



Cronus-PCS




PerfuseCell



CerCell



PumpCell



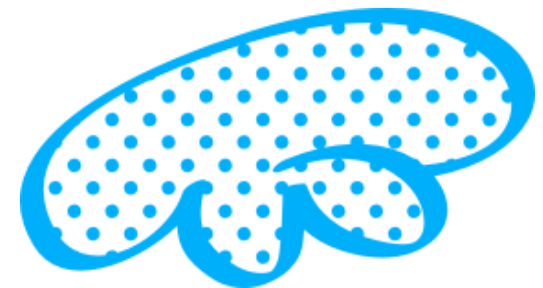
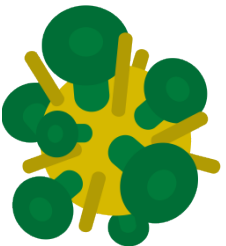
ProlifeCell

Five specialized sister companies

www.CerCell.com / www.PerfuseCell.com / www.PumpCell.com / www.Cronus-PCS.com / www.ProlifeCell.com

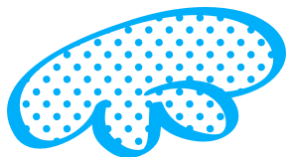
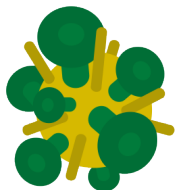
Why single-use system's

- The future
- Reduction in water and energy consumption ~ 45%
- Cost saving by eliminating cleaning, sterilization ~40 %
- Reduction in turn around time ~35 %

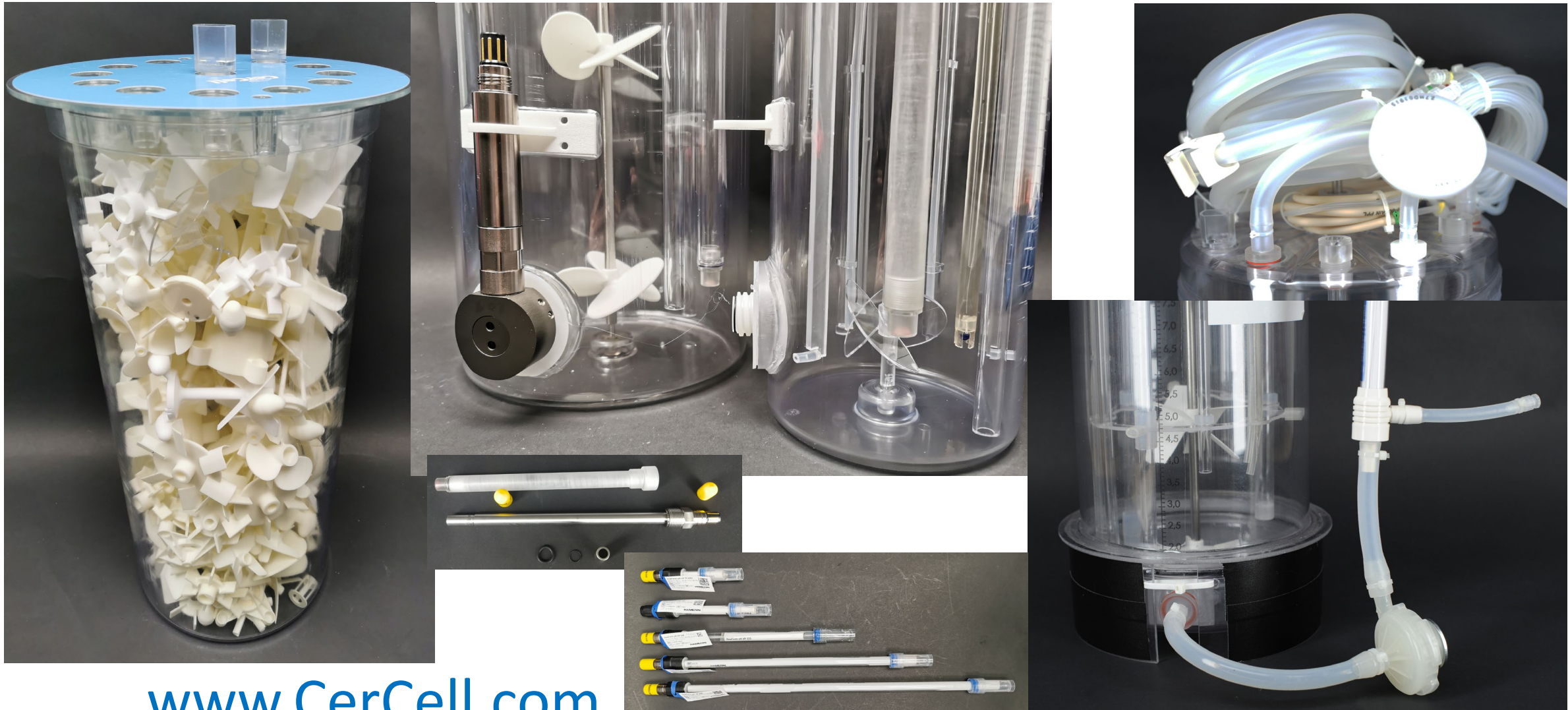
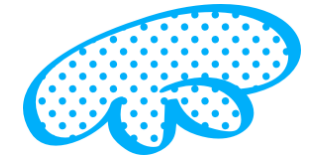


Question - I need to get around limitations from “standard” SUBs, SUFs, SUMs

- Then drop “standard” bioreactors, fermenters, mixers
- Realize that **customization** will bring you to the next level
- Improve your process with our customized Single-Use-Bioreactors - Single-Use-Fermenters - Single-Use-Mixers
- We cover 0.5 – 30 liter Vessel-Volume (VV) rigid plastics
- Designed to fit to your process and Process-Control-System

