



# PLC Purification Systems

Preparative HPLC, flash, and CPC in one compact purification system

LARGE CAPACITY

HIGH VERSATILITY

COMPACT FOOTPRINT



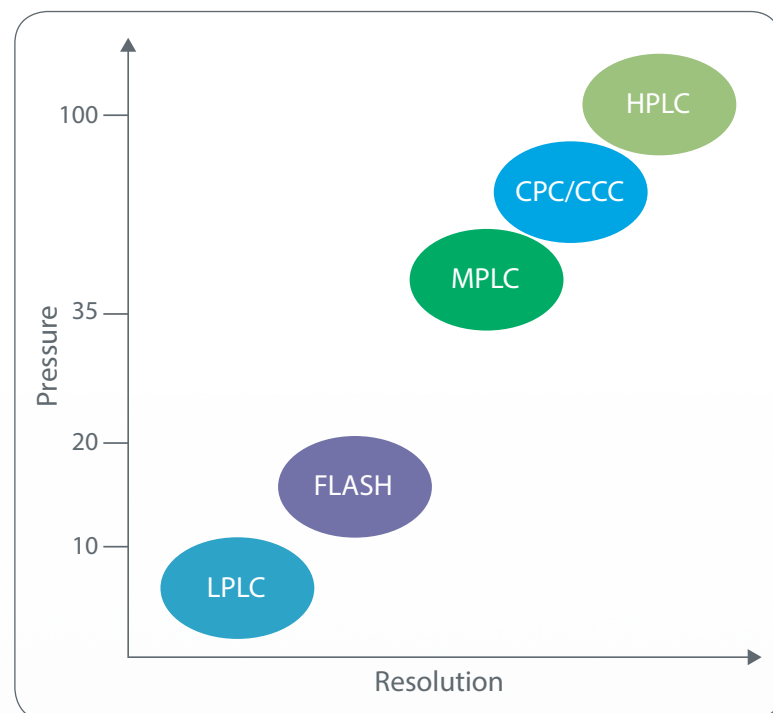
 **GILSON®**



## One system for many columns

### Choose your application, connect your column, start your purification!

Gain independence from shared systems and increase the possibilities of your drug discovery with configurable, application-ready PLC Purification Systems.



HPLC

CPC

FLASH

Three PLC Purification Systems are available:

#### PLC 2050

50 mL/min, 300 bar  
Purify 50–500 mg using HPLC

- Prep HPLC: 10–30 mm ID columns
- Flash: 2.5–70 g cartridges
- CPC: 25–250 mL columns

#### PLC 2250

250 mL/min, 230 bar  
Purify 100–2000 mg using HPLC,  
or 4–30 g by flash

- Prep HPLC: 10–50 mm ID columns
- Flash: 10–600 g cartridges
- CPC: 25 mL–1 L columns

#### PLC 2500

500 mL/min, 110 bar  
Purify 250–4500 mg using HPLC,  
as well as large flash cartridges

