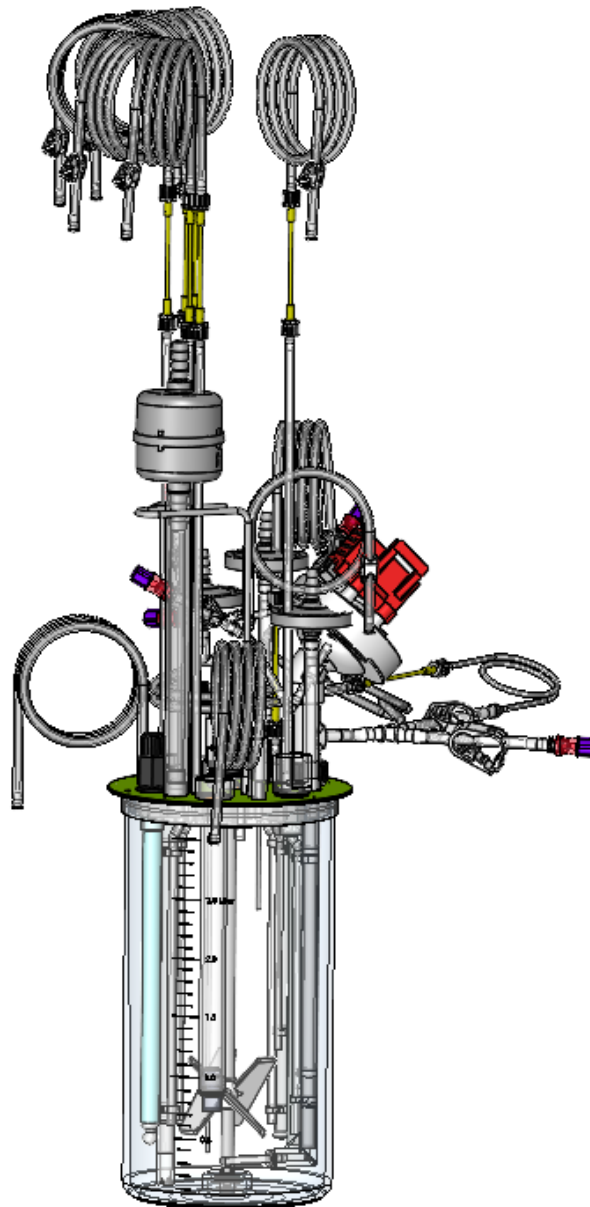


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Customer name and address	
Date of contact	
Number of SUB's	
Time of delivery, week from order	
Configurator Version	CellRetention-3 - SUBmerged - HPD - EHB
Order number	

