IKA

designed for scientists

EN

POWERFUL STIRRING | Overhead Stirrers

Overhead Stirrers

/// Stirring at the highest level

IKA overhead stirrers are strong, sturdy and safe because we understand the most important aspects during development. From low to high viscosities, and with up to 200 liters of stirring volume, all mixing and stirring tasks constitute no challenge for our stirrers. This is a good foundation for differentiated functionalities, which include: a safety circuit, a clear display, convenient control using labworldsoft® laboratory software and a wide range of stirring tools. Whether it is propeller stirrers, anchor stirrers or spiral stirrers – you will find the right tool for all applications in our range.

Personalized application support

In the IKA Application Center you can test the overhead stirrers yourself. Our experts analyze your processes and work with you to find out how your application can be optimized.

Worldwide service

To opt for the IKA overhead stirrers is also to opt for the excellent IKA service in your region. Our team is available worldwide for your service and application needs. Availability of spare parts is guaranteed for 10 years.

Do you have any questions? Our service team is at your disposal:
00 8000 4524357 (00 8000 IKAHELP)

3 years warranty*

CE

*2+1 years after registering at www.ika.com/register, wearing parts excluded

Overhead Stirrers

/// Powerful stirring

NANO-, MICRO- and MINISTAR series
The space-saving high performers of the NANOSTAR, MICROSTAR and MINISTAR series convince with perfect basic functionalities, have a compact design and are easy-to-use.

EUROSTAR series
The EUROSTAR series offers indispensable features, which include: electronic safety circuit, short-term overload operation and monitoring of all parameters using labworldsoft® software.

RW series
The RW series is the robust and long established line in the market. This series comes with two gear settings to support high torque or high speed mixing respectively.

DESIGN AWARD 2017

NANO, MICRO- and MINISTARS

/// Compact and reliable

The space-saving high performers of the NANOSTAR, MICROSTAR and MINISTAR series convince with perfect basic functionalities, have a compact design and are easy-to-use.

Compact design

The reduced design and the focus on the most essential aspects make the NANOSTAR, MICROSTAR and MINISTAR stirrers reliable laboratory companions.

Constant torque

All models of the NANOSTAR, MICROSTAR and MINISTAR series guarantee a constant torque over the entire rpm range. The MICROSTAR and MINISTAR stirrers are available in six different versions with revolutions of up to 2000 rpm and a torque of up to 80 Ncm, each in a digital or control variant. The latest model NANOSTAR is available as 7.5 digital version.

Ease of operation

Operation takes place using a stable rotary knob. The display of the digital version clearly shows the rotational speed, while the display of the control version shows further information, such as medium temperature and torque. The integrated timer and counter function enables the monitoring of sensitive chemical reactions.

FEATURES

- Fast response display covered with hardened glass for maximum visibility of parameters
- Continuously adjustable speed
- USB interface, e.g. for documenting parameters using labworldsoft® or installing firmware updates
- High IP value 54 designed with chemical resistant housing and display
- Microprocessor-controlled speed governor for constant rotational speed, even with changes in viscosity
- R 300 shaft protector included to avoid accidental touching of moving chuck
- Supports sample volume from low to high volume with different impeller designs

ADDITIONAL FEATURES

(control version only)

- Clear display for all essential information: rpm, torque, temperature, timer/ counter
- Touch-sensitive surface for long service life
- State-of-the-art vibration sensors detect deviations from permissible thresholds and automatically stop the process
- Timer and counter function
- Display of the samples weight by connecting with the IKA [scale] plate stand via bluetooth connection
- Temperature sensor included for sample temperature measurement
- Key lock function

Special safety precautions

The display of the stirrers is made of hardened and chemical-resistant glass. The stirrers' protection class IP54 ensures maximum safety. In addition, the state-of-the-art vibration sensors integrated in the control version detect deviations from permissible thresholds and automatically stop the process. The external, low-voltage power supply unit also contributes to increased safety.

Fast updates

Periodic software updates can be carried out quickly and easily via the USB interface. In addition, regulation via a PC and documentation of the test parameters is possible via the interface of the control devices.

NANOSTAR 7.5 digital
Ident. No. 0025004356

MICROSTAR 7.5 digital Ident. No. 0025004715	MICROSTAR 15 digital Ident. No. 0025004883	MICROSTAR 30 digital Ident. No. 0025004884
MICROSTAR 7.5 control Ident. No. 0025001984	MICROSTAR 15 control Ident. No. 0025001986	MICROSTAR 30 control Ident. No. 0025001987
MINISTAR 20 digital Ident. No. 0025004885	MINISTAR 40 digital Ident. No. 0025004886	MINISTAR 80 digital Ident. No. 0025004887
MINISTAR 20 control Ident. No. 0025001988	MINISTAR 40 control Ident. No. 0025001989	MINISTAR 80 control Ident. No. 0025001990

NANOSTAR

7.5 digital

Original size

MICROSTARS

7.5 digital | 7.5 control | 15 digital | 15 control | 30 digital | 30 control

MINISTARS

DESIGN AWARD 2017

20 digital | 20 control | 40 digital | 40 control | 80 digital | 80 control

Technical data

Technical data	NANOSTAR 7.5 digital
Stirring quantity max. (H_2O)	5 l
Speed	min.: 0/50 rpm max.: 2000 rpm
Viscosity max.	4000 mPas
Torque max. at stirring shaft	7.5 Ncm
Dimensions (W × H × D)	53 × 147 × 130 mm
Weight	0.8 kg

Technical data	MICROSTAR 7.5 digital | control	MICROSTAR 15 digital | control	MICROSTAR 30 digital | control	MINISTAR 20 digital | control	MINISTAR 40 digital | control	MINISTAR 80 digital | control
Stirring quantity max. (H_2O)	5 l	10 l	20 l	15 l	25 l	50 l
Speed	digital: 0/50 rpm control: 0/30 rpm max.: 2000 rpm	digital: 0/50 rpm control: 0/30 rpm max.: 1000 rpm	digital: 0/50 rpm control: 0/30 rpm max.: 500 rpm	min.: 0/50 rpm max.: 2000 rpm	digital: 0/50 rpm control: 0/30 rpm max.: 1000 rpm	digital: 0/50 rpm control: 0/30 rpm max.: 500 rpm
Viscosity max.	4000 mPas	8000 mPas	20 000 mPas	10 000 mPas	30 000 mPas	60 000 mPas
Torque max. at stirring shaft	7.5 Ncm	15 Ncm	30 Ncm	20 Ncm	40 Ncm	80 Ncm
Dimensions (W × H × D)	60 × 173 × 126 mm	60 × 173 × 126 mm	60 × 173 × 126 mm	70 × 193 × 147 mm	70 × 193 × 147 mm	70 × 193 × 147 mm
Weight	1.18 kg	1.26 kg	1.26 kg	1.56 kg	1.72 kg	1.72 kg