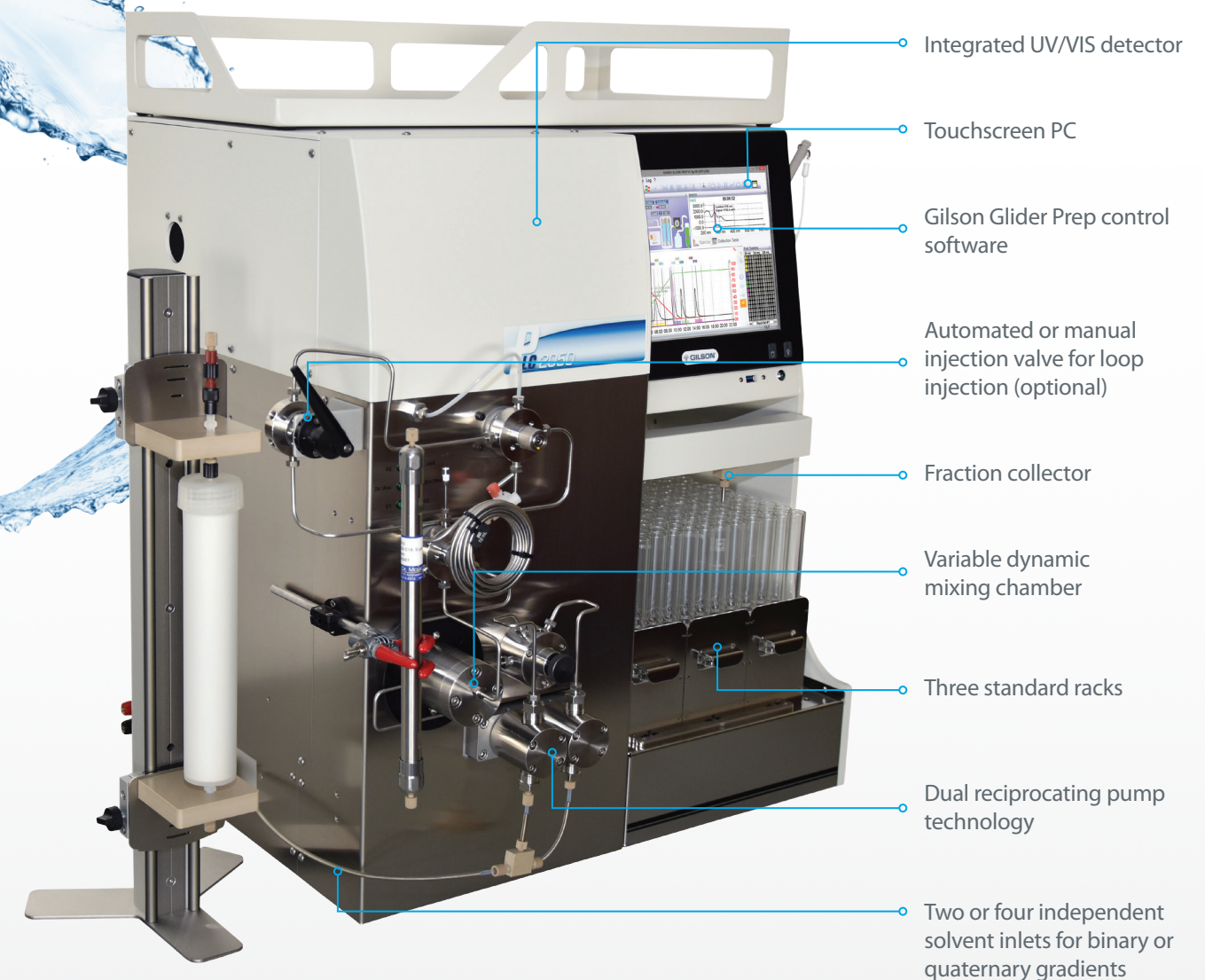
- Prep HPLC: 20–100 ID columns
- Flash: Up to 1.2 kg cartridges
- CPC: 250 mL–5 L columns

## All the features you need in one compact footprint

### A versatile purification tool for your preparative HPLC, flash, and CPC columns!

Gilson PLC Purification Systems integrate all preparative chromatography components into one instrument to make it one of the most flexible and safe automated purification systems available.

A complete solution—HPLC and flash in one standalone system with numerous capabilities!



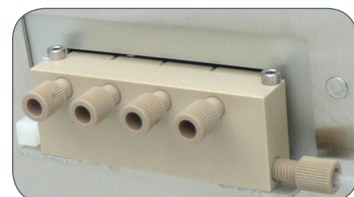




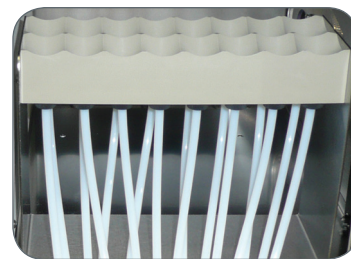
## Configure your system to fit your research

### Maintain flexibility with application-ready, out of the box convenience

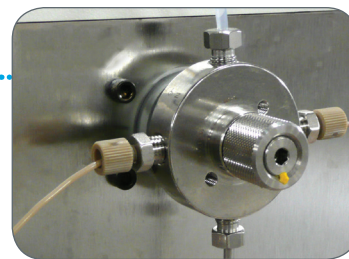
PLC Purification Systems provide customizable solutions to meet the unique needs and constraints of researchers. Contact your local Gilson representative to create the PLC purification System that fits your workflow.



