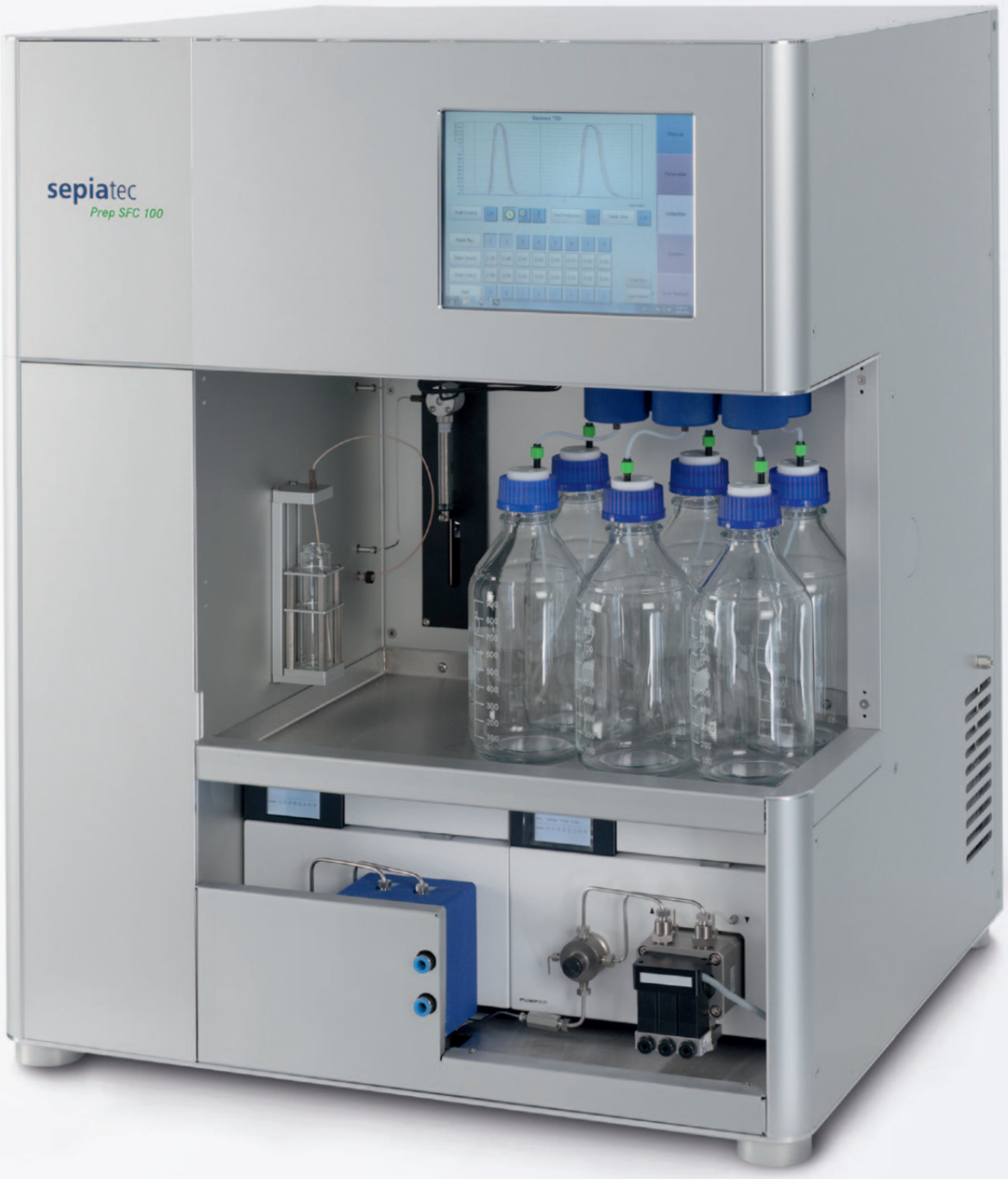
PREP SFC 100

Preparative Scale Separation – Compact Design



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PREP SFC 100

Sepiatec's Prep SFC 100 system is a compact benchtop unit designed for preparative separation using supercritical fluid chromatography. Measuring just 70 x 60 x 88 cm (W x D x H) the system offers all advantages of SFC technology such as fast separation, reduced consumption of organic solvents, lower costs, improved environmental compatibility and increased safety.

