



Spark
H O L L A N D

BETTER SAMPLE CARE

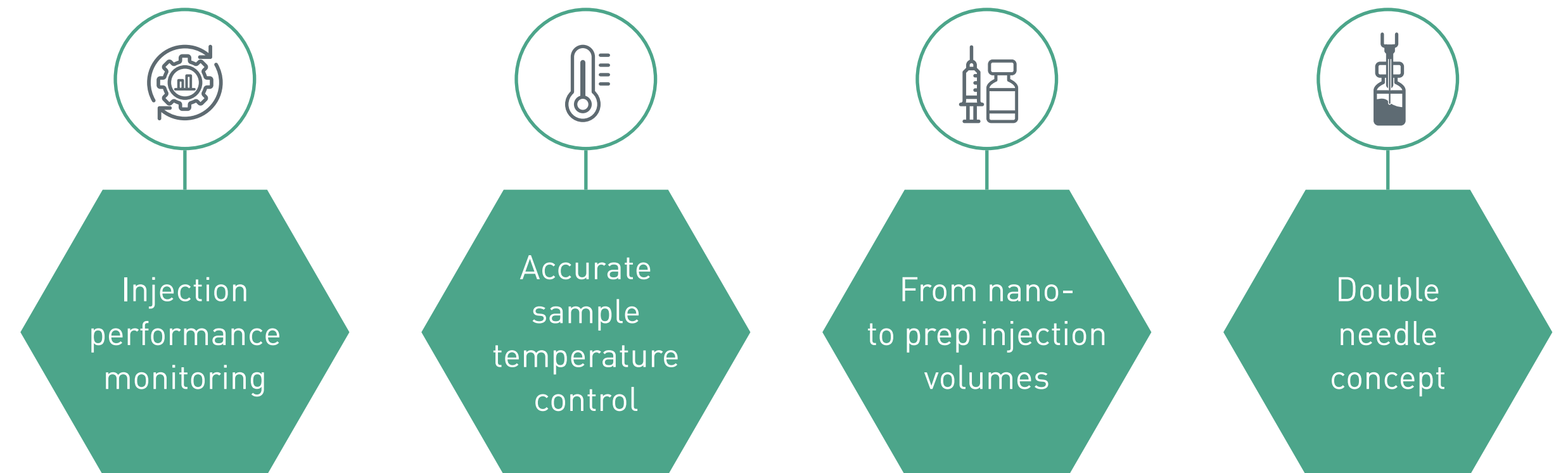
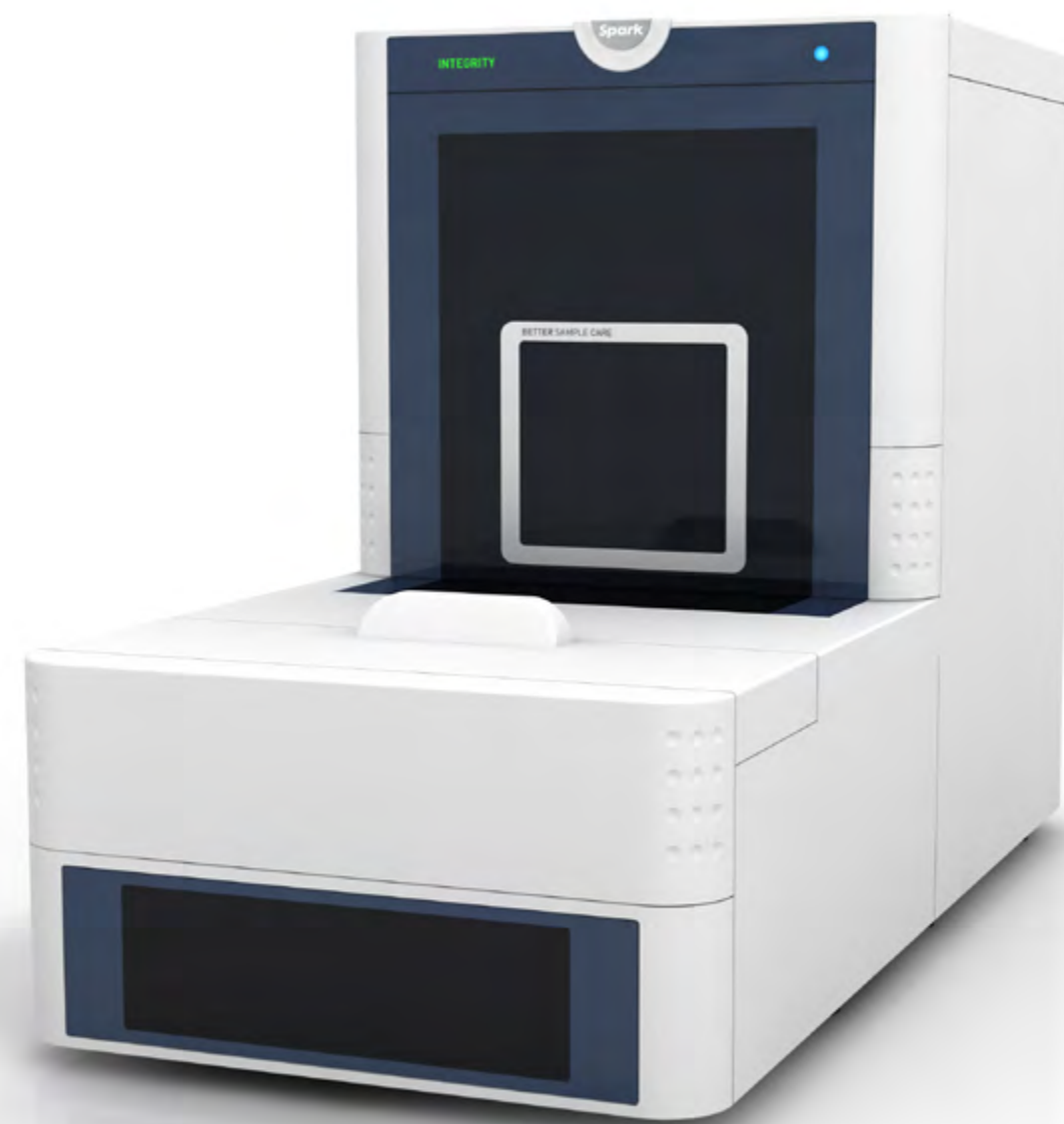
A new standard in sample care

