

PREP SFC M5

Versatile SFC System for Chiral and Achiral Separations



PREP SFC M5 SYSTEM

Sepiatec's Prep SFC M5 system is a preparative system for separating chiral and achiral samples using supercritical fluid chromatography.

The Prep SFC M5 system consists of the main module and the collector module. Both modules form a functional unit that can be configured in a variety of ways with different equipment.

The main module can be equipped with up to three high pressure pumps, a CO₂ pump, a modifier pump and an optional add-on pump for separations with low modifier portions. The available options include CO₂ and modifier pumps with 30 ml pump heads, 400 bar (Prep SFC M5 - 50) or CO₂ and modifier pumps with 150 ml pump heads, 400 bar (Prep SFC M5 - 250).

The integrated auto sampler can accommodate two standard or two deep well microtiter plates with 24 wells and a volume of 10 ml each or racks with up to 60 sample vials with a volume of 1.5 ml each.

The heatable column oven contains up to 10 separation columns with internal diameter of 4 to 30 mm and a length of 250 mm.

The post heater and the back pressure regulator are integrated within the collector module. The continuously operating gas-liquid separator is located at the front of the collector module; it removes residual CO₂ from the isolated compounds.

Standard equipment in the main module is a UV detector for measuring in the range of 190 – 500 nm. Other detectors, such as a DAD or an ELSD, can also be connected.

The Prep SFC M5 system can be fitted with a carousel fraction collector which can accommodate collection vessels with volumes ranging from 10 to 500 µl.

Alternatively, an XY-fraction collector for vials with volumes of 10 or 60 µl is available. A total of up to 195 fractions can be collected.

An integrated system controller and a 15.6" TFT touch screen are used to input all data for sample separations. No additional computer is needed, reducing the space required for the Prep SFC M5 system to a width of just 92 cm.



Prep SFC M5 with XY-collector



Prep SFC M5 with carousel collector



PREP SFC M5 SYSTEM WITH MASS SPECTROMETER

For mass-directed fractionation the Prep SFC M5 system can be combined with Advion's expression CMS.

The expression CMS is a compact mass spectrometer featuring the latest single quadrupole technology. The system as a whole, consisting of the Prep SFC M5 and the 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.

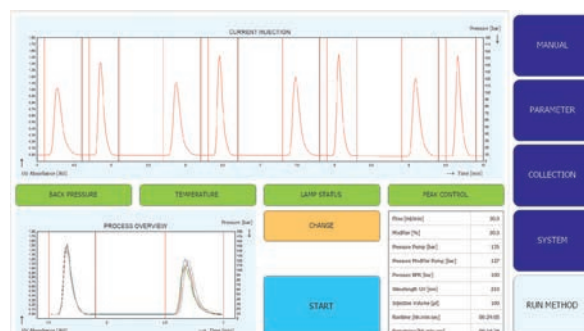
The expression CMS mass spectrometer is operated and the data obtained are displayed using the Prep SFC control software.

PREP SFC M5 SOFTWARE

The Prep SFC M5 system is controlled entirely by means of the Prep SFC control software which offers a clear menu structure enabling simple and intuitive operation. All input options are presented on just a few screens.

The software includes a sequence editor for inputting separation parameters for different samples, functions such as stack injection with automatic suggestions for stack times, multiple options for fractionation and on-the-fly editing for changing parameters during the course of a run.

An additional monitor at a separate work site can also be connected.



TECHNICAL DATA

PREP SFC M5 SYSTEM

	Prep SFC M5-50	Prep SFC M5-250
Operating mode	1 analytical or semi-preparative column	1 semi-preparative or preparative column
Suitable columns	4 to 16 mm ID, max. 250 mm in length	15 to 30 mm ID, max. 250 mm in length
CO2 pump	30 ml pump head, 400 bar	150 ml pump head, 400 bar
Modifier pump	30 ml pump head, 400 bar	150 ml pump head, 400 bar
Add-on pump	30 ml pump head, 400 bar (optional)	30 ml pump head, 400 bar (optional)
Total flow rate, isocratic	50 ml/ min at a modifier portion of 40 %	250 ml/ min at a modifier portion of 40 %
Total flow rate, gradient	30 ml/ min	150 ml/ min
Solvents	CO2 and organic solvents	
Number of modifier solvents	1 standard, max. 4 with optional selection valve	
Operating pressure	Up to 300 bar, back pressure regulator online adjustable	
Autosampler	2 standard microtiter plates or 2 deep well MTP with 24 wells 10 ml each, racks with 60 vials 1.5 ml or 24 vials 5 ml each	
Injection	Partial loop with syringe pump	
Column oven	Ambient temperature to 70° C, 10 columns	
UV detector	Wavelength range 190 to 500 nm	
Other detectors	DAD, ELSD or mass spectrometer optional	
Fraction collectors	Carousel fraction collector: fraction volumes 10 to 500 ml XY-fraction collector: 72 vials 60 ml or 195 vials 10 ml, custom made fraction collectors available on request	
Software	Prep SFC control software	
System controller	Integrated controller, Windows 10	
Touch screen	15.6" touch screen, 16:9 format	
Connections	3 USB ports, Ethernet, HDMI	
Dimensions	92 x 60 x 88 cm (W x D x H), with XY fraction collector 97 cm in width	

Technical data of the Prep SFC M5 sorter module available on request