TOP text …… 80 - 200 ml Working Volume ATF Perfusion-SUB
2nd line text …… **SUBmerged™ mini P-SUB 300 ml for ATF method**
Date: 2026-06-30
Author: PS

- Revolutionizing **CellRetention-300-DASbox** operating ATF integrating Thalia SUP with SepraPor® HFF (Hollow-Fibre-Filter) directly into the SUB eliminating dead volume – even without occupying a precious PG13 port !!!!
- Direct coupled 110 cm2 HFF to inverted innovative LASER guided Thalia diaphragm Single-Use-Pump eliminates shear stress, cell accumulation and well known HFF fouling

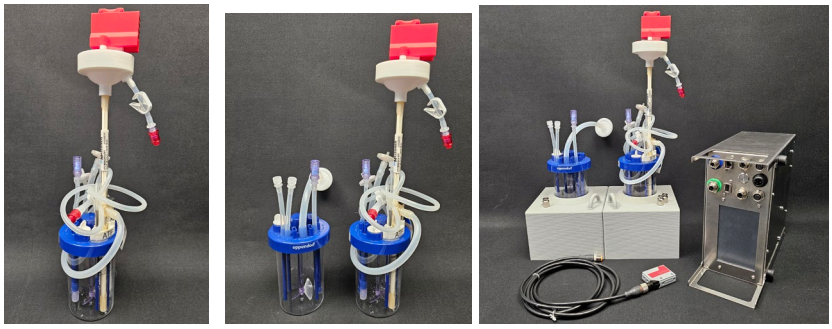


*Photo shows standard bioBLU 0.3 batch SUB converted to **CellRetention-300-DASbox** operating ATF P-**SUBmerged**. Center photo one std bioBLU® batch and one CellRetention-300 with the blue head plate and visible the Thalia TM60 on top of **SUBmerged** SepraPor®. Right photo batch, ATF SUBs and Clotho Drive Unit and LASER sensor in front of DASbox dummy.*

INSIDE the SUB the **CellRetention-300-DASbox** features:

- SepraPor® HFF C012 inlet positioned directly in the broth (manufactured by Meissner® Corp) with pore 0.2 µm, 110 cm^2 area, 1 mm lumen
- Two liquid level sensors
- Extra deep-tube

OUTSIDE the SUB the **CellRetention-300-DASbox** features:

- 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.
- Thalia inverted SUP eliminates cell accumulation – choose between TM60 or TM80
- Hoses in-mass covering any need
- Included OneFerm pH sensor with K8 connection mounted in PG13 port
- One PG13 port free

The P-SUB ver-1 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 alternating 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 **CellRetention-300-DASbox** in DASbox
2. Connect all the hoses and sensors – being a big job !
3. Clamp in the LASER sensor in the red Thalia 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

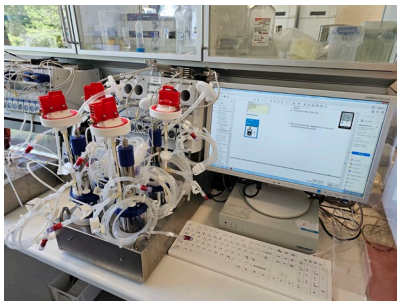
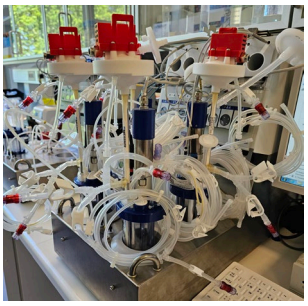
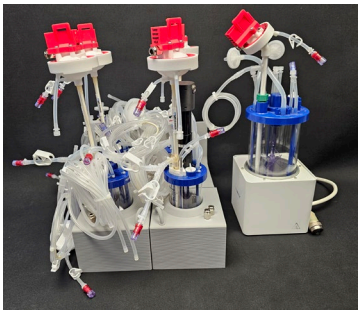
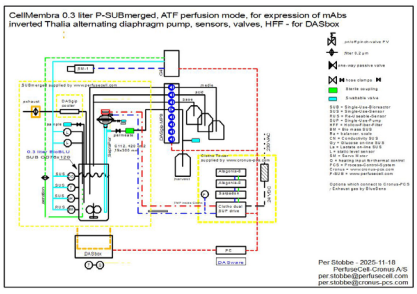
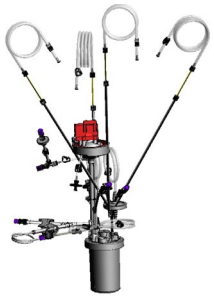




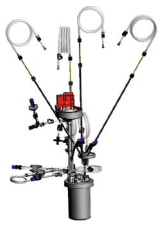
*Photo show bioBLU 0.3 batch SUB converted to **CellRetention-300-DASbox** operating ATF P-**SUBmerged**. Right photo four CellRetention-300 with the blue head plate and visible the Thalia TM80 on top of **SUBmerged** SepraPor® and one bioBLU® 1 liter equipped with the PG13-DIY-kit.*






Flow-chart illustrates most important connections. Rendered JPG illustrate extensive set of hoses that fit directly to DASbox and as such require no assembling inside a hood. Photo of the complete assembly as delivered – ready to install - remember to wet/rinse the HFF before use.

Download documentation - if 3D PDF checkout here - https://perfusecell.com/download-product-info



Some conclusions for the CellRetention-300 BioBLU:

- 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

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