Integrity™

A new standard in sample care

Advanced autosampler

State-of-the-art injection technology, rapid sample turn-around time and large sample capacity are important, of course. But this all becomes irrelevant if you have only the slightest doubts about the integrity of the samples that you injected! Yet, while injection technology and capacity have seen great advances over the last 30 years, measures to maintain and control sample integrity have had little attention from instrument manufacturers. That's why we developed the Integrity™ autosampler.



- Sample and tray bar code reading
- < 20 sec injection cycle
- True 4 °C sample cooling of all samples
- Injection performance monitoring
- Vial bottom detection – inject 1 µL out of 1 µL

- Advanced wash capabilities to eliminate carryover
- Dual independent concentric needle concept
- Optimized for UHPLC
- Advanced reagent addition and derivatization

- Integrated on-line sample prep capabilities
- Up to 4 well plates or 216 standard sample vials
- Flexible workstation for many liquid handling needs of analytical samples



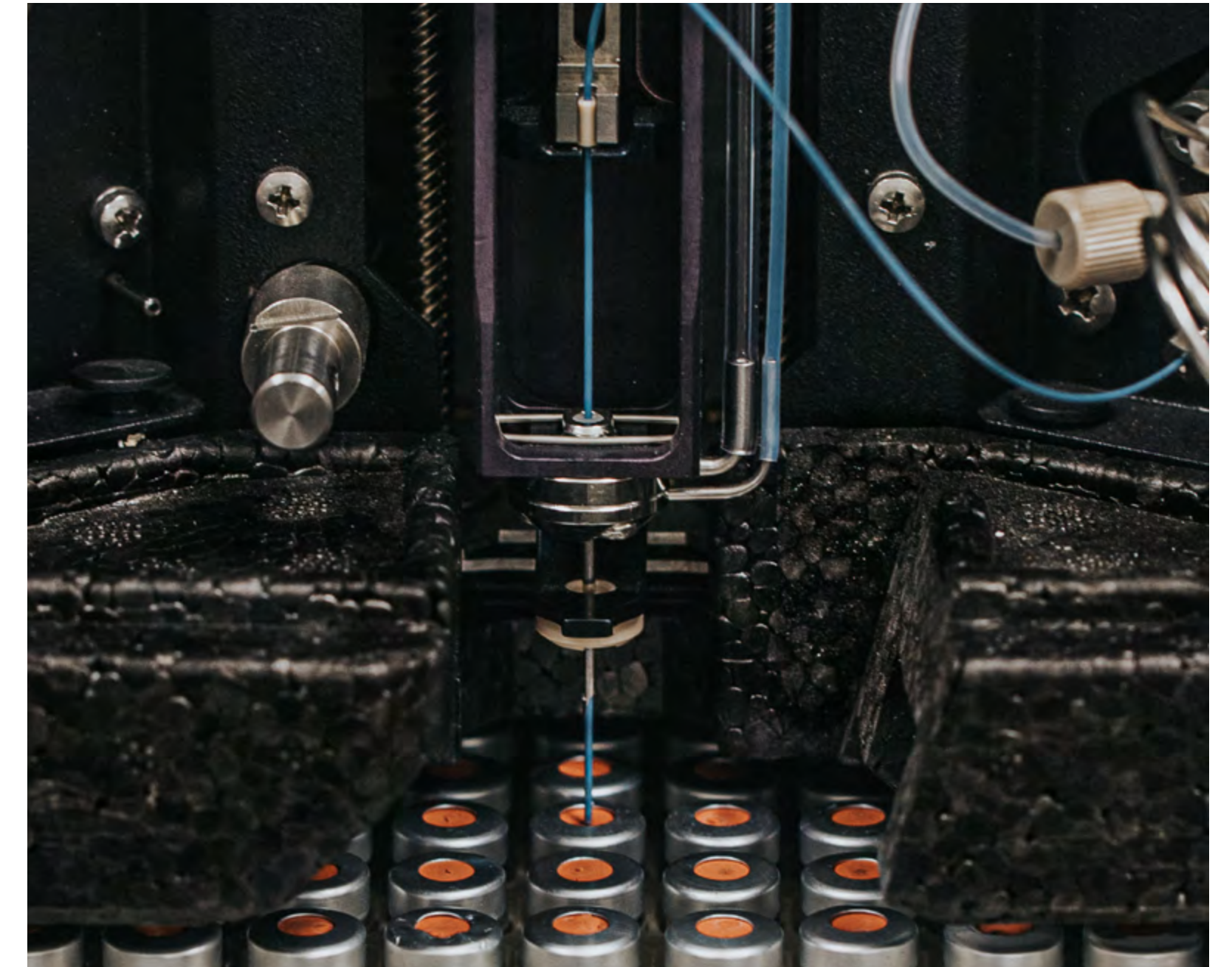
Micro injection volumes and micro sample waste

Using a micro syringe for accurate aspiration of small sample volumes, even nanoliter volumes of samples can be injected with high precision and accuracy. The microliter-pick-up mode reduces sample loss to zero, and vial bottom detection enables INTEGRITY™ to position the sample needle at just a few tenths of a mm above the vial bottom to make sure you get all your precious sample injected reliably, independent of size variations in vials. Injection cycle time is not compromised by the reduced syringe volume because of the separate wash pump taking care of wash solvent delivery!



