

Coflore® ACR - Agitated Cell Reactor

Laboratory Scale Flow Reactor



The Coflore® ACR is an agitated cell reactor with a working volume between 30 and 90ml. It is suitable for homogeneous and multiphase mixtures. The ACR reactor block is mounted onto an agitating platform. It has 10 reaction stages and features borosilicate glass viewing windows, side and front entry port which enables multipoint temperature measurement or process connections.



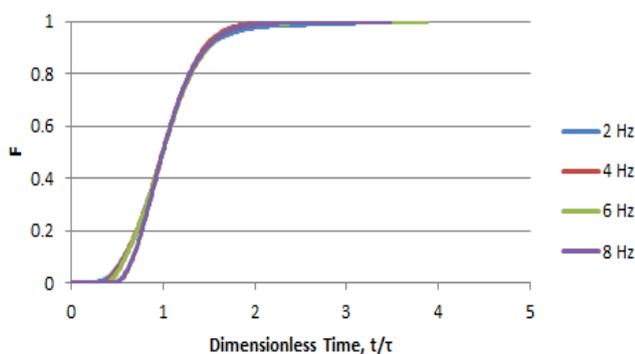
The Coflore® Agitated Cell Reactor (ACR) is a bench top flow reactor for developing scalable flow solutions in a laboratory environment. The Coflore® ACR is an actively mixed flow reactor with a reactor block divided into 10 CSTR equivalent stages. The Coflore® technology provides good mixing even at very low flow rates enabling the ACR platform to provide great versatility.

The ACR consists of two parts, the agitating platform and a demountable reactor block. The agitating platform consists of a reactor chamber with a closable lid. The platform also houses the instruments and controls for generating mixing. Connections for heat transfer fluids are mounted on the side of the platform and access ports for the process connections are located on the front plate. The control panel provides agitation frequency control, temperature monitoring and optional data logging. The reactor can be purchased with one or more of the reactor blocks shown overleaf and further blocks can be purchased if necessary (e.g.. with different materials of construction). All blocks are fully interchangeable.

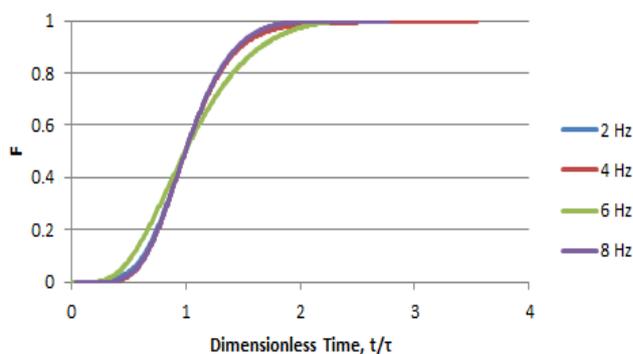
Capacity:	100 mL (without agitators)
Number of Stages:	10
Design Temperature:	-40°C to +140°C
Design Pressure:	Up to 10 Bar
Inter-stage channel Size:	4mm x 4mm
ACR Cell Block Materials:	PTFE, 316 Stainless Steel or Hastelloy C276
Heat Exchange Plate Materials:	316 Stainless Steel or Hastelloy C276
Cell Window Materials:	Borosilicate Glass, 316 Stainless Steel or Hastelloy C276
Channel Restrictors:	0.1, 0.2, 0.5, 1 and 2 mm
Process connections:	10 side ports and 10 window ports can be configured as inlet /outlet or for thermocouples (side ports only)
Agitator types:	70%, 50% or 30% agitators. High shear spring agitator. Catalyst basket.
Agitator materials:	316 Stainless Steel, Hastelloy C276 or Technox 2000.



Bottom Up



Top Down



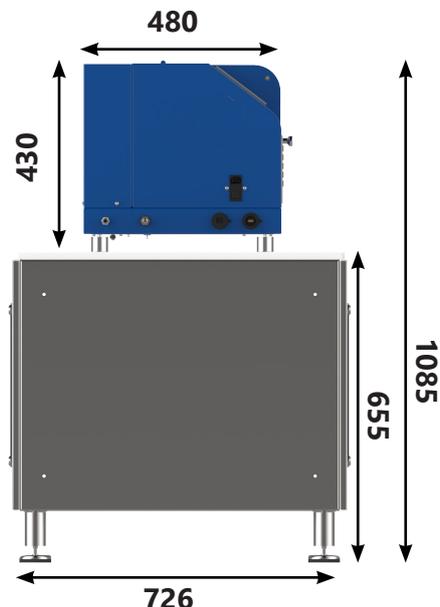
The Coflore® flow reactor range: the **Realistic Alternative** to Batch Chemical Manufacturing

Coflore® ACX-100

The ACX Extractor Cell Block is used for developing counter-current extractions or reactions. It can handle multiphase materials flowing in opposite directions. The ACX extractor cell block can replace the ACR reactor cell block to provide added flexibility to the ACR. Continuous counter-current extractors give higher extraction efficiency with lower solvent usage.



- Capacity: 100 mL (without agitators)
- Number of Stages: 10
- Design Temperature: -40°C to +140°C
- Inter-stage channel Size: 4mm x 4mm
- ACR Cell Block Materials: PTFE
- Heat Exchange Plate: Hastelloy C276
- Channel Restrictors: 0.1, 0.2, 0.5, 1 and 2 mm
- Process connections: 10 side ports and 10 window ports can be configured as inlet /outlet or for thermocouples (side ports only)
- Agitator types: 70%, 50% or 30% agitators

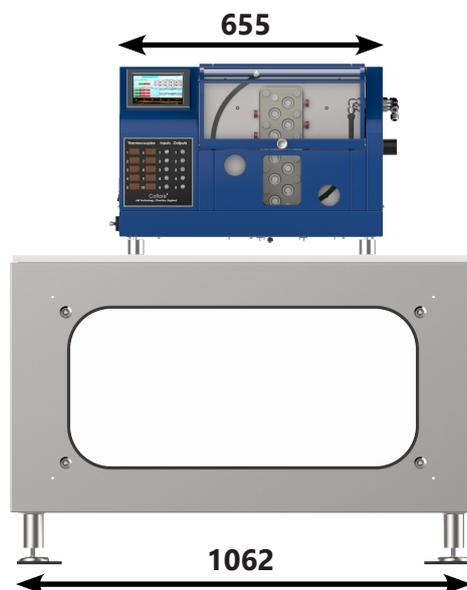


Maximum reactor mass	9 kg
Agitating platform mass	130 kg
Noise	< 70 dBA
Requirements;	
Compressed air	3 bar, 3.2 CFM oil-free clean air
Maximum air pressure	6 bar
Power supply	100-240 vac, 50/60 Hz, 2 A max
Compressed air connection	6 mm push fit
Heat transfer fluid connections	M16 x 1.0 Huber



The Coflore® ACR system is ideal for establishing and developing novel continuous processes prior to scale up or when only limited quantities of material are available or required. The use of Coflore® mixing technology ensures that any process developed on an ACR system has a scale up path via Coflore® ATR and RTR systems.

Assembled Coflore ACR Reactor Block



		Reactor throughput (L/day)						
		Reaction time	10s	30s	1m	5m	30m	1h
Reactor Volume	0.03L		259.2	86.4	43.2	8.64	1.44	0.72
	0.1 L		864	288	144	28.8	4.8	2.4

