

Cogent® μ Scale TFF System

Easy-to-use, semi-automated benchtop TFF system for both micro-scale process development and everyday low-volume ultrafiltration/diafiltration work

The Cogent® μ Scale tangential flow filtration (TFF) system is an easy-to-use, semi-automated benchtop solution that has been designed to fully support TFF process development at the “micro-scale” using up to three Pellicon® 3 88 cm² cassettes (264 cm²). It is also an excellent tool for streamlining everyday low volume ultrafiltration/concentration and diafiltration (UF/DF) work in the biopharmaceutical research environment.

With a low minimum working volume (16 mL*), the ability to operate at feed pressures up to 80 psi (5.5 bar) and low pulsation (≤ 3 psi), the Cogent® μ Scale TFF system enables both scaling studies and low volume UF/DF work using Pellicon® 3 88 cm² TFF cassettes. It is ideally suited for purifying and concentrating your monoclonal antibodies, recombinant proteins, vaccines, gene therapy constructs, blood serum products, and other cell-derived components.

- Versatile system — Ideally suited for both scaling studies and low volume UF/DF work
- Enhanced productivity — User-configurable alarm set points and automated data acquisition
- Easy-to-use — Intuitive, multilingual display and touchscreen interface

*Reference minimum working volume specification.



Designed for Everyday Use

An intuitive, multilingual display and touchscreen interface makes the Cogent® μ Scale TFF system easy to operate, and the user-configurable alarm set-points and automated data acquisition enable you to be more productive. Time-stamped data for all operational parameters, including alarm and event history are automatically captured by the system and can be easily uploaded in a tab delimited/CSV file format directly to your PC, and imported into standard spreadsheet programs such as Microsoft® Excel® software.

The semi-automated system can be run at either a fixed pump speed or at a set DeltaP via an automated control loop. Alarm set-points for feed and retentate pressure, DeltaP, TMP, and filtrate flow/weight (present only with filtrate weight scale option) include four settings that either “alert” you to changing conditions (Hi/Lo settings), or “shut down” the process (HiHi/LoLo settings) if desired. When an alarm condition is triggered, a message appears on the touchscreen display. An audible alarm can also be activated. The system also includes an E-stop that will immediately shut down the process if needed.

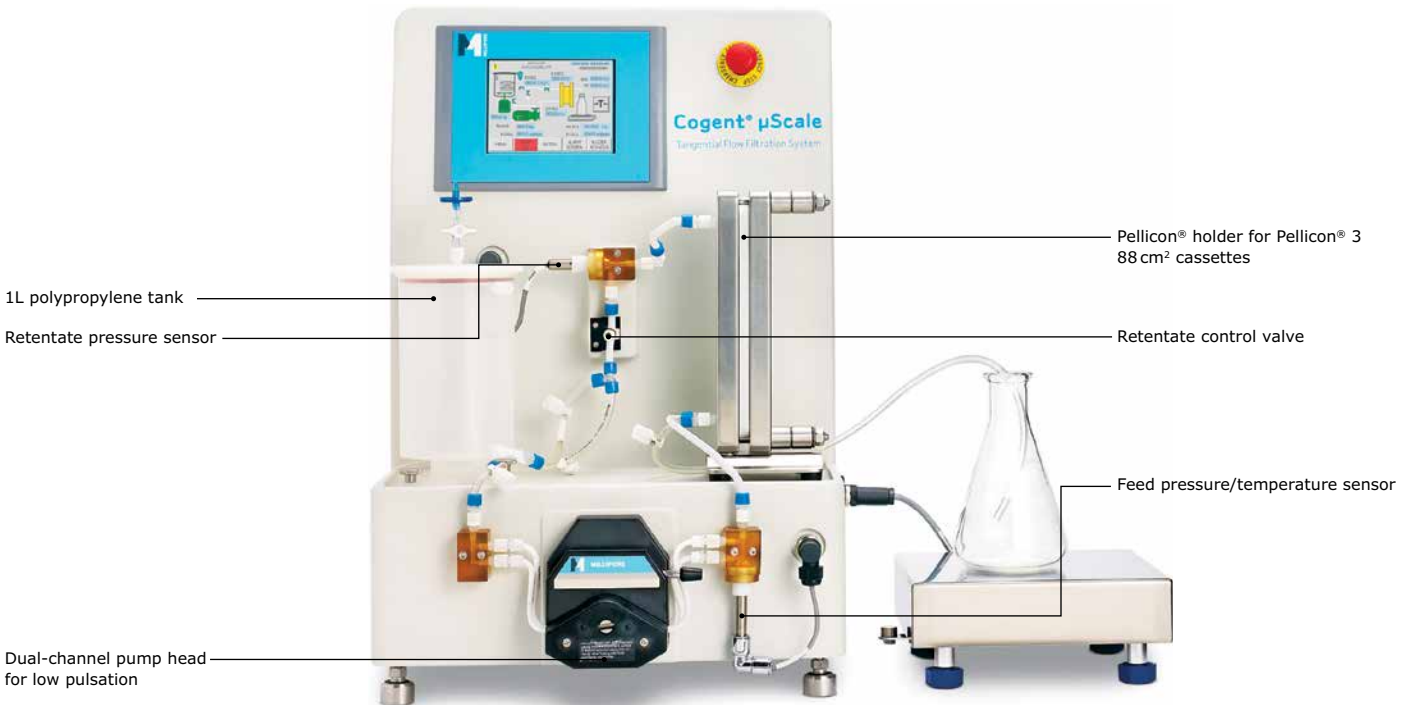
With the optional filtrate weight scale, you can measure filtrate flow and weight. You also have the ability to automatically shut down your process when a target weight/product concentration has been achieved. The P&ID screen monitors all active parameters, including: pump speed, mixer speed, feed and retentate pressures, temperature, calculated feed flow rate, DeltaP, TMP, and calculated filtrate flow and weight

