

HyPerforma Glass Bioreactors

The Thermo Scientific™ HyPerforma™ Glass Bioreactors are available in 1, 3, 7, and 15 L sizes. They offer easy operation and rapid assembly and are manufactured with the highest standards for materials and surface finish. Developed using a computational fluid dynamics (CFD) simulator, the HyPerforma Glass Bioreactor impellers provide maximum mixing with minimum shear force, resulting in a higher average $k_L a$. The cold finger has been replaced by a cooling loop to increase the thermal surface. Laboratory performance tests have demonstrated a cooling rate two times better than a sample of products from other suppliers. Control can be bidirectional, which allows a single-wall vessel to be used for mammalian applications and fermentation processes* (needs two kits).



HyPerforma Glass Bioreactor key features

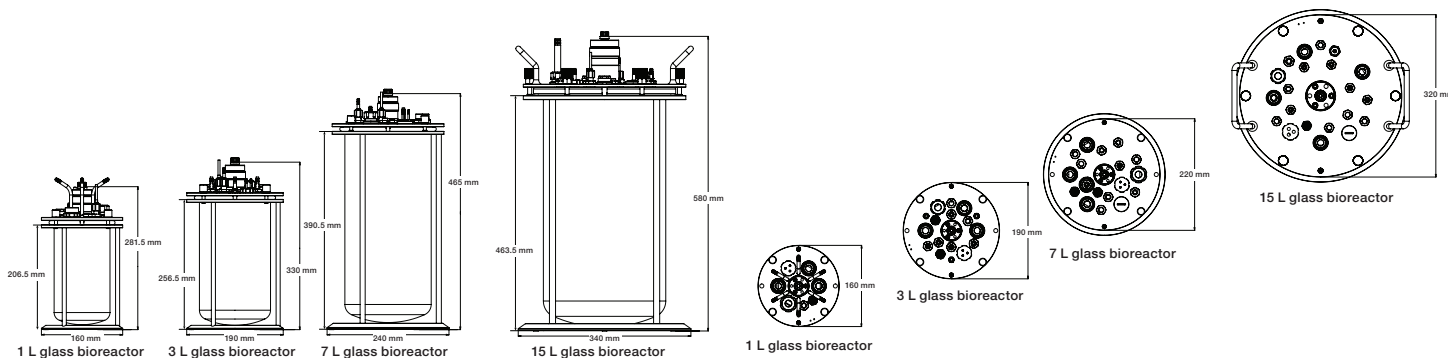
- The motor adapter uses coupling windows and an alignment marker for easy assembly
- Ergonomic head plate design provides easy assembly and disassembly of components for rapid reconfiguration

Accessories

- Kits to help enable the end user to configure the vessel according to the intended use
- Heating blanket: designed for rapid thermal transfer; a bimetallic temperature-limiting switch embedded in the blanket helps protect against overheating or fires
- Common accessories kit: includes blind stoppers for vessel reconfiguration

* Requires additional components. Please consult with your local Thermo Fisher Scientific sales representative for more information.

