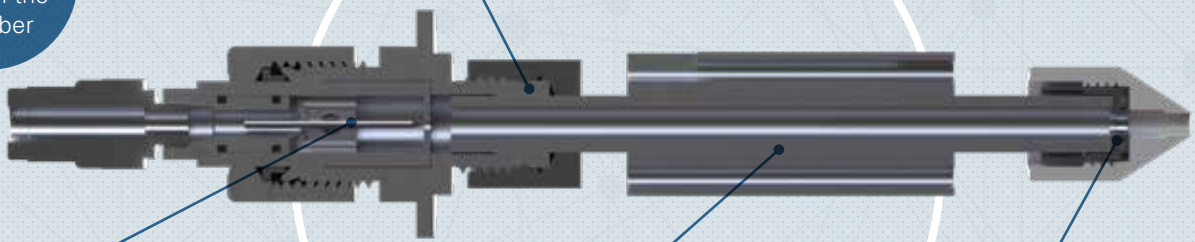
bruker.com

Fully-integrated DART source

Inert gas flows through the chamber

Electrostatic lenses remove ions and electrons, leaving only long-lived excited atoms and molecules

Vapor phase ions produced by interaction of excited-state species of inert gas with the sample enter MS for analysis



Electrical discharge creates a plasma containing ions, electrons, and excited neutral atoms and molecules

Heater coil increases the temperature of the gas as it travels towards the exit of the source

Grid prevents ion-electron recombination and acts as an electron source for negative-ion formation

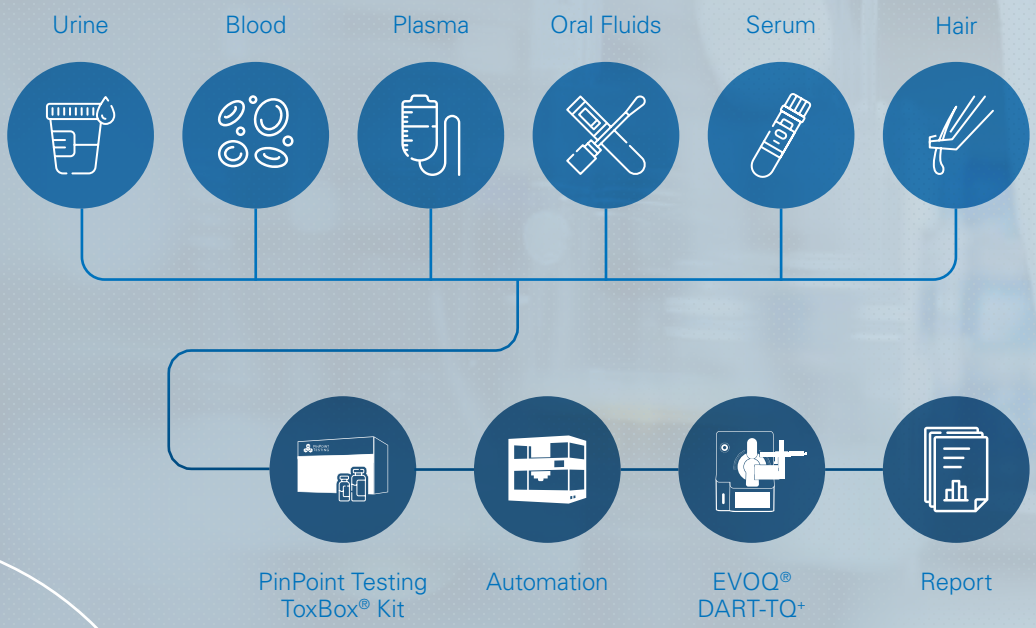
Application Forensics

Chromatography-Free Workflows Efficient, Effective, Economical

The reliable EVOQ DART-TQ+ system enables straightforward routine assay workflows from simplified tuning and method development through data analysis and report generation for improved lab efficiency and productivity. Using the fully integrated DART ionization source, chromatography-free workflows using PinPoint Testing's ToxBox® panels can be easily implemented making the EVOQ DART-TQ+ MS even more productive and economical to operate.