(only with weight scale option), providing an easy way to monitor your process in real time. And through a separate trend screen you can quickly see how key process parameters have changed over the course of a run, facilitating process development.

The Cogent® μ Scale TFF system includes a 1L polypropylene tank with a removable vacuum seal lid that enables vacuum diafiltration/buffer exchange and/or fed batch processing of samples up to 5L or more. Also included with the system is a filter holder for the Pellicon® 3 88 cm² cassettes, and a complete high-pressure tubing assembly capable of running up to 80 psi (5.5 bar), enabling you to run at higher DeltaP and TMP settings.

Real-World TFF Operations

1. Easily create accurate scale-down models for process development, membrane screening and process characterization at the micro-scale
 - Enables you to do more with less product
2. Feed pressures up to 80 psi
 - Allows higher DeltaP and TMP processing
3. Robust design with minimal maintenance requirement



Optimized for Process Development and Research Applications

The Cogent® µScale TFF system is designed to meet your real-world process development and low volume sample preparation requirements. This system will support all your TFF operations including fed batch, diafiltration and concentration. System set-up is quick and easy, and the user interface and user-defined control parameters enable you to execute development work quickly, safely, reliably and reproducibly. The robust flow path supports flow rates from 17 mL/min to 330 mL/min at operating pressures up to 80 psig (5.5 bar) with very low pulsation. The system also has an extremely low minimum recirculation and hold-up volume for low volume processing and maximum product recovery, and with a compact footprint, it is easy to use in any research or lab environment.

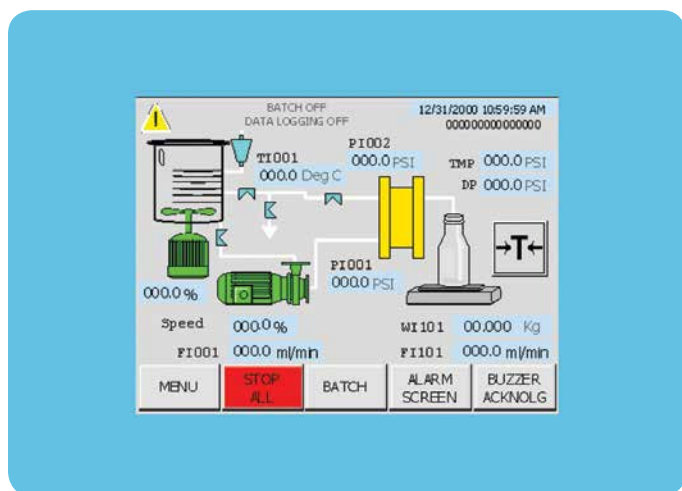
Cleanability

The fluid path is drainable and designed for Clean-in-Place (CIP) using industry standard cleaning agents. If cross-contamination is a concern, the tubing assembly and one-liter polypropylene tank assembly can be easily replaced in just a few minutes.

Automated Data Capture and Export

The Cogent® µScale TFF system automatically captures time-stamped data for the following operational parameters: Feed Pressure, Retentate Pressure, DeltaP, TMP, Feed Flow, Pump Speed, and Temperature. With the Weight Scale option, Filtrate Flow Rate and Filtrate Weight are captured as well. In addition, alarm history and event history (e.g., user login, calibration changes) are captured in separate time-stamped files. These tab delimited/CSV files can then be manually or automatically uploaded directly to a PC for import into standard spreadsheet programs.

Figure 1. Cogent® µScale system P&ID screen provides real-time monitoring of your TFF process.



Specifications

Description	Specifications	
Supported TFF Devices	Pellicon® 3 88 cm ² cassettes	(88 cm ² to 264 cm ²)
	Pellicon® XL 50 device	(50 cm ² to 150 cm ²)
Pellicon® Cassette Holder included with system	Holds Pellicon® 3 88 cm ² cassettes	
Filtration Area	0.005 – 0.0264 m ²	
Tank Volume	1L	
Minimum Working Volume	16 mL	
Hold-up Volume	< 3 mL (excluding cassette)	
Process Temperature	4 to 50°C	
Pump Flow Rate	17 – 330 mL/min	
Sensors	Feed and retentate pressure	0 – 5.5 bar (0 – 80 psig)
	Temperature	0 – 50°C (32 – 122°F)
Retentate Control and Isolation Valves	Manual	
Weight Scale	6 kg maximum capacity	
Languages Supported	English, French, German, Spanish, Italian, Chinese, and Japanese	
Dimensions	Width	41 cm (16.14 in.)
	Depth	48 cm (18.89 in.)
	Height	62 cm (24.40 in.)
	Weight with holder	30 kg (66 lbs.)
Power Supply	100-240 VAC, 50-60Hz, 4 / 2A	
Wetted Materials of Construction	Filter holder	316L stainless steel
	Tubing	Silicone (platinum-cured) and GORE STA-PURE® (platinum-cured silicone expanded PTFE) plastic
	Luer fittings	Polypropylene
	Pressure sensors	Titanium
	Flow cells	Polysulfone
	Stir bar	PTFE
	O-rings	Silicone
Vent valve	Polycarbonate	
Wetted Materials	All wetted polymers and gaskets are produced with FDA Title 21 CFR, paragraph 177	
Regulatory Information	The Cogent® µScale system meets the requirements of the Low Voltage Directive (LVD) (2014/35/EU) and Directive 2014/30/EU for Electromagnetic compatibility (EMC) along with the RoHS 2, Directive 2011/65/EU. Please review the product's Declaration of Conformity for the most up to date list of all laws, regulations and directives in which the product meets and/or is evaluated too.	

Ordering Information

Description	Cat. No.
Core System and Weight Scale	
Cogent® µScale TFF system, 100 – 240 VAC Includes tank, Pellicon® holder, and complete tubing assembly and sensors.	CUP0300
Filtrate weight scale	CUP0308
Spare Parts and Accessories - (extract)	
1L polypropylene tank subassembly	CUP0301
Tubing subassembly (includes all fittings and pinch valves)	CUP0302
Pump tubing kit	CUP0311
Dual-channel peristaltic pump head	CUP0303
Temperature/pressure sensor subassembly	CUP0304
Pressure sensor subassembly	CUP0305
Retentate valve/manifold subassembly	CUP0306
Set of fuses for main switch	CUP0307
Annual maintenance spare parts kit (PLC battery & O-rings)	CUP0310
PLC battery & media memory card	CMP1415
Vent filters	SLFG025LS
Pellicon® 3 88 cm ² cassette filter holder	XX42PMICRO
Pellicon® XL 50 stand	XXPXLSTND

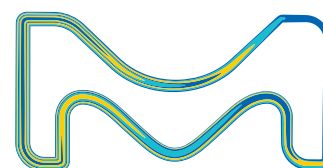
Description	Cat. No.
Services	
Commissioning with IQ/OQ	
Includes unpacking of system, set-up, testing to verify calibration, and IQ/OQ execution to verify system performance.	
Zones*	
Zone 1 (Travel of less than 50 miles from a service office)	SVCBIOQLABZ1
Zone 2 (Travel of more than 50 miles but less than 200 miles from a service office)	SVCBIOQLABZ2
Zone 3 (Travel of more than 200 miles from a service office)	SVCBIOQLABZ3
Annual PM Service Contract	
Includes one (1) annual preventive maintenance visit, travel* expense and labor.	
Preventive maintenance spare parts (CUP0310) are provided at a discounted rate. We recommend that you order your spare parts when purchasing your preventive maintenance plan.	
Zones*	
Zone 1 (Travel of less than 50 miles from a service office)	SVCTB783K7Z1
Zone 2 (Travel of more than 50 miles but less than 200 miles from a service office)	SVCTB783K7Z2
Zone 3 (Travel of more than 200 miles from a service office)	SVCTB783K7Z3

*Contact your sales representative for specific zone information.

To Place an Order or Receive Technical Assistance

Please visit
[MerckMillipore.com/contactPS](https://www.merckmillipore.com/contactPS)

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[MerckMillipore.com](https://www.merckmillipore.com)



Merck KGaA
Frankfurter Strasse 250
64293 Darmstadt, Germany