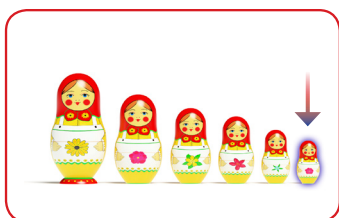


The **biggest** idea in single-use bioreactors just got **smaller**



Small

A miniaturized version of the XDR family, allowing linear scalability to 2000L scale in the same single-use platform while maintaining constant power and shear from bench to production. Shares geometric similarity, impeller design and product contact materials with its larger XDR siblings.



Strong

Proven stirred-tank design with the ability to monitor and control measurement factors at benchtop scale. Features industrial pH and DO transmitter compatible with conventional and single-use sensors



Smart

The XDR-10 features industrial level process control and the same Rockwell/Wonderware automation as the rest of the XDR line. A better understanding of process conditions at benchtop scale allows you to develop a better scale-up strategy for more efficient process development.

The XDR-10 single-use bioreactor is the latest addition to Xcellerex's industry leading line of GMP cell-culture systems. The XDR-10 shares the same robust design and vessel geometries as its larger siblings, providing seamless linear scale-up from 10L to 2000L. The XDR-10 also features industrial grade instrumentation and controls to deliver consistent process control across the entire product family. And of course, the XDR-10 also comes with the support of the hands-on cell-culture experts at Xcellerex to get your process up and running fast.

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XDR-10 System Specifications (Single-Vessel System)

Control Platform						
Integrated Control Unit	Built to GAMP standards/ 21 CFR part 11 compliance (optional)					
CE	CE certified					
Integrated Control Unit	Strongarm including 17" (42.5cm) monitor, Resistive Touchscreen Panel PC Station					
Controller	Rockwell/ Allen Bradley Soft Logix					
Operator Interface	Wonderware HMI					
Data Historian Software	Wonderware					
E-Stop	Integrated Safety Circuit for pumps, agitator, heating blanket, and filter heater					
Hardware	Power switch and one (1) USB port on the rear panel					
Features	Log In/Out, Alarms, Control loops, Setpoints, Trending					
Network connection	Ethernet, RJ11					
Vessel Features						
LLDPE Vessel	Working volume 4.5-10L (2.2:1 turndown ratio)					
	Height to diameter ratio: 1.5					
	USP Class VI, Bio-compatible plastic film(s)					
Agitator	Drive: Servo motor coupled to magnetic drive head, wash down rated Range: 40-350 rpm, Bi-directional				Range: 40-350 rpm Readable unit: 0.1 rpm Accuracy: ±2 rpm	
Tubing Manager	Push-lock tubing holder on the frame					
Temperature Control	Heating blanket		2x400W			
Process Instrumentation						
Transmitter for pH and DO	1	Rosemount - Panel integrated PID control loop to CO2 MFC and Base pump outputs PID control loop - Air, O2, MFC Gas mixing				
pH Probe	1	Range: 2-12 pH units Dual input transmitter				Readable unit: 0.01 pH Accuracy: ± 0.05 pH units
DO probe	1	Range: 0-200% atmospheric saturation Dual input transmitter				Readable unit: 0.01% sat. Accuracy: ± 1% of set point
Mass Flow Controller	4	1	Air	0-2 slpm	Headspace	Accuracy: ± 1% of set point
		1	Air	0-1 slpm	Sparger	
		1	O ₂	0-1 slpm	Sparger or Headspace	
		1	CO ₂	0-1 slpm	Sparger or Headspace	
			N ₂	0-1 slpm	Optional, Through O ₂ MFC, Sparger or Headspace	
			Any	0-1 or 2 slpm	Optional, Sparger	
RTD Temperature Sensor	1	Single Probe with Dual Sensor System Operating Range: 4-60°C				Readable unit: 0.1°C Accuracy: ± 0.1°C
Pressure Sensor	1	Range: 0-2 psig, 0-0.14 bar				Accuracy: ±0.01 psig (±0.0007 bar)
Peristaltic Pump*	2	0-0.05 LPM (4.8mm tube)		WM 114, fixed*		Watson-Marlow Brushless DC-drive * Max. flow rate with max tubing size
	1	0-0.5 LPM (8mm tube)		WM 313, variable*		
Integration Capacity	2	AUX input				For external devices
Filter Heater Assembly	1	Blanket, Mounted to top of vessel 24 VCD with solid state relay for digital output (+card) to 50-60°C				
Options						
Optional Mass Flow Controller	2	Up to max. six (6) MFCs as shown above				
Optional Pump	1	WM 313	100 RPM	0-0.5 LPM (8mm tube)* * Max. flow rate with max tubing size		Panel mounted
Weight Control	Scale on stand - Mettler/Toledo or other with 30.01g resolution				0-60kg	
Single-Use Bag Specification						
Bag Film	LLDPE contact layer					
Impeller Type	M40E	Material: HDPE		Impeller Diameter	5.4"	13.5 cm
Number of Blades	3			Di/ Dt	0.68	
Impeller Location	Center					
Ports (PRO)	4	Headspace gas(es): 1, Harvest/Drain: 2, Exhaust: 1				
	3	Probe (temperature, pH, DO)				
	4	Additions (base, feed, antifoam, and spare port)				
	1	Sample	Syringe with tube option for bag manifold (tube weld)			
Ports (PRO PLUS, for perfusion)	4	Headspace gas(es): 1, Harvest/Drain: 2, Exhaust: 1				
	5	Probe (temperature, pH, DO, 2 extra ports)				
	5	Additions (base, feed, antifoam, 2 extra spare ports)				
	1	Sample	Syringe with tube option for bag manifold (tube weld)			
	1	ATF (perfusion) port with dip tube				
Sparger	2	STD	2µm (1), 20µm (1) Sintered sparge disk			
	2	STD	2µm Sparge Disk with five (5) 0.5mm drilled holes (1) and five (5) 1mm drilled holes (1)			