

# B Pilot CX750

Automated CHROM & TFF Dual-Function System



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Dual-Function



Wide  
Compatibility



GMP-Compliant



Flexible and  
Scalable



Reduced Footprint  
and Less Capital

Lisure B Pilot CX750 system is a pilot-scale purification platform that integrates both chromatography (CHR) and ultrafiltration (TFF). With an optimized flow-path architecture and upgraded monitoring modules based on previous B Pilot system, CX750 enables easy switching between chromatography and ultrafiltration on a single unit—with no hardware modification or tubing reconnection. Featuring a highly integrated system design, wide process compatibility, and full GMP-compliant capabilities, CX750 provides a reliable and efficient platform for process scale-up and process validation for antibodies, vaccines, recombinant proteins, other biologics, and for CGT manufacturing.



### Key Features

#### Dual-Function:

##### Chromatography + Ultrafiltration

- A single system supports both CHR and TFF processes
- No need to disassemble or reconnect tubing

#### Wide Compatibility:

##### Covering the Entire Pilot-Scale Process

- The range of flow rates and membrane areas meets different needs from process development to pilot-scale production.
- Compatible with most chromatography column and TFF cassette; suitable for purification of mAbs, vaccines, recombinant proteins, and gene therapy products.

#### Reduced Footprint and Less Capital

- Chromatography and ultrafiltration functions are integrated into one platform, reducing cleanroom footprint and capital expenditure.

#### Flexible and Scalable

- The fully automated platform acquires pilot-scale process parameters for key steps, ensuring seamless process transfer.
- The system architecture is adapted to future process upgrades and scale-up requirements.

#### GMP-Compliant

- Material compliance: All product-contact components meet USP Class VI requirements, ensuring biocompatibility and cleanability.
- Data integrity: Supports electronic signatures, audit trails, and complete data records, in full compliance with 21 CFR Part 11.
- Cleanability: Supports CIP, enabling thorough cleaning and safe switching between batches and products.

# System Specifications

## Basic Specifications of the CX750 System

System DimensionsLxWxH	708mmx700mmx820mm
Equipment Weight	90 Kilograms (Kg)
Pipeline Specification	Polytetrafluoroethylene (PTFE) material; Outer Diameter (OD): 3/16" (4.8mm), Inner Diameter (ID): 1/8" (3.2mm)
Maximum Working Pressure	6 bar
Operating Temperature	2~40°C
Operating Humidity	5%~95% (non-condensing)
Power Supply Requirement	100~240 Volts (V), 50~60 Hertz (Hz)
System Power	1100 Watts (W)
Cabinet Material	Aluminum alloy with powder coating
System Dimensions	Internal pipeline flow path volume: 60ml (dual-pump configuration) Bubble trap volume: 70mL, Mixer volume: 5ml
Software	Standard configuration: Software platform based on LabWindows/CVI, DCS optional.
Control System	Controller: Siemens PLC1500 Workstation: Standard desktop PC; Optional: Wireless tablet

## Chromatography System Specifications

System Pump	Dual-pump gradient system: A/B diaphragm pumps, 30 ~ 750 mL/min, 0 ~ 6 bar
Ultrasonic Flow Meter	accuracy: $\pm 2\%$ *
UV Detector	Wavelength range: 200 ~ 400 nm Detection range: -5 AU ~ 5 AU; Linear accuracy: $\pm 2\%$ (0 ~ 2AU) Light path: 2 mm Wavelength accuracy: $\pm 2$ nm
Conductivity Detector	Measurement range: 0.02 ~ 300 mS/cm Accuracy: $< \pm 3\%$ ( $> 20 \mu\text{S/cm}$ ) Integrated temperature sensor; Temperature range: 0~99°C; Accuracy: $\pm 2^\circ\text{C}$ (2~50°C)
pH Detector	Measurement range: 0 ~ 14; Accuracy: $\pm 0.2$ (2 ~ 12 pH)
Pressure Detector	Measurement range: 0 ~ 6 bar
Column Position Valve	Optional: Single-column / Dual-column configuration
Inlet Ports	Maximum inlets: 11 (A1 ~ A5, B1 ~ B6)
Outlet Ports	Maximum number of outlets: 6 (P1 ~ P6)