STC™ - Accurate sample temperature control - low and high!

Many biological samples require cooled storage during processing to avoid deterioration. INTEGRITY™ not only offers cooling, but also offers sample temperature control from 4°C up to 40°C for the entire sample tray and sample processing space. Actual readout of tray temperature shows when the autosampler is ready to accept new samples. Actual tray temperature can also be linked to sample assay results to verify correct sample temperature afterwards. And, in addition, the cooling device has been designed to reduce condensation in the sample area to a minimum.



Separate needle wash pump for better needle wash and faster injection cycles

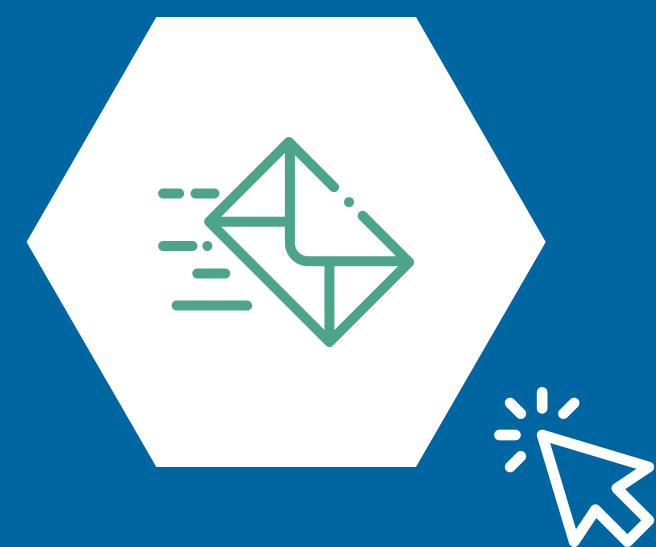
A separate built-in solvent pump provides wash solvents to the needle pair, and a smart combination of air pressure and solvent streams ensures thorough cleaning of the needle pair, inside and outside, in seconds. And also provided – jet-stream drying of the needles before entering the next sample! Multiple solvents can be selected by the wash pump for maximum clean-up ensuring zero carry-over for the stickiest samples. Because the wash pump is much faster than the syringe-dispenser used for the injection, needle rinsing is not only better, but also much faster.