- **Rapidly screen samples** with cost-effective chromatography-free workflows
- **Increase sample throughput** and lower operational costs
- **Robust design** provides fast result generation with high uptime
- **Turnkey data analysis software** streamlines sample acquisition to report
- **Green enabled** to reduce energy and solvent consumption, minimizing waste

Chromatography-free toxicology workflow



Excellent chromatography-free screen demonstrating quantitative performance that rivals LC-MS

Analyte	Range (ng/mL)	R^2	LOD (ng/mL)	LLOQ (ng/mL)	Accuracy QC 1 (150 ng/mL)	Accuracy QC 2 (3,000 ng/mL)	Accuracy QC 3 (8,000 ng/mL)	Repeat-ability (%RSD)
Alprazolam	50-10,000	0.999	2.2	7.5	101	105	99	9%
Clonazepam	50-10,000	0.999	16.0	53.4	104	99	101	12%
Lorazepam	50-1,000	0.998	15.5	51.6	102	105	-	9%
Diazepam	50-10,000	0.998	10.0	33.2	101	105	106	10%
Oxazepam	50-10,000	0.999	3.0	10.1	101	105	97	4%
Flurazepam	50-10,000	0.999	2.5	8.4	97	101	104	7%
Triazolam	50-10,000	0.998	0.1	0.5	99	110	107	9%
Desalkylflurazepam	50-10,000	0.997	3.6	11.9	101	104	101	8%
7-Aminoclonazepam	50-10,000	0.999	6.9	22.9	99	98	101	3%
7-Aminoflunitrazepam	50-10,000	0.999	4.9	16.3	101	102	110	6%
alpha-Hydroxyalprazolam	50-10,000	0.998	0.0	0.1	98	100	110	12%
alpha-Hydroxymidazolam	50-10,000	0.998	0.2	0.7	102	101	99	10%

PinPoint ToxBox® Benzodiazepine chromatography-free workflow results

Application Food and Environmental

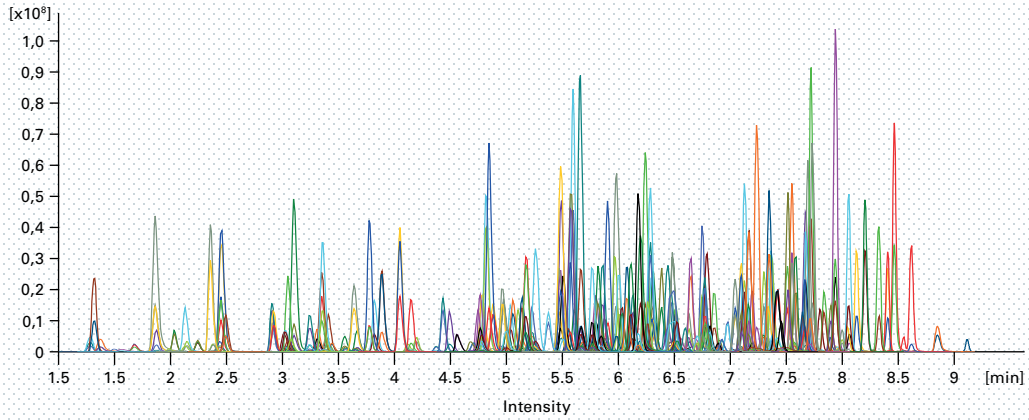
Best of Both Worlds

Regulations and the scope of analysis dictate the best analytical approach for sample analysis in routine and contract laboratories. Spanning concise compound lists to comprehensive targeted screening methods, from quick turn-around priority samples to thousands of samples in the queue, from comprehensive sample prep or dilute and shoot to no sample prep DART-MS the EVOQ DART-TQ+ efficiently handles the workload. Whether, LC-MS or chromatography-free DART-MS, navigate vast numbers of samples in challenging sample matrices with the dependable EVOQ DART-TQ+ mass spectrometry system that provides fast acquisition, sustained sensitivity and greater productivity. Queue up more pesticides in a short LC-MS method than ever before. Or quickly prescreen PFAS samples with a rapid chromatography-free workflow to determine samples with a concentration that would benefit from dilution and avoid lengthy system clean-up and downtime.