The Prep SFC 100 system uses two high-pressure pumps fitted with 100-ml pump heads. Total flow rates (CO_2 and modifier) of up to 150 ml of supercritical fluid per minute can be achieved, and allow the operator to use separation columns with internal diameters of 20 to 30 mm and lengths of 250 mm.

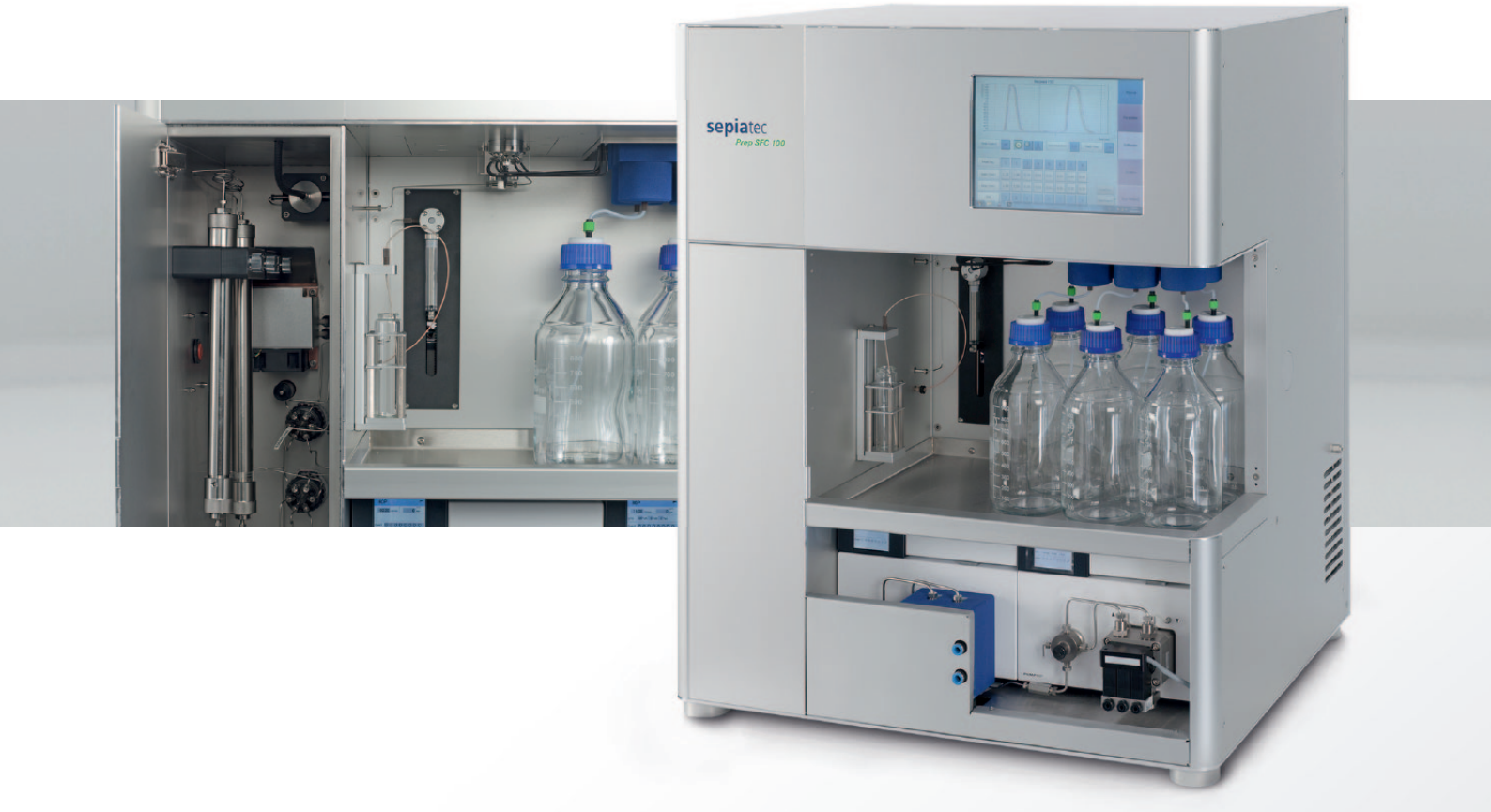
Due to its compact design the footprint of the Prep SFC 100 system is comparatively small and precious laboratory space can be saved. The clearly arranged assembly of the Prep SFC 100 system allows easy access to all of its modules. The fractionation module includes a selector valve and a gas/liquid separator. It is designed for 8 sample bottles with a volume of 1 litre each. Due to the flexible outlets even bigger sample containers with volumes up to several litres can be used.