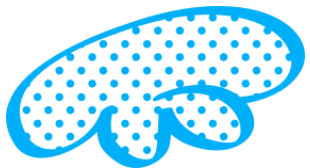


Customized to the next level - including

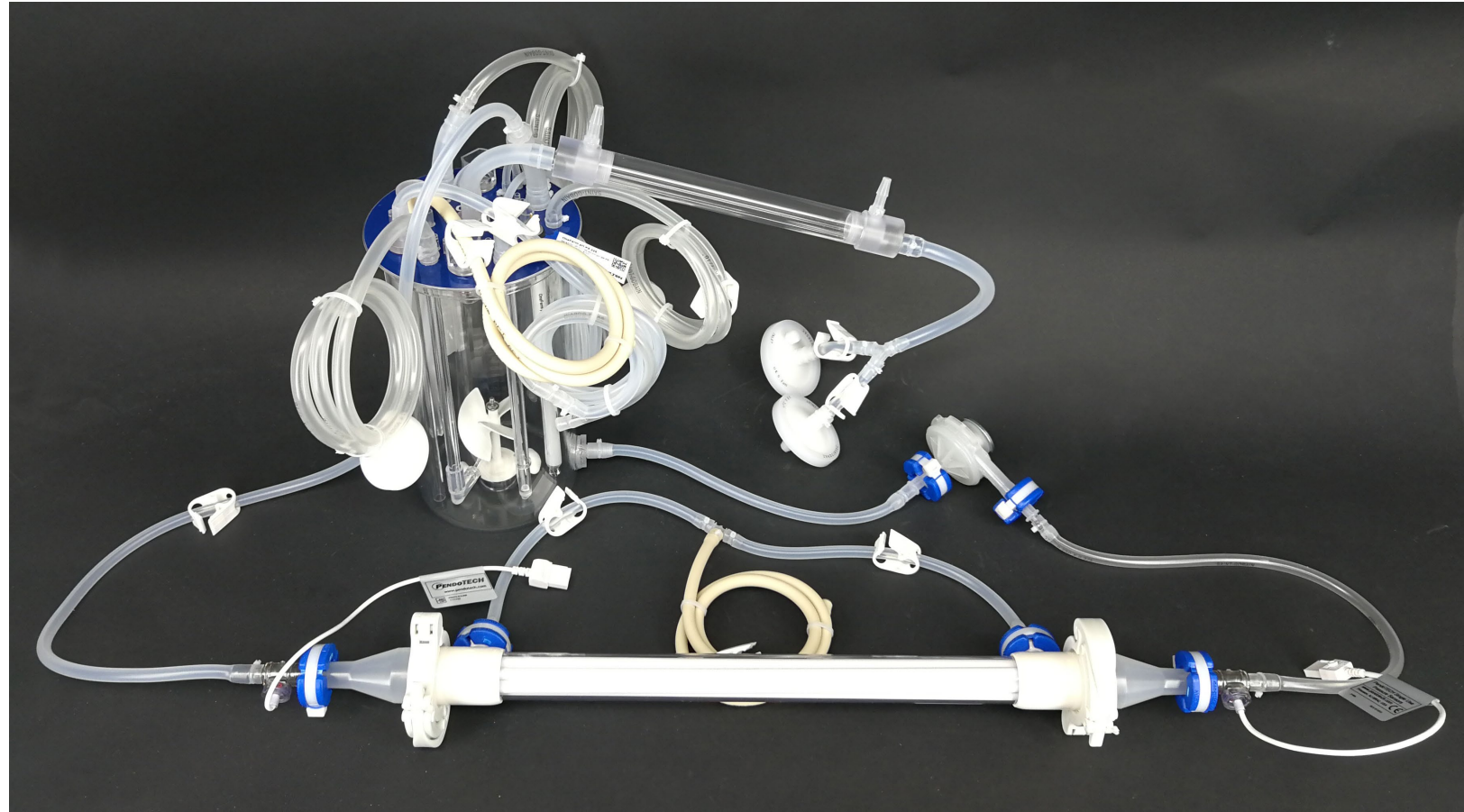
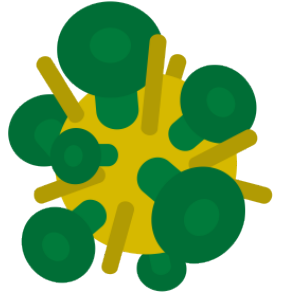


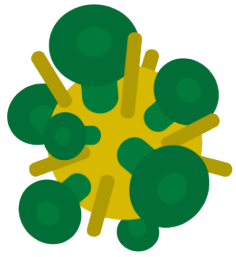
www.CerCell.com

- Highly customized – Plug & Play – no hood needed
- Mimic larger systems
- One-to-One copy of existing glass & steel systems
- Designed to work with all known Process-Control-Systems
- Pre-assembly tubing set, assemblies, mounted directly on the vessel, pumps and filter

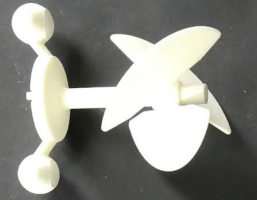
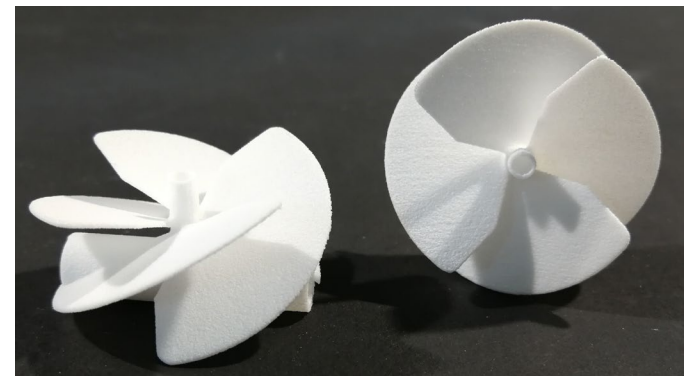
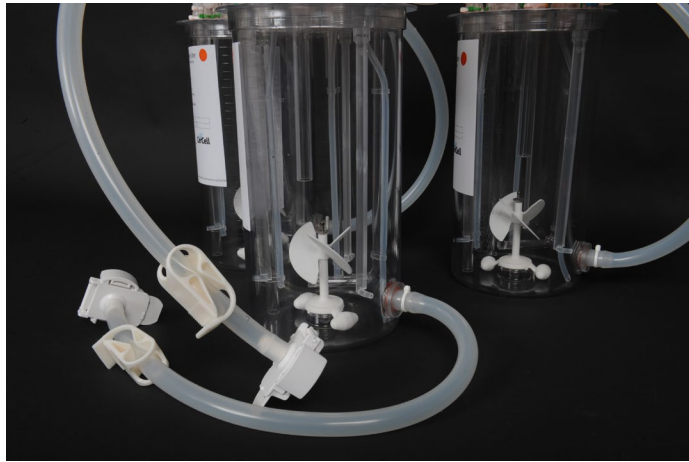
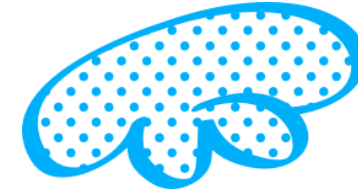


