

# NEW HPLC - SYSTEM LINE



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# S 9425 HPLC solvent delivery system

The **S 9425 solvent delivery system** is a robust, low pulsation solvent delivery system.

The **S 9425 solvent delivery system** is available as [isocratic HPLC pump](#) and [quaternary gradient Pump](#) with optional integrated online vacuum degasser. The pump head is easily accessible from the front panel to make routine maintenance, like changing pump seals, easy and fast.



The transparent front makes it easy for the operator to detect any leakages. The pump is available with micro or analytical pump head in stainless Steel or PEEK.

## Stepper motor

The **S 9425 solvent delivery system** is driven by a high-power stepper motor. The stepper motor has a much better resolution in the low-flow range than a conventional DC motor.

## Mixer synchronization

The **S 9425** low pressure gradient mixer is synchronized with the piston stroke to achieve highly precise and accurate gradient results.

## Lubrication

The **S 9425 solvent delivery system** camshaft is constantly lubricated within a sealed chamber to guarantee long lifetime and low maintenance.

## Dual-piston pump head

The **S 9425 solvent delivery system** uses a dual-piston pump head for low pulsation. Together with electronic pressure compensation the S 9425 pumps are suitable for all analytical tasks in HPLC and GPC/SEC.

## Optional: piston back flushing

The **S 9425 solvent delivery system** head incorporates an optional active piston back flushing system; this system is interchangeable with older Schambeck pumps and does not require an additional motor.

## Technical specifications\*

<b>Wetted Materials:</b>	Stainless Steel / PEEK*, Teflon AF®, PVDF, Ceramics, Sapphire, Ruby
<b>Flow Rate:</b>	Programmable Micro: 0.001 - 2.000 ml/min. Analytical: 0.001 - 10.000 ml/min.
<b>Flow Accuracy:</b>	± 1.0 % 1.000 ml / min.
<b>Flow Precision:</b>	± 0.1 % RSD 1.000 ml/min.
<b>Pressure Range:</b>	0 – 40 MPa (0 – 6000 PSI)
<b>Pressure Pulsation:</b>	typical < 0.1 MPa or < 1.0 %
<b>Compensation/ Compressibility:</b>	user-adjustable for different solvents
<b>Mixer Volume:</b>	adjustable: 10 – 500 µl
<b>Dimensions:</b>	310 x 165 x 478 mm (W x H x D)
<b>Power Supply:</b>	100 - 250 ~V (47 - 63 Hz)

\*depending on configuration

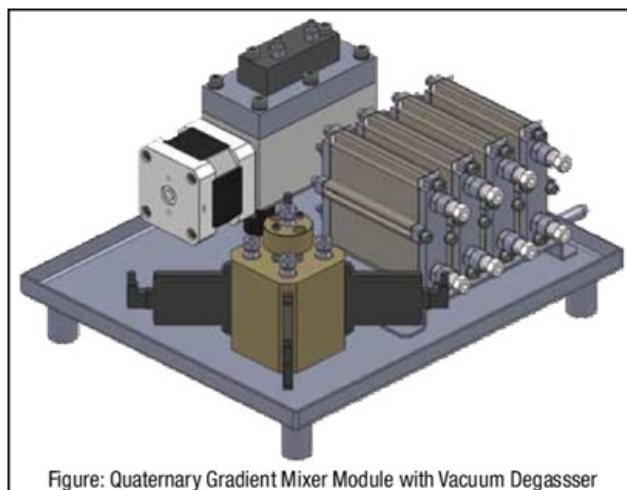


Figure: Quaternary Gradient Mixer Module with Vacuum Degasser

### Order information S 9425 isocratic HPLC pump

Part-no.	Description
S9425ISM	S 9425 Isocratic HPLC Pump – SS – Micro
S9425IPM	S 9425 Isocratic HPLC Pump – PEEK – Micro
S9425ISA	S 9425 Isocratic HPLC Pump – SS – Analytical
S9425IPA	S 9425 Isocratic HPLC Pump – PEEK – Analytical
S9425-02	option: Active Piston Back flushing

### Order information S 9425 quaternary gradient pump

Part-no.	Description
S9425GPS	S 9425 Quaternary Gradient Pump – SS – Micro
S9425GPM	S 9425 Quaternary Gradient Pump – PEEK – Micro
S9425GSA	S 9425 Quaternary Gradient Pump – SS – Analytical
S9425GPA	S 9425 Quaternary Gradient Pump – PEEK – Analytical
S9425-01	option: Vacuum Degasser
S9425-02	option: Active Piston Backflushing

## ***S 4245 UV/Vis detector***

The Schambeck **S 4245 UV/Vis detector** is a variable wavelength UV/Vis detector for routine analysis and sophisticated research.

