

DASGIP's Bioreactors

Bioreactors for Microbial Application

Technology

DASGIP Parallel Bioreactor Systems combine the convenience of simple systems such as flasks with benefits of industrial scale bioreactors: The systems' small working volumes allow high experimental throughput with minimal input while precision and automated control offer highly optimized scalable and reproducible processes.

The highly instrumented vessels contribute critically to this advanced system as the monitoring modules and the control system do.

To suit individual requirements DASGIP's bioreactors provide users with a great flexibility in size, shape and instrumentation. Each of them consists of an easy to autoclave glass body and a stainless steel head plate with standardized fittings and ports.



Bioreactors Microbiology

Application

A wide range of different vessels guarantees superior results when working with *E. coli*, *Pichia pastoris* or other microorganisms.

Different sizes and shapes allow integration into various set-ups. Working volumes from 60 mL up to 4 L save resources such as media, isotopes and other material. The vessels operating in the DASGIP Bioblock, providing integrated temperature and agitation control for up to four vessels. Reactor's cooling is capable to effectively compensate the heat generated during high cell density cultivation.

Each vessel can be fit out with a great choice of instruments. PH and DO sensors as well as high precision gas and media supply, including the perfusion option, can be installed. DASGIP vessels operate with headspace or submerged gassing. DASGIP Bioreactors are suitable for working with anaerobic cells.

One fermentation set-up controls up to 16 vessels. When being part of the Parallel Bioreactor System or other control systems critical process parameters in applications such as strain

characterization, process development and gene expression can be controlled easily. For instance, monitored dissolved oxygen controls substrate feed and allows this way a DO-triggered feed. Additional analyzing tools offer deeper insight into the cells' metabolism. The off-gas analyzer, for instance, calculates the oxygen uptake rate, carbon dioxide transfer rate and respiratory quotient in real-time.

Benefits

Instruments for monitoring, substrate feed, gas supply and sampling are implemented via DASGIP's in-house developed head plates. All head plates belong to DASGIP's head plate family. Made of stainless steel, all ports and fittings have a standardized format. This allows highest flexibility in use of different probes as well as instruments for aeration, feed, gassing and sampling. As ports suit industry sensors DASGIP reactors deliver the same quality of monitored data than large scale reactors, i.e. easily scalable results.




The following bioreactors give an overview on the different models.

Quality System certified by DQS ■ DIN EN ISO 9001 ■ Reg.-No. 63431

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Reactors

<p>DASGIP Bioblock Stirrer</p>	
<ul style="list-style-type: none"> ■ Working Volumes: 60 - 200 mL (SR0200) and 150 - 300 mL (SR0400) ■ Agitation: Magnetic driven stir bar or Pitched Blade Impeller, Speed: 60 - 1200 rpm, ■ Instrumentation: Head plate with five PG13.5 ports and four 6 mm ports supports pH, DO, OD, redox and temperature sensors, gas supply, liquid addition and removal (media, acid/base), exhaust gas port (optional off-gas condenser), level/anti foam control as well as sampling ■ Aeration: Headspace and/or submerged gassing with dip tube or stainless steel sparger 	
<p>DASGIP Bioblock Advanced Stirrer Line SR</p>	
<ul style="list-style-type: none"> ■ Working Volumes: 200 - 1000 mL (SR0700), 200/500 - 1500 mL (SR1000), 400 - 2000 mL (SR1500) ■ Agitation: Overhead-driven Rushton Impeller, Speed: 30 - 1250 rpm or 100 - 1600 rpm ■ Instrumentation: Head plate with seven PG13.5 ports and one 6 mm port supports pH, DO, OD, redox and temperature sensors, gas supply, liquid addition and removal (media, acid/base), exhaust gas port (optional off-gas condenser), level/anti foam control as well as sampling ■ Aeration: Headspace or submerged gassing with dip tube, stainless steel sparger or L-sparger 	
<p>DASGIP Benchtop Bioreactor Line DR</p>	
<ul style="list-style-type: none"> ■ Working Volumes: 0.7 - 2.7 L (DR03)*, 0.8 - 3.8 L (DR04)* ■ Agitation: Overhead-driven Rushton Impeller, Speed: 30 - 1250 rpm or 100 - 1600 rpm ■ Instrumentation: Head plate with eight M18x1.5 mm ports and eight 6 mm ports (versatile DASGIP compression fittings and adapters available) supports pH, DO, OD, redox and temperature sensors, liquid addition and removal (media, acid/base), exhaust gas port (optional off-gas condenser), gas supply, level/anti foam control as well as sampling ■ Aeration: Headspace or submerged gassing with dip tube, stainless steel sparger or L-sparger 	

* not suitable for DASGIP Bioblock