

Laboratory equipment

Process laboratory (GMO class 1)

Filtration equipment

CR-Pump peristaltic pump YZ1515x

Peristaltic pump for transfer of liquid to/from equipment, vessels, tanks and containers.
Can be used with SANI membranes system



CR-Pump peristaltic pump BT600M

Peristaltic pump for transfer of liquid to/from equipment, vessels, tanks and containers.
Can be used with SANI membranes system



CR-Pump peristaltic pump BT100M

Peristaltic pump for transfer of liquid to/from equipment, vessels, tanks and containers.
Can be used with SANI membranes system



Äkta Pure 150L FPLC

Protein purification at flow rates up to 150 mL/min and pressure up to 5 MP. Gradient mixer with 1.4 mL and 5 mL chamber installed. Sample application from both loop and sample pump in one valve. A UV monitor detect proteins at 280 nm (Fixed Wavelength). Conductivity monitor (0.01 to 999.99 mS/cm), for gradient verification in all common chromatography techniques.



Cytiva Fraction collector F9-C (Use with the Äkta Pure)

Flexible fraction collector for use with ÄKTA pure. Collects up to 576 fractions in deep-well plates, tubes, and bottles.



Äkta Pilot

Automated liquid chromatography (LC) system designed to carry out development, scale-up, and production processes. This system can purify products in milligrams of up to tens of grams. Up to 2 MPa (20 bar, 290 psi) between system pump and column inlet, 4–400 mL/min



Masterflex peristaltic pump

Peristaltic pump for transfer of liquid to/from equipment, vessels, tanks and containers



SANI membranes VIBRO-LAB35P

For this SANI membrane system, we have a wide range of Membrane Modules with pore sizes between 1 kDa and 1 μm . Membrane area: 35 cm^2 . Can be used for MF & UF. Dead volume: 8 mL. Ideal process volume: 10 mL – 1 liter.



SANI membranes VIBRO-LAB3500

For this SANI membrane system, we have the possibility to change Membrane Modules with pore sizes between 1 kDa and 1 μm . Membrane area: 3500 cm^2 . Drainable dead volume: 600 mL, Ideal process volume: 2-100 liter



MMS

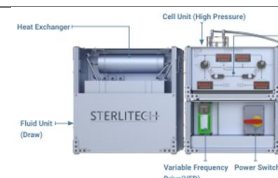
The MMS Triple System is an easy-to-use batch laboratory membrane device for microfiltration, ultrafiltration, nanofiltration and reverse osmosis operations. The Triple System is based on a unique designed flat-sheet cell for crossflow membrane testing up to 40 bar.

Applications such as fractionation, purification and concentration of molecules can be tested: Protein or extract fractionation & concentration - Hydrolysate fractionation & concentration - Sugar fractionation & concentration - De alcoholization of beer and wine - Soy milk debittering - Acid/caustic recovery - Catalyst separation - Solvent exchange & recovery - Polymer purification & concentration - Condensate water purification



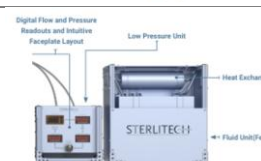
STERLITECH High pressure

To use for micro- and ultra filtration up to 5,5 bar with a capacity of 1 to 19 L.



STERLITECH Low pressure

To use for Nano filtration and forward- and reverse osmosis up to 69 bar with a capacity of 1 to 19 L.



Sterlitech HP4750 High Pressure Stirred Cell Kit

The cell can complete a variety of separations from microfiltration to reverse osmosis.

Are typically used in membrane applications such as: Membrane test and quality assurance, biological or biopharmaceutical processing, desalination of brackish water or seawater, purification of rinse water in electroplating tanks, municipal or industrial water and wastewater purification



Reactors

Techfors-S In Situ Sterilizable Pilot Scale Bioreactor

30-liter (working vol. 5-20 liter) fermenter with built-in steam generator and an external cooling unit. Exhaust O₂ and CO₂ gas analyzer. The fermenter can be operated via the local PLC/display or via an external PC with the software EVE from Infors-HT.



Minifors 2 - Bench-top Bioreactor

Minifors 2 is a complete package with everything you need for cultivating microorganisms. The fermentor includes a compact base unit with four freely configurable pumps, pH and pO₂ sensors, gas strategy with compressed air and O₂/N₂ with mass flow controllers for automatic control and a control unit.



Syrris - Atlas HD Automated Jacketed Reactor

1-liter and a 5-liter reaction chambers. Touch screen interface gives the power to automate the entire experimental procedure. The pump (where we have the standard and XL) has two independent channels, providing a complete dosing solution, including pH control.