Example of what we can offer





650 Impeller's & 150 Turbine's





Drive systems

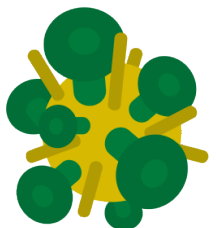
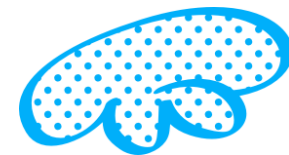
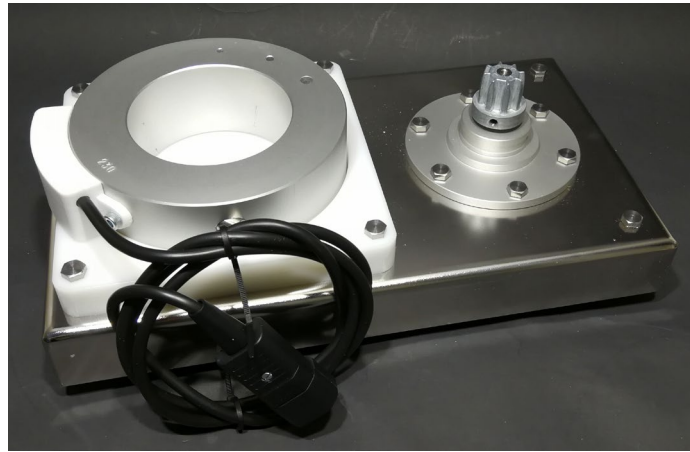
All our bioreactor, fermenter and mixer components can be driven from either top and/or from bottom

- HPD = Head-Plate-Drive
- MBD = Magnetic-Bottom-Drive

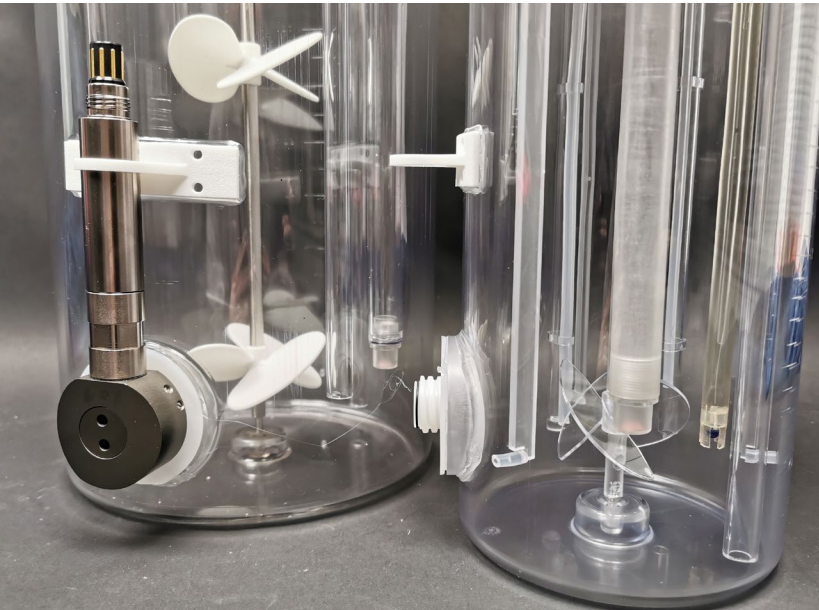
We support any Process-Control-System + our Cronus-PCS

Our Cilix unit is world-only to show Power Number - all the time !!

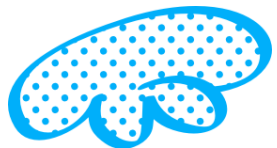
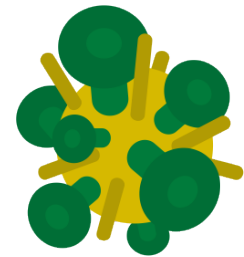
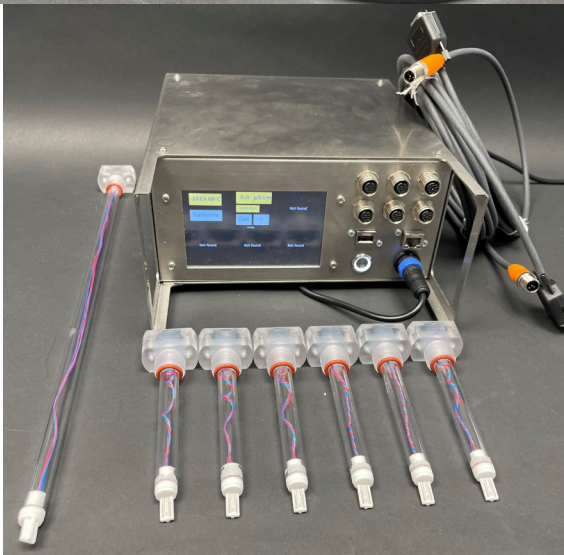
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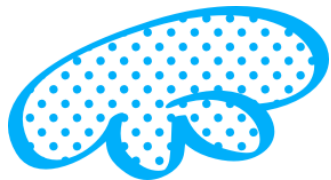


