

Specifications

Compliance and certification	
Regulatory compliance	CE RoHS
Applied safety standards	IEC61010-1
Applied EMC standards	IEC61326-1 / EN55011 / CISPR 11
Certification	NTRL certificate of compliance with UL and CSA standards

Functional	
Syringe volume	2 mL
Volume accuracy	± 1% (for volumes > 0.3 mL) ± 2% (for volumes < 0.3 mL)
Volume precision	< 1% RSD (volumes > 0.1 mL)
Syringe flow	0.1 - 10 mL/min (Dispense and Aspirate)
Flow accuracy	± 1%
Flow precision	< 1% RSD
Flow ripple	< 2%
Flow back pressure	max. 300 bar
Pressure sensor	0-300 bar
Pressure accuracy	< 5% (for 10 to 300 bar)
Pressure precision	< 2% (for 30 to 50 bar) < 1% (for 50 to 300 bar)
Mix ratio	Max. 1:9, (10-90%)
Dispense Flow rate	0.1 - 1 mL/min in 0.01 mL/min steps 1 - 10 mL/min in 0.1 mL/min steps
Aspirate Flow rate	0.1 - 10 mL/min in 0.1 mL/min steps
Volume range	0 - 0.1 mL in 0.001 mL steps 0.1 - 1 mL in 0.01 mL steps 1 - 10 mL in 0.1 mL steps 10 - 100 mL in 1.0 mL steps 100 - 990 mL in 10 mL steps
Selectable Solvents	Port 1- 4
Solvent selection manifold (2)	In right panel of HPD1 only, for connecting 6 extra solvents per SSM Port indication around ports via LEDs Ratio accuracy 3% (47% < Measurement < 53%) (Liquid Viscosity ratio < 3) Ratio precision < 2 % RSD (Liquid Viscosity ratio < 3) Ratio precision < 2 % RSD (Liquid Viscosity ratio < 3) Aspirate Flow rate 4 mL/min (fixed)
Pressure safety limit	0-300 bar in 1 bar steps
Pressure read-out	Selectable: bar - psi - MPa
Wetted materials	SS316, Teflon, Tefzel, Kalrez, PE, PEEK

Ordering information

High Pressure Dispenser unit (HPD™)	
HPD™ std	SP730.000
HPD™ mix + 1 SSM (left)	SP730.020
HPD™ dual unit	SP730.060
HPD™ mix + 2 SSM (right)	SP730.110
HPD™ mix + 2 SSM (left)	SP730.120
HPD™ mix + 4 SSM	SP730.220

All products are for Research Use Only (RUO), unless specifically labeled otherwise.

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Specifications are subject to change

Spark
HOLLAND



BETTER SAMPLE CARE



BETTER SAMPLE CARE

Spark Holland introduces
HPD™

High Pressure Dispenser

HPD™

A syringe based dispenser
resisting HPLC pressure



Designed for volumetric on-line reagent delivery

Traditional volumetric dispensers are designed for pipetting reagents or samples into vials or wells at ambient pressure or a few bar at most. On-line volumetric reagent delivery however, may require the ability to introduce reagents into a system with a high working pressure. The HPD™ was originally designed by Spark for SPE solvent delivery in on-line SPE-LC systems, but other applications are easy to imagine. Think of pre-column reagent addition for on-line derivatization in HPLC, post-column reagent addition for detection enhancement, etc.

Tailor the HPD™ for your on-line SPE application

In most cases the HPD™ is used in combination with our Automated Cartridge Exchange (ACE™) system and our DBS™ autosampler to create a system for on-line SPE-LC (see brochure on ACE™ and on-line SPE cartridges). The HPD™ comes in a range of models that help you configure an on-line (or at-line/off-line) SPE system for virtually any application or as the solvent delivery system for the Spark DBS™ autosampler system for desorption of de-dried blood or dried sample spot.

The HPD™-dual is equipped with two syringes for parallel operation to support high-throughput assays. The HPD™-mix has 1, 2 or 4 additional Solvent Selection solenoid Manifolds (SSM) that allow selection from as many as 24 different solvents (in the case of 4 manifolds). You may also use this option to select from 24 sample bottles for on-line SPE of very large sample amounts. Load 100 ml water samples into on-line SPE-LC-MS for environmental analysis! For rapid method development the HPD™ can mix any two of the available solvents in ratios between 10 and 90%. With so many options,

- Accurate volume delivery at controlled flow rates
- Independent of backpres-



it will be hard to imagine an application you cannot support. The standard HPD™ has a flow rate ranging from 0.1 – 10 ml/min. This is perfect for almost any on-line SPE application.

SparkLink PC control software

After configuring an analytical system including the HPD™, you need full control of every Spark Holland system component for maximum flexibility in assay development. Our SparkLink software provides just that. That does not mean that you can't use any third party instruments as components for your system. Just be aware that SparkLink will have limited control options for third party instruments. A special "Easy Access" control level allows for rapid start up of methods and method

- sure up to 300 bar
- Selects from 4-24 solvents... or samples!

development with pre-programmed system parameters. Note that SparkLink is able to control two HPD™'s in a single system. **Clarity™ PC control software** Clarity is advanced Chromatography Data Station (CDS) from Data-apex with optional software modules for data acquisition, processing and instrumental control. Its wide range of data acquisition interfaces (A/D converters, LAN, USB, RS232) allows connection to any GC or LC chromatograph. Clarity supports the current portfolio of Spark Holland instruments.

OEM Solutions

Spark Holland has over 30 years' experience in HPLC and UHPLC instrument innovation, specializing in the field of autosampling, on-line solid phase extraction and, more recently, on-line dried blood spot (DBS) analysis. Our innovative products have always led the way in injection technology, sample preparation integration and flexibility of operation. Combined with high quality engineering and manufacturing, Spark Holland is leading OEM supplier of front-end UHPLC and on-line solid phase extraction instruments, working according to

- On-line solvent mixing
- Dual-syringe version for high throughput

ISO 13485 and, when required, delivering CE-IVD compliant modules for use in clinical systems.

Reassuring reliability

Spark has more than 33 years of experience in development and innovation of sample handling

technology. The robustness of our instruments has been proven in more than 25,000 autosamplers and over 1,250 systems for on-line SPE: reassuring numbers if you demand a reliable partner in HPLC.

Specifications

HPD™	
General	
Installation category	II
Pollution degree	2
Operating environment	Indoor use only
Operating temperature	5 - 40°C
Operating humidity	20 - 80% RH
Operating altitude	up to 2000m
Transport and storage temperature	-30 - 60°C
Transport and storage humidity	Max. 85% RH
Sound pressure level	LAeq <70 dB
Physical	
Dimensions (W x H x D)	150 x 350 x 290 mm
Weight	11 kg
Stackable weight (max. weight on top)	10 kg
Electrical	
Power requirements	100 - 240 VAC, 50/60Hz
Power consumption	200 VA
Fuses	2 x 2.5AT, 250V, 1500A breaking capacity IEC60127-2, UL recognized
Communication	
Digital outputs (P1 RELAY OUTPUTS)	2 programmable relay outputs max. 28V, 0,25 A
Digital inputs (P2 INPUTS)	2 programmable, TTL inputs
Analog pressure output (PRESSURE OUTPUT SYRINGE 1) (PRESSURE OUTPUT SYRINGE 2)	10 mV/bar (for 50 to 300bar) Analog pressure output syringe 1 Analog pressure output syringe 2
Communication ports (SL IN/OUT)	RS232 (Multilink)
Ethernet	CAT 5e shielded cable (dedicated instrument network recommended)
Maximum length for RS232 and IO cables is 3 m	