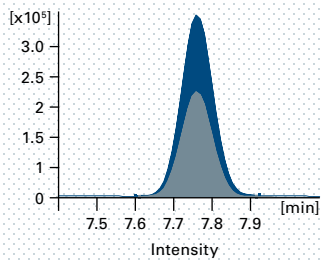
After screening your sample backlog with chromatography-free workflows simply switch in less than 1 minute to LC-MS for conventional sample validation.

- Fast LC-MS and even faster chromatography-free workflows for increased throughput
- Simple switch between DART and VIP-HESI sources
- Validate compound screen hits with conventional LC-MS for result assurance

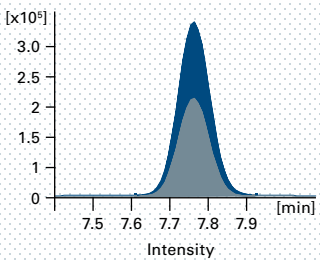
Screen more pesticides than ever before, and faster.



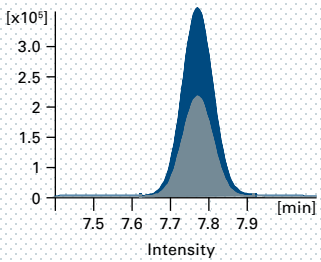
Thousands of compounds and still maintain exceptional sensitivity and analytical performance.