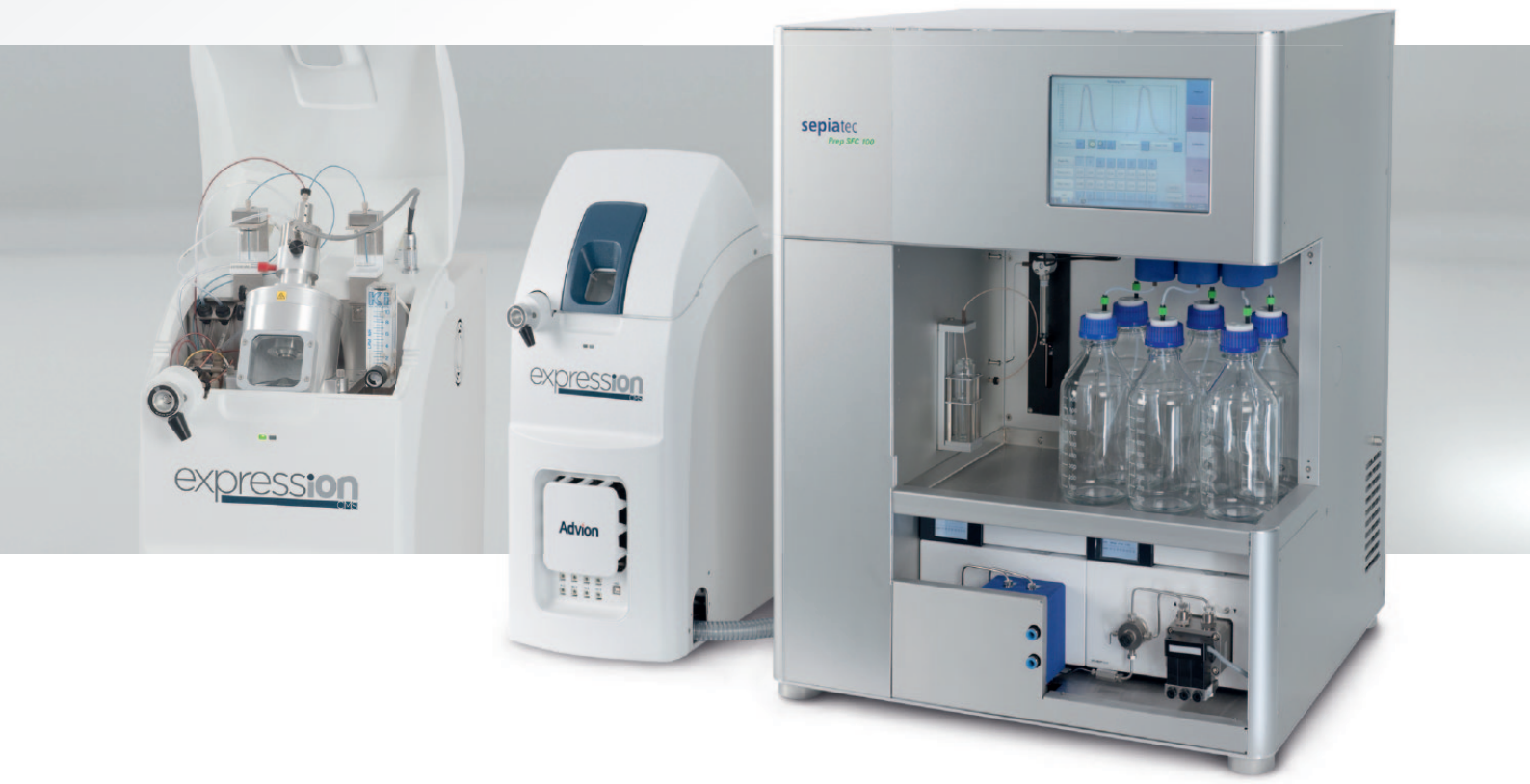
The very user-friendly Prep SFC 100 control software runs the entire device and contains functions such as stack injection and peak detection. Data is entered via the 10" touch screen, which is placed ergonomically on the upper front of the Prep SFC 100 system.

