

Personal OPLC-50 Specifications

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Principle of Operation	Over Pressure Layer Chromatography or OPLC
Solvent Delivery Unit	
Control	Microprocessor control, menu oriented programming. Manual control or programmed method operation. Nine programmed methods are included; and the user can generate a custom method.
Solvent Delivery Modes	Single piston pump provides standard mobile phase elution and flash volume capabilities (for off-line separation linearization). Flow rate during delivery of the flash volume is automatically calculated to optimize the separation. The flow is stopped automatically if back pressure exceeds 40 bar (580 psi).
Mobile Phase Composition	Electronic switch valve selects one of three solvent reservoirs containing a solvent or mixture for isocratic elution or sequential isocratic elutions (step gradient).
Flow Rate Range	10 μ L/min to 10 mL/min
Precision	2.5%
Maximum Pressure	Maximum achievable back pressure is 80% of programmed pressure on the OPLC flat column. Because the pressure on the columns cannot exceed 50 bars, maximum achievable back pressure cannot exceed 40 bar.
Alarm	Provided to indicate when programmed run is completed, when maximum operating pressure has been attained or if cassette is not in the proper operating position.
Dimensions and Weight	206 mm (W) x 400 mm (L) x 200 mm (H) (8.2" x 15.7" x 7.9") Weight 11 kg (24.2 lb)
Separation Chamber	
Manual Control	Single piston pump on the face of the pumping station drives a hydraulic press to a manually programmed pressure between 1 and 50 bar. The switch button on the control panel is used to release the pressure. Time to reach maximum pressure: less than 45 s.
Programmed Control	Pressurization between 1 and 50 bar can be performed in one of the 2 program modes. Depressurization is automatic at the end of the run, if the backpressure exceeds 80% of applied pressure or when a manual STOP command is given from the control panel of the pump station.
Maximum Pressure	50 bars (5MPa or 725 psi). This is also the recommended operating pressure with all stationary phases. This pressure is applied by an on-board hydraulic system using a water/glycerol mixture.
Precision	2 bar
Sorbent Bed Compatibility (1)	All flat columns are compatible with the Personal OPLC 50 unit, including 5 x 20 cm, 10 x 20 cm and 20 x 20 cm sizes, glass or aluminum-backed and 0.2 to 0.5mm thick. A broad range of chromatographic media is available for analytical separations including Normal Phase (SiO ₂), Reverse Phase (C18, C8) and specialized phases (Chiral, Cyano, Diol, NH ₂) in 5 and 11 μ m particle size.

Preparative Scale Operation	Preparative scale separations can be performed. Maximum loading capacity depends on the selected particle size, column dimensions, sample and solvent. With columns of 5 x 20 cm, 200 µ thick, 11 µ particle size, loadings of 50 mg max have been achieved. With columns of 10 x 20 cm, 200 µ thick, 11 µ particle size, loadings of 100 mg max have been achieved. With columns of 20 x 20 cm, 200 µ thick, 11 µ particle size, loadings of 200 mg max have been achieved. A glass backed column of 20 x 20 cm, 500 µ thick, 22 µ average particle size, loadings of 500 mg max have been achieved.
Mode of Separation	Unidirectional, bi-directional, bi-dimensional or circular separations can be performed.
Sample Application	<i>Direct Sample Application Mode</i> - Samples can be spotted or streaked on the sorbent bed in an off-line mode either manually or automatically using an automatic sample applicator (not included). Multiple samples can be placed on the sorbent bed in a linear arrangement. <i>Sample Injection Mode</i> - Samples can be injected into the stream of solvent flowing through the chamber using a manual injection valve or autosampler (not supplied).
On-line Detection	The Personal OPLC 50 can be interfaced to all detectors compatible with classical HPLC systems (e.g. UV, Fluorescence, Radiometric, Evaporative Light Scattering, MS, NMR).
Off-Line Detection	The flat columns can be readily removed from the Personal OPLC 50 and examined at any point during a separation (flow must be stopped before removing column). Observation of bands can be performed either with a hand-held UV lamp (not included), densitometer (not included) or after derivatization with a spray/dip reagent.
Safety	The hydraulic system will not function unless a column holder (cassette) is properly inserted into the separation chamber.
Dimensions and Weight	296 mm (W) x 390 mm (L) x 135 mm (H) (12" x 15.4" x 5.3") Weight 19 kg (41.8 lb)
System	
Operating Conditions	Temperature: 10-40 °C/50-104 °F Maximum Relative Humidity: 90% non-condensing Maximum Altitude: 2000 m (6962 ft)
Storage Conditions ⁽²⁾	Temperature: 10-40°C Relative Humidity: 20-90 %
Power Requirement	110 V/60 Hz or 220 V/50 Hz, 130 VA Voltage fluctuations must not exceed +/- 10% VAC vs nominal (Configured according to user's local power supply)
Certifications	Class I Pollution degree 2 Installation Category II

All specifications are subject to change.

- (1) Caution: the appropriate column holder (cassette) for each column must be in good working condition to avoid damaging the unit.
- (2) Protect against condensation especially if bringing in from the cold