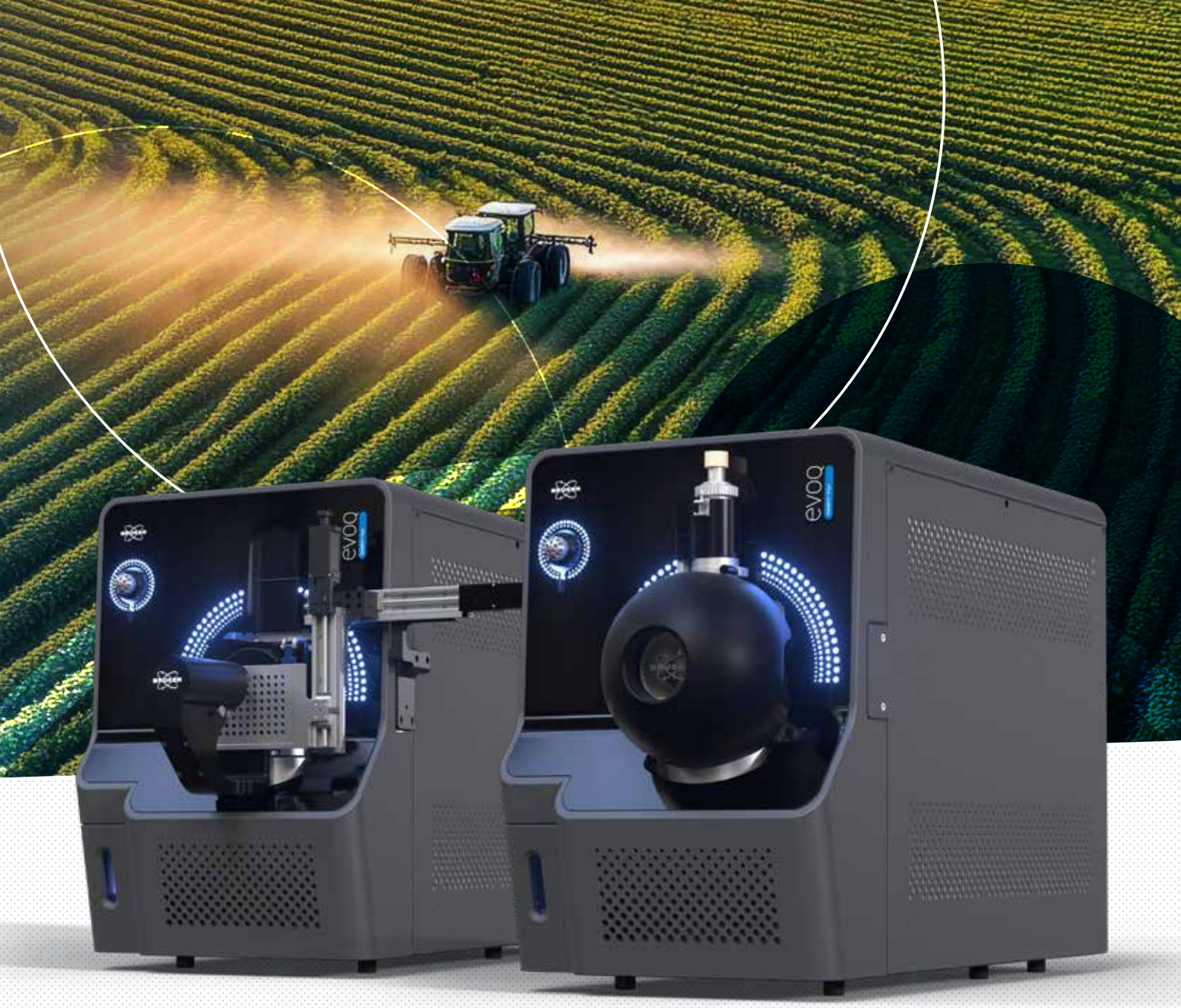
12 points per peak
min scan time 15 ms



13 points per peak
min scan time 10.8 ms



20 points per peak
min scan time 5.6ms



250 samples in matrix quantified over 5 days

Sample ID	Pesticides detected	Reference Value (*)	Results Cal 1	Results Cal 2	Results Cal 3	Results Cal 4	Results Cal 5
625	Chlorantraniliprole	67 ppb	59 ppb	62 ppb	67 ppb	61 ppb	67 ppb
	Fluopyram	33 ppb	26 ppb	28 ppb	36 ppb	33 ppb	35 ppb
641	Propamocarb	11 ppb	10 ppb	12 ppb	12 ppb	12 ppb	12 ppb
	Cyazofamide	6 ppb	8 ppb	10 ppb	9 ppb	11 ppb	11 ppb
647	Fluopyram	57 ppb	43 ppb	43 ppb	47 ppb	48 ppb	48 ppb
	Propamocarb	41 ppb	38 ppb	39 ppb	38 ppb	37 ppb	37 ppb
636	Propamocarb	22 ppb	19 ppb	20 ppb	19 ppb	19 ppb	20 ppb
	Azoxystrobin	20 ppb	17 ppb	20 ppb	22 ppb	20 ppb	22 ppb
	Fluopyram	10 ppb	9 ppb	10 ppb	10 ppb	10 ppb	11 ppb
749	Fluonicamid	36 ppb	37 ppb	36 ppb	39 ppb	37 ppb	39 ppb
	Acetamiprid	12 ppb	11 ppb	13 ppb	13 ppb	11 ppb	13 ppb

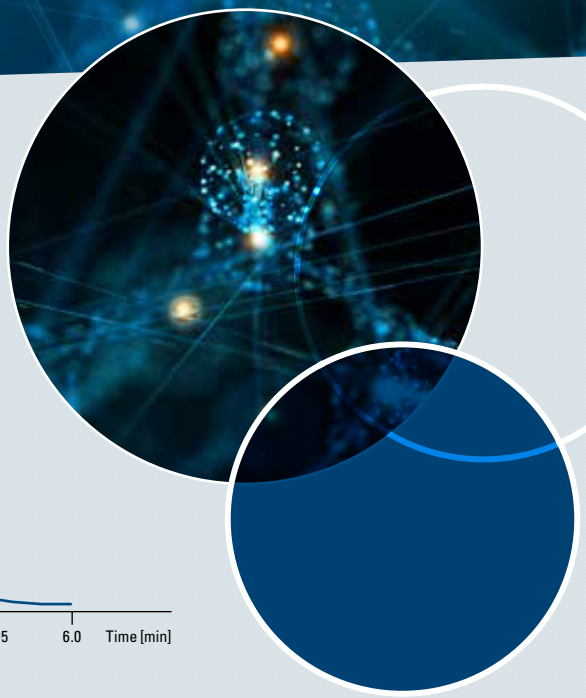
Application Environmental

Sensitive, Sturdy, Secure

Persistent Organic Pollutants (POPs), toxic chemicals that endure in the environment and bioaccumulate through the food chain, adversely affect human health and ecosystems around the world. Mounting concern on a global level about existing contamination levels has led regulatory agencies to implement restrictions and stringent monitoring to mitigate the impact of POPs. Per- and polyfluoroalkyl substances (PFAS), a class of POPs, are prevalent, permeating water, soil, food and air.

