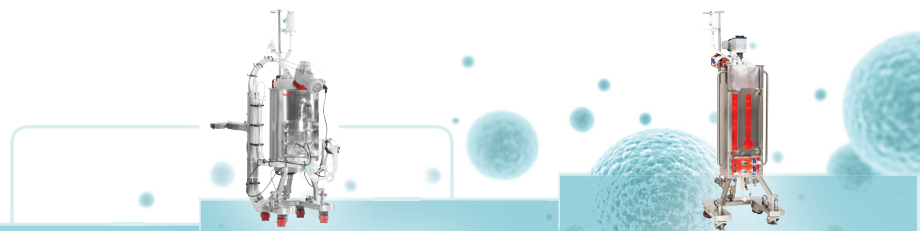


Choose the right HyPerforma Single-Use Bioreactor for your process

We launched the first-ever single-use bioreactors (S.U.B.s) in 2006 and we've continued to improve upon their design and technology. The Thermo Scientific™ HyPerforma™ 5:1 S.U.B. enabled higher turn-down, and the Enhanced series of HyPerforma reactors meets the demands associated with specific culture processes. The Enhanced series is built on the legacy HyPerforma hardware with three targeted bioprocesses:

- Intensified fed-batch (FB)
- Perfusion (n-1 and continuous USP)
- Adherent culture with microcarriers

Cell cultures continue to intensify through improvements in clone and media selection, demanding an exceptional S.U.B. to meet future culture needs. To meet those needs, we've introduced the Thermo Scientific™ HyPerforma™ DynaDrive S.U.B., which provides the high performance required for cell culture applications while bridging the gap between 2,000 L single-use and stainless steel systems.



Features	HyPerforma 5:1 S.U.B.	HyPerforma Enhanced S.U.B.	HyPerforma DynaDrive S.U.B.
Scalable volumes	50–2,000 L	50–500 L	50–5,000 L
PIV (W/m³)	≤40 at 2 kL	≤100, all volumes	≤80, all volumes
Mass transfer	●	● ●	● ● ●
Turndown ratio	5:1	2:1–4:1	10:1 (50 L); 20:1 (500 L, 5,000 L)
Sparge type	Frit, DHS, open pipe	Enhanced DHS	Enhanced DHS
BPC film	Aegis5-14		
Suited for cell types	CHO, HEK, Vero, Sf9, and more		
Cell shear	Low	Low	Low
Fed-batch	●	● ●	● ● ●
Intensified FB	●	● ●	● ● ●
Perfusion	●	● ● ◐	● ● ●
Microcarriers	●	● ● ●	Not tested
Viral vectors	● ●	● ●	● ●
Gene therapy	● ●	● ●	● ●

● Product fit on a scale of 1 to 3 (3 = best fit).

Drive efficiency, reimagine bioreactor possibilities—get more information or request a quote or demo unit at thermofisher.com/sub

