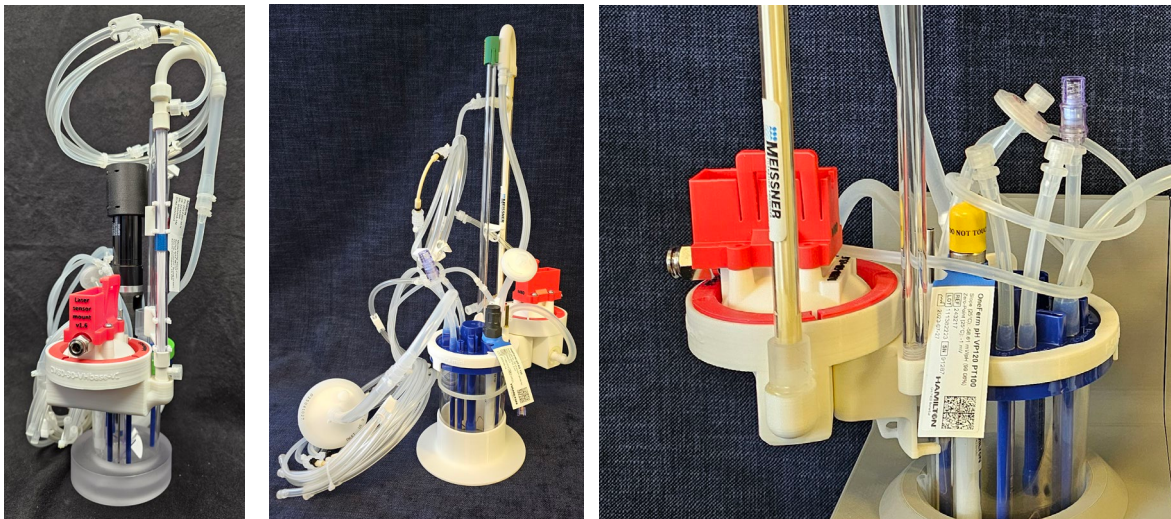


TOP text 80-200 ml parallel TFF Perfusion-SUB
2nd line text **Parallel operating 300 ml P-SUB for TFF method**
Date: 2026-08-15
Author: PS

- Revolutionizing **CellMembra-300-DASbox** integrate Clio diaphragm pump with SeptraPor® HFF (Hollow-Fibre-Filter) directly into the SUP reducing dead volume – even without occupying a precious PG13 port !!!!
- Direct coupled HFF to innovative LASER guided Clio diaphragm Single-Use-Pump reduce shear stress and clear the well-known HFF fouling



Left photo shows BioBLU 0.3 SUB converted to **CellMembra-300-DASbox P-SUB** incl Maxon motor. Center photo one CellMembra-300 (ver-10) with the blue head plate and visible the Clio CM80 SUP. Right photo of **CellMembra-300-DASbox** illustrating the in SUP integrated SeptraPor HFF eliminating Luer-Loc hereby reducing Luer-Loc causing significant shear force stress.

INSIDE the P-SUB the **CellMembra-300-DASbox** integrates:

- SeptraPor® HFF C012 cartridge (manufactured by Meissner® Corp) with pore 0.2 µm, 110 cm² area, 1 mm lumen inlet integrated directly on Clio OneWay-Single-Use-Pump (O-SUP)
- Liquid level sensor
- Upgraded from standard one hole deep tube aeration to glass micro-sparger model P40 with 16-40 µm pore for very high cell density

OUTSIDE the P-SUB the **CellMembra-300-DASbox** integrates:

- Based on customized BioBLU® 0.3 batch SUB designed with magnetic HPD for the DASbox. Aeration, agitation, and process control remain based on the standard BioBLU® 0.3c and chosen DASbox® configuration.
- LASER guided Clio TM80 SUP position eliminates dead volume
- Hoses in-mass covering any need
- OneFerm pH sensor with K8 connection included mounted in PG13 port
- One PG13 port free

The P-SUB ver-12 features:

- The complete and pre-assembled mini-P-SUB packed in dual film bags and precision irradiated – forget the autoclave
- P-SUB dim OD76 x 120 mm for Working Volume (WV) ranging from 80 ml up to 200 ml