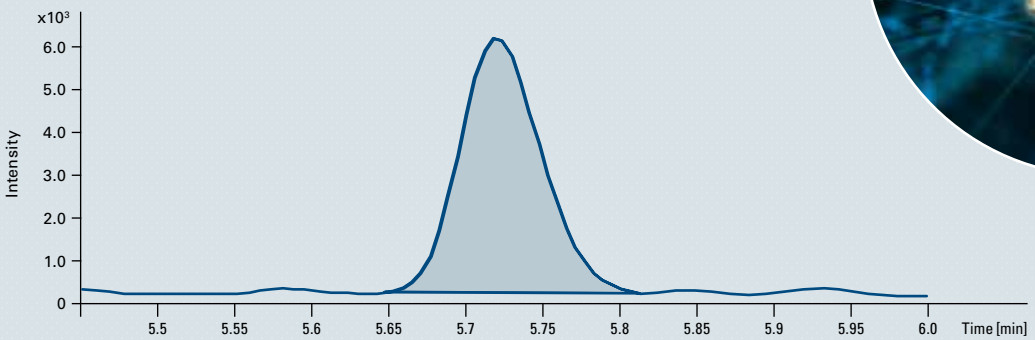
With sensitivity to spare, reliability, accuracy and precision, the EVOQ® DART-TQ+ is designed to stay ahead and ensure PFAS compliance with regulatory standards.

- Reliable, robust, confident, routine PFAS analysis
- Meet and exceed regulatory compliance requirements
- Protect the future with the best in PFAS analysis

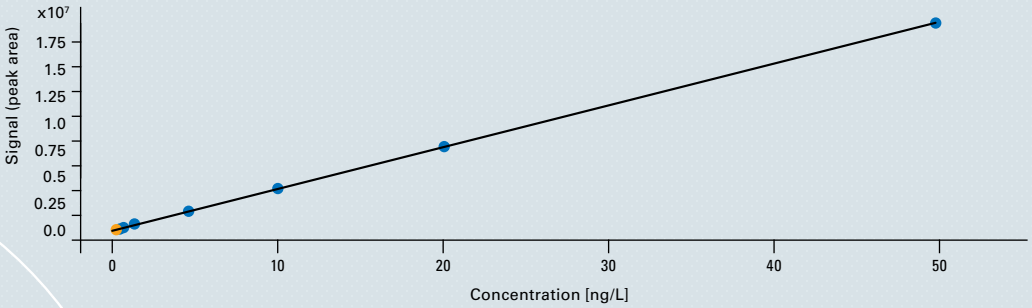


Sub-ppt level PFAS sensitivity future-proofs your laboratory to fulfil the most demanding regulations

