

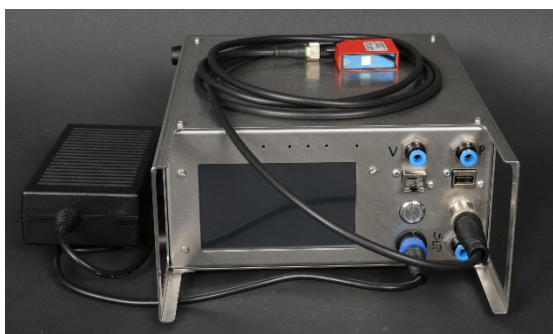
LEAFLET for Lachesis-1

Single channel SUP/CFF control station for one Clio diaphragm Single-Use-Pump.

Product, model name	Lachesis-1
Purpose	Single SUP/ CFF control
Single-Use-Pump size, ml/stroke	30, 100, 150
Drive gas pressure supply	>1 - <4 bar atmospheric
Drive gas vacuum supply	<0,1 bar absolute
Power supply	24 VDC, 2 amp
Hephaestus cabinet size	U2
Weight, kilo	3.5

Design

For use with one CellMembra Perfusion-Single-Use-Bioreactor's (P-SUB's) for high cell density cultivation operating in perfusion mode supplied by www.perfusecell.com. The P-SUB integrates both SUB, diaphragm Single-Use-Pump (SUP) and Cross-Flow-Filter (CFF) - all in one package.



Lachesis-1 is so small and compact that all electronics fits inside Hephaestus U2 Stainless Steel cabinet. Even with the 5" touch sensitive display.

Specification

When connection to a supply of pressure with sufficient capacity then one channel spec is:

- Stroke frequency, per minute: 0.5 - 10
- Stroke duration, seconds: 1 - 60
- Clio-30 diaphragm volume per stroke, ml: 0 - 30
- Clio-100 diaphragm volume per stroke, ml: 0 - 100
- Clio-150 diaphragm volume per stroke, ml: 0 - 150
- CFF retentate velocity, m/s: 0,1 – 10

In & Out in front panel

- 24 VDC supply via Buccaneer socket
- Power on/off breaker with LED light
- Supply of pneumatic air via 6 mm hose from pressure supply
- Supply of vacuum via 6 mm hose from vacuum supply
- Single drive gas pressure via 6 mm hose to SUP
- RJ45 socket
- USB socket
- Single 12 mm multi pin connection to laser sensor

Driving the SUP requires drive gas below and above atmospheric pressure. The drive gas is constantly adjusted via a set of proportional valves inside Lachesis. Which control the pumped liquid broth from the SUP and the velocity of the broth through the CFF.

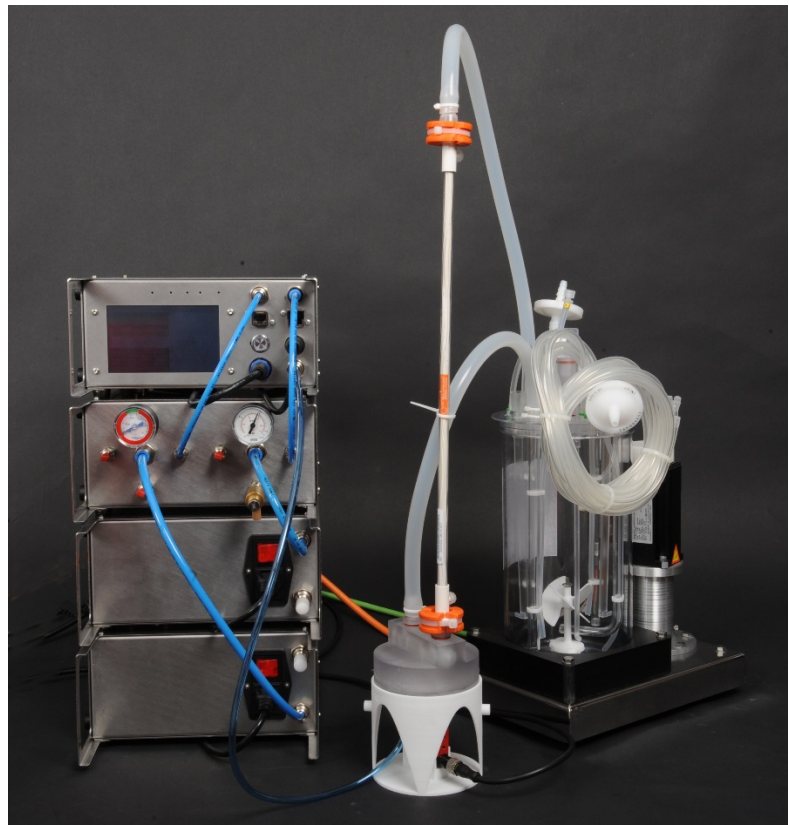
Sensors and actuators

- Pressure sensors
- Vacuum sensor
- Single laser sensor
- Proportional valve for positive drive gas pressure
- Proportional valve for negative drive gas pressure

Communication

- 5" touch sensitive TFT display for programming and info from the built-in webserver
- USB port for USB adapter/Wi-Fi connection and 5 VDC / 1 amp charging
- RJ45 socket for IP/TCP for communication and software upgrades

Suitable supply of pressure and vacuum to CellMembra build into Hephaestus cabinets are Alagonia 0-25 nl/min. Check out the Sarpedon reservoir stabilising pressure/vacuum and reduce pulsation.



Lachesis-1 is designed for operation of one CellMembra P-SUB's like the one 3,2 litre Vessel Volume seen here. One or more Lachesis-1 may be connected to both Alagonia pumps and Sarpedon reservoir for ease of use.

Lachesis can of course be driven by in lab installed pneumatic air and vacuum.