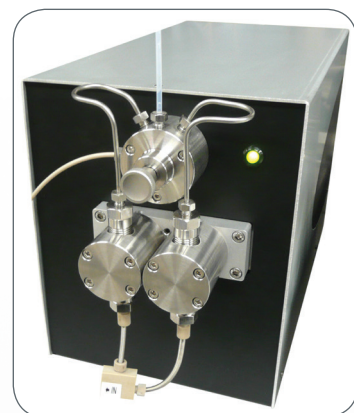
Binary/quaternary elution gradient inlets



16-outlet funnel rack



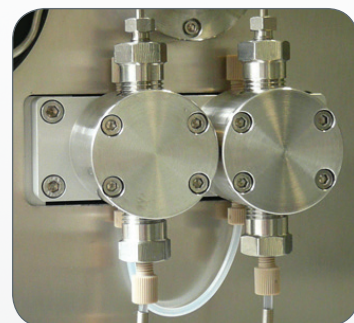
Controlled backflush valve and/or column switching valve



External injection pump  
50 mL/min, 300 bar for high volume injections



Fraction collector enclosure



Retrofit kits to exchange pump head.  
Flow rates: 50 <--> 250 mL/min



Standalone column holder for flash chromatography



GX-241 Liquid Handler for automated sample injections

## Choose your detector options

### Adaptable to meet your detection needs

PLC Purification Systems come with factory-installed options for detection, including UV/VIS and DAD, with the ability to connect additional detectors, such as ELSD and MS.

#### Built-in UV/VIS detector

Upgrade PLC Purification Systems with a wide spectrum (up to 840 nm) diode array detector to monitor up to four wavelengths simultaneously. Get real time spectra for immediate purity checks.

#### Built-in ELSD detector

The evaporative light scattering detector (ELSD) is a general-purpose detector that provides capabilities for all kinds of HPLC applications.



#### Standalone additional detectors

A wide range of external detectors (RI, Conductivity/pH monitor, etc.) can be connected to PLC Purification Systems with signals monitored by Gilson Glider Prep software.



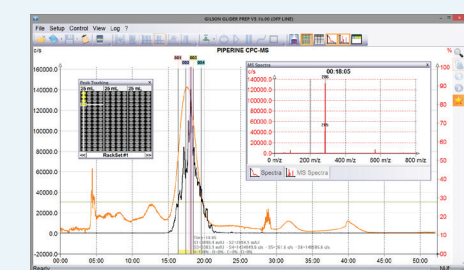
Gilson VERITY® 1810 Conductivity and pH Monitor

- Low-temperature technology for high sensitivity, reliability, and accuracy
- Automatic gain adjustment to avoid any off-scale saturation
- Split flow up to 5 mL/min

### Mass-directed purification of your target compounds

Connect the Gilson VERITY®1900 MS Detector—a compact, chip-based mass spectrometer!

- System for mass-directed purification in flash, prep HPLC, and CPC
- Compact footprint that saves bench space  
55 x 35 x 25 cm (L x W x H)  
21.7 in x 13.8 in x 10 in (L x W x H)
- Utilizes chip-based (MEMS) technology
- Optimize collection to collect only target mass
- 50 - 800 m/z mass range
- Positive or negative electrospray ionization source
- Real-time and post-run MS and UV spectra display
- Integrated control with remote operation
- Plug-and-play simplicity with a 30-minute startup







## Add CPC to create an advanced purification tool

### The perfect purification collaboration: PLC + CPC

Connect a centrifugal partition chromatography (CPC) column to a PLC Purification System for the ultimate performance of automated, silica-free purifications.