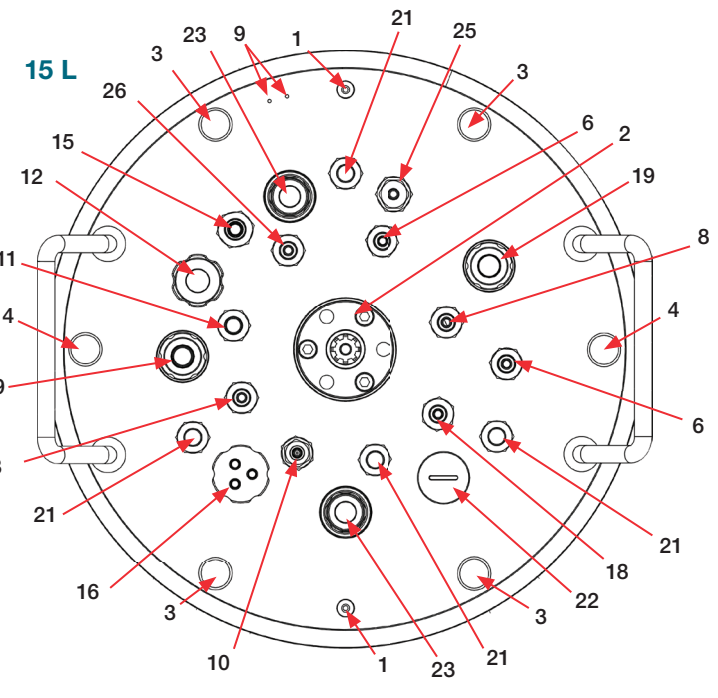
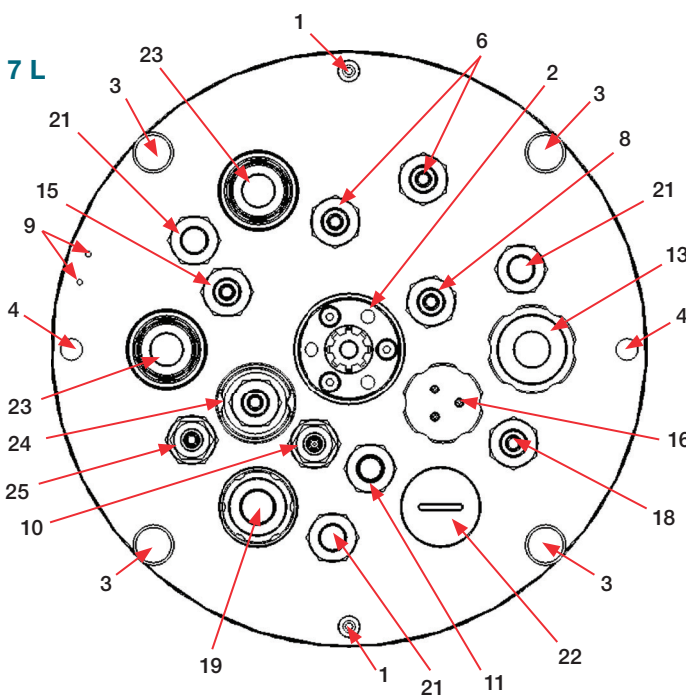
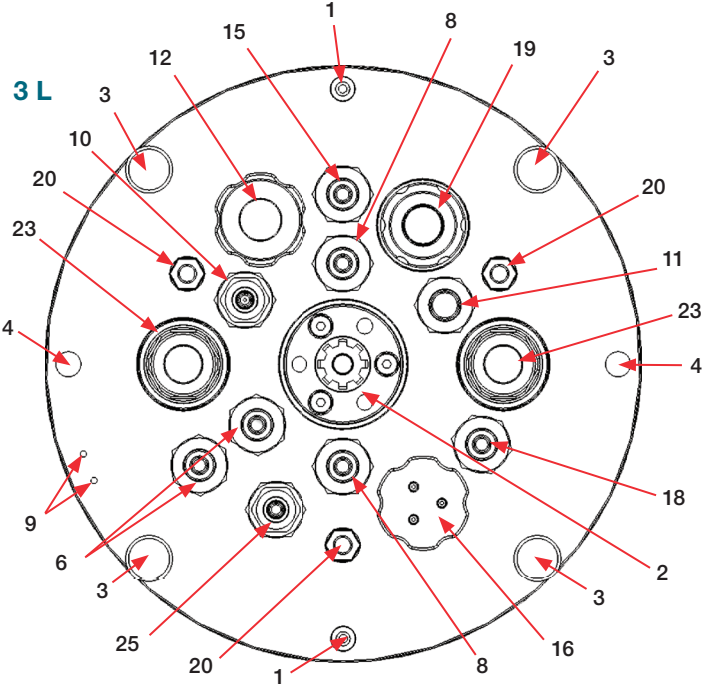
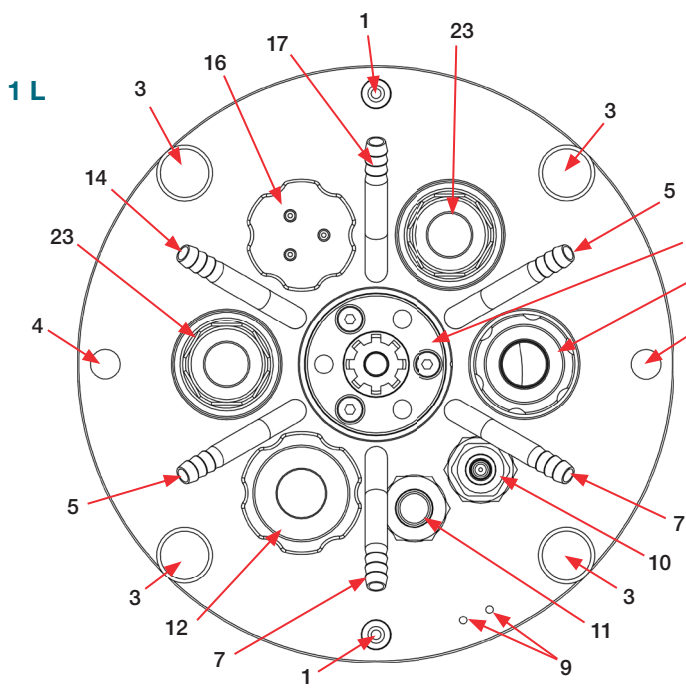
HyPerforma Glass Bioreactor specifications