Specifications

	Integrity HPLC	Integrity UHPLC	Integrity UHPLC Micro
Max operating pressure	35 MPa (5000 psi)	126 MPa (18,000 psi)	84 MPa (12,000 psi)
Loop volume	Standard: 50 µL Other loop sizes possible	Standard: 20 µL Other loop sizes possible	10 µL Other loop sizes possible
Injection volume With standard loop volume*	<ul style="list-style-type: none"> • Full loop: 50 µL • Partial loop fill: 1 – 25 µL 	<ul style="list-style-type: none"> • Full loop: 20 µL • Partial loop fill: 0.5 - 10 µL 	<ul style="list-style-type: none"> • 0.05 – 1 µL
* larger volumes possible with larger sample loop	• µL pick-up: max 15 µL		
Injection precision With standard loop volume	Full-loop: < 0.3% RSD Partial loop-fill: < 0.5% RSD* µL -pick-up: < 1.0% RSD* * injection volume > 5 µL	Full-loop: < 0.3% RSD Partial loop-fill: < 0.5% RSD* µL -pick-up: < 1.0% RSD* * injection volume > 1 µL	Full-loop: < 0.3% RSD Partial loop-fill: < 0.5% RSD for injection volume 0.5 µL; < 1% RSD for injection volume > 0.2 µL -pick-up: < 1.0% RSD for injection volume > 0.2 µL
Sample needle	SS 0.25 mm i.d. Volume 10 µL (including connecting tubing)	PEEK-SIL 0.2 mm i.d. Volume: 7 µL (including connecting tubing)	PEEK-SIL 0.15 mm i.d.; volume 3.6 µL
Sample buffer tubing tubing between syringe and injection valve	Tefzel, 1.0 mm i.d. Volume 500 µL	Tefzel, 0.75 mm i.d. Volume 200 µL	PEEK, 0.5 mm i.d.; volume: 100 µL
Injection valve* *) other valves available on special order	SS stator, PEEK rotor seal, 0.4 mm bore, 1/16" connections	UHPLC valve with ILDTM Coated SS stator VESPEL rotor seal 0.25mm bore 1/16" connections	Coated SS stator, VESPEL rotor seal, 0.15 mm bore, 1/32" connections.
Dispenser Syringe volume	250 µL	100 µL	50 µL
Injection cycle time	Typically 30s, including default wash in partial loopfill mode	30 - 60 sec. depending on selected conditions for injection and wash speed	~ 1 minute depending on injection and wash conditions
Carry-over	< 0.005% under specified conditions	< 0.005% under specified conditions	< 0.01% under specified conditions

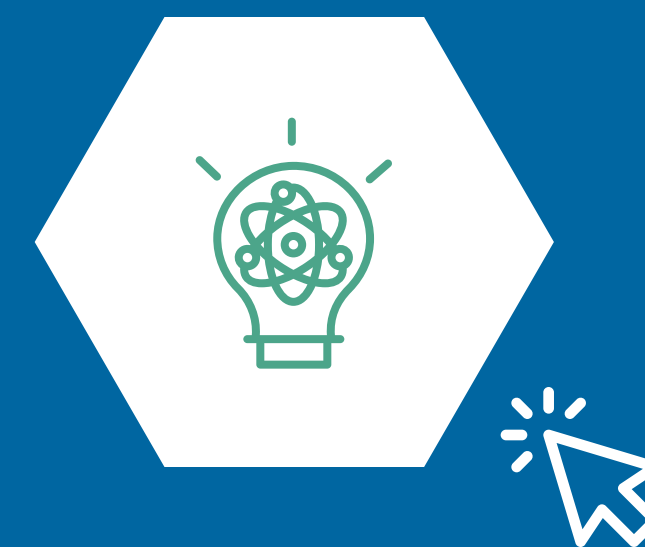




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