General data	NANO- MICRO- AND MINISTAR digital | control
Speed display	LED | LCD
Permissible ON time	100 %
Motor type	Brushless DC
Setting accuracy speed	± 1 rpm
Deviation of speed measurement n > 300 rpm	± 1 %
Deviation of speed measurement n < 300 rpm	± 3 rpm
Chuck range diameter	min. 0.5 mm max. 8.2 mm
Hollow shaft (push-through - when stopped)	Yes
Housing material	Alu-cast coating/ thermoplastic polymer
Protection class according to DIN EN 60529	IP 54
Interface	USB

EUROSTARS

/// The key to successful mixing

Designed to optimize complex stirring applications, IKA offers the very best in overhead stirrer technology. Our EUROSTAR series provides the perfect solution to all of your laboratory stirring and mixing needs, from lower to higher viscosities.

Twin technology

The EUROSTAR digital and control series are conceptually similar; both series feature a speed display and an overload protection. Furthermore, the control version is designed with a removable wireless controller and is equipped with a torque trend display, TFT display, RS 232 and USB interface. In addition, you will be able to update your firmware online by connecting your control device via USB to a computer.

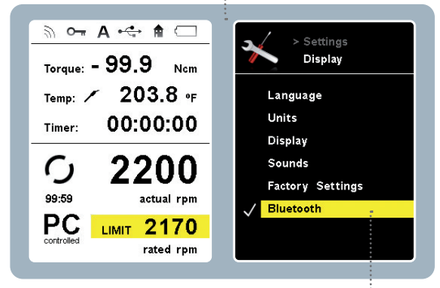
FEATURES

EUROSTAR digital

- Digital display for precise monitoring of set and actual speeds
- Brushless DC motor for longer life span, low maintenance and higher efficiency
- Short-term overload operation
- Rotary knob for adjusting the speed and push knob for navigating through the menu on the wireless controller

Wireless technology

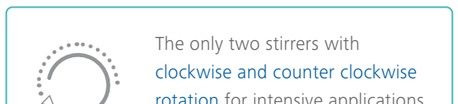
The Wireless Controller (WiCo) can be separated from the overhead stirrer. This allows for a safe working in a fume hood or safety cabinet without lifting the protective screen. With the additional online update function (only control version), your device is always up-to-date.



FEATURES

EUROSTAR control

- TFT display for better image quality and easy navigation
- Programmable functions with interval operation options
- Real-time torque trend display to indicate viscosity changes during the mixing process
- Temperature sensor included for real time temperature monitoring function
- USB interface to control and document all parameters with the software labworldsoft® and for updating the firmware
- Removable wireless controller (WiCo) for easy and user-friendly operation



The only two stirrers with clockwise and counter clockwise rotation for intensive applications and better mixing results.

FEATURES

EUROSTAR 100 digital

- Laboratory stirrer designed for highly viscous applications and intensive mixing
- Digital display for precise monitoring of set and actual speeds

FEATURES

EUROSTAR 100 control | P4 control

- Clockwise and counter clockwise rotation
- Removable wireless controller (WiCo) for easy and user-friendly operation
- TFT display for better image quality and easy navigation

FEATURES

EUROSTAR 20 high speed digital | control

- High-speed stirrer for intensive mixing
- Extremely powerful laboratory stirrer designed for intensive stirring tasks
- Options for propellers or dissolver impellers (accessories)
- Fast dissolving / dispersing with mixing speed of up to 6000 rpm

FEATURES

EUROSTAR 200 P4 control

- Extremely powerful laboratory stirrer for highly viscous applications with a torque of up to 660 Ncm
- For viscosities up to 150,000 mPas