#### CPC vs. flash and prep HPLC

- Silica-free chromatographic column using biphasic solvent system
- No column to replace or silica to recycle
- Five times less solvent consumption
- 100% recovery: no irreversible absorption or denaturation
- Easily scaleable purification (mg to kg)
- Diverse application fields from complex natural extracts to proteins and synthetic mixtures



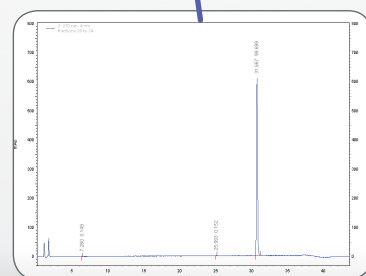
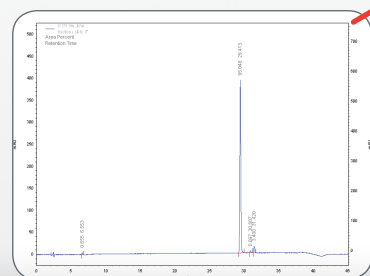
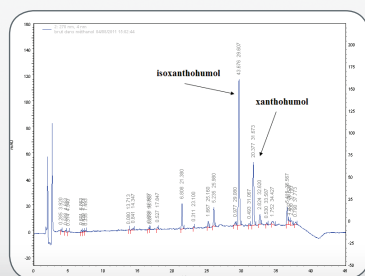
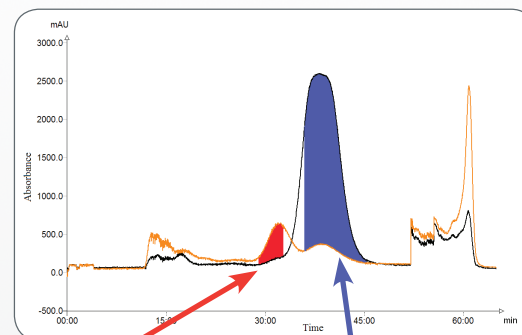
#### CPC Explained

CPC, where both the stationary and mobile phase are liquid, rely on special columns with a rotating section. At each CPC column end, a rotary seal allows the passage of the liquid phases from the static to the rotating part. The rotating portion of the column is made up of stacked disks where more than a thousand cells are linked together by a thin engraved duct. This special design maintains the stationary phase when under a centrifugal field, while allowing the mobile phase to move through the extraction.



#### ► Example of a CPC Application

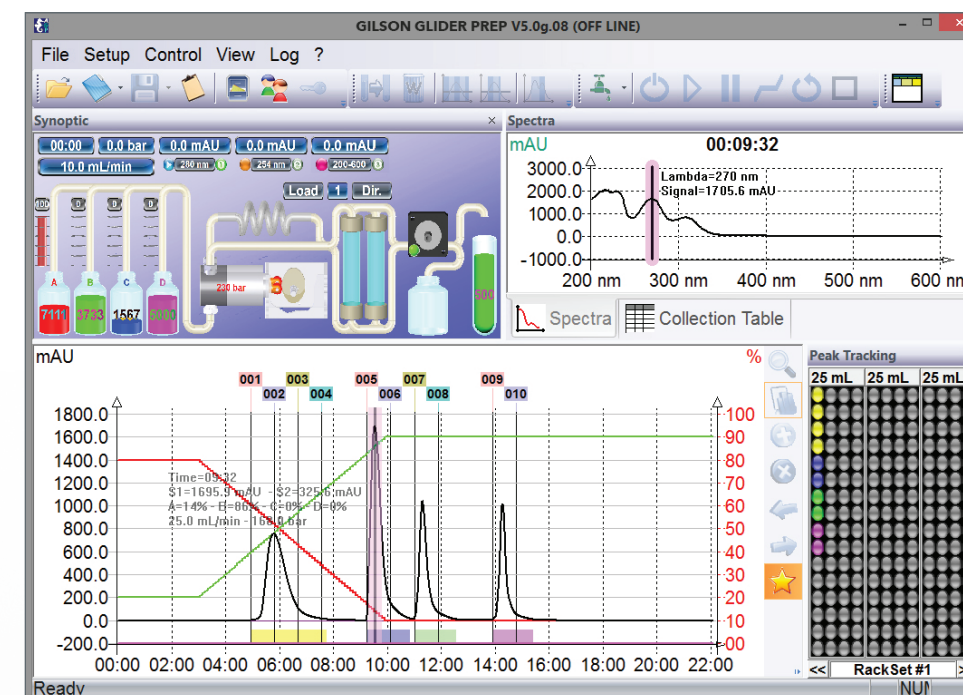
- 1 g injection of crude hop extract on 250 mL CPC column.
- Less than a liter of solvent used; separation complete in 45 minutes.
- Pure xanthohumol (25 mg) and isoxanthohumol (100 mg).
- Only one step for high purity and recovery!