Single-Use-Sensor's

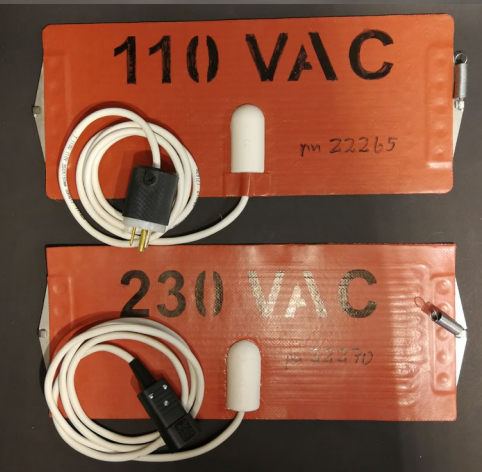
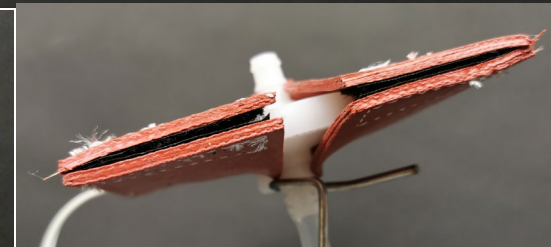
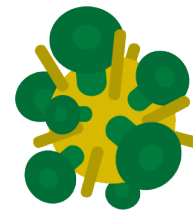


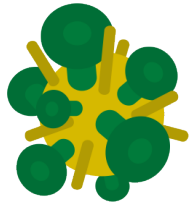
- pH – analogue + ARC
- DO – analogue + ARC
- InCyte ARC capacitance
- Conductivity
- CO2 – ARC
- Temperature Pt100 + Pt1000
- Our Sipylus unit accept any sensor





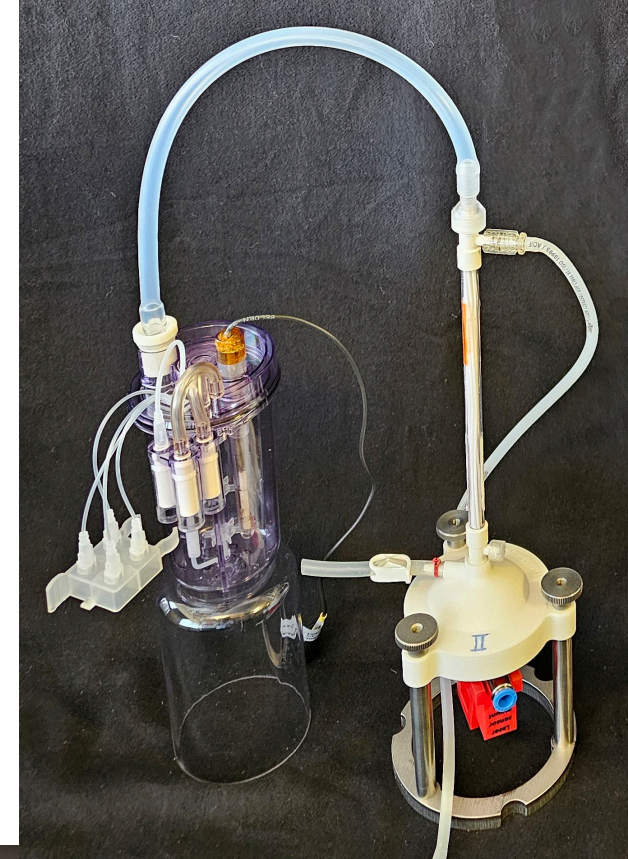
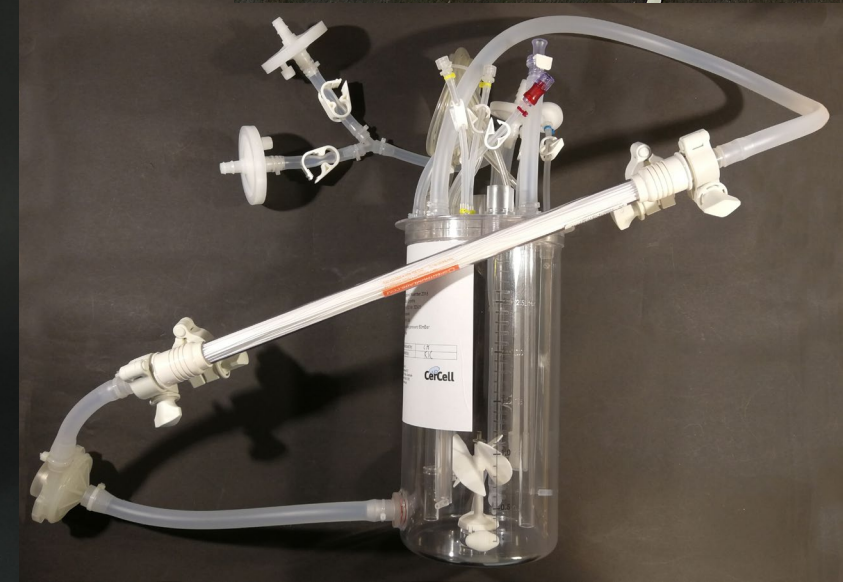
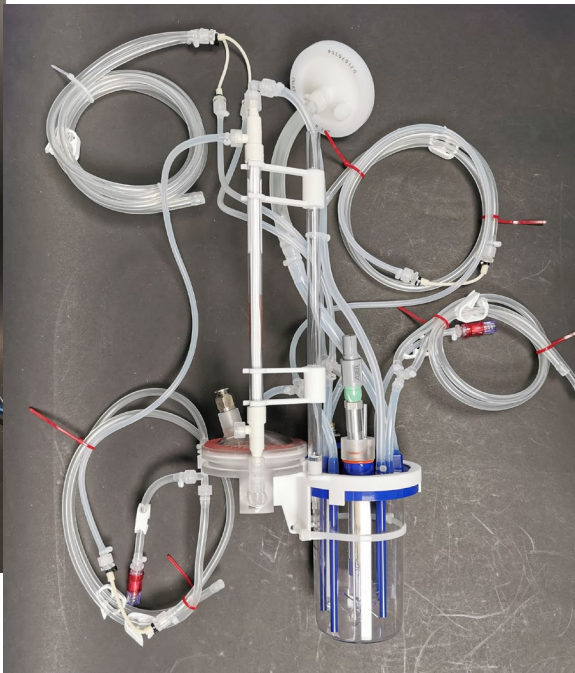
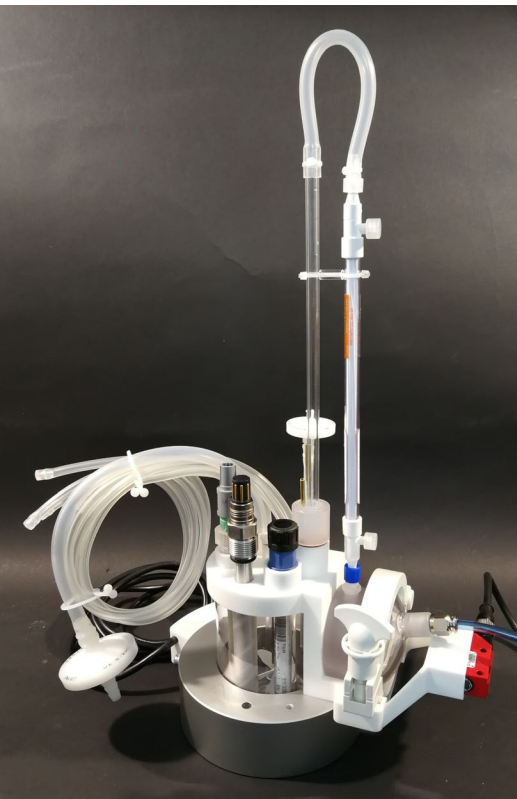
Thermal control