The optimal stirrer for your application

OVERHEAD STIRRERS FOR LIGHT STIRRING TASKS

reddot design award
winner 2012

EUROSTAR 20 digital
Ident No. 0004442000

EUROSTAR 40 digital
Ident No. 0004444000

EUROSTAR 60 digital
Ident No. 0004446000

EUROSTAR 60 control
Ident No. 0004440000

POWERFUL OVERHEAD STIRRERS FOR UNIVERSAL STIRRING TASKS

reddot design award
winner 2012

EUROSTAR 100 digital
Ident No. 0004238100

EUROSTAR 100 control
Ident No. 0004028500

EUROSTAR 200 digital
Ident No. 0003990000

EUROSTAR 200 control
Ident No. 0003992000

ULTRA HIGH TORQUE OVERHEAD STIRRERS

EUROSTAR 100 control P4
Ident No. 0025004384

EUROSTAR 200 control P4
Ident No. 0004090000

HIGH-SPEED OVERHEAD STIRRERS

EUROSTAR 20 high speed digital
Ident No. 0004028600

EUROSTAR 20 high speed control
Ident No. 0025001314

PILOT SCALE OVERHEAD STIRRERS

EUROSTAR 400 digital
Ident No. 0004214000

EUROSTAR 400 control
Ident No. 0004214100

Technical data

Technical data	EUROSTAR 20 digital | 40 digital	EUROSTAR 60 digital | control	EUROSTAR 100 digital | control
Stirring quantity max. (H_2O)	15 l | 25 l	40 l	100 l
Max. viscosity	10 000 mPas | 30 000 mPas	50 000 mPas	70 000 mPas
Motor rating input/output	70 / 42 W | 118 / 84 W	176 / 126 W	186 / 136 W
Permissible ON time	100 %	100 %	100%
Speed range	0/30 – 2000 rpm	0/30 – 2000 rpm	0/30 – 1300 rpm
Speed range I (at 50/60 Hz)	–	–	–
Speed range II (at 50/60 Hz)	–	–	–
Max. torque at stirring shaft	20 Ncm | 40 Ncm	60 Ncm	100 Ncm
Display	LED	LED | TFT	LED | TFT
Reverse operation	no	no	no | yes
Intermittent operation	no	no | yes	no | yes
Temp. sensor connection	no	no | PT 1000	no | PT 1000
Chuck range	0.5 – 10 mm	0.5 – 10 mm	0.5 – 10 mm
Hollow shaft	yes	yes	yes
Torque trend measurement	no	no | yes	no | yes
Timer	no	no | yes	no | yes
Temperature measurement	no	no | yes	no | yes
Temperature measuring range	–	– | -10 to 350 °C	– | -10 to 350 °C
Dimensions (W × D × H)	86 × 208 × 248 mm	86 × 208 × 248 mm | 86 × 230 × 267 mm	86 × 208 × 248 mm | 86 × 230 × 267 mm
Weight	4.4 kg	4.4 kg | 4.7 kg	4.4 kg | 4.7 kg
Permissible ambient temp.	5 – 40 °C	5 – 40 °C	5 – 40 °C
Permissible relative moisture	80%	80%	80%
Protection class DIN EN 60529	IP 40	IP 40	IP 40
USB / RS 232 interface	no	no | yes	no | yes
Voltage	230 V	230 V	230 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz

EUROSTAR 200 digital | control	EUROSTAR 100 | 200 control P4	EUROSTAR 20 high speed digital | control	EUROSTAR 400 digital | control
100 l	100 l	20 l	150 l
100 000 mPas	100 000 mPas | 150 000 mPas	10 000 mPas	100 000 mPas
130 / 84 W	174 / 142 W | 134 / 76 W	176 / 125 W	220 / 176 W
100%	100%	100%	100%
0/6 – 2000 rpm	10 – 300 rpm | 0/4 – 530 rpm	0/150 – 6000 rpm	0/6 – 2000 rpm
0/6 – 400 rpm	0/4 – 110 rpm	–	0/6 – 400 rpm
0/30 – 2000 rpm	0/16 – 530 rpm	–	0/30 – 2000 rpm
200 Ncm	320 Ncm | 660 Ncm	20 Ncm	400 Ncm
LED | TFT	TFT	LED | TFT	LED | TFT
no	no	no	no
no | yes	yes	no | yes	no | yes
no | PT 1000	PT 1000	no | PT1000	no | PT 1000
0.5 – 10 mm	0.5 – 10 mm	fixed	0.5 – 10 mm
yes	no	no	yes
no | yes	yes	no | yes	no | yes
no | yes	yes	no | yes	no | yes
no | yes	yes	no | yes	no | yes
– | -10 to 350 °C	– | -10 to 350 °C	– | - 10 to 350 °C	– | -10 to 350 °C
91 × 209 × 274 mm | 91 × 231 × 274 mm	86 × 352 × 230 mm | 91 × 230 × 379 mm	86 × 208 × 325 mm | 86 × 230 × 325 mm	114 × 245 × 300 mm | 114 × 268 × 320 mm
4.6 kg | 4.9 kg	5.2 kg | 5.8 kg	5.3 kg | 4.7 kg	7.8 kg | 8.2 kg
5 – 40 °C	5 – 40 °C	5 – 40 °C	5 – 40 °C
80%	80%	80%	80%
IP 40	IP 40	IP 40	IP 40
no | yes	yes	no | yes	no | yes
230 V	230 V	230 V	230 V
50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz

RW series

/// Stirring larger volumes

Powerful, mechanically controlled laboratory stirrers designed for highly viscous applications. The stirrers of the RW series are suitable for intensive mixing for use in laboratories and pilot plants.

RW 20 digital
Ident No. 0003593000

The bestseller in the laboratory

- With digital display
- Robust, slimline, ergonomic design
- With constant power-drive
- Two speed ranges for universal use from 60 – 2000 rpm
- Push-through agitator shafts (only when stationary)
- For stirring quantities of up to 20 l (H_2O)

RW 28 digital
Ident No. 0005040000

For quantities up to 80 l (H_2O)

- Infinitely adjustable speed from 60 to 1400 rpm in two speed ranges

RW 47 digital
Ident No. 0004050000

For quantities up to 200 l (H_2O)

- Infinitely adjustable speed from 57 – 1300 rpm in two speed ranges
- SI 400 safety switch and SI 474 fixing device are available as optional accessories allowing the user to switch on the device only at a defined height in the stand's working range

FEATURES

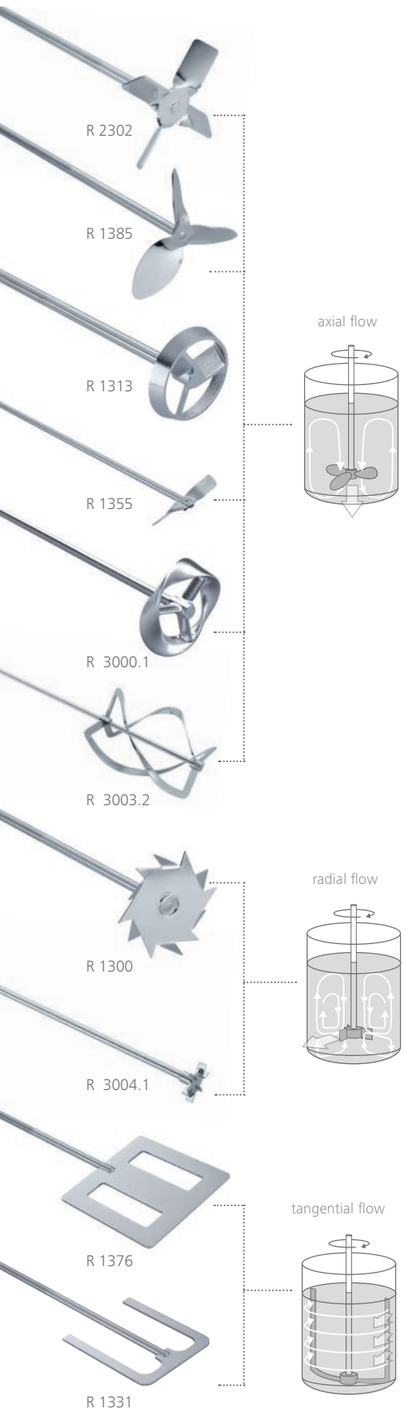
RW 28 digital & RW 47 digital

- Digital speed display
- Push-through agitator shafts
- Overload protection
- Error code display
- Robust, ergonomic design
- Quiet operation
- With constant power-drive

