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BOROSIL®
Scientific
enabling the future of science



MINI LAB REACTOR

Power Up Your Reaction Setup for Smarter Process Development

LABQUEST®

SMART • RUGGED • PRACTICAL

IS YOUR REACTION SETUP BECOMING TOO COMPLICATED?

A typical lab reaction setup may need:



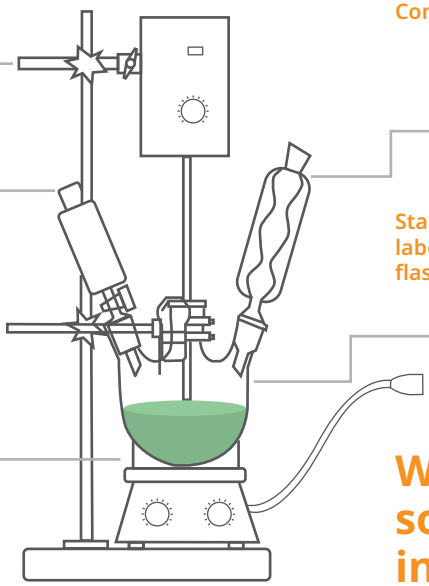
Overhead stirrer
with Non sparkling design



Dossing funnel
with pressure equalizer



Oil bath
with digital display



Condenser



Standard laboratory flask



Why use so many separate instruments?

This can lead to:

- Too many instruments taking up lab space
- Complicated connections and setup
- More parts to operate and maintain
- Difficult temperature control
- More external connections
- More operator effort
- A messy and complicated work area

ONE INTEGRATED MLR CAN SIMPLIFY YOUR ENTIRE REACTION SETUP



The Mini Lab Reactor (MLR) brings the essential reaction-processing functions together in one compact, integrated system - helping the R&D laboratories reduce equipment clutter, simplify operation, and achieve better process control.

250 mL to 5 L | Integrated Heating | Stirring | Cooling Provision | Digital Control

MEET THE MINI LAB REACTOR

Multiple functions and one integrated platform

The MLR combines the essential elements of a laboratory reaction setup into a **compact, controlled, and easy-to-use system**

One platform for:

- **Heating:** Precise and stable heating using an oil bath for uniform heat transfer
- **Stirring:** Efficient mixing with adjustable stirrer height for different reaction vessel configurations
- **Cooling** Integrated internal copper coil enables connection to an external cooling medium



- **Reaction** Designed for laboratory-scale chemical reactions from 250 mL to 5 L
- **Reflux & Distillation** Supports reaction setups involving reflux and distillation arrangements
- **Process Development:** Ideal for generating reliable laboratory data for process development and scale-up studies

Think of it as a complete reaction workspace - not just a reactor

Mini Lab Reactor features:



Enclosure design for fume leak prevention



Effortless Oil Draining Valve



Oil bath with an internal copper coil for cooling medium



Integrated control system with digital/TFT display and quick setting knob



Easy Stirrer Height Adjustment

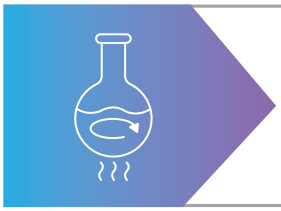
THE MLR ADVANTAGE

More Than Heating. More Than Stirring, It Brings the Process Together.

Conventional Approach	VS	MLR Approach
Multiple instruments		Integrated system
More connections		Simplified setup
More bench space		Compact footprint
Separate controls		Integrated control
Manual adjustments		Easy operation
External cooling arrangement		Integrated cooling coil
Complex assembly		Simplified workflow
Higher operator dependency		User-friendly operation

MLR APPLICATION

SYNTHESIS



Enables controlled heating and uniform mixing for efficient, safe, and reproducible laboratory-scale chemical synthesis.

API & PROCESS DEVELOPMENT



Provides precise PID temperature control and consistent mixing to achieve repeatable reaction conditions during API and process development.

REFLUX REACTIONS



Maintains stable heating and efficient condensation through an integrated reflux arrangement, making it suitable for extended reaction cycles.

CRYSTALLIZATION



Offers controlled heating and cooling to support precise nucleation, crystal growth, and reproducible crystallization studies.