HyPerforma Glass Bioreactor specifications				
Size	1 L	3 L	7 L	15 L
Bioreactor height	206.5 mm (in.)	256.5 mm (10.1 in.)	390.5 mm (15.4 in.)	463.5 mm (18.3 in.)
Agitator mounting height	281.5 mm (11.1 in.)	330 mm (12.9 in.)	465 mm (18.3 in.)	580 mm (22.8 in.)
Headplate diameter	160 mm (6.3 in.)	190 mm (7.5 in.)	220 mm (8.7 in.)	320 mm (12.6 in.)
Bioreactor stand diameter	160 mm (6.3 in.)	190 mm (7.5 in.)	240 mm (9.5 in.)	340 mm (13.4 in.)
Dry weight	3.7 kg	4.8 kg	8.7 kg	23.0 kg
Total loaded volume	1.42 L	3.03 L	7.22 L	16.80 L
Loaded working volume	0.97 L	2.96 L	6.83 L	14.66 L
Minimal working volume	~0.3 L	~1.2 L	~2.8 L	~6.0 L
Material	Borosilicate glass, 316L stainless steel, silicone			
Drilled pipe sparger	5 holes (0.8 mm)	7 holes (0.8 mm)	13 holes (0.8 mm)	23 holes (0.8 mm)
Ring sparger	NA	18 holes (0.85 mm)	42 holes (0.85 mm)	90 holes (0.85 mm)
Frit pore sparger	Pore size: 12–15 µm Length: 7 mm Diameter: 7.9 mm	Pore size: 12–15 µm Length: 7 mm Diameter: 7.9 mm	Pore size: 12–15 µm Length: 18 mm Diameter: 7.9 mm	Pore size: 12–15 µm Length: 25.4 mm Diameter: 12.7 mm
Heat only	Heating blanket (110 W)			
Heat and cool	1.32 kW heat + 0.18 kW (at 20°C) water bath cool			1.32 kW heat + 0.3 kW (at 20°C) water bath cool
	Cooling loop solenoid valve cable assembly: 1 m (3 ft)			
Optional scale	Analog Benchtop, Combics Series, 15 kg x 0.5 g (16 bit) or x 8 g (12 bit), 254 x 254 mm, CAPS1U-20CC-LU			Analog Benchtop, Combics Series, 30 kg x 1 g (16 bit) or x 15 g (12 bit), 457 x 457 mm, CAPS1U-50EE-LU
Indicator with optional scale	Midrics 2, IP65, display, MIS2UR-V2			
Resistance temperature detector (RTD)	Temperature sensor assembly, RTD to 5 pin, 3 ft (Thermo Scientific™ HyPerforma™ G3Lab™ Controller, glass)			
Foam sensor cable assembly	1 m (3 ft)			
Cable assembly with optional scale	Analog output: 6 m (19.6 ft), 1 cable per scale indicator			
Agitator kit	Triple-stack motor (adapter included) Agitator assembly: Teknic NEMA 23 Single to HyPerforma Glass Bioreactor Cable assembly: 2 m (6 ft)			
Agitator speed	1,250 rpm (set as default); can be configured to lower values via Thermo Scientific™ TruBio™ software			
Agitator voltage	120 V/240 V			