- Part of DASbox is the MP8 peristaltic pump module - the integrated Pharmed/Biomed pump hoses are selectable ID 1.0 (media exchange) or 0.5 (addition for pH control)
- Thermal control, agitation, aeration, media addition as offered by DASbox

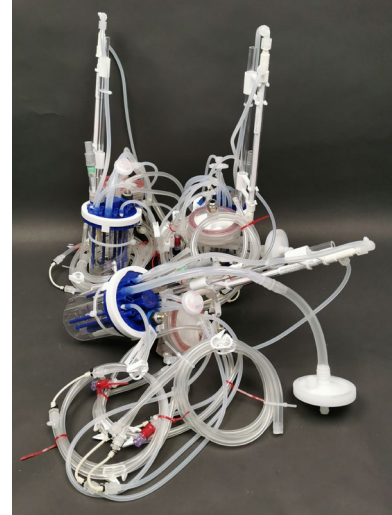
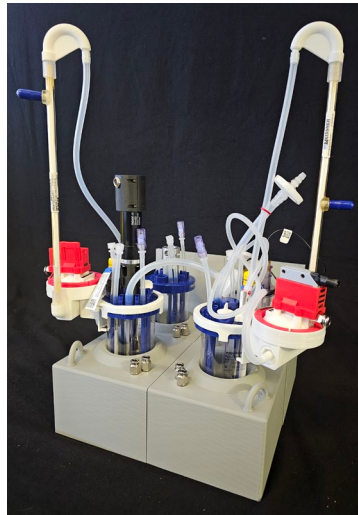
Benefits:

1. Clotho drive unit offer controlled tangential flow of any broth volume, number of strokes and velocity fully programmable, accurately measured and fully repeatable – no process guessing – check out Clotho here - <https://perfusecell.com/perfusion-bioreactors/diaphragm-pump-drive-units-41>
2. SUBmerged™ and Direct-Fit™ HFF eliminating shear stress caused by conventional Luer-Lok™ fittings

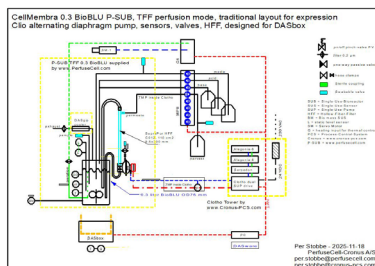
Installation (no hood needed)

1. Unpack and insert the **CellMembra-300-DASbox** in DASbox
2. Connect all the hoses and sensors – being a big job !
3. Clamp in the LASER sensor in the red Clio socket and connect to Clotho
4. Don't forget to pre-wet HFF, as usual, by adding 200 ml suitable liquid into the SUB. Activate Clotho for 15 strokes and pump entire volume out through the permeate port by MP8 peri pump

Find Tips & Tricks here - <https://perfusecell.com/perfusion-support/tips-tricks-in-details/tips-tricks-small-volume>



The **CellMembra-300-DASbox** is delivered dual bag packed and E-beam irradiated. Heavily equipped with an extensive hose assembly ready to install and use in the DASbox - remember to wet/rinse the HFF before use. Example of how CellMembra-300 P-SUBs in parallel inserted into the DASbox originally designed for OD76 mm STR.



Flow-Chart illustrates the setup with Clotho Tower (in the yellow box) operating the LASER controlled Clio-SUP. Clotho keep an eye on the TMP and ensure regular cleaning of the HFF. Center photo 8 pcs P-SUBs in parallel. operated, controlled by dual Clotho towers and DASware or directly from the Clotho software independent of DASware. The pressurized air

and vacuum delivered by dual Alagonia and one Sarpedon for each tower. A photo of a CellMembra-300 Clio SUP lot from production.

Some conclusions for the CellRetention-300-DASbox:

- The oxygenation is based on the BioBLU 0.3 standard one hole gas inlet limiting the max suspended cell density ranging 50-75 m/cells/ml

Below find a complete set of product documentation

The one 3D PDF file below needs to be download and a correction to Acrobat is needed - <https://perfusecell.com/download-product-info>



All products are patented by www.stobbe.group