

RALF

Empowering your lab's potential.



Full flexibility

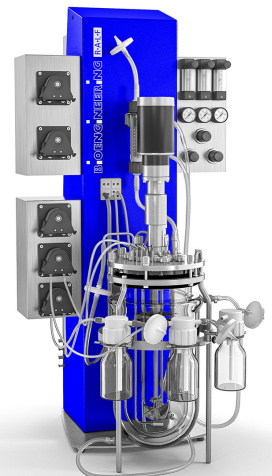
RALF supports batch, fed-batch and perfusion processes and offers maximum versatility by seamlessly integrating your preferred instrumentation and control equipment through a variety of interfaces. It is controlled by BioSCADA and meets stringent standards such as 21 CFR Part 11.

The vessel is positioned in front of the control tower for easy access from all directions. The compact control tower saves space and fits into any laboratory environment.

Three temperature options are available: a single-wall vessel with heating pad, a double-wall vessel for cell culture, and a special single-wall vessel with perfused baffles for microbial applications. This design provides efficient heat transfer. It is easier to transport and can be autoclaved in less time than conventional double-walled vessels.

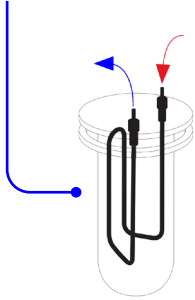
Common supply connections simplify installation of multiple systems and minimize space requirements. The system offers customized solutions for optimal process conditions.

- Unique temperature control option
- Compact design
- Modular system



Perfused baffles:

The temperature control system achieves two-sided temperature control, but in a single-wall vessel. This results in shorter autoclave time and lower overall vessel costs, while providing highly uniform temperature distribution previously achieved only with double-jacketed vessels.

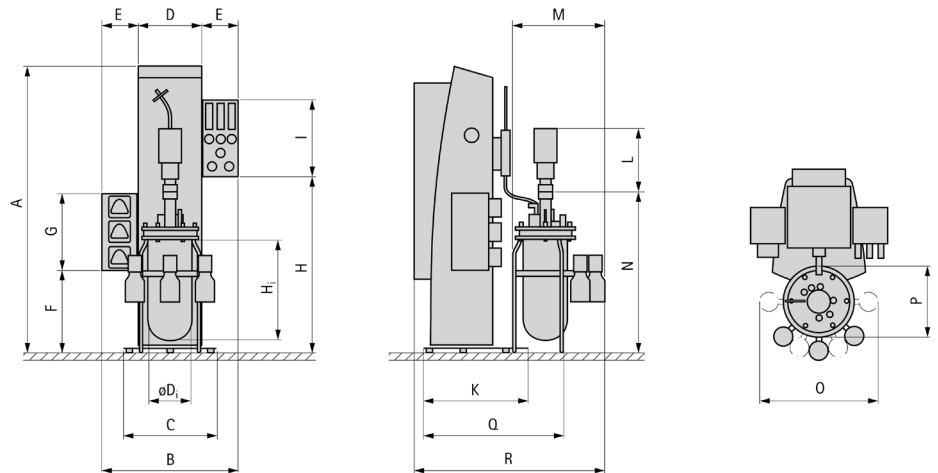


Space-saving arrangement for placing in the autoclave.



Technical Data

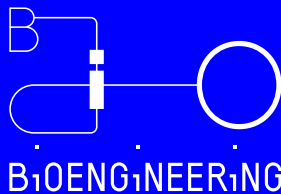
- Working volume: 1.3 / 2.5 / 3.3 / 4.5 liters
- Vessel: Single or double-walled glass vessels
- Drive: Direct top drive with mechanical seal or magnetically coupled
- Impellers: Rushton, marine, pitched blade
- Aeration: Tube, ring sparger, sinter sparger, bubble-free gassing
- Gas: Up to 6 individual gas lines with pulse valves or mass flow controllers
- Pumps: Up to 6 pumps integrated in the control unit and one external pump
- Configuration: Up to 6 bioreactors controlled by a single controller
- Temperature control: Heating pad and cooling fingers, heating circuit via perfused baffles, heating circuit via double wall of vessel
- Measurement and control: Speed, temperature, pH, pO₂, antifoam/level, pressure, redox, OD, weight, exhaust gas, numerous interfaces and controllers
- BioSCADA: Sophisticated control and visualization software



A	B	C	D	E	F	G	H	I	K	L
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
1065	512	342	240	136	309	285	652	285	390	246
			M*	N*	O*	P	Q	R	D _i	H _i
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
			307	507	400	222	489	679	96	300
			325	509	417	239	502	690	125	300
			349	607	440	264	521	721	150	300
			349	607	440	264	521	723	150	400

* Maximum size for autoclaving

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