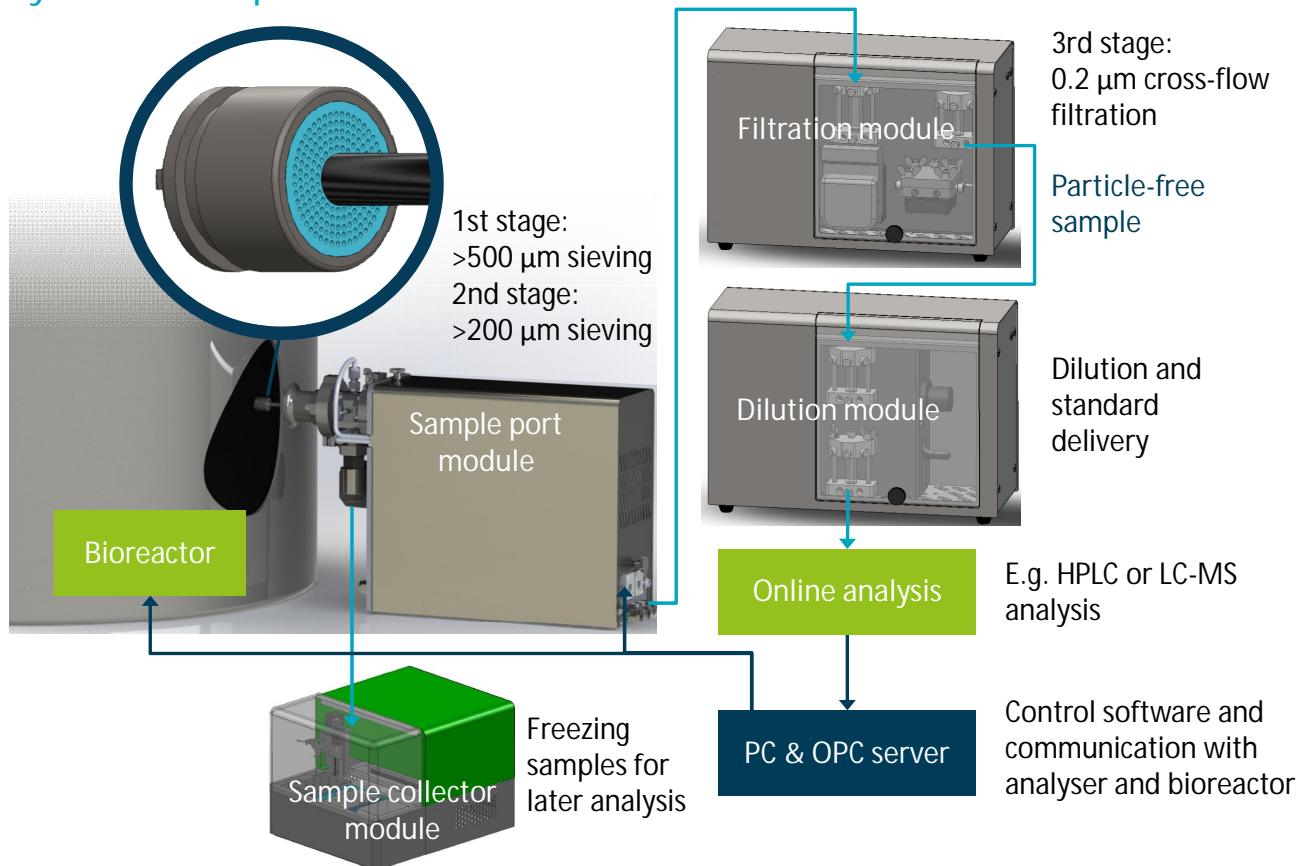


## Automated sterile sampling system

### System description



Filtration stages	1 <sup>st</sup> adjustable stage during sampling eliminates >500 µm particles 2 <sup>nd</sup> customizable stage in the piston eliminates remaining >200 µm particles 3 <sup>rd</sup> stage in the Filtration module eliminates remaining >0.2 µm particles in a circulated cross-flow filtration using round 45 mm filter membranes
Sample volume Sampling interval	Adjustable 2-10 mL per pull; several pulls per sampling cycle possible c. 10 min, but depends on the length of the analysis Sample at the analyser after 2 min
Sterilization and cleaning	Sterilization and cleaning with 2 bar steam Drying with 2 bar air or nitrogen



LESS  
VARIATION



HIGHER  
YIELD

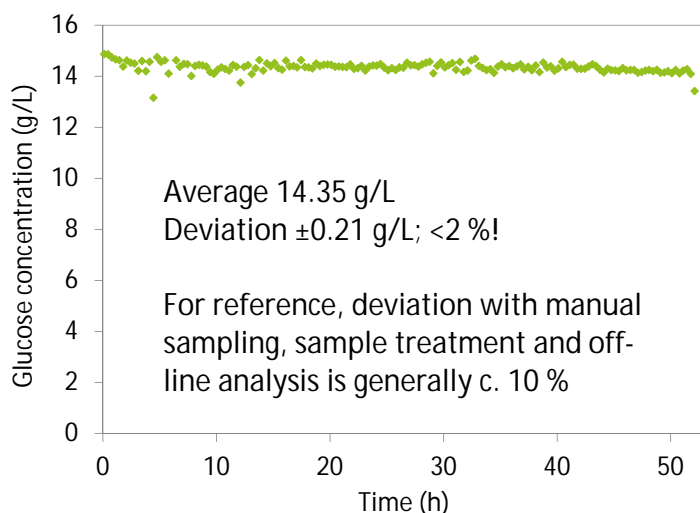


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## Technical data

Interfaces and connections	<p>Connection to reactor or pipe into 25 mm Ingold-style port</p> <p>Connection to on-line analysers: Sample pumped via 1/8" Teflon tube</p> <p>Connection to automation: OPC protocol for data transfer over Ethernet connection</p> <p>2 bar steam required for sterilization and cleaning</p> <p>2 bar air or nitrogen required for drying</p> <p>The modules use 24 VDC electricity</p>
Multiplexing	6 Sample ports and Filtration modules can be connected to one Dilution module and on-line analyser
Dimensions	<p>Sample port: Length 45 cm, Width 12 cm, Height 30 cm</p> <p>Filtration module: Length 24 cm, Width 16 cm, Height 20 cm</p> <p>Dilution module: Length 24 cm, Width 16 cm, Height 20 cm</p>

## Repeatability



Repeatability of sampling, sample treatment and analysis

Sample volume:  
2 x 7 mL

Sampling interval:  
20 min

On-line analysis  
18 min HPLC run

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