DISTILLATION



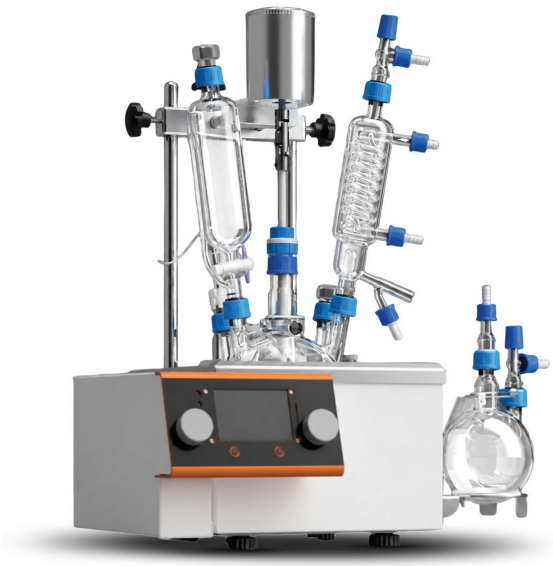
Supports integrated reaction and distillation processes for efficient separation, purification, and laboratory-scale process evaluation.

PROCESS DEVELOPMENT & SCALE-UP



Generates reliable and reproducible laboratory data to support process optimization, technology transfer, and seamless scale-up from laboratory to pilot scale.

MLR CONFIGURATIONS



MLR001
(250mL,500mL,1L)

Model Name	MLR250	MLR500	MLR010
Discription	1000ml With interchangable vessels 250 ml - 1000 ml		
Unit Dimensions (Including Glass) (L X B X H)	500 x 450 x 700 mm		
Speed (RPM)	100 - 1500		
Glass Material	Borosilicate 3.3		
Reactor Capacity	250 ml - 1000 ml		
Wetted Material MOC	Polytetrafluoroethylene PTFE, Glass		
Operating Vacuum (mbar)	100mbar - 1000mbar with external vacuum pump		
External Body MOC	GI with powder coated		
Max Temperature (°C)	180 °C		
Min Temperature (°C)	-10 °C with borosil Chiller		
Heater Capacity	1 kw		
Temperature Setting	Digital		
Temperature Sensor	PT100 with PTFE Coating		
Power (VAC)	100 - 230 V		
	BLFHMLR2500000000	BLFHMLR5000000000	BLFHMLR0100000000

MLR CONFIGURATIONS



MLR005
(2L,3L,5L)

Model Name	MLR020	MLR030	MLR050
Discription	Mini Bath Reactor 5000 ml with interchangable vessels 2000 ml - 5000 ml		
Unit Dimensions (Including Glass) (L X B X H)	650 x 500 x 1000 mm		
Speed (RPM)	100 - 1500		
Glass Material	Borosilicate 3.3		
Reactor Capacity	2000 ml - 5000 ml		
Operating Vacuum (mbar)	100mbar - 1000mbar with external vacuum pump		
External Body MOC	GI with powder coated		
Max Temperature (°C)	180 °C		
Min Temperature (°C)	-10 °C with borosil Chiller		
Heater Capacity	2 Kw		
Temperature Setting	Digital		
Temperature Sensor	PT100 With PTFE Coated		
Power (VAC)	100 - 230 V		
Ordering code	BLFHMLR0200000000	BLFHMLR0300000000	BLFHMLR0500000000

ADDITIONAL ACCESSORIES



Parameters	CHL010	CHL020
Tank capacity	8 - 9 L	14 - 15 L
Tank size (L x B x H) mm	(287 x 210 x 180) mm	(287 x 360 x 252) mm
Overall Dimensions	(590 x 320 x 570) mm	(658 x 466 x 838) mm
Cooling capacity @ - 10 °C	1000 W	2000 W
Pump flow rate	15 LPM	15 LPM
Display	LED	LED
Temperature stability	±1 °C	±1 °C
Temperature range	-10°C -15 °C to ambient	-10°C -15 °C to ambient
Suitable MLR Model	MLR 250, MLR 500, MLR 010	MLR 020, MLR 030, MLR 050
Ordering information	BLFRCHL01000000000	BLFRCHL02000000000

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