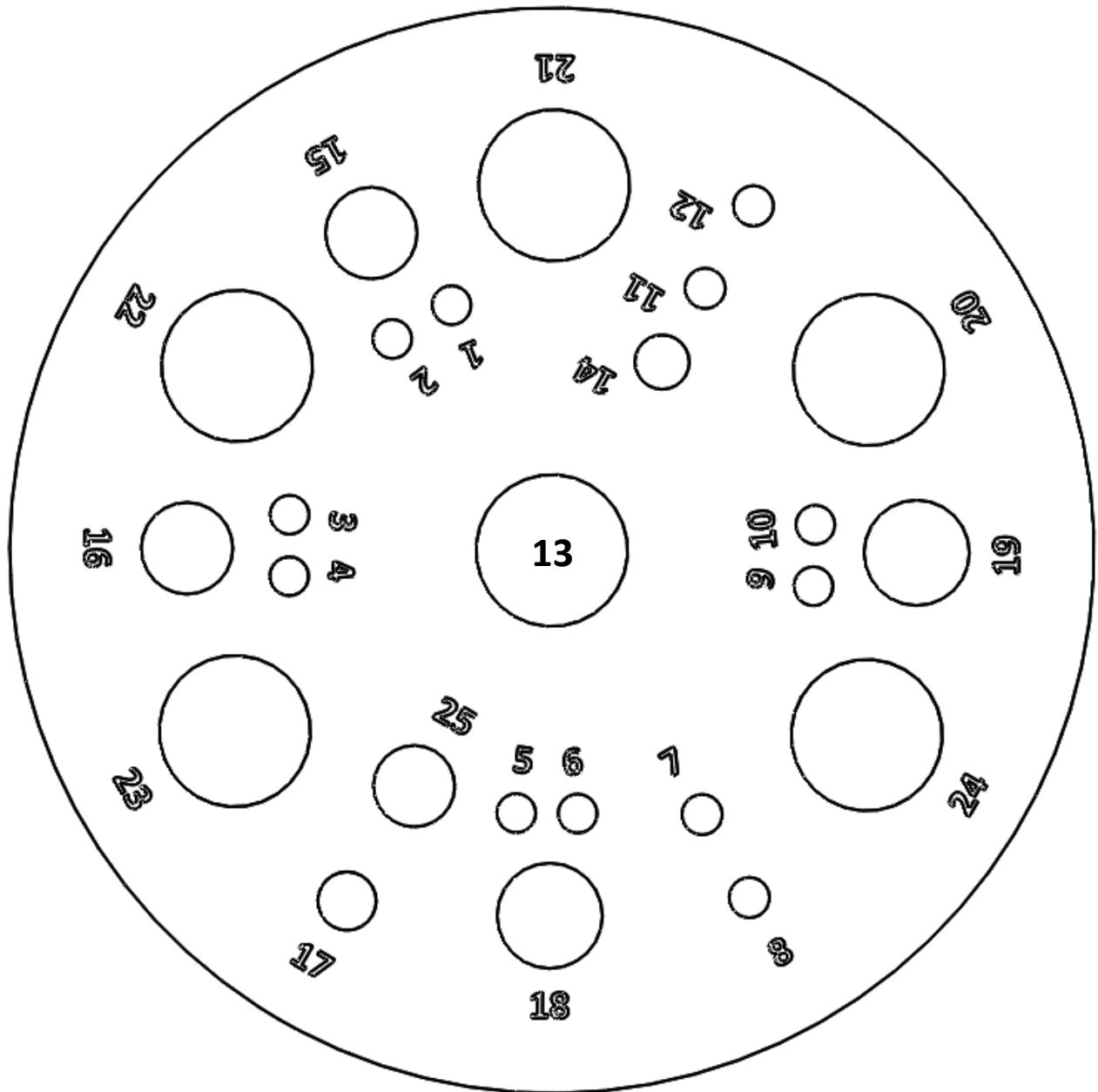


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Top plate layout



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Basic vessel size

Diameter	Ø 137 mm (outer diameter)
Model	225
Vessel volume (total)	3.2 liters

Port description

Port No.	Name (Purpose)	Info	Internal Configuration	External Configuration
1	Liquid removal line (Cell bleeding)	ID 3 mm barb	OD6 x ID3 mm silicone hose 40mm to the bottom.	OD6 x ID3 x 300 mm silicone hose, male Luer-Lock (MTLL230), Bioprene pump-head tubing (ID2.0 mm x OD3.6 mm), male Luer-Lock (MTLL230), OD6.4 (1/4") x ID3.2 (1/8") x 1000 mm C-flex hose, clamp and closed with a plug. (PIP230)
2	Sample line A- Sterile Air B- Auto sampling C- Manual Sampling	ID 3 mm barb	OD6 x ID3 mm silicone hose set at 70 mm from the bottom.	OD6 x ID3 x 50mm silicone hose, Y-connection (Y230): A. OD6 x ID3 x 50 mm silicon hose, clamp, female Luer-lock (FTLL230), sterile filter OD25 (8 cm²), and closed with male Luer plug. (MTTLP) OD6 x ID3 x 50 mm silicon hose, Y-connection (Y230): B. OD6.4 (1/4") x ID3.2 (1/8") x 500 mm C-flex hose, clamp and closed with a plug. (PIP230) C. OD6 x ID3 x 50 mm silicon hose, clamp, female Luer-lock (FTLL230), swabable valve and plug. See "Sample line" for more information.