A computer with current performance data is built into the device. There is no need for a separate computer or monitor, and no additional bench space is required.

The equipment of the Prep SFC 100 system includes:

- a high pressure pump for CO_2
- a high pressure pump for modifiers
- a back pressure regulator
- a syringe pump for sample injection
- a UV/VIS detector
- an integrated computer with a 10" touch-screen
- the Prep SFC 100 control software





PREP SFC 100 WITH MASS SPECTROMETER

As an option Sepiatec's Prep SFC 100 system can be combined with Advion's expression CMS.

The expression CMS is a very compact mass spectrometer featuring the latest single quadrupole technology. The system as a whole, consisting of Prep SFC 100 and expression CMS, allows users to perform mass-directed-, mass-confirmed and UV-controlled fractionation. The exact molecular weights of the separated substances are quickly and reliably measured, and even UV-inactive targets can be fractionated.

The ion source consists of an ESI option and an APCI option, which can both produce anions or cations as required. The acquisition rate is 5,000 m/z units sec-1 and the resolution is 0.5 – 0.7 m/z units (FWHM) at 1,000 m/z units sec-1 throughout the acquisition range.

All the modules needed to connect the expression CMS to the Prep SFC 100 system, such as a makeup flow pump and a split valve, are included.

The expression CMS mass spectrometer is operated and the data obtained are displayed using the Prep SFC 100 system software. The expression CMS software allows users to perform a wide range of assessments.

The compact size of the Prep SFC 100 and the expression CMS means that they can be installed together in a standard laboratory fume hood.

TECHNICAL DATA

PREP SFC 100

Operating mode	1 preparative column
Solvents	CO_2 and organic solvents
Number of solvents	3 solvents
CO_2 pump	100 ml pump head, 400 bar
Modifier pump	100 ml pump head, 400 bar
Operating pressure	Up to 300 bar, adjustable online backpressure control
Injections	Total loop with syringe pump
Columns	20 to 30 mm ID, up to 250 mm length
Column oven	Up to 70°C, integrated heating module, injection valve and UV flow cell
Detection	UV detector 190 - 510 nm
Fraction collection	1 to 8 fractions (standard 8 x 1 l bottles)
Software	Prep SFC 100 control software
System controller	Integrated PC, 10“ TFT touch-screen
Connections	USB ports for mouse / keyboard, Ethernet
Dimensions	70 x 60 x 88 cm (W x D x H)

MASS SPECTROMETER EXPRESSION CMS BY ADVION

Ion source	ESI with APCI option (switchable with minimal effort)
API interface	Orthogonal ion sampling from heated capillary – allows for small single turbo pump (patents pending)
Flow rate range	10 µL/min to 500 µL/min (higher with simple split)
Polarity	+ve and -ve ion in sequential analyses
m/z range	m/z 10 to m/z 1,200
Acquisition rate	5,000 m/z units sec-1 (compatible with UHPLC)
Resolution	0.5 - 0.7 m/z units (FWHM) at 1000 m/z units sec-1 over entire acquisition range
SIM sensitivity	10 pg reserpine (FIA – 5 µL sample injection volume at 100 µL/min) 100:1 S/N (RMS) with SIM of m/z 609.28
Scan sensitivity	100 pg reserpine (FIA – 5 µL sample injection volume at 100 µL/min) 100:1 S/N (RMS) with full-scan acquisition of m/z 100 to m/z 1200
Accuracy	± 0.1 m/z units over entire acquisition range

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