



# Laboratory Reactors



designed  
for scientists

**dijkstra  
verenigde**

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**IKA® laboratory reactors are modular systems for the optimization and reproduction of chemical reaction, mixing, dispersal and homogenizing processes at the laboratory level.**

The reactor systems can be adapted individually to a wide range of tasks. This includes, for example, the manufacture of creams and lotions, the grinding and reduction to fibres of solids in liquids or polymers, as well as the mixing and drying of powders.

On the following pages, we present our four laboratory reactor systems: LR 1000 basic and control, LR-2.ST, magic LAB® and magic PLANT.

**3 Years warranty\***

\* 2 years plus 1 year after registration at [www.ika.com/register](http://www.ika.com/register), excluding glass parts and wearing parts

Protection class according to DIN EN 60529: IP 21



Torque trend measurement shows viscosity changes in the product



Integrated weighing function with a weighing range up to 2 kg



Option of connecting a pH electrode



**IKA+**

- > Reproducible procedures
- > Continuous high quality
- > Control and documentation using the labworldsoft® software



# The IKA® Laboratory Reactor Portfolio



Technical data	
Temperature	120 °C
Viscosity	100,000 mPas
Volume min.	350 ml
Volume min. for dispersing	600 ml
Volume max.	1,000 ml
Throughput	–
Vacuum	25 mbar
Pressure	–
Dispersing	Batch with T 25

Ident. No. 0008040100  
Ident. No. 0010001035



LR-2.ST	
230 °C	
150,000 mPas	
500 ml	
800 ml	
2,000 ml	
–	
25 mbar	
–	
Batch with T 25	

Package 1 Ident. No. 0009023600  
Package 2 Ident. No. 0009023700  
Package 3 Ident. No. 0009023800



magic LAB® 2000/03	
120 °C	
10,000 mPas	
–	
500 ml	
2,000 ml	
10 – 100 l/h	
500 mbar	
2.5 bar	
Inline UTL	

Ident. No. U078310



magic PLANT	
150 °C	
100,000 mPas	
500 ml	
1,000 ml	
2,000 ml	
–	
25 mbar	
2.5 bar / 5 bar	
Batch with T 25 or Inline with DR	

basic Ident. No. 20001186  
inline Ident. No. U107703  
powder Ident. No. U107159

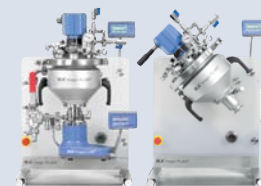


Multiple vessels can be used with just one base unit. This means that more sets of samples can be processed per day.

Suited for processing high-viscosity samples at highest temperatures. Various types of agitators can be used to meet individual requirements.

Unique and multifunctional small-scale laboratory mixer designed for mixing, dispersing, wet milling, and for the incorporation of powders into liquids. Its modular design allows for small scale simulations of almost every IKA® production machine and its identical process parameters ensure perfect optimization of product recipes and reliable scale-up to full production.

The IKA® magic PLANT combines different mixing technologies with innovative drying processes. Depending on the version, it is ideally suited for batch, inline and powder operation modes.



# Laboratory Reactors | Packages

## LR 1000 basic Package

Ident. No. 0008040100

Description	Ident. No.
1 LR 1000 basic Baseplate	0003600099
3 LR 1000.1 Reactor vessel	0003602000
5 LR 1000.61 Sensor receptacle	0004664400
6 PT 100.30 Temperature sensor	0004284700
7 H 11 Main cable	0001091500

## LR 1000 control Package

Ident. No. 10001035

Description	Ident. No.
2 LR 1000 control Baseplate	0025001938
4 LR 1000.3 Reactor vessel	0025001955
5 LR 1000.61 Sensor receptacle	0004664400
6 PT 100.30 Temperature sensor	0004284700
7 H 11 Main cable	0001091500
8 USB cable – USB A to Micro-B, 2 m	0004335000



1

3



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6



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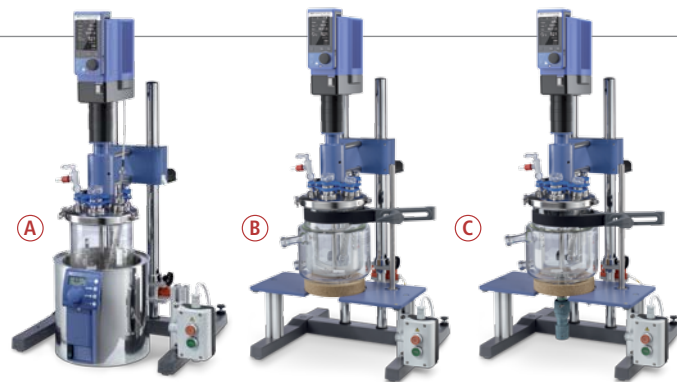
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4



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## A LR-2.ST Package 1\*

Ident. No. 0009023600

### Description

LR-2.ST Stand system

- 1 EUROSTAR 200 control P 4
- 2 LR 2000.11 Anchor stirrer with flow borings
- 3 LR 2.1 Single-walled reactor vessel