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Port No.	Name (Purpose)	Info	Internal Configuration	External Configuration
3	Liquid addition-submerge (Acid)	ID 3 mm barb	OD3.2 x ID1.6 mm silicone hose set at 90 mm from the bottom.	OD6 x ID3 x 30 mm silicone hose, male Luer-Lock (MTLL230), Bioprene pump-head tubing (ID1.0 mm x OD3.1 mm), male Luer-Lock (MTLL230), OD6.4 (1/4") x ID3.2 (1/8") x 1000 mm C-flex hose, clamp and closed with a plug. (PIP230)
4	Aeration – (Submerge)	ID 3 mm barb	OD10 PC tube set at 20 mm from the bottom. Silicone 90° angle with glass micro frit sparger selectable 25 or 100 µm pore.	OD10 x ID6 x 100 mm silicone hose with sterile filter OD50 (16cm ²)
5	Liquid addition-submerge (Base)	ID 3 mm barb	OD3.2 x ID1.6 mm silicone hose set at 40 mm from the bottom.	OD6 x ID3 x 300 mm silicone hose, male Luer-Lock (MTLL230), Bioprene pump-head tubing (ID2.0 mm x OD3.6 mm), male Luer-Lock (MTLL230), OD6.4 (1/4") x ID3.2 (1/8") x 1000 mm C-flex hose, clamp and closed with a plug. (PIP230)
6	Liquid addition-submerge (spare)	ID 3 mm barb	OD6 x ID3 mm silicone hose set at 40 mm from the bottom.	OD6 x ID3 x 300 mm silicone hose, male Luer-Lock (MTLL230), Bioprene pump-head tubing (ID2.0 mm x OD3.6 mm), male Luer-Lock (MTLL230), OD6.4 (1/4") x ID3.2 (1/8") x 1000 mm C-flex hose, clamp and closed with a plug. (PIP230)
7	Liquid addition-Overlay/Headspace (Anti-Foam)	ID 3 mm barb	N/A.	OD6 x ID3 x 300 mm silicone hose, male Luer-Lock (MTLL230), Bioprene pump-head tubing (ID2.0 mm x OD3.6 mm), male Luer-Lock (MTLL230), OD6.4 (1/4") x ID3.2 (1/8") x 1000 mm C-flex hose, clamp and closed with a plug. (PIP230)
8	Liquid addition-Overlay/Headspace (Inoculation)	ID 3 mm barb	N/A.	OD6.4 (1/4") x ID3.2 (1/8") x 1000 mm C-flex hose closed with a plug. (PIP230)
9	Liquid addition-Overlay/Headspace (Glucose)	ID 3 mm barb	N/A.	OD6 x ID3 x 300 mm silicone hose, male Luer-Lock (MTLL230), Bioprene pump-head tubing (ID2.0 mm x OD3.6 mm), male Luer-Lock (MTLL230), OD6.4 (1/4") x ID3.2 (1/8") x 1000 mm C-flex hose, clamp and closed with a plug. (PIP230)