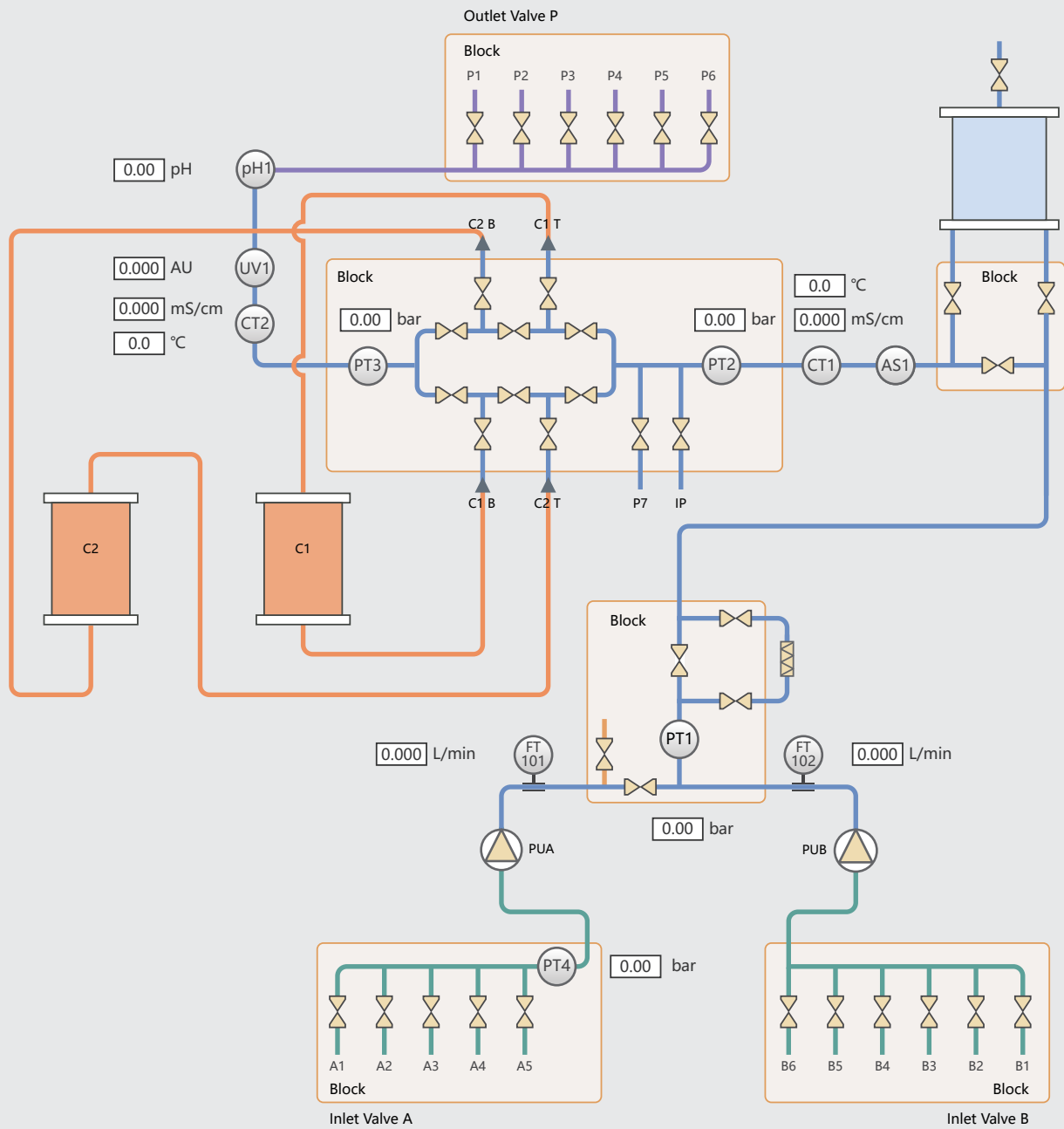
\* Flow rate accuracy:  $\pm 2\%$  or  $\pm 5$  mL, whichever is greater.