Mettler Toledo Optimax 1001 chemical

The OptiMax is a powerful thermostat that provides the necessary heating and cooling power to control the temperature of any synthesis accurately and precisely. It simplifies organic chemistry and enables reproducible and precise synthesis. Can be operated locally or via PC-software.



Other

Q-interline NIR

Fourier Transform Near-Infrared Spectrometer "QUANT" from Danish company Q-Interline, for analysis of solids, powders, pastes and liquids at-line, in-line or just as a lab instrument (different adapters are included).



Synoxis Algae NANO photobioreactor

Designed to provide a controlled and optimal environment for the growth of photosynthetic microorganisms such as microalgae and cyanobacteria, as well as macroalgae. Our cutting-edge technology enables us to optimize the natural conditions for photosynthesis, by controlling with precision parameters such as light, temperature, pH and nutrients. Its TWIN system allows you to grow two different algae simultaneously or under different conditions.



4 x 60 liter steel tanks.

We have four jacketed steel tanks of each 60 liter. The tanks are equipped with Eilersen weighing cells, temp/pH sensor and either magnetic agitator in the bottom (2) or top-stirrer (2).



Eppendorf centrifuge 5810 R

Large Eppendorf centrifuge with cooling. Rotors available for 50 mL Bluecap tubes and 15 mL tubes.



Freeze dryer Christ Beta 2-8 LSC-plus

Vacuum brand hybrid pump RC6, 0,0001 mbar, 5,9 m³/h that can be used with organic solvents as well as water. 5 heatable shelves with sealing device, and connectors for round-bottom flasks, wide-neck filter bottles or ampoule distributors. Ice-condenser.



Hirayama HGD113 Autoclave

A 113 liter working vol. autoclave with built-in steam generator, vacuum pump, temperature sensor, printer. Stainless steel basket for easy handling of autoclaved materials.



Holten Laminar Air Flow (LAF) bench

LAF bench for work that requires a sterile or very clean environment, e.g. handling or inoculation of cells.



IKA Eurostar 40 Digital Overhead Stirrer

Universal laboratory stirrer designed for simple stirring tasks for quantities up to 25 l (H₂O). It automatically adjusts the speed through microprocessor-controlled technology within the speed range of 0/30 - 2000 rpm. Continuous comparison of shaft speed to desired speed is maintained and variations are adjusted automatically.



IKA ministar 20 control, 15L, Overhead Stirrer

Integrated timer / counter for the control of kinetic sensitive reactions and reminders. Viscosities up to 10,000 mPas and volume of up to 15 L. Continuously adjustable speed between 0/30 – 2,000 rpm. Temperature reading on display. USB interface, e.g., for documenting parameters



PendoTECH PressureMAT

The PressureMAT Sensor Transmitter is a comprehensive unit designed to monitor the pressure of Pendotech's Single-Use Pressure Sensors. It combines the functions of a monitor, alarm, and transmitter, making it a versatile tool for your biopharmaceutical processes.



Diffusion-Osmosis apparatus ME-6940

Allows students to explore the rate of water movement and quantify pressure changes occurring in the system.



Heating/cooling chillers

Julabo FL1703 Recirculation chiller/heater -20 to 40°C

The cooler can be used for our jacketed steel tanks to control temperature, or with the Techfors-S fermenter to control cooling during fermentation



Thermofischer heating/cooling water bath

The heater/cooler can be used as an ordinary water bath, or with external circulation to e.g. the MT Optimax 1001 or other units.



Lauda Microcool MC1200 circulating chiller

The cooler can be used for our jacketed steel tanks to control temperature, or to any other cooling tasks



General laboratory equipment

Platform scale DS 30K0.1L 30 kg / 0,1g

The scale can be used to monitor media consumption during fermentation or for any other purpose



Shaker SLLG Labware Unishaker 25

Shaker for bottles, flasks, beakers etc.



Forma freezer -86 °C

A 422 liter freezer to store cells and other sensitive or fragile materials.



Gram BioMidiFreezer -20 °C and Refrigerator +5 °C

A 425 liter freezer for general freezing and a refrigerator for general cooling purposes



Termaks Heating incubator 25-100 °C



Ice cube machine

Generate ice for all general cooling purposes



Microwave oven

For all general heating where microwave heating is usable



Eppendorf pipettes

We have a broad range of pipettes: 10, 20, 200 μ L, 1 ml, 5 mL



BWT purified water

Bestaqua60 HQ compact reverse osmosis with polishing filter. Delivers purified water for autoclave, fermenter, washing machine and for any other purpose in both laboratories



Fume Cupboard / Exhaust Hood

Exhaust hood for work with chemicals, dust etc.



WVR technical weight



If we don't have the equipment needed for your project, contact Kresten at kkro@pha.dk to discuss options.

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