LR-2.SI Safety switch-off

\*HBR 4 Heating bath not included in the scope of delivery

## B LR-2.ST Package 2

Ident. No. 0009023700

### Description

LR-2.ST Stand system

- 1 EUROSTAR 200 control P 4
- 2 LR 2000.11 Anchor stirrer with flow borings
- 4 LR 2000.1 Double-walled reactor vessel with quick-fit couplings

LR-2.SI Safety switch-off

## C LR-2.ST Package 3

Ident. No. 0009023800

### Description

LR-2.ST Stand system

- 1 EUROSTAR 200 control P 4
- 2 LR 2000.11 Anchor stirrer with flow borings
- 5 LR 2000.2 Double-walled reactor vessel with quick-fit couplings and bottom drain valve

LR-2.SI Safety switch-off



1

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## magic LAB®

Ident. No. U078310

magic LAB® 2000/03

The basic magic LAB® 2000/03 unit is equipped with a UTL single-stage dispersion system. Additional modules can be installed as an option, but are not included in the scope of delivery (see Accessories Page 8).



## magic PLANT

Description	Ident. No.
A magic PLANT basic	20001186
B magic PLANT inline	U107703
C magic PLANT powder	U107159



A

B

C

### A magic PLANT basic

- > Adjustable speed drive for perfect agitation of liquids or suspensions
- > Tilttable, double jacketed and insulated vessel
- > Special stirrer tools included e. g. anchor and propeller type
- > Optional ULTRA-TURRAX® T 25 digital disperser for perfect emulsions and suspensions

### B magic PLANT inline

- > The latest development in dispersion technology for the finest and most stable emulsions and suspensions
- > Circulation of the product via the circulation line with the two-stage rotor-stator system in the connected magic LAB® laboratory dispersion machine
- > Stirring tools, such as propeller stirrers and toothed disc, available as an option
- > Anchor stirrer included in scope of delivery

### C magic PLANT powder

- > Efficient gentle mixing process
- > Special powder stirrer
- > Spiral stirrer included in scope of delivery
- > Tilttable vessel for improved mixing and drying results
- > Draining by full inclination of the vessel



Laboratory Reactors | Accessories



LR 1000 Accessories

	Ident. No.
1 LR 1000.1	0003602000
Reactor vessel, 1,000 ml, FPM seals, 4 connections	
2 LR 1000.3	0025001955
Reactor vessel, 1,000 ml, FFKM seals, 6 connections	
LR 1000.10	0004663100
Anchor stirrer with PEEK scrapers	
LR 1000.11	0004663000
Anchor stirrer, stainless steel	
LR 1000.20	0004663200
Flow breaker, stainless steel	



LR 1000.41 0004664300  
Shaft receptacle for installing the S 25 KV dispersing tools



LR 1000.61 0004664400  
Sensor receptacle for installation of the PT 100.30 temperature measuring sensor

LR 1000.64 0004663300  
pH Redox electrode

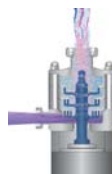
LR 1000.65 0004663400  
pH Electrode receptacle

LR 1000.70 0025003123  
Lid holder

magic PLANT Accessories

	Ident. No.
Toothed disc agitator	20002170
T 25 Linking	20001910
Consisting of adapter and cable from T 25 to the magic PLANT	
Safety valve	20003010
5 bar	
Temperature measurement in the cover	20003346
Powder stirrer	U106093
Conversion kit to magic PLANT from inline to basic	20001209
Bottom drain valve and plug	

magic LAB® Accessories



Three-stage disperser for applications with high shear requirements; ideal for producing the finest emulsions and suspensions.



Colloid Mill with cone shaped rotor and stator; used for the production of colloidal solutions (finest suspensions) and emulsions. The gap between the rotor and stator is adjustable.



Cone Mill capable of wet milling and grinding, producing even smaller particle sizes than a colloid mill. The milling tool surface is coated with wear-resistant tungsten carbide cobalt and the milling gap is infinitely adjustable to achieve even finer suspensions.



Powder / liquid mixer used in a recirculation process; provides an energy-efficient means of incorporating solids into liquids, via suction. The CMS ensures a homogenous product, free of agglomerates while maintaining a dust-free environment.



Powder / liquid mixer used in an inline process; continuous mixing and dispersing of powders into liquids. Its unique patented design allows for fast and homogenous mixing, free of agglomerates, in a single pass. Solids concentrations up to 80% possible.