Technical data

Technical data	RW 20 digital	RW 28 digital	RW 47 digital
Stirring quantity max. (H_2O)	20 l	80 l	200 l
Max. viscosity	10 000 mPas	50 000 mPas	100 000 mPas
Motor rating input/output	70 / 35 W	220 / 90 W	513 / 370 W
Permissible ON time	100%	100%	100%
Speed range (at 50/60 Hz)	60 – 2000 rpm / 72 – 2400 rpm	60 – 1400 rpm / 72 – 1680 rpm	57 – 1300 rpm / 69 – 1560 rpm
Speed range I (at 50/60 Hz)	60 – 500 rpm / 72 – 600 rpm	60 – 400 rpm / 72 – 480 rpm	57 – 275 rpm / 69 – 330 rpm
Speed range II (at 50/60 Hz)	240 – 2000 rpm / 288 – 2400 rpm	240 – 1400 rpm / 288 – 1680 rpm	275 – 1300 rpm / 330 – 1560 rpm
Max. torque at stirring shaft	150 Ncm	900 Ncm	3000 Ncm
Display	LED	LED	LED
Reverse operation	no	no	no
Intermittent operation	no	no	no
Temp. sensor connection	no	no	no
Chuck range	0.5 – 10 mm	1 – 10 mm	3 – 16 mm
Hollow shaft	yes	yes	no
Torque trend measurement	no	no	no
Timer	no	no	no
Temperature measurement	no	no	no
Temperature measuring range	–	–	–
Dimensions (W × D × H)	88 × 212 × 294 mm	123 × 252 × 364 mm	145 × 358 × 465 mm
Weight	3.1 kg	7.5 kg	16 kg
Permissible ambient temp.	5 – 40 °C	5 – 40 °C	5 – 40 °C
Permissible relative moisture	80%	80%	80%
Protection class DIN EN 60529	IP 20	IP 40	IP 54
USB / RS 232 interface	no	no	no
Voltage	220 – 240 V	220 – 240 V	3 x 400 Y
Frequency	50/60 Hz	50/60 Hz	50/60 Hz

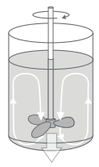
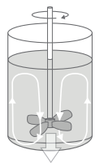
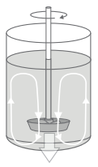
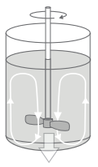
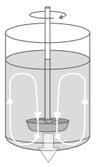
Accessories
Stirring elements

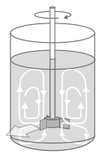
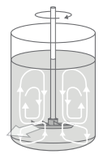
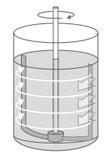
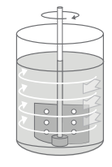


Product	Shaft length Shaft diameter Stirrer diameter	Max. speed	Material	Ident. No.	NANO-STAR 7.5 digital	MICRO-STARS digital | control	MINI-STARS digital | control	EUROSTAR 20 | 40 digital	EUROSTAR 60 digital | control	EUROSTAR 100 digital | control	EUROSTAR 200 digital | control	EUROSTAR 400 digital | control	EUROSTAR 100 & 200 control P4	RW 20 digital	RW 28 digital	RW 47 digital
PROPELLER STIRRERS, 4-BLADED																
R 1342	350 | 8 | 50 mm	≤ 2000 rpm	Stainless steel	0000741000	++	++	++	++	++	++	++	++	++	++	++	–
R 1345	550 | 8 | 100 mm	≤ 800 rpm	Stainless steel	0000741300	–	–	–	–	++	++	++	++	++	–	++	++
R 2302	800 | 13 | 150 mm	≤ 600 rpm	Stainless steel	0000739000	–	–	–	–	–	–	–	++	–	–	–	++
PROPELLER STIRRERS, 3-BLADED																
R 1381	350 | 8 | 45 mm	≤ 2000 rpm	Stainless steel	0001296000	++	++	++	++	++	++	++	++	++	++	++	–
R 1382	350 | 8 | 55 mm	≤ 2000 rpm	Stainless steel	0001295900	++	++	++	++	++	++	++	++	++	++	++	–
R 1385	550 | 10 | 140 mm	≤ 800 rpm	Stainless steel	0000477700	–	–	–	–	–	–	++	++	++	–	++	++
R 1388	800 | 10 | 140 mm	≤ 400 rpm	Stainless steel	0000477800	–	–	–	–	–	–	++	++	–	–	++	++
R 1389*	350 | 8 | 75 mm	≤ 800 rpm	PTFE-coated	0002343600	++	++	++	++	++	++	++	++	++	++	++	–
TURBINE STIRRERS																
R 1311	350 | 8 | 30 mm	≤ 2000 rpm	Stainless steel	0002332900	++	++	++	++	++	++	++	++	++	++	++	–
R 1312	350 | 8 | 50 mm	≤ 2000 rpm	Stainless steel	0002333000	++	++	++	++	++	++	++	++	++	++	++	–
R 1313	400 | 10 | 70 mm	≤ 800 rpm	Stainless steel	0002333100	–	–	–	–	++	++	++	++	++	–	++	–
CENTRIFUGAL STIRRERS																
R 1352	350 | 8 | 60/15 mm	≤ 2000 rpm	Stainless steel	0000756900	++	++	++	++	++	++	++	++	++	++	+	–
R 1355	550 | 8 | 100/24 mm	≤ 800 rpm	Stainless steel	0001132700	–	–	–	–	++	++	++	++	++	–	++	++
DISSOLVER STIRRERS																
R 1300	350 | 8 | 80 mm	≤ 2000 rpm	Stainless steel	0000513500	++	++	++	++	++	++	++	++	++	++	++	–
R 1302	350 | 10 | 100 mm	≤ 1000 rpm	Stainless steel	0002387900	–	–	–	–	++	++	++	++	++	–	++	++
R 1303	350 | 8 | 40 mm	≤ 2000 rpm	Stainless steel	0002746700	++	++	++	++	++	++	++	++	++	++	++	–
PADDLE STIRRERS																
R 1375	550 | 8 | 70 mm	≤ 800 rpm	Stainless steel	0000757700	+	+	+	+	++	++	++	++	++	–	++	–
R 1376	550 | 10 | 150 mm	≤ 800 rpm	Stainless steel	0000757800	–	–	–	–	–	–	++	++	++	–	++	++
R 2311	800 | 13 | 150 mm	≤ 600 rpm	Stainless steel	0000739500	–	–	–	–	–	–	–	++	–	–	–	++
ANCHOR STIRRERS																
R 1330	350 | 8 | 45 mm	≤ 1000 rpm	Stainless steel	0002022300	++	++	++	++	++	++	++	++	++	++	–	–
R 1331	350 | 8 | 90 mm	≤ 1000 rpm	Stainless steel	0002022400	–	–	–	–	++	++	++	++	++	–	++	–
R 1333	550 | 10 | 150 mm	≤ 800 rpm	Stainless steel	0002747400	–	–	–	–	–	–	++	++	++	–	++	++
MOEBIUS STIRRERS																
R 3000.1	565 | 10 | 100 mm	≤ 800 rpm	Stainless steel	0020001192	–	–	–	++	++	++	++	++	++	++	++	++
R 3001.1	575 | 10 | 100 mm	≤ 800 rpm	Stainless steel	0020001195	–	–	–	++	++	++	++	++	++	++	++	++
SPIRAL STIRRERS																
R 3003	350 | 8 | 50 mm	≤ 800 rpm	Stainless steel	0020001203	+	+	+	++	++	++	++	++	++	++	++	++
R 3003.1	550 | 10 | 100 mm	≤ 800 rpm	Stainless steel	0020001204	–	–	–	++	++	++	++	++	++	++	++	++
R 3003.2	800 | 10 | 150 mm	≤ 800 rpm	Stainless steel	0020001205	–	–	–	–	–	+	+	++	–	–	++	++
BLADE STIRRERS																
R 3004	359 | 8 | 30 mm	≤ 1000 rpm	Stainless steel	0020001206	++	++	++	++	++	++	++	++	++	++	++	++
R 3004.1	565 | 10 | 50 mm	≤ 1000 rpm	Stainless steel	0020001207	–	–	–	++	++	++	++	++	++	++	++	++
R 3004.2	819 | 10 | 70 mm	≤ 1000 rpm	Stainless steel	0020001208	–	–	–	++	++	++	++	++	–	++	++	++
PADDLE STIRRERS | SCREW-TYPE STIRRERS																
R 1001	160 | 4 | 34 mm	2000 rpm	Stainless steel	0000527400	++	++	++	++	+	+	+	+	+	++	–	–
R 1002	140 | 4 | 12 mm	2000 rpm	Stainless steel	0000527500	++	++	++	++	+	+	+	+	+	++	–	–