## Gilson Glider Prep software: interactive and customizable user interface

### One software package for HPLC, flash, and CPC!

The combination of PLC Purification Systems with Gilson Glider Prep software creates an advanced purification tool for all types of applications, providing outstanding performance and efficiency for process development and purification.



#### The tab-based method editor allows for easy editing of the configuration and settings.

- Users can specify solvents, columns, gradient conditions, detector settings, collection parameters, and more
- Methods can be pre-programmed or written as needed, and saved for later use

#### USB ports on the instrument make it easy to print reports, or export and save them as PDF files.

#### Free offline software can be installed on all PCs for method preparation and data reprocessing.

- Real-time operating parameters update and display state of solvent containers
- Real-time color display matches peaks with tubes
- Up to six detector signals simultaneously for triggering fraction collection
- Direct access to all parameters on the graphical user interface while purification is running
- Programmed gradients automatically convert to isocratic steps when a peak is recognized
- Identified peaks are collected after the end of the programmed run time
- Customizable interface
- Automatic method creation via Rf values of Thin Layer Chromatography (TLC) plate



# Specifications

## PLC 2050, PLC 2250, PLC 2500 Purification Systems

Flow Rate / Max Pressure	PLC 2050: 50 mL/min with pressure up to 300 bar (4351 psi) PLC 2250: 250 mL/min with pressure up to 230 bar (3336 psi) PLC 2500: 500 mL/min with pressure up to 110 bar (1595 psi)
Performance	Flow rate accuracy: 2% (with H <sub>2</sub> O degassed at 20°C) Repeatability better than 0.5% Linear response to gradients from 2% to 98%
Gradient Former	Binary (standard) Quaternary (optional)
Injection	Automatic or manual loop injection valve (optional) Additional injection pump (optional) Additional GX-241 Liquid Handler (optional)
Valve Options	Automatic backflush valve (optional) Manual column switching valve (optional)
Column Holder	Built-in tightening clamp for up to 40 mm OD columns (standard) Additional standalone holder for flash columns (optional): <ul style="list-style-type: none"><li>• Maximum height: 400 mm</li><li>• Maximum diameter: 115 mm</li></ul>
Detection	UV monochromator single wavelength detector, 254 nm by default (standard) UV monochromator dual wavelength detector, 254/280 nm by default (optional) UV detector, 4-wavelength DAD, 200–400 nm (optional) UV/VIS detector, 4-wavelength DAD, 200–600 nm (or 190–840 nm) (optional) VERITY® 1900 MS Detector (optional) VERITY® 1810 Conductivity and pH Monitor (optional) Built-in ELS Detector (optional)
Collection	Several rack options available Rack overlays for easy tube identification (optional) Funnel rack for a large and variable collection volume in external high-capacity containers Fraction collector cover kit (optional)
Control	Touchscreen PC with Gilson Glider Prep software
AC Mains Supply Voltage	110V or 240V, 50/60 Hz, 350 W (maximum)
Electrical Protection	Delayed action fuses 6.3A H 250V~ "T"-type