The dual lamp design offers a wavelength range of 190 – 900 nm with a low baseline noise.

The front-accessible flowcell can easily be exchanged, as can be also the lamps which are accessible through a side panel in the instrument housing.



### **Integrated wavelength program**

The **S 4245 UV/Vis detector** features a wavelength program to change the selected wavelength over time.

With this feature the optimum wavelength can be selected for each analyzed substance according to its retention time.

### **Integrated peak detector**

The integrated peak detector works as a basic fraction collector. The peak detection level can be freely programmed for peak start and peak end to enhance the collection purity.

An integrated 24V output for switching a solenoid valve is used for the fraction collection, which is automatically operated with a selectable time delay.

### **Optional - dual - wavelength**

The **S 4245 UV/Vis detector** is available with an optional second wavelength. This feature enhances the Wavelength Program feature that you can measure 2 different wavelengths at the same time.

A second D/A converter output comes with this option to keep the system flexible to be used with any data acquisition software available.

### **Optional - online - scan**

Another option for the **S 4245 UV/Vis detector** is the online scan. With the online scan whole spectrum information can be gathered at a certain time. This scan information is stored internally and can be recalled at any time. The Online Scan is a good alternative to a full UV PDA detector.

# S 4245 UV/Vis detector

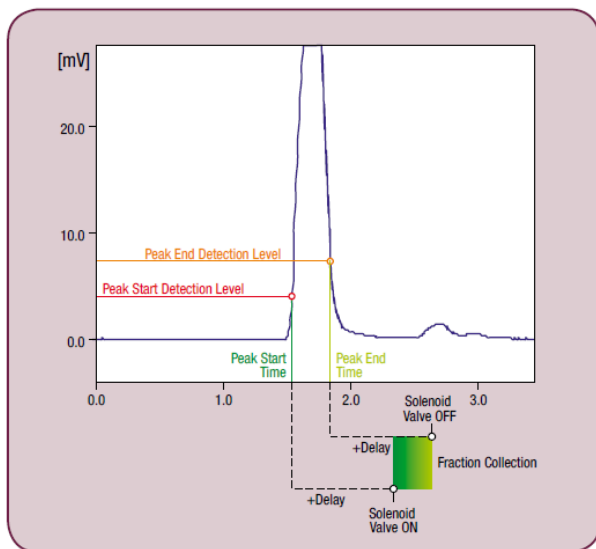


Figure: S 4245 peak detector

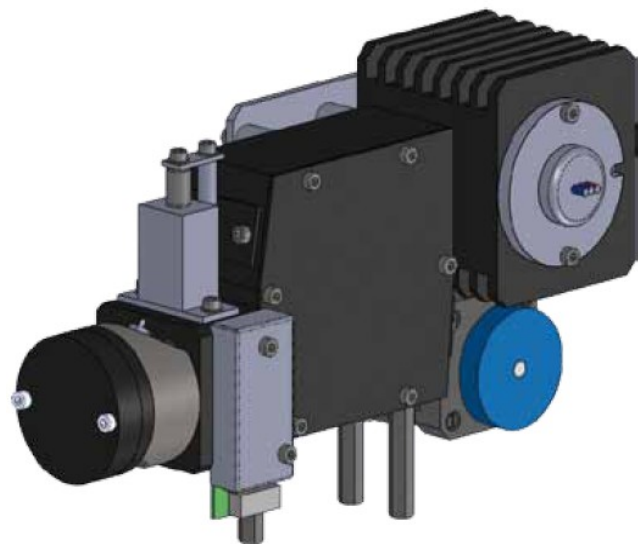


Figure: S 4245 optical module

## Technical specifications\*

<b>Wetted Materials:</b>	Stainless Steel / PEEK*
<b>Baseline Noise:</b>	$\pm 1 \times 10^{-5}$ AU (@240 nm, 1 sec. Risetime)
<b>Baseline Drift:</b>	$2 \times 10^{-4}$ AU/h
<b>Wavelength Range:</b>	190 – 900 nm
<b>Wavelength Accuracy:</b>	$\pm 2$ nm
<b>Linearity:</b>	$> 2.0$ AU
<b>Light Source:</b>	Deuterium Lamp, Tungsten Lamp
<b>Wavelength Program:</b>	Programmable, 10 steps
<b>Analog Output:</b>	1x 1 V (optional: 2x 1V)
<b>Control Features:</b>	Internal Peak Detector with +24 V solenoid switching output.
<b>Dimensions:</b>	310 x 165 x 478 mm (W x H x D)
<b>Weight:</b>	TBA
<b>Power Supply:</b>	100 - 250 V (47—63 Hz)

\* depending on configuration

## Order information S 4245 UV/Vis detector

Part-no.	Description
UV/Vis S4245	UV/Vis detector S 4245, 1 channel
UV/Vis S4245-2	UV/Vis detector S 4245, 2 channels
UV/Vis S4245-2S	UV/Vis detector S 4245, 2 channels with scan option



## S 6250 auto sampler

The **S 6250 auto sampler** is a very flexible and powerful HPLC and GPC/SEC autosampler with excellent reproducibility and linearity properties.