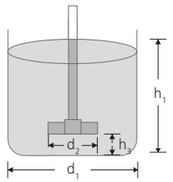
* (PTFE-coated)

++ IKA recommended | + Installable | – Not compatible

STIRRER	PROPELLER 3-BLADED	PROPELLER 4-BLADED	TURBINE	CENTRIFUGAL	MOEBIUS
Image					
Flow direction (Diagram)					
Tip speed / circumferential speed (m/s)	2 – 15	2 – 15	2 – 15	2 – 15	2 – 10
Direction	AXIAL	AXIAL	AXIAL	AXIAL	AXIAL
Mixing speed	Medium – high	Medium – high	Medium – high	Medium – high	Medium
Shear forces	Medium	Medium	Low	Low	Very low
Viscosity	Low – medium	Low – medium	Low	Low	Low – medium
Applications	Flow-efficient design to provide up and bottom flow pattern while creating minimum shearing forces.	Standard stirring element for general mixing applications. It creates local shearing forces and axial flow in the vessel.	This stirrer is used for drawing the material to be mixed from above within the vessel. It carries a minimum level of danger of injury when contact is made with sensor or vessel.	Two-bladed stirrer whose blades open with increasing speed. Perfect for stirring in round vessels with narrow necks and the effect is similar to that of a 4-bladed propeller stirrer.	Drawing the material to be mixed from the top and the bottom while creating minimum shearing forces.
Prefered geom. dimension d_2/d_1	0,1 – 0,5	0,2 – 0,5	0,2 – 0,5	0,2 – 0,5	0,2 – 0,5
Prefered geom. dimension h_3/d_1	0,3 – 3	0,3 – 3	0,3 – 3	0,3 – 3	0,3 – 3
Prefered geom. dimension h_1/d_1	1,0	1,0	1,0	1,0	1,0

SPIRAL	BLADE	DISSOLVER	ANCHOR	PADDLE
				
				
2	3 – 7	8 – 20	1 – 5	1 – 3
AXIAL	RADIAL	RADIAL	TANGENTIAL	TANGENTIAL
Low – medium	Medium – high	Medium – high	Low	Low – medium
low	High	Very High	Low	Low
Medium – high	Low – medium	Low	High	Medium – high
Medium is conveyed from the bottom upwards. For homogeneous mixing and heat exchange of medium.	This stirrer draws the material to be mixed from the top and the bottom while creating high turbulence and high shearing forces for dispersion or gassing of liquid.	This stirrer provides drawing the material to be mixed from the top and the bottom while creating high turbulence and high shearing forces for particle reduction or break down agglomeration.	This stirrer creates tangential flow, high shearing rate at the edges, minimum deposits on the vessel wall making them great for polymer reactions and even distribution of high mineral contents in liquids.	This stirrer creates tangential flow, minimum turbulence, good heat exchange, and gentle treatment of the product.
0,9 – 0,98	0,2 – 0,5	0,2 – 0,5	0,9 – 0,98	0,5 – 0,7
–	0,3 – 3	0,3 – 3	–	–
1,0	1,0	1,0	1,0	0,75

d_1: container diameter
d_2: stirrer diameter
h_1: fill height
h_3: bottom distance



Mixing Range	Speed
Low	< 150 rpm
Medium	150 to 800 rpm
High	> 800 rpm

Viscosity Range	mPas	Example (at 20 °C)
Low	< 1000	Water to motor oil
Medium	< 10 000	Honey
High	> 10 000	Asphalt

Accessories

BC 1000 Beaker cap
Can be used with 1000 ml and 600 ml beakers for dispersing and stirring experiments.
Ident No. 0020003417

A

FK 1 Flexible coupling
Required for stirring tasks using glass stirring rods. The flexible coupling compensates for any structural variances.
Ident No. 0002336000