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Port No.	Name (Purpose)	Info	Internal Configuration	External Configuration
10	Liquid addition-Overlay/Headspace <i>(Perfusion Media)</i>	ID 3 mm barb	N/A.	OD6 x ID3 x 300 mm silicone hose, male Luer-Lock (MTLL230), Bioprene pump-head tubing (ID2.0 mm x OD3.6 mm), male Luer-Lock (MTLL230), OD6.4 (1/4") x ID3.2 (1/8") x 1000 mm C-flex hose, clamp and closed with a plug. (PIP230)
11	Liquid addition-Overlay/Headspace (spare)	ID 3 mm barb	N/A.	OD6.4 (1/4") x ID3.2 (1/8") x 1000 mm C-flex hose closed with a plug. (PIP230)
12	Level Sensor rod	ID 3 mm barb	SS-rod at 2.4L 194 mm from the bottom.	SS-rod with an OD10 x ID6 x 40 mm silicone hose for 2mm banana-plug.
13	Center port (Agiation Interface)	PG13.5 port	Shaft for impeller.	HPD bearing.
14	Sky support barb	N/A	N/A.	N/A.
15	Aeration – (Submerse / macro sparge)	ID7 mm	Ring sparger attached to bearing body including 3 micro porous glass frit bodies OD6x15	OD10 x ID6 x 100 mm silicone hose with sterile filter OD50. (16cm ²)
16	Temp Well (T sensor)	ID7 mm	OD10 x ID7 mm PC tube.	OD12 x ID8 silicone hose to ensure sealing.
17	Aeration - Overlay/headspace	ID4 mm	N/A	OD10 x ID6 x 100 mm silicone hose with sterile filter OD50. (16cm ²)
18	Harvest Line (Harvest)	ID9 mm	ID8 mm PC tube 20 mm from the bottom, OD12 x ID8 x 40 mm silicone hose to the bottom with "V-cut".	OD15.9 mm x ID9.6 mm x 40mm C-flex hose, straight through reducer(N670), OD6.4 mm x ID3.2 mm x 950 mm C-flex hose, closed with plug. (PIP230)
19	Exhaust (Off-gas line)	ID9 mm	N/A.	OD15.9 x ID9.6 x 200 mm C-flex hose, sterile capsule filter. (400 cm ²)
20	Sensor port (DO)	PG13.5 port	Designed for Hamilton VisiFerm sensor model OD12 x 225.	Built-in VisiWell sleeve solution for VisiFerm DO sensor.
21	Sensor port (spare)	PG13.5 port	Not in use	Plug + O-ring. (e.g. for autoclavable pCO ₂ or RAMAN sensor)
22	Perfusion-ATF - SUBmerged	PG13.5 port	Pre-installed - see section "Perfusion (ATF) assembly.	Thalia TM80A SUP
23	Sensor port (spare)	PG13.5 port	N/A.	Plug + O-ring. (e.g. for autoclavable PG13.5/OD12mm sensor)
24	Sensor Port (pH)	PG13.5 port	pH sensor model OD12 x 225.	Hamilton OneFerm SU pH sensor, K8 or VP connection.

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Port No.	Name (Purpose)	Info	Internal Configuration	External Configuration
25	Ground port for SS rod	ID2.5 mm	SS-rod positioned 20mm from the bottom.	For 2mm banana-plug.

Impeller

Number impeller (from the bottom)	Type of impeller	Diameter of impeller (mm)	Number of blades	Angle (°)	Distance from bottom/lower impeller (mm)
1	Pitch Blade Impeller	65	3	45	55

- Clockwise rotation, down flow.
- Without baffles.

Sample line:

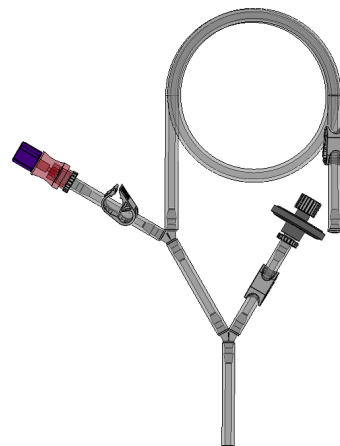
OD6 x ID3 x 50mm silicone hose, Y-connection (Y230):

- A. OD6 x ID3 x 50 mm silicon hose, clamp, female Luer lock (FTLL230), sterile filter OD25 (8 cm²), and closed with male Luer plug. (MTTLP)

- OD6 x ID3 x 50 mm silicon hose, Y-connection (Y230):

B. OD6.4 (1/4") x ID3.2 (1/8") x 500 mm C-flex hose, clamp and closed with a plug. (PIP230)

C. OD6 x ID3 x 50 mm silicon hose, clamp, female Luer lock (FTLL230), swabable valve and plug.



Perfusion (ATF) assembly pre-installed:

SUP: Thalia TM80A (angled) diaphragm Single-Use-Pump unify the HFF SUBmerged into the vessel.