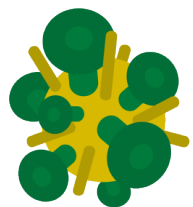




Perfusion Ready SUB's

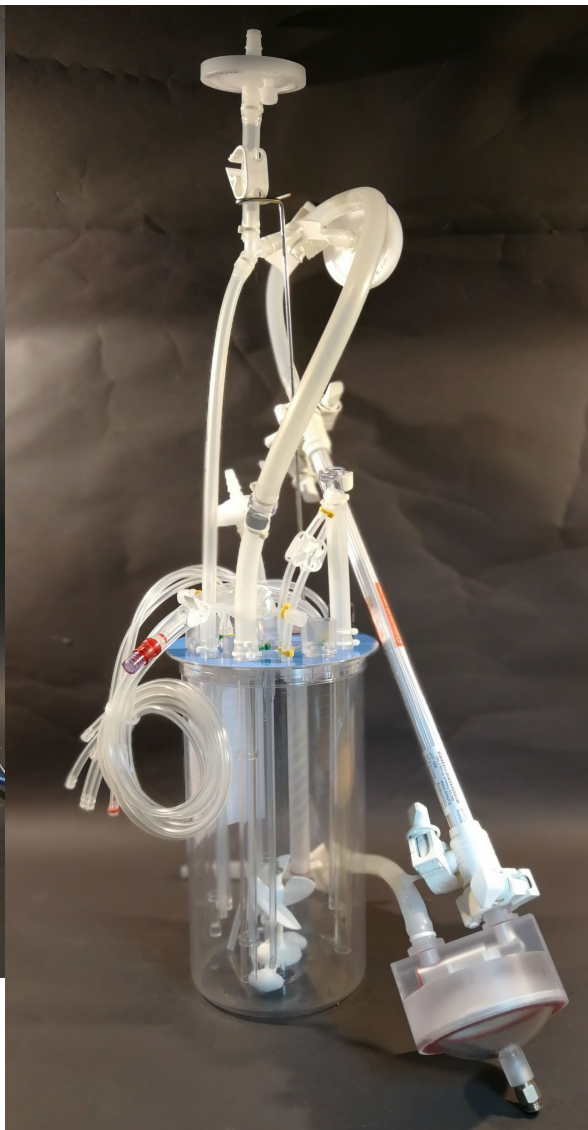
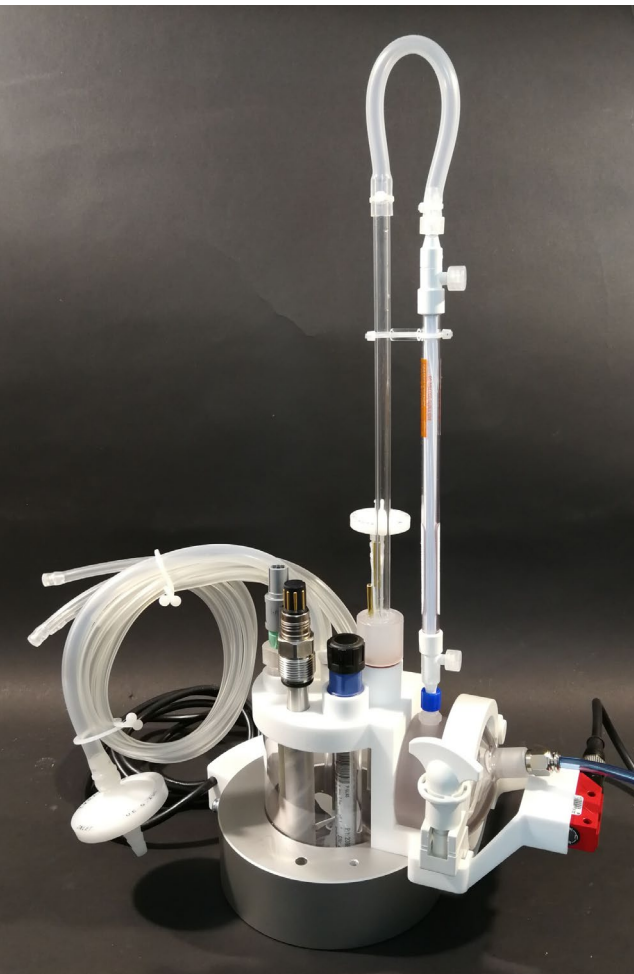
ATF or TFF methods from
0.25 to 30 liter