## Ultrafiltration System Specifications

Recirculation Flow Rate	30~750ml/min
Compatible Membrane Area	0.01~0.2m <sup>2</sup>
TMP Adjustment Mode	Automatic Control
Cross Flow (CF) Adjustment Mode	Automatic Control
Pressure Detector	Range: 0 ~ 6 bar; Accuracy: $\pm 0.2$ bar
UV Detector	Wavelength range: 200 ~ 400 nm; 4-wavelength detection; Light path: 2 mm; Measurement range: 0 ~ 2 AU; Linear accuracy: $\pm 2\%$
Conductivity Sensor	Measurement range: 0.02 ~ 300 mS/cm; Accuracy: $\pm 3\%$ or $\pm 20\mu\text{S/cm}$
pH Detector	Measurement range: 2 ~ 12 pH; Accuracy: $\pm 0.2$

# Flow Chart

## Chromatography Flow Chart

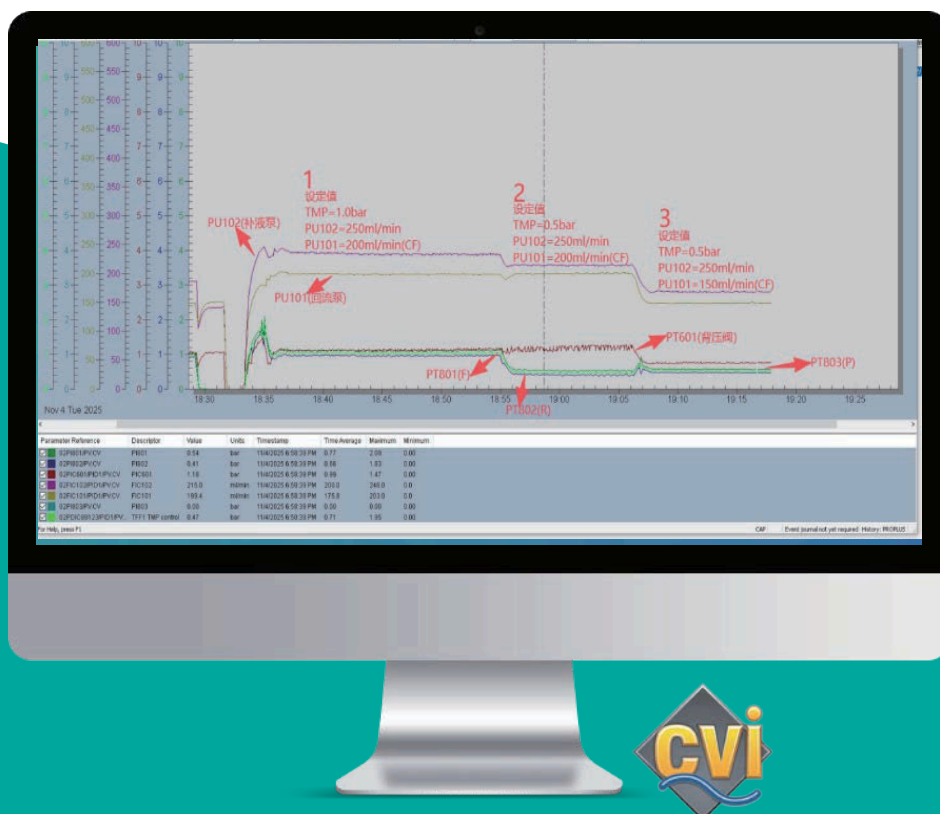




# Software Platform

Developed based on the LabWindows/CVI, the control software features a simple interface and robust performance, fully compliant with FDA 21 CFR Part 11 requirements. DeltaV is optional.

- **Compliant design:** meets 21 CFR Part 11 requirements with electronic records, electronic signatures, access control, and password management.
- **Flexible recipe editing:** allows configuration of flow rate, valve switching, gradient modes (CV, L, or min), and other operational parameters based on process requirements.
- **Audit trail:** fully records all operations with support for generating PDF reports.
- **Data backup and recovery:** supports automatic and manual backup to ensure data integrity and traceability.
- **System log recording:** provides comprehensive operation logs for process and system diagnosis.
- **Alarm and warning management:** supports alarm configuration and recovery logic to improve operational safety and system reliability.
- **Database-based data management:** All data is stored in a database to ensure stability and searchability.





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