1

RH 3 Strap clamp
For securing vessels during stirring.
Ident No. 0003008600

3 4

RH 5 Strap clamp
For securing vessels against walls or for synchronized rotation during stirring, incl. boss head clamp R 270.
Ident No. 0003159000

1

R 182 Boss head clamp
Ident No. 0002657700

3 4

R 270 Boss head clamp
Ident No. 0002657800

3 4

R 271 Boss head clamp
Specialized clamp with openings for the stands R 2722 and R 2723 as well as extensions with Ø 16 mm.
Ident No. 0002664000

R 6547 H Floor stand
Manually adjustable, extendable floor stand, for RW 47 digital and T 65 basic/digital.
Ident No. 0020018378

R 2850 Floor stand
Mobile floor stand, with H-shape base which prevents against tipping. For overhead stirrers and dispersers with a diameter of extension arm of 16 mm.
Ident No. 0020002900

Plate stands
R 1825 / R 1826 / R 1827
With slip resistant foil.
Ident No. 0003160000
Ident No. 0003160100
Ident No. 0003160200

IKA [scale] Weighing stand
A stand with an integrated scale and data interface: only available from IKA.
Ident No. 0025004318

R 2722 H-Stand
Stable stand with H-shaped base which prevents the stand from tipping backwards.
Ident No. 0001412000

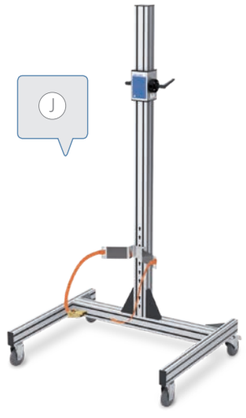
R 2723 Telescopic stand
Similar to R 2722, additionally equipped with a pneumatic spring, which enables effortless raising of the dispersing unit.
Ident No. 0001412100

R 474 Telescopic stand
Specially designed for RW 47 D/digital.
Ident No. 0001643000

R 472 Floor stand
Mobile floor stand, specially designed for RW 47 digital.
Ident No. 0000738700

J

Height: 1635 mm



J

Height: 1900 mm

B H

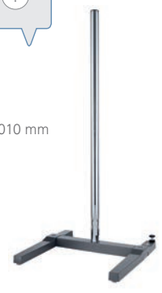
Height R 1825: 560 mm
R 1826: 800 mm
R 1827: 1000 mm

1

A

Height: 570 mm

2



A – I

Height: 1010 mm

3

A – I

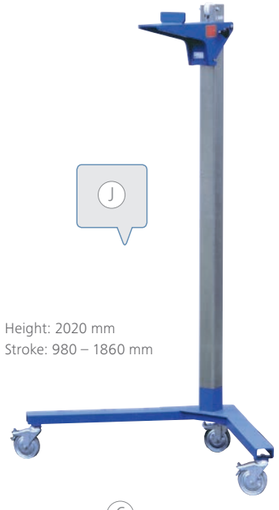
Height: 620 – 1010 mm
Stroke: 390 mm

4

J

Height: 1200 mm
Stroke: 500 – 1000 mm

5



J

Height: 2020 mm
Stroke: 980 – 1860 mm

6

NANOSTAR

MICROSTAR
digital | control

MINISTAR
digital | control

A

EUROSTAR 20 | 40
digital

EUROSTAR 60
digital | control

B

EUROSTAR 100
digital | control

C

EUROSTAR 200
digital | control

D

EUROSTAR 400
digital | control

E

EUROSTAR 100 | 200
P4 control

F

EUROSTAR 20 high speed
digital | control

G

RW 20
digital

H

RW 28
digital

I

RW 47
digital

J

* IKA recommendations only

Accessories for RW 47 digital

R 303
Stirring shaft protection for RW 47 digital.
Ident No. 0030000257

SI 400
Safety switch
Ident No. 0003294800

SI 472
Fixing device for R 472 stand.
Ident No. 0003264000

SI 474
Fixing device for R 474 and T 653 stand.
Ident No. 0003264400

Accessories for EUROSTAR control series

H 67.60
Temperature sensor made of stainless steel.
Ident No. 0025006664

H 67.61
Temperature sensor made of stainless steel with a fast response time.
Ident No. 0025007920

H 66.51 Temperature sensor
Temperature sensor, stainless steel, glass-coated, Ø 6 mm, 260 mm length.
Ident No. 0002735551

H 66.53 Temperature sensor
Chemical resistant coated sensor, extension cable H 70 required for connection.
Ident No. 0004499900

Accessories for RW 20 digital & EUROSTAR series

R 60 Keyless chuck
Ident No. 0003889500

R 60.1 Keyless chuck
Ident No. 0025007821

R 301 Stirring shaft protection
Ident No. 0002603000

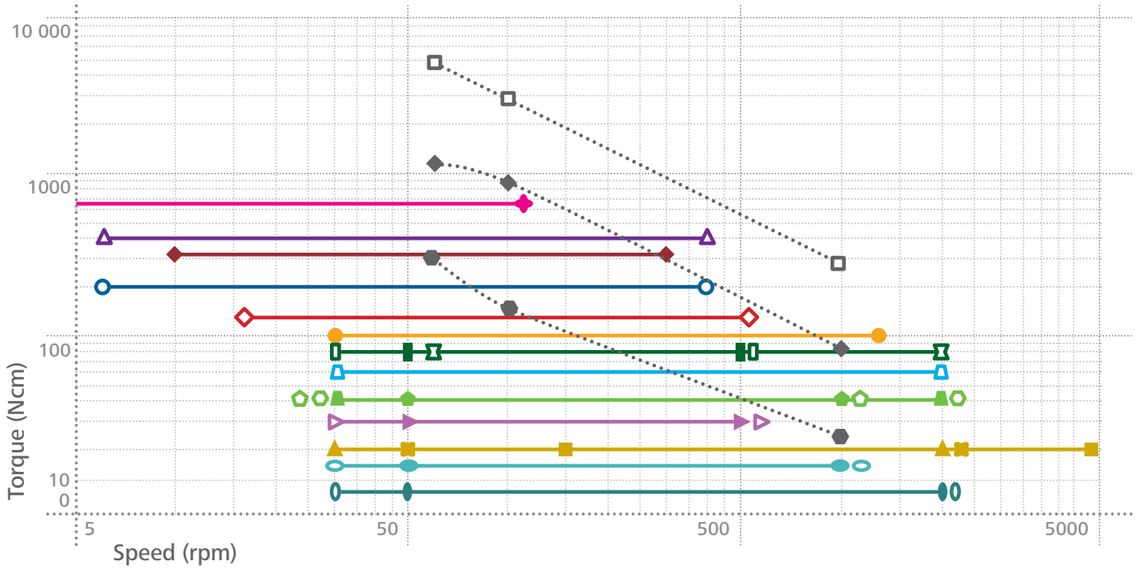
R 301.1 Support holder
For fixing the stirring shaft protection R 301 to the stand when in use with overhead stirrers NANOSTAR 7.5 digital, MINISTAR, MICROSTAR series and EUROSTAR 400.
Ident No. 0002604000

