

LEAFLET for Lachesis

Single channel SUP/HFF control station for one big Clio or Thalia diaphragm Single-Use-Pump.

Product, model name	Lachesis
Purpose	Single SUP/ HFF control
Single-Use-Pump size, ml/stroke	140, 200, 300
Drive gas pressure supply	>1 - <4 bar atmospheric
Drive gas vacuum supply	<0,1 bar absolute
Power supply	24 VDC, 4 amp
Hephaestus cabinet size	U3
Weight, kilo	6

Design

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



Clotho to the left is the smaller brother to Lachesis at right. Compact though all the electronics fits inside the Hephaestus U3 Stainless Steel cabinet. Even with the 5" touch sensitive display on the front.

Specification

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

- Stroke frequency, per minute: 0.5 - 10
- Stroke duration, seconds: 1 - 60
- Clio or Thalia size 140 diaphragm SUP
- Clio or Thalia size 200 diaphragm SUP
- Clio or Thalia size 300 diaphragm SUP
- HFF retentate velocity, m/s: 0.1 – 20

In & Out in front panel

- 24 VDC supply via Buccaneer socket
- Power on/off breaker with LED light
- Supply of pneumatic air via 16 mm hose from pressure supply
- Supply of vacuum via 16 mm hose from vacuum supply
- Single drive gas pressure via 12-16 mm hose to SUP
- RJ45 socket
- USB socket
- Single M12 multi pin connection to laser sensor

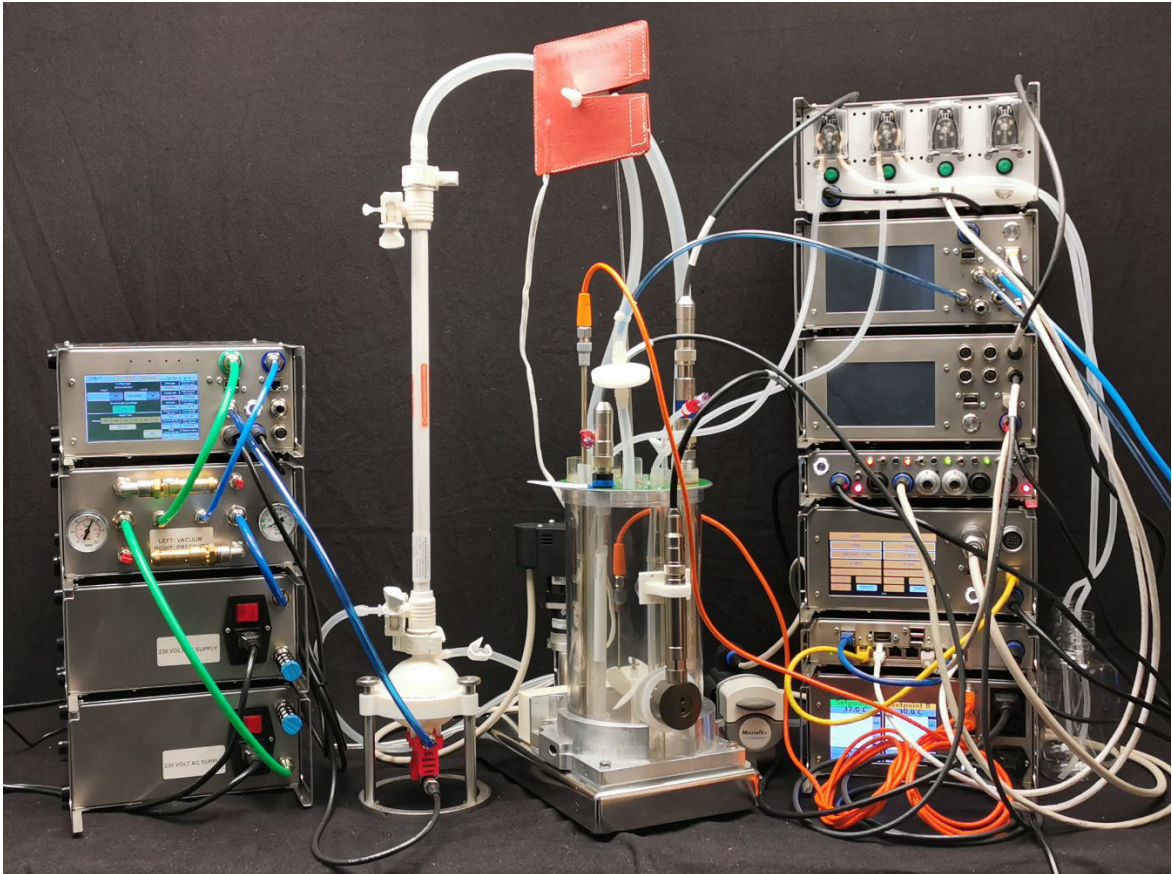
Driving the SUP requires drive gas below and above atmospheric pressure. The drive gas is constantly adjusted via sets of proportional valves inside Lachesis. Which control the pumped liquid broth from the SUP and the velocity of the broth through the HFF.

Sensors and actuators controlled by Lachesis

- Pressure sensors - internal
- Vacuum sensor - internal
- LASER sensor connected to the SUP
- 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
- RJ45 socket for IP/TCP for OPC-UA communication and software upgrades



The smaller Clotho-1 is designed for operation of one CellMembra or CellRetention P-SUB's like the one 3.2 litre Vessel Volume seen here. With pressure and vacuum supply to the left side. Here further shown with a complete Process-Control-Systems package on the right side.

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