

Specifications	Cambridge Reactor Design Ltd <i>Polar Bear Plus - Crystal</i>	Avantium Technologies <i>Crystal 16</i>	HEL <i>CrystalSCAN</i>	Mettler Toledo <i>EasyMax</i>
<b>1 General</b>				
Tube arrangement	Flexible Format (interchangeable)	Fixed Format	Flexible Format (interchangeable)	Flexible Format (interchangeable)
Reactor Type	Choice of reactors	Glass Vials	Choice of reactors	Choice of reactors
Max number of parallel experiments	1 to 96	16	4 or 8	2
Volume	mL 0.5 to 500	0.5 to 2	2 to 350	1 to 150
Weight	kg 9			20
Total Footprint (without crystal) l x w x h	cm			
<b>2 Heating and cooling</b>				
Cryostat	Not required	Required	Required	Required
Number of heated stages	1	4	4 or 8	2
Heating method	Electrical only	Peltier + Cryostat	Electrical + Cryostat	Peltier + Cryostat
Temperature range	-40°C to 150°C	-15°C to 150°C	-80°C to 250°C	-40°C to 180°C
Temperature resolution	C 0.01	0.1	0.1	0.1
Programmable heating, cooling and hold steps	Yes	Yes	Yes	Yes
Ramp temperature resolution	16	Yes	No limit	No limit
	C/min 0.01 to 3.00	0 to 20	0.1 to 1	0.1 to 1
<b>3 Stirring</b>				
Method	Magnetic and overhead stirring	Magnetic	Magnetic	Magnetic and overhead stirring
Speed	rpm 0 - 1250	0 - 1250	0 - 1250	50-1000
Programmable	Yes	Yes	Yes	Yes
Range of overhead stirrers	Yes	No	No	No
Styles of stirrers	Yes	No	No	Yes
<b>4 Online measurements with overhead stirring attachment</b>				
Turbidity	Yes	Yes	Yes	Yes
Probe	Top entry	Integrated	Top entry	Top entry
Standard	No	Yes	No	No
Optional part	Yes	N/A	Yes	Yes
Data collection and integration with Temperature Data	Yes	Yes	No	No
Backlight	Yes	No	No	Yes
Conductivity	Yes	No	Yes	Yes
Standard	No	No	No	No
Optional part	Yes	No	Yes	Yes
Data collection and integration with Temperature Data	Yes	No	No	No
pH	Yes	No	Yes	Yes
Standard	Overhead	No	Overhead	Overhead
Optional part	Yes	No	Yes	Yes
Data collection and integration with Temperature Data	Yes	No	No	No
<b>5 Software</b>				
	Polar Bear iTools		WinIso	Tablet
Computer Essential	No	Yes	Yes	No
Network ready	Yes	No	No	No
Data saved automatically	Yes	No	No	No
<b>6 Estimated Cost, K</b>	<b>15-20</b>	<b>40-50</b>	<b>40-50</b>	<b>50-60</b>

Pitch blade (glass, Alloy C-276)  
Anchor (glass)  
Rushton Turbine (Alloy C-276)  
Half-moon blade (glass)