Module DISPAX-REACTOR® DR
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80 l/h (H<sub>2</sub>O)  
14,600 rpm  
23 m/s  
Ident. No. U078352

MK module colloid mill
------------------------

200 l/h (H<sub>2</sub>O)\*\*  
14,600 rpm  
23 m/s\*  
Ident. No. U076662

MKO module cone mill
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25 l/h (H<sub>2</sub>O)\*\*  
14,600 rpm  
23 m/s\*  
Ident. No. U079664

CMS module
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1,000 l/h (H<sub>2</sub>O)  
11,000 rpm  
19.5 m/s\*  
Ident. No. U075333

MHD module
------------

60 l/h (H<sub>2</sub>O)  
14,600 rpm  
23 m/s\*  
Ident. No. U075262

\* At standard speed / speed adjustable from 3,000 to 26,000 rpm  
\*\* With maximum gap between rotor and stator



LR-2.ST Accessories



LR-2.ST Accessories

	Ident. No.
1 LR 2000.10	0002508400
Anchor stirrer with PEEK scrapers	
2 LR 2000.11	0002509500
Anchor stirrer, stainless steel	
3 LR 2000.20	0002508500
Flow breaker, stainless steel	
4 LR 2.1	0003070000
Reactor vessel, single-walled, 2,000 ml	
5 LR 2000.1	0002508300
Reactor vessel, double-walled, 2,000 ml	
6 LR 2000.2	0002509600
Reactor vessel, double-walled, 2,000 ml with bottom drain valve	

7 LR 2000.40	0002509200
Shaft receptacle to carry the S 25 KV dispersing tools	
8 LR 2000.60	0002509300
Sensor receptacle for carrying the PT 100.30 temperature measuring sensor	

LR 2000.65	0003172600
pH Electrode receptacle	
PH 225.1*	0003122600
pH Redox electrode	
DTM 12.15*	0003128300
Adapter cable for pH electrode LR-2.ST	
LR-2.SP	0003326400
Splinter shield	
ALMEMO 2490	0004709300
Universal measuring instrument with two measuring channels	

\* can only be used in combination with ALMEMO 2490



LR-2.ST Accessories

	Ident. No.
LT 5.20	0002606700
High-temperature hose kit (2 pcs), stainless steel, 1,500 mm, Ø 10 mm	
LT 5.21	0020000988
High-temperature hose kit (2 pcs), PTFE, 1,500 mm, Ø 13 mm	
LT 5.24	0002578100
Hose adapter	
LT 5.25	0020000878
Lock coupling	
LT 5.26	0020000879
Lock Adapter	
LT 5.27	0020000880
Hose adapter	

General accessories for all Laboratory Reactors

	Ident. No.
8 T 25 digital	0003725000
Disperser	
9 S 25 KV - 25 F	0002404000
Dispersing tool	
10 S 25 KV - 25 G	0002466900
Dispersing tool	
11 S 25 KV - 18 G	0002348000
Dispersing tool	
12 labworldsoft®	0004720000
Laboratory software, relevant connection cables available as accessories on <a href="http://www.ika.com">www.ika.com</a>	



# Laboratory Reactors | Complementary Products

IKA® offers more

The IKA® heating bath circulator HBC 5 control is suitable for heating double walled lab reactors, e.g. such as the LR-2.ST.

**IKA® +**  
IKA® offers a wide variety of laboratory equipment for your applications.



### Customizing Center

It is important that IKA® products work for your application. We have a special program: product solutions tailored to your needs.

Should you not find the appropriate device in our standard product range, please send us your requested specifications through the online form. Our team will determine its feasibility and offer a solution to you.

Please visit [www.ika.com/customizingcenter](http://www.ika.com/customizingcenter) to review already implemented product modifications.



### IKA® Application Support

Our Application Center spans 400 sqm and offers modern facilities for presenting and testing lab devices and processes. This brings us even closer to our customers and improves our service. Here, prospective buyers and customers can test processes that involve stirring, shaking, dispersing, grinding, heating, analyzing and distilling.

Call us at 00 8000 4524357 (00 8000 IKAHELP) or send an email to [applicationsupport@ika.de](mailto:applicationsupport@ika.de) or visit our website at [www.ika.com/applicationsupport](http://www.ika.com/applicationsupport)



For dry, oil-free applications, Vacuum hoses included in delivery.

Technical data	RC 2 basic   control	HBC 5 basic   control
	Recirculating chiller	Heating bath circulator
Appliance type	—	2,500 W
Heater capacity (230 V)	400 W	—
Cooling capacity at 20°C	—20 °C – RT	RT+10°C – 200 °C   RT+10°C – 250 °C
Temperature range	± 0.1 K   ± 0.05 K	± 0.02 K   ± 0.01 K
Temperature stability DIN 12876	1.4 – 4 l	4.5 – 6.5 l
Bath volume range	18 l/min	26 l/min   31 l/min
Max. flow rate	yes	yes
USB / RS 232 interface	Ident. No. 0004171000   0004173000	Ident. No. 0004125000   0004127000

Technical data	MVP 10 basic
	1.7 m³/h
Pump rate max. (50/60Hz)	28.3 l/min
Pump rate max. (50/60Hz)	2
Suction levels	7 mbar
Input pressure min.	Ident. No. 0003980000
Accessories	
1 VCV 1	Ident. No. 0020004850
Manual vacuum control valve	
3 VCV 2	0020004893
Digital vacuum control valve	
VSS 1	0020005194
Vacuum safety kit	

### Exceptional, flexible scalability

IKA® guarantees reliable scale-up due to the option of using the same method from development of the recipe to production.



**IKA®+**

**Ordering made easy!**

For more information about our products and online ordering, please visit:

[www.ika-apparatuur.nl](http://www.ika-apparatuur.nl)

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