HFF: Custom Meissner SeptraPor® based on pn: XFCM20-C112-XX2X, OD19.1mm, Length=300mm, 420cm² surface area, 0.2 µm pore size with ID 1mm fibers (# of fibers/lumen =55), HFF top Permeate port (Harvest):

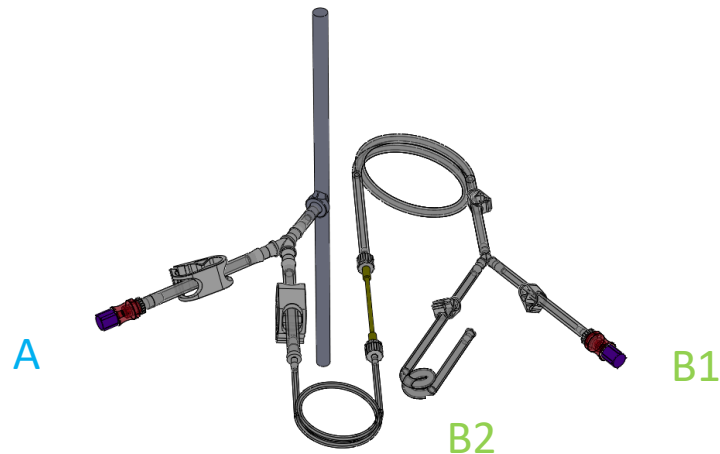
Permeate; OD8 x ID5 x 40 mm silicone hose, Y-connection (260-6005):

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- A. **Wash-Line:** OD8 x ID5 x 100 mm silicone hose, clamp, female Luer-Lock (FTLL360) and swabable valve.
- B. **Harvest-Line:** OD8 x ID5 x 100 mm silicone hose, clamp, straight through reducer (3050), ID1.6 x OD4.8 x 450 mm silicone hose, male Luer-Lock (MTLL220), Bioprene pump-head tubing (ID2.0 mm x OD3.6 mm), male Luer-Lock (MTLL230), ID3.2 (1/8") x OD6.4 (1/4") x 600 mm C-flex hose, clamp, Y-connection (240-6005):
1. Male Luer-Lock (MTLL230), ID3.2 (1/8") x OD6.4 (1/4") x 100 mm C-flex hose, clamp, female Luer-Lock (FTLL230), and swabable valve.
 2. Female Luer-Lock (FTLL230) + FSLLR, ID3.2 (1/8") x OD6.4 (1/4") x 400 mm C-flex hose, clamp and plug. (PIP230)



Single-Use-Pump:

The diaphragm pump used for this product is Thalia TM80A (angled) unified with Meissner SeptraPor® 0.2 µm Hollow-Fiber-Filter (HFF) SUBmerged directly into the vessel.

De-gassing Port:

OD6 x ID3 x 50 mm silicone hose, hose clamp, T-connection (TL878):

- A) Collinear: Swabable valve and Luer-Lock cap (Qosina 65372).
- B) Perpendicular: OD6 x ID3 x 30mm silicone hose, hose clamp, OD25 sterile filter and male Luer-Lock cap (Qosina 65372).

B



A

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Additional information

Single-Use-Jacket (SUJ)

None - for EHB

Level Sensor Info:

2nd SS Level sensor connection port integrated into Port 12 - for 2mm banana-plug. One ground electrode and one level/foam electrode 80 mm under headplate.

Designed and manufactured by

PerfuseCell-Cronus-PCS A/S

Noerrelundvej 10

DK-2730 Herlev

Denmark

www.perfusecell.com

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