Variable vial racks and adaptors for microtiter plates as well as a multitude of firmware options make this system highly adaptable and suitable for any analytical application.

### Robust design

#### Durable X/Y/Z-sampling

The **S 6250 auto sampler** features a mechanically durable X/Y/Z-sampling-mechanic designed for long life operation. The self-lubricating bearings keep the routine maintenance at a minimum and avoid troubles caused by dusty environments. High precision stepper motors drive the X/Y axis for accurate positioning. Microstepping mode enables a high resolution for the syringe dosing and vial positioning.

#### Dual-Needle Design

The dual-needle design of the **S 6250 auto sampler** avoids system blockages due to septum particles injected into the system. The ventilation needle pierces the septum before the injection needle moves into the sample vial (*see figure on the right*). As the more fragile injection needle does not need to pierce the vial septum, stronger vial caps or plastic vials can be used without problems.

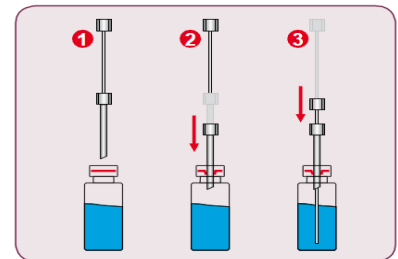


Figure: Dual-Needle injection

#### Accessibility

The injection valve with sample loop and injection port can be accessed directly from the instrument front without removing any protective covers. The dosing syringe can be accessed from the side of the instrument through a hinged glass panel.

The exchange of the syringe can be done without the requirement of any tools.

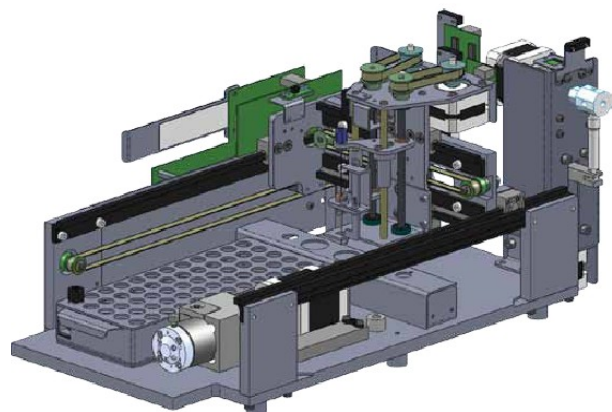


Figure: S 6250 mechanical design



# S 6250 auto sampler

## Precision & modularity

### Performance

The **S 6250 auto sampler** offers multiple injection modes depending on application and sample needs. Besides fixed loop overfilling and variable volume injection the instrument offers a *Zero-Waste* injection mode for injecting very small sample amounts by moving the sample into the middle of the sample loop. Linearity and injection precision can be optimized for any volume by different sample loops and syringe sizes.

### Modular options

The modular nature of the **S 6250 auto sampler** offers the possibility to “*just buy what you need*”. Modular options include sample heating/cooling for any sensitive sample material and derivatization for automatized pre-column derivatization tasks from reagent derivatization to automatic sample dilution.

### Technical specifications\*

<b>Wetted Materials:</b>	Stainless Steel / PEEK*, PPS, PVDF
<b>Sample capacity:</b>	60/90 (1.5 ml), 96 (microtiter plates)
<b>Injection Volume:</b>	Programmable 0.1 - 999.9 µl
<b>Injection Precision:</b>	< 0.5 % Variable Volume Injection (10 µl; typically ~0.25 %)
<b>Linearity:</b>	Correlation Factor > 0.999 (10 µl injection volume, 500 µl Syringe)
<b>Cary Over:</b>	< 0.05 % with wash program
<b>Dimensions:</b>	310 x 210 x 478 mm (W x H x D)
<b>Weight:</b>	TBA
<b>Power Supply:</b>	100 - 250 V (47—63 Hz)

\* depending on configuration

### Order information S 6250 auto sampler

Part-no.	Description
S6250	<i>S 6250 auto sampler , fix injection volume</i>
S6250-01	<i>Upgrade variable injection volume</i>
S6250-02	<i>Upgrade cooling / heating</i>
S6250-03	<i>Upgrade derivatisation</i>

## S 8515 vacuum degasser

The **S 8515 vacuum degasser** is an online degasser system with high efficiency.