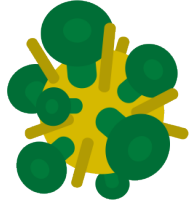




Perfusion Ready TFF

- Complete and ready-to-use
- Sensors & assemblies
- Pumps: Clio or Levitronix
- From 0.3 liter VV and up
- One or more HFF
- Supported by Clotho drive unit
- Works with bioBLU



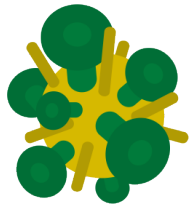


Perfusion Ready ATF P-SUBs

- ATF method from 0.25 to 30 liter VV
- Complete and ready-to-use
- LASER guide Thalia diaphragm SUP
- Eliminates HFF blocking
- Select preferred HFF
- SUP controlled by Clotho drive unit
- P-SUB controlled by any PCS

www.perfusecell.com

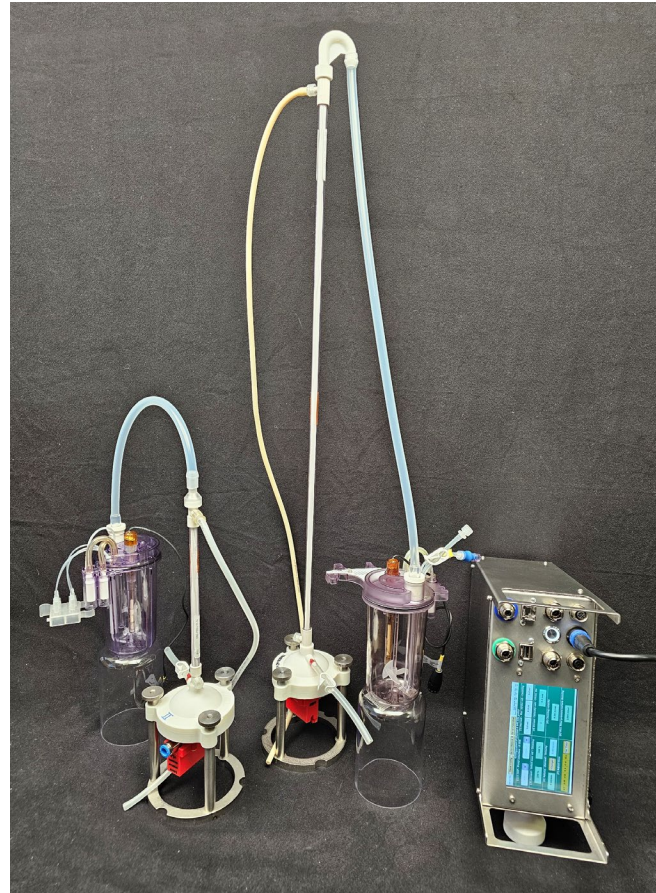




Perfusion Ready 250 ml ATF

- ATF method kit fits Modular
- Ready-to-use kit
- LASER guide Thalia diaphragm
- Eliminates HFF blocking
- Well known 250 ml SUB
- Supported by Clotho drive unit