H 70 Extension cable
To connect EUROSTAR control with the temperature sensor.
Ident No. 0002735600

WH 11
Wall mount for wireless controller (WiCo)
Ident No. 0025001500

labworldsoft® 6 Starter | Pro | Advanced
labworldsoft® is a multi-purpose software program for measuring, controlling and regulating laboratory devices.
Ident No. 0020019397 | 0020017366 | 0020105873

DQ/IQ/OQ/PQ Documentation LAB
Ident No. 0010006581



NANOSTAR 7.5 digital
MICROSTAR 7.5 digital

MICROSTAR 7.5 control

MICROSTAR 15 digital

MICROSTAR 15 control

MICROSTAR 30 digital

MICROSTAR 30 control

MINISTAR 20 digital / control

MINISTAR 40 digital

MINISTAR 40 control

MINISTAR 80 digital

MINISTAR 80 control

ES 200 control P4 I

ES 40 digital

ES 100 digital / control

ES 60 digital / control

ES 20 digital

ES 20 high speed

ES 200 digital / control I

ES 200 control P4 II

ES 200 digital / control II

ES 400 digital / control I

ES 400 digital / control II

ES 100 control P4

RW 47 digital

RW 28 digital

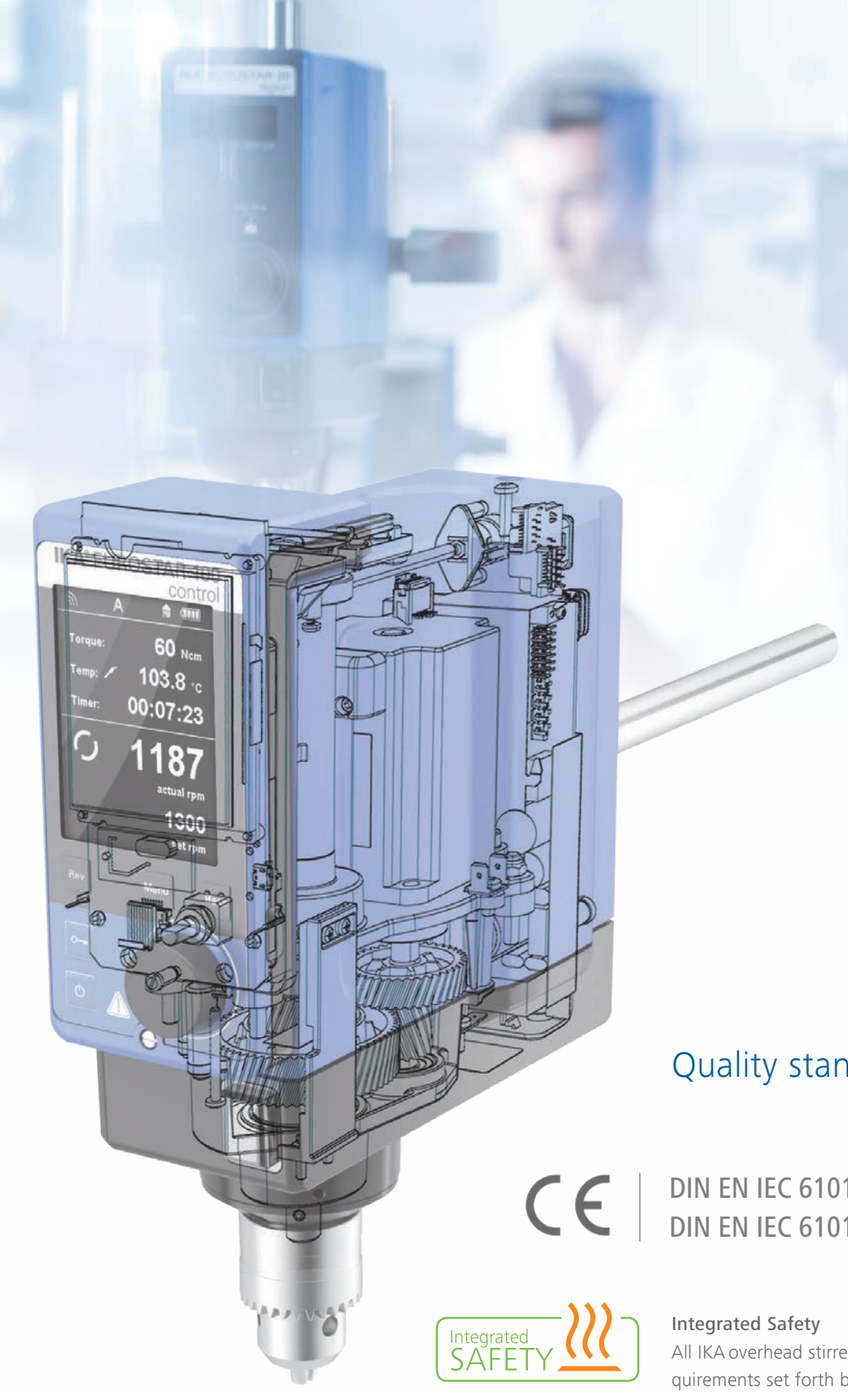
RW 20 digital

I : speed step 1

II: speed step 2

The electronic overhead stirrers have a constant torque over the entire speed range. They can also be used for short-term overload operations. The electronic stirrers are ideal for reproducible procedures as well.

The mechanical overhead stirrers have a high torque at low speed and the torque decreases when the speed increases. Speed range I is for highly viscous samples and speed range II is for intensive mixing of low viscous samples.



