



THALESNano



"Good reactions"™

X-Cube Flash™
Chemistry "in a Flash"

X-Cube Flash™

Chemistry "in a Flash"

FEATURES

The X-Cube Flash™ is a high temperature, high pressure continuous flow reactor, developed by ThalesNano Inc. to perform homogeneous organic synthesis. The X-Cube Flash™ is capable of 350°C and 200 bar (For reference, this compares to 250°C and 20 bar in a microwave). Access new chemical space by working safely and conveniently at temperatures and pressures that were not easily accessible before. See reactions go "in a Flash", saving time, materials, and effort. Analyze results faster, leading to quicker reaction optimization. Thanks to the intrinsic nature of flow chemistry, scaling up of reactions is easier. Flash can be easily included in any automated laboratory set up and multiple Flash (and other ThalesNano) reactors may be hooked up in series to perform multistep synthesis. Chemistry "In a Flash" is simply a better way of working.

- A continuous flow of reaction mixture is preheated and pumped into an exchangeable reaction coil.
- The reaction coil can be heated up to 350°C (662°F) and pressurized up to 200 bar (2900 psi).
- The reaction mixture is then cooled before eluting into a collection vessel.
- Different size reaction coils may be used to increase reaction residence time or to increase the throughput of the reaction.

The high temperature, high pressure capability of the X-Cube Flash™ means that many solvents may reach to supercritical conditions. This increases reaction rates by orders of magnitude meaning reactions may progress in minutes, even in the absence of catalysts.

ADVANTAGES

Precise control

- Temperature sensors along the coil result in precise reaction temperature control.

Safe

- The flow nature of the X-Cube Flash™ means only small volumes of reaction mixture are heated at any one time, so there is less risk involved.

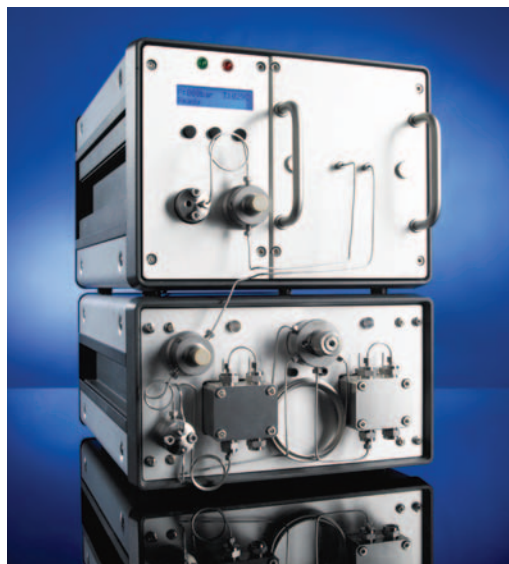
Speed

- High temperatures and pressures mean that many reactions progress in minutes.
- Temperature, pressure, and flow rate can be changed on the fly for rapid optimization.

Convenient

- The system has a small footprint minimizing the space taken up in the fume hood.
- User friendly operation via ThalesNano's intuitive touch screen operating system.

Also available with optional dual pump and injection system.



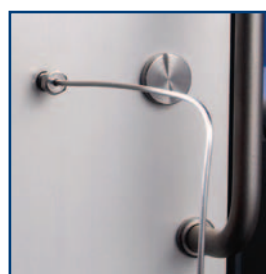


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1. Touch screen

All the reaction parameters can be adjusted and monitored on the touch screen of a Mobile PC when the reaction is in progress.



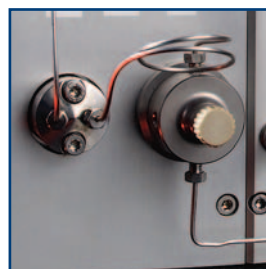
2. Inlet Tube:

The inlet tube transports the reaction solution from the pump to the reaction zone. The flow rate range is 0.1 – 9.99 mL/min.



3. Exchangeable Heater Block:

The Exchangeable Heater Block contains a heat exchanger and a heatable reaction coil. The block can be changed to increase the volume of the reaction line. (4 mL, 8 mL and 16 mL sizes are available).



4. System Pressure Valve & Sensor:

The System Pressure Valve sets and stabilizes the system pressure to a value up to 200 bar.



5. Outlet tube:

The reaction mixture or product elutes into a collection vessel at ambient temperature and atmospheric pressure. The short reaction times allow analytical samples to be taken in minutes for reaction optimization.



Specification of X-Cube Flash™

Pressure range:	50 bar – 200 bar (725 -2900 psi)
Temperature range:	Room temperature – 350 °C (662°F)
System material:	Stainless Steel 316 L
Loop volume:	16 mL – 8 mL – 4 mL (Changeable)
Flow rate range:	0.1 – 9.99 mL/min
Dimensions:	Height: 191,6 mm (7.54")
	Width: 257 mm (10.12")
	Depth: 371 mm (14.61")
Weight:	ca. 12 kg (27 lbs)
Voltage:	100 – 240 V AC
Frequency:	50 – 60 Hz
Power consumption:	max. 500 VA
Fuses:	2x3,15A – 230-240V
	2x6,3A – 100-120V

Wide variety of reactions can be performed on the X-Cube Flash™, including:

- esterification
- alkylation
- deamination
- Buchwald coupling
- Diels-Alder and
- Heck reactions without catalyst

For further information please contact us at flowchemistry@thalesnano.com or visit our website: **www.thalesnano.com**

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