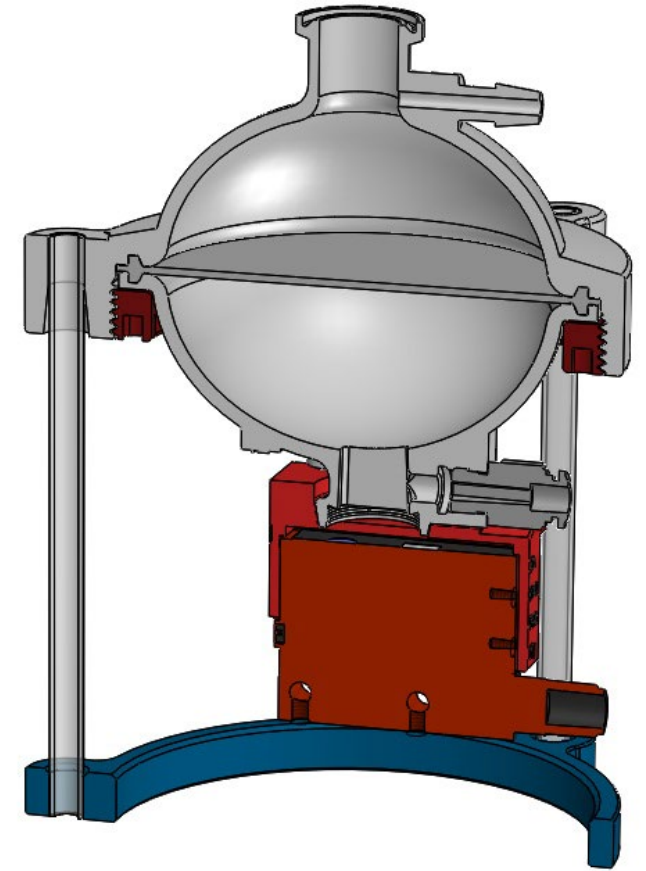
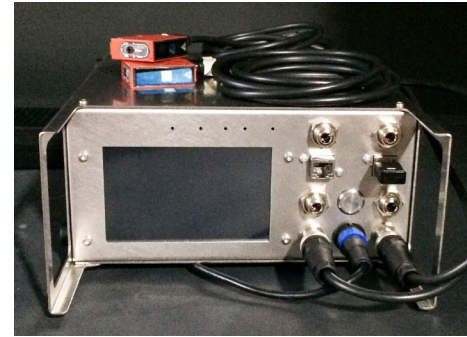
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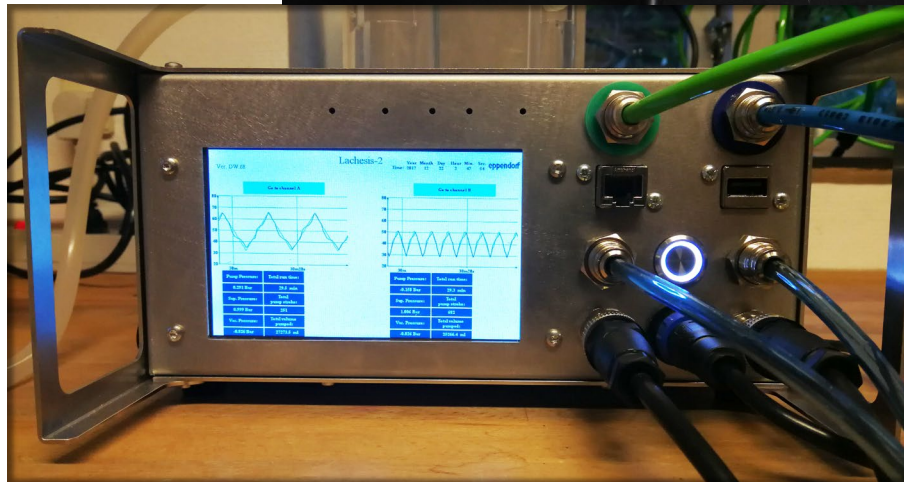
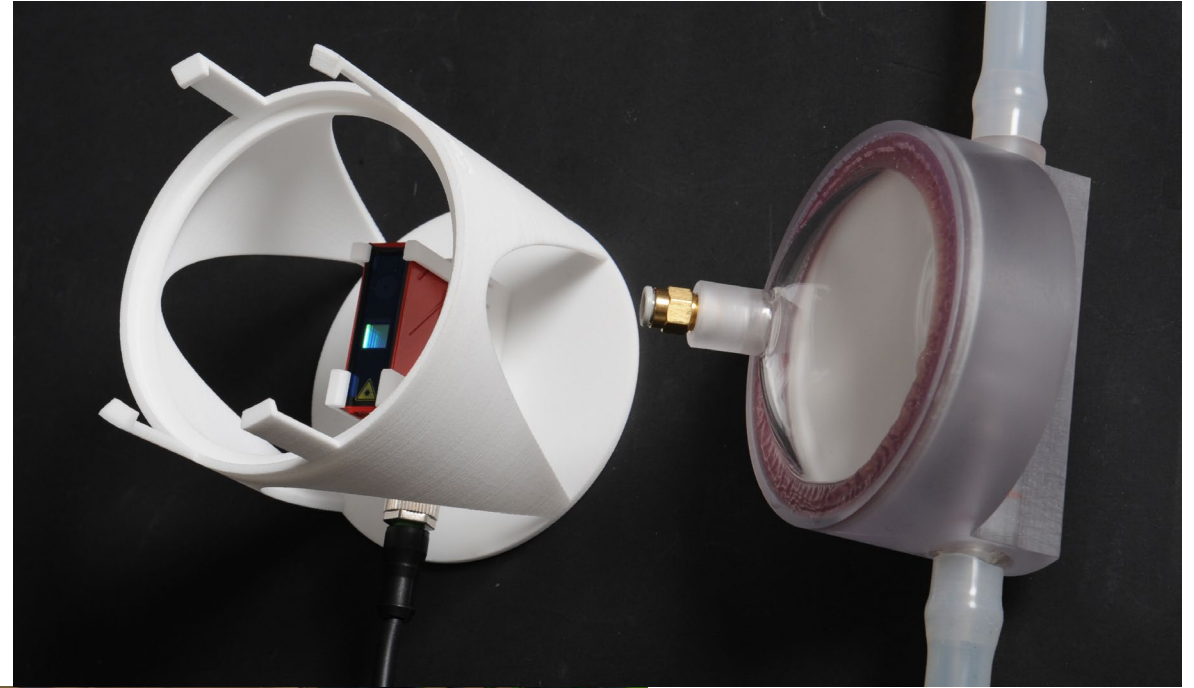
Why LASER guided SUP ?

- Known diaphragm pumps have not developed last 150 years
- Our patented SUP “copy” the functionality of mammalian heart
- Fully controlled by Clotho:
 - Number of strokes per time
 - Choose velocity like 0.1-20 m/s
 - Volume per stroke like 1-100%
- Keep HFF clean, a metering SUP and off course scalable