Quality standards

CE | DIN EN IEC 61010-1
DIN EN IEC 61010-2-051

Integrated SAFETY

Integrated Safety
All IKA overhead stirrers adhere to the requirements set forth by the norms DIN EN IEC 61010-1 and DIN EN IEC 61010-2-051.

They meet and exceed CE standards and fulfill international safety regulations.

Knowledge

Torque

Torque is mathematically defined as the vector product of force and lever arm. It is therefore calculated as M = F * r , where M is the torque, r is the lever arm and F is the force. The magnitude of the force is based on the perpendicular distance from the axis of rotation to the line of action of the force.

The unit of measurement of torque is Nm. For example, in mixing systems, the drive power of an electric motor is delivered to the rotating drive shaft or the drill chuck fixed to the mixing tool. What matters is the transfer of power in the drive to the rotating mixing tool. Torque is the key to the relationship between the mixing tool geometry, viscosity of the medium to be mixed and the speed of rotation. The power is transferred from the motor to the shaft and then to the mixing tool. The torque acts on the mixing tool at the drill chuck as shown in the brochure.

Typical dynamic viscosity values (Range 1 – 100 000 mPa*s)

Substance	Viscosity η in mPa*s
Water	1
Milk	2
Coffee whipped cream	10
Olive oil	100
Lubricant oil	200
Motor oil	650 – 900
Shampoo	3000
Hand cream	8000
Honey	10 000
Ketchup	50 000
Toothpaste (40 °C)	70 000
Asphalt	100 000

Unless otherwise stated, the values refer to the viscosity at 20 °C and atmospheric pressure

Viscosity

The “viscosity” shown in our brochure always refers to the dynamic viscosity η. Viscosity is a measure of the fluid’s resistance to flow or change in shape due to internal friction between the molecules. If a fluid has high viscosity, then it strongly resists flow. This is an important parameter to be considered when it is required to create product emulsions and suspensions by mixing and homogenizing or merely in the transfer of fluids from one location to another.

$1N = [\eta] . (m^2 m / m s) => [\eta] = Ns / m^2 = Pa*s$

Fluids are either Newtonian or Non-Newtonian. Fluids whose viscosity is constant at all shear rates are called Newtonian fluids (e.g., pure fluids, ideal fluids / water, oil and most gases which have a constant viscosity). Fluids whose viscosity is not constant at all shear rates are called Non-Newtonian fluids (e.g., blood, sand-water mixtures, dough, puddings, asphalt cement, etc.).

Oil is a good example of a highly viscous liquid. It does not flow easily and affects parameters such as the thickness of the lubricating film in bearings, motors, gear units, leakage losses in the hydraulics, pump efficiency and friction losses in pipes.

Applications and Industries

Food: Butter, mayonnaise, ketchup...
Cosmetics: Creams, shampoo, soap...
Pharmaceutical and chemical industry: Pills, suppositories, aluminium oxide, glycerin...
Abrasives: Silicon carbide, crystals, sand...
Inks, coatings, paints and pigments: printing ink, metallic paints, color pigment suspension...
Glues and adhesives: Adhesive mixture, Vaseline, two-component glue...
Plastics and polymers: PVC powder, pre-polymer, polyester resin...
Cement and construction: Concrete, mineral clay, loam...

FAQ

1. Does IKA supply an explosion-proof stirrer system?
IKA does supply custom-made explosion-proof systems for larger volumes upon request.

2. What does torque trend display mean in the case of the EUROSTAR control range – can they measure viscosity?
The EUROSTAR control units only display the change in torque. Normally, this is associated with a change in the viscosity of the medium. The viscosity cannot, however, be directly calculated from the data. In order to do so, one can use a viscometer.

3. How long can a stirrer be operated without interruption?
All IKA stirrers have a 100% duty cycle, i.e. they can be operated without interruption.

4. Are there any stirrers which rotate in different directions?
All IKA stirrers rotate in clockwise direction except for EUROSTAR 100 control and EUROSTAR 100 control P4 which rotates in both clockwise and counter clockwise direction.
Additionally, upon request for special applications, counter clockwise direction can be incorporated.

5. What is the difference between the electronic and mechanical versions of the stirrers?
In mechanical stirrers, the speed is set by means of a continuously variable transmission. A higher torque can be made available directly in the lower speed range by altering the transmission ratio of the actuator. Whereas in electronic stirrers, the power output is monitored and controlled by a processor. This ensures a constant speed range even with changes in viscosity.

6. What quantities and viscosities can be processed with IKA stirrers?
Depending on the unit, maximum stirring quantity ranges from 20 ml to 200 liters. Similarly, the viscosity ranges from 1 mPas to 150 000 mPas.

7. What should be the diameter of the vessel in relation to the stirrer tool?
In the case of water, the diameter of the vessel should be twice the diameter of the stirrer element and the height two or three times that of the stirrer element. In case of high viscosity material, the stirrer element should be closer to the vessel wall.

8. What ambient conditions are required for the operation of IKA stirrers?
The ambient temperature should be consistent between 5 °C and 40 °C and the humidity should not exceed 80%.

IKA

designed for scientists

EN

GERMANY
IKA-Werke GmbH & Co. KG
Janke & Kunkel-Straße 10, 79219 Staufen
Phone: +49 7633 831-0, eMail: sales@ika.de
www.ika.com

/// WORLDWIDE

USA
IKA Works, Inc.
Phone: +1 910 452-7059
eMail: sales@ika.net

KOREA
IKA Korea Ltd.
Phone: +82 2 2136 6800
eMail: info@ika.kr

BRAZIL
IKA Brazil
Phone: +55 19 3772-9600
eMail: sales@ika.net.br

MALAYSIA
IKA Works (Asia) Sdn Bhd
Phone: +60 3 6099-5666
eMail: sales.lab@ika.my

CHINA
IKA Works Guangzhou
Phone: +86 20 8222 6771
eMail: info@ika.cn

POLAND
IKA Poland Sp. z o.o.
Phone: +48 22 201 99 79
eMail: sales.poland@ika.com

JAPAN
IKA Japan K.K.
Phone: +81 6 6730 6781
eMail: info_japan@ika.ne.jp

INDIA
IKA India Private Limited
Phone: +91 80 26253 900
eMail: info@ika.in

UNITED KINGDOM
IKA England LTD.
Phone: +44 1865 986 162
eMail: sales.england@ika.com

VIETNAM
IKA Vietnam Company Limