

UniFuge® UFPilot

The UFPilot is an automated batch centrifuge for low shear separation of mammalian, bacteria, and insect cell lines. This system produces high cell recovery rates using a single-use, tubular-bowl module mounted in the bowl. In addition, all process contact surfaces in the centrifuge system are disposable and 100% replaceable after each run. The UFPilot operates in an intermittent, batch mode. During the filling phase of the separation cycle, the bowl is rotated to the preset preliminary fill speed(s) allowing liquid suspension to be fed into the UFPilot at a controlled flow rate. When a full bowl condition is detected, the controller stops the feed pump and the centrifuge is automatically accelerated to a preset separation speed. Once the bowl has reached the separation speed, the feed is restarted at the preset process flow rate and the clarified supernatant valve opened. At the end of the preset feed cycle, the centrifuge bowl is stopped, and the feed pump reversed to recover the cell concentrate. This cycle is repeated as many times as required to process the bioreactor volume.

Features

- Minimizes shear forces on cells
- Single-use module with tube-set
- Continuous discharge of supernatant and intermittent discharge of cell culture
- Integrated cooling jacket (customer supplied cooling fluids)
- Programmable automated batch processing including peristaltic pump and pinch valves for Feed, Concentrate, Supernatant, and Buffer
- Recipe System for setting system parameters
- Optional data acquisition for SCADA System via Ethernet connection
- Optional features for 21 CFR Part 11 compliance
- Processes scalable from UFMMini to U2k
- CE Compliant Design

Operating Parameters*

- Variable G-force between 500-4000 x g
- Processing Rates: 0.1 – 4 liters/min
- Recommended Bioreactor Volume: 25L – 500L
- Maximum Bowl Speed: 7,200 RPM
- Maximum Concentrate Density: < 1.5 g/ml
- Automated with flexible cycle parameters
- Designed for fluid transfer with temperatures between 2-40 °C (36-104 °F)
- Low noise level (below 80 dB) during operation



Equipment Specifications

- Four pinch valve configuration:
- Peristaltic Pump
- Portable stainless-steel cart
- Stainless Steel Base, Motor plate and end plates
- IP 55 Control Panel
- Allen-Bradley® PLC & HMI Touchscreen 30.7 cm (12.1") - 16:10 aspect ratio
- System footprint: 71cm wide x 101cm deep x 137cm high (28" x 40" x 54" high)
- System weight (approx.): 254 kg (560 lbs.)

Utility Requirements

- Electrical:
 - 230VAC, 50/60Hz, 1-Phase
 - 100VAC, 50/60Hz, 1-Phase (w/transformer)
 - 115VAC, 50/60Hz, 1-Phase (w/transformer)
- Pneumatic:
 - 5.5 (+/- 1) Bar, 80 (+/-15) PSI, 550 (+/-100) kPa
- Bowl Case Cooling (optional):
 - 4 liters a minute @ 550 kPa (80 psi) maximum
 - - 25° C to 20° C (process dependent)

*Processing speeds are application-dependent and may vary.
**Weights and dimensions dependent on system configuration and options required.

UniFuge® UFPilot Single-Use Module

The single-use module is supplied with a tube-set, which can be readily tube welded to your single-use bioreactor connections (customer-specified single-use connectors available upon request).

Tubular-bowl technology is optimal for high cell viability, recovery, concentration, washing and fast processing times that address the challenges of conventional centrifugation by continuously separating cells in a low shear, scalable and automated system.



System	UFPilot	
	Pilot	Pilot Shallow Pool
Module	Pilot	Pilot Shallow Pool
Part Number	C61390184	C61390214
Min Working Volume	1.8 L	0.9 L
Recommended Bioreactor Volume	25L - 500 L*	25 L - 50 L*
Tubing Materials & Connection	TPE, Plug	TPE, Plug
Tubing Diameter ID (OD)	3/8" (1/2")	3/8" (1/2")
Integrity Testing	✓	✓
Endotoxin Free	✓	✓
Animal Derived Component Free	✓	✓
Gamma Irradiated	✓	✓
Physiochemical: USP <87> <88> Class VI, USP 661 (or ISO 10993) for plastic materials	✓	✓
Manufactured in ISO 13485 facility with Class 7 cleanroom	✓	✓

*Processing speeds are application-dependent and may vary.

**Weights and dimensions dependent on system configuration and options required.