Precision diaphragm Single-Use-Pump's

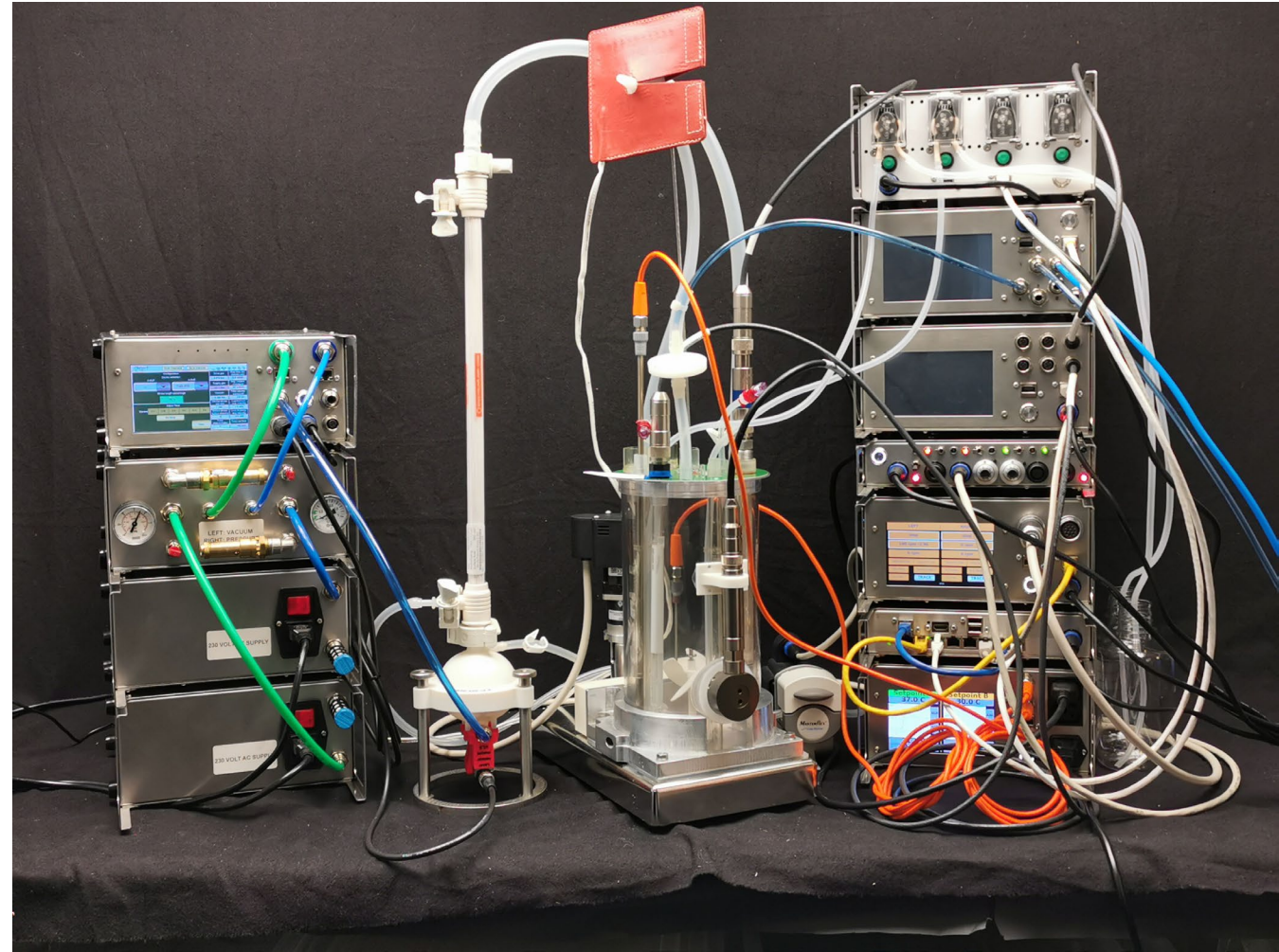
- World only Single-Use-Pump (SUP) operating with 1 % accuracy
- Operates like the human heart
- Performance fully PLC controlled
- Pulses controlled by LASER sensor
- Programmable Clotho drive unit
- Controls and measure volume
- 100 % single-use materials
- Perfect for Perfusion-SUBs



Customizable Process-Control-System (PCS)



- Practical & compact design
- Unlimited input & output
- Assemble your own PCS
- Each unit include PLC and monitor
- WiFi and LAN with PC, phone
- Talk via OPC-UA to software like Lucullus, DeltaV, DasWare and others



www.cronus-pcs.com

Customizable Process-Control-System units







- Design your own PCS
- We chose individual small boxes
- Unlimited input & output
- Stand-alone with its own build-in software for one purposes
- One unit for one purpose reduce investment and required desktop space for one task

www.cronus-pcs.com



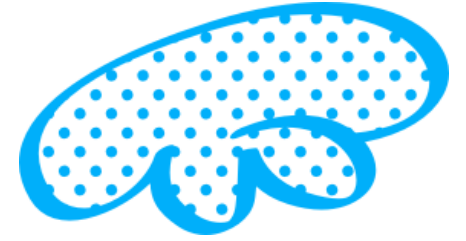
Power Number online

- Cilix drive unit family recognise a range of BLDC servo motor sizes automatically
- Power Number measured constantly / on-line
- Combined with Cronus-PCS tower or as Stand-Alone with its own build-in software for programming and monitor showing conditions

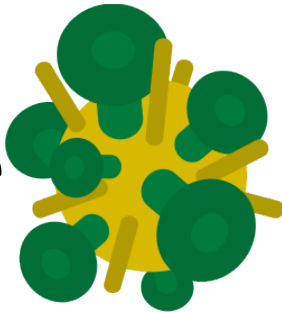
| Impeller photo | Impeller name | 300 RPM no baffels | 400 RPM no baffels | 300 RPM with baffels | 400 RPM with baffels |
|---|---|------------------------|------------------------|-------------------------|-------------------------|
|  | Kidney OD 60 mm 3 blades 30 °angle | 0.1 W 0.9 Np | 0.1-0.2 W 0.8 Np | 0.1 W 1.3 Np | 0.2 W 0.9 Np |
|  | Kidney OD 60 mm 3 blades 45 °angle | 0.1-0.2 W 1.8 Np | 0.3-0.4 W 1.7 Np | 0.2 W 2.1 Np | 0.4 W 1.8 Np |
|  | Kidney OD 50 mm 3 blades 30 °angle | 0.1 W 1.5 Np | 0.1 W 1.1 Np | 0.1 W 1.6 Np | 0.1 W 1.1 Np |
|  | Torpedo without impeller 72mm | 0.1 W 0.15 Np | 0.1 W 0.15 Np | 0.1 W 0.2 Np | 0.1 W 0.15 Np |



Where we benefit with extra impact

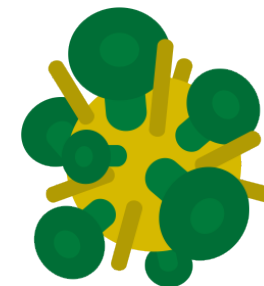


- Design of complex Single-Use-Mixer's for plasmid, DNA / Lysis, mRNA – even in a continuous process
- High Cell-Density E. coli process in Single-Use-Fermenter's
- Mimic larger systems / downscale a 1 m2 for seed-train
- Easier validation Single-Use-Bioreactor's including complete assemblies for CDMO's - eliminating local assembling and auto-claving
- Simplify even complicated processes converting to single-use

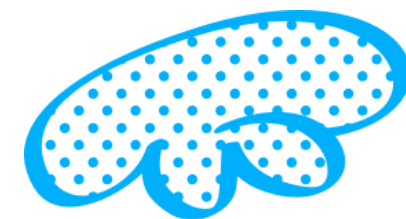




Thanks for listening
visit our booth



detailed info on websites



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www.Cronus-PCS.com / www.ProlifeCell.com