Dissolved gases are removed from the solvents by applying vacuum to a semi-permeable membrane.

### High efficiency

The high efficient Teflon-AF® capillary has a much higher efficiency than a normal Teflon capillary of similar size.

This allows the usage of a smaller length of capillary to reduce the dead volume of the system considerably.



Figure: S 8515 vacuum degasser

### Operation modes

The **S 8515 vacuum degasser** can be run either with constant speed or in hysteresis mode, which switches the vacuum pump on or off.

### 5-Year membrane warranty

The **S 8515** vacuum pump uses a membrane for creating the vacuum. This membrane is made of a specific Teflon material specifically designed for fast movements. Schambeck SFD GmbH offers a 5-year warranty on the lifetime of this membrane.

### Multi - channel

The **S 8515 vacuum degasser** is available as 1-channel, 2-channel, 3-channel or 4-channel version and also in a PEEK—metal free version.

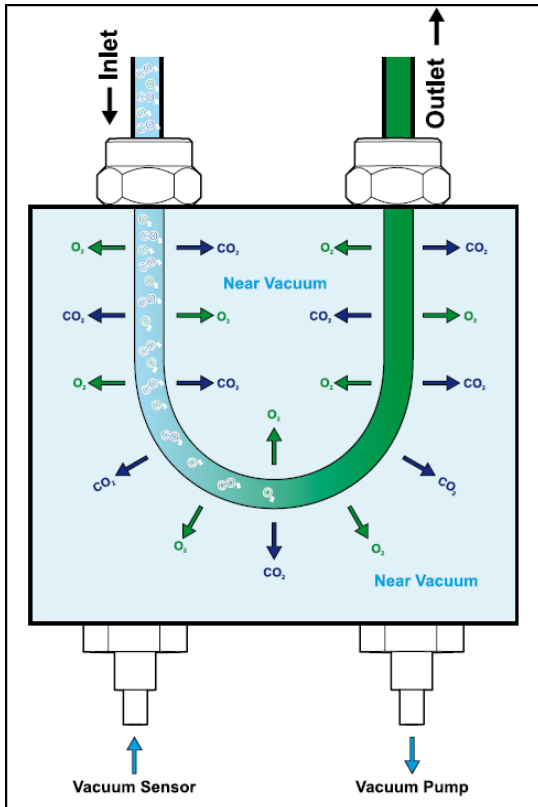
Each solvent channel can be used for a different solvent or several channels can be used in series to increase the efficiency even more.



# S 8515 vacuum degasser

## Working principle

The solvent flows through a short length of Teflon AF® capillary inside a sealed chamber. This chamber (vacuum chamber) is completely sealed to the environment and vacuum is applied with a pump. Due to this vacuum any dissolved gases in the solvent running through the inner capillary are removed through its semi-permeable membrane wall. The high efficiency of the Teflon AF® material allows the usage of a very short length of capillary inside the vacuum chamber.



## Technical specifications\*

**Wetted Materials:** Teflon AF®, Teflon, Stainless Steel, Aluminium, EPDM

**Degassing Capacity:** < 20% dissolved gases remaining in water at 1.0 ml/min

**Volume /Channel:** < 500 µl

**Dimensions:** 125 x 167 x 270 mm (W x H x D)

**Weight:** 3,2 kg

**Power Supply:** 100 - 250 V (47—63 Hz)

\* depending on configuration

## Order Information S 8515 vacuum degasser

Part-no.	Description
S 8515 – 1A	S 8515 vacuum degasser - 1 Channel
S 8515 – 2A	S 8515 vacuum degasser - 2 Channel
S 8515 – 3A	S 8515 vacuum degasser - 3 Channel
S 8515 – 4A	S 8515 vacuum degasser - 4 Channel
S 8515 – 1AP	S 8515 vacuum degasser - 1 Channel / PEEK—metal free
S 8515 – 2AP	S 8515 vacuum degasser - 2 Channel / PEEK—metal free
S 8515 – 3AP	S 8515 vacuum degasser - 3 Channel / PEEK—metal free
S 8515 – 4AP	S 8515 vacuum degasser - 4 Channel / PEEK—metal free

**HPLC - Systems**  
**GPC/SEC - Systems**  
**Chromatographie - Software**  
**Spare Parts and Accessories**  
**for HPLC and GPC/SEC**

**Schambeck SFD GmbH**  
**produces since more than 20 years**  
**Systems**  
**and single components**  
**for HPLC and GPC/SEC.**

**Complete Systems, Vakuum Degasser,**  
**Pumps, Autosamplers and Detectors**



**use Clarity Software from DataApex**  
**with optional software modules for data**  
**acquisition, data processing and**  
**instrument control**

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