Head plate (HP) configurations

- | | | |
|---------------------------------|--------------------------------------|-----------------------------------|
| 1. Stand | 10. Foam level sensor | 19. 12 mm port |
| 2. Agitator assembly | 11. Thermowell | 20. Blind port, 6 mm |
| 3. Fixing screw | 12. Septum | 21. Blind port, M10 |
| 4. HP alignment hole | 13. Septum, M24 | 22. Blind port, M24 |
| 5. Cooling loop (welded in HP) | 14. Open pipe sparger (welded in HP) | 23. PG13.5 adapter |
| 6. Cooling loop | 15. Open pipe sparger | 24. Port adapter, M18 to Ø10.5 mm |
| 7. Overlay (welded in HP) | 16. Triple inlet | 25. Sample pipe |
| 8. Overlay | 17. Sparger (welded in HP) | 26. Feeding tube |
| 9. Foam level sensor connection | 18. Sparger | |



Note: Head plate configuration, subject to change.

Ordering information

HyPerforma Glass Bioreactor*			
Size	Voltage	Description	Cat. No.
1 L	120 V	Heat only, with scale	F100-2684-001
		Heat only	F100-2684-002
		Heat and cool, with scale	F100-2684-003
		Heat and cool	F100-2684-004
	240 V	Heat only, with scale	F100-2684-101
		Heat only	F100-2684-102
		Heat and cool, with scale	F100-2684-103
		Heat and cool	F100-2684-104
3 L	120 V	Heat only, with scale	F100-2680-001
		Heat only	F100-2680-002
		Heat and cool, with scale	F100-2680-003
		Heat and cool	F100-2680-004
	240 V	Heat only, with scale	F100-2680-101
		Heat only	F100-2680-102
		Heat and cool, with scale	F100-2680-103
		Heat and cool	F100-2680-104
7 L	120 V	Heat only, with scale	F100-2681-001
		Heat only	F100-2681-002
		Heat and cool, with scale	F100-2681-003
		Heat and cool	F100-2681-004
	240 V	Heat only, with scale	F100-2681-101
		Heat only	F100-2681-102
		Heat and cool, with scale	F100-2681-103
		Heat and cool	F100-2681-104
15 L	120 V	Heat only, with scale	F100-2685-001
		Heat only	F100-2685-002
		Heat and cool, with scale	F100-2685-003
		Heat and cool	F100-2685-004
	240 V	Heat only, with scale	F100-2685-101
		Heat only	F100-2685-102
		Heat and cool, with scale	F100-2685-103
		Heat and cool	F100-2685-104

Note: All bioreactors listed are GMP-compliant.

* Each lab-scale bioreactor needs to be operated using a HyPerforma G3Lab Controller and appropriate automation platform. Please contact your Thermo Fisher Scientific sales representative for more information on standard package options suitable for your requirements.

Find out more at thermofisher.com/sut