PFAS ADONA @ LOQ: 0.05 ng/L



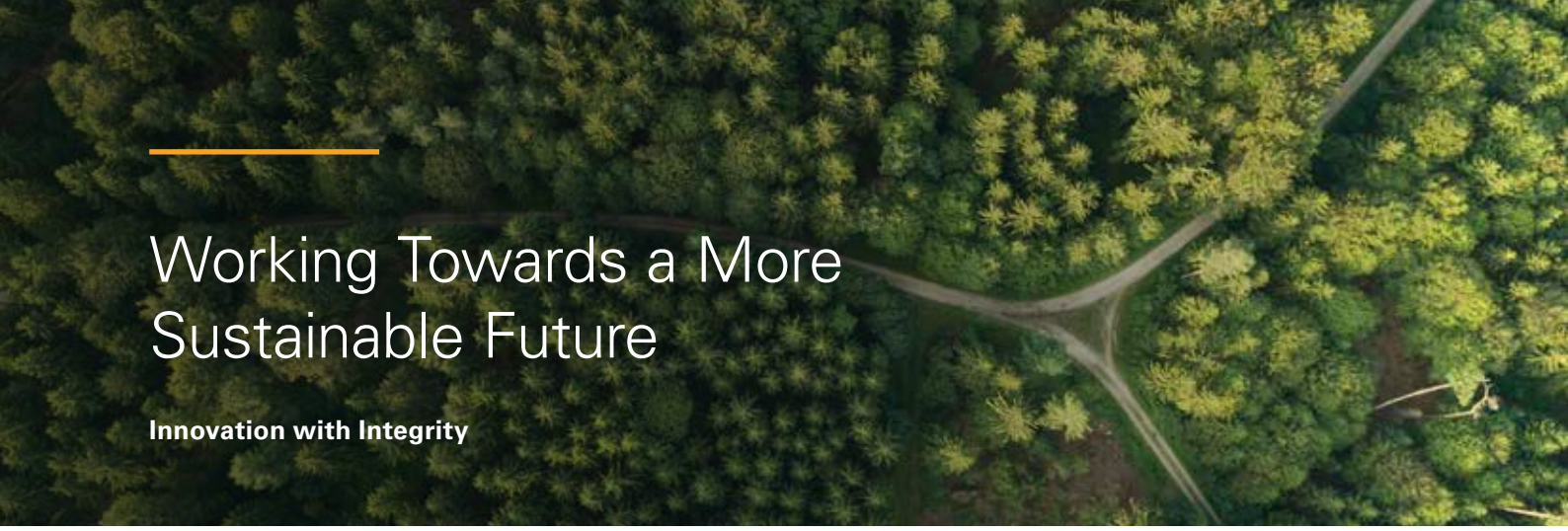
ADONA calibration curve: 0.05 - 50 ng/L



Software

Streamlined method development
Instrument control, data processing

- **MRM Builder feature** in tqControl software makes short work of method generation for a long list of analytes on the EVOQ® DART-TQ+ system. Either insert the analyte from the MRM library or use the MRM builder to optimize analytes. A simple drag-and-drop of the compound from the factory-installed compound library, which contains more than 3,000 MRM transitions, automatically sets up the method and manages the TQ duty cycle.
- **Fully automated tuning routine** allows for remote system calibration and ensures optimal ion transmission across the mass range.
- **Scheduled Daily Check** procedure automatically checks key performance indicators and provides the status of the system in day-to-day operation.
- **Exception and rule-based data review** automatically flags the analytes and samples requiring manual review, saving both time and effort to process the acquired batches.



Working Towards a More Sustainable Future

Innovation with Integrity

As a forward-thinking, innovative company, Bruker has a rich legacy of protecting the environment, treating others with dignity and respect, and following the highest standards of ethical compliance and governance. These principles more recently characterized as Environmental, Social, Governance (ESG), have been an integral part of our DNA for over 60 years.

Bruker's innovative technologies and solutions support scientists and businesses around the world to explore, understand, and improve the world in which we live. Our innovative spirit drives solutions intended to address environmental challenges, improve recycling, advance research discovery, identify hazardous and harmful materials in the environment, and keep our foods and environment safe. We are proud to support a more sustainable future.

As a global innovation leader in developing and marketing advanced analytical technologies and solutions, our scientists and engineers support businesses and scientists around the world to better understand environmental hazards, protect our essential food supply, research clean, sustainable energy, and search for new ways to improve the quality of life. Realize solvent savings and waste reduction with our chromatography-free workflows and employ our ECO version to cut energy consumption in half. We are especially proud to collaborate closely with many of our customers on ways to ensure a more sustainable future.

	EVOQ® DART-TQ+	EVOQ® DART-TQ+ Eco
Bench space required	40 cm	40 cm
Power consumption during acquisition*	~ 2100 - 2200 W	~ 1100 – 1200 W
Air conditioning demand	~ 7500 Btu/h	~ 3750 Btu/h

For Research Use Only. Not for use in clinical diagnostic procedures.

Bruker Switzerland AG

Fällanden · Switzerland
Phone +41 44 825 91 11

Bruker Scientific LLC

Billerica, MA · USA
Phone +1 (978) 663-3660

marketing.bams.emea@bruker.com

bruker.com

Learn more: