

## SFC Prep 350 System

The Waters™ SFC Prep 350 System is used to isolate specific quantities of a particular substance contained in a chemical mixture with the individual solutes of interest isolated, collected, and recovered for further use. Intended for bulk purification, the SFC Prep 350 System provides for unattended, automated runs, fast equilibration times, and reduced solvent costs.

### SYSTEM SPECIFICATIONS\*

Operating pressure range (recommended)	100 to 320 bar (1450 to 4638 psi)
Liquid CO <sub>2</sub> inlet pressure	55 to 100 bar (797 to 1450 psi)
Maximum pressure	320 bar (4641 psi)
Pressure accuracy	±1% Full scale pressure
Inlet liquid CO <sub>2</sub> temperature	5 °C to ambient (25 °C)
Cooling with external cooling	Circulating coolant
Total flow rate range (CO <sub>2</sub> + co-solvent)	200 to 350 g/min
Co-solvent percentage range	5% to 55% (at maximum total flow of 350 mL/min)
Fraction capacity	Up to five fractions (plus one waste)
Software	ChromScope™ Software

*\* Individual component specifications may allow operation outside the total system defined parameters.  
The system is designed and tested only for the ranges defined in System Specifications.*

### HIGH PRESSURE CO<sub>2</sub> PUMP (P-350)

High pressure pumps are ideal for high pressure, supercritical fluids, and pulseless flow applications.

Flow rate range	35 to 350 mL/min
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### MODIFIER PUMP (P-200X)

Flow rate range	20 to 200 mL/min
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### STANDARD EQUIPMENT

Dual stainless steel heads, sapphire piston assembly, check valves, pressure sensor, pressure gauge, and brushless motor.



## PRE-COLUMN HEAT EXCHANGER

The pre-column heat exchanger is used to heat the CO<sub>2</sub> and solvent in the mobile phase before the sample is introduced and enters the column.

Temperature range	Ambient to 60 °C
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## INJECTION MODULE

The Injection Module is configured to perform modifier stream injection. An optional configuration change allows combined stream injection.

Injection loop	2 mL standard with 5 mL syringe
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## 2489 UV/VIS DETECTOR

Wavelength range	190 to 700 nm
Spectral bandwidth	6 nm
Wavelength accuracy	±1 nm
Wavelength precision	±1 nm
Sensitivity range	0.001 to 2.000 AU (0.001 AU increments)
Linearity range	1%, when value is within specified sensitivity range
Noise (peak to peak, short term)	@ 254 nm <math>\leq \pm 2.5 \times 10^{-5}</math> AU @ 520 nm <math>\leq \pm 6.0 \times 10^{-5}</math> AU
Drift	<math>< 3.0 \times 10^{-4}</math> AU/hour
UV lamp	Deuterium
Visible lamp	Tungsten/halogen
Flow cell	Preparative – standard
Cell material of construction	Sapphire, peek, 316 stainless steel
Path length	Preparative: 0.5 mm
Cell volume	Preparative: 2.0 µL
Pressure limit (SFC high-pressure flow cell)	320 bar (4641 psi)



## 2424 ELS DETECTOR (OPTIONAL)

The Waters 2424 Evaporative Light Scattering (ELS) Detector, with its compact and innovative design, offers near universal detection of non-volatile and semi-volatile sample components.

### Nebulizers

High-flow rate (standard with detector) 300 to 3000  $\mu\text{L}/\text{min}$  (gas flow at 1.80 L/min at 25 psi)

Optional low-flow rate 50 to 500  $\mu\text{L}/\text{min}$  (gas flow at 0.77 L/min a 25 psi)

### Temperature control

Nebulizer heater power 0% to 100%

Nebulizer cooler On/off

Drift tube Ambient +5.0 to 100.0  $^{\circ}\text{C}$ ; 0.1  $^{\circ}\text{C}$  increments

Optional external column heater Ambient +5.0 to 150.0  $^{\circ}\text{C}$ ; 1.0  $^{\circ}\text{C}$  increments

Gas supply Nitrogen, to be supplied at least 65 psi

Gain setting 0 to 1000

Filter time constant Hamming, 0.0 to 5.0 s

Sampling rate Up to 80 points/s

Measurement range 0.1 to 2000.0 LSU

### Optical component specifications

Optics Heated optics bench (constant 50  $^{\circ}\text{C}$ )

Light source Tungsten halogen polychromatic front mounted, pre-aligned, user installable  
Warranty: 2000 hours or one year (whichever comes first)

Detector Photomultiplier tube

Scattering angle 60 degrees

Wetted materials 316 stainless steel, aluminum, viton, PTFE, FEP, silicone rubber, polyethylene, polyurethane

## AUTOMATED BACK PRESSURE REGULATOR (ABPR)

The ABPR valve assembly is motor-driven and temperature controlled to compensate for cooling during depressurization. A built-in pressure sensor provides closed loop feedback for control and pressure alarm monitoring.

Maximum flow rate 350 g/min

Maximum pressure 320 bar (4641 psi)

## TRAILING HEAT EXCHANGER

After exiting the Automated Back Pressure Regulator, the Trailing Heat Exchanger is incorporated to ensure a phase separation in the mobile phase between the  $\text{CO}_2$  and the co-solvent. This Trailing Heat Exchanger is used to vaporize the  $\text{CO}_2$  from the mobile phase so that the fraction collectors are collecting only a sample enriched solvent mixture.

Wetted material 316 stainless steel



## HIGH PRESSURE FRACTION COLLECTION MODULE

The High Pressure Fraction Collection Module utilizes two high pressure rotary valves to allow collection of up to five fractions (plus one waste).

Wetted material	316 stainless steel and PEEK
Material	316 stainless steel
Flow rate	350 g/min

## MANUAL BACK PRESSURE REGULATOR

The Manual Back Pressure Regulator is used to maintain pressure on the high-pressure fraction collectors for efficient collection and to minimize any freezing that may occur during depressurization.

Wetted material	316 stainless steel and PEEK
Pressure	80 bar (1160 psi)

## POWER REQUIREMENTS

Voltage and frequency	220 V
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## PHYSICAL DIMENSIONS

Dimensions	Width: 107 cm (42 in) Height: 135 cm (53 in) Depth: 92 cm (36 in)
Weight	195 kg (430 pounds)

## VENTING

Carbon dioxide (CO<sub>2</sub>) is a non-toxic gas. However, it will displace the air in the room which requires that the system be properly vented. The system provides for venting to a fume hood through a 1/4 inch compression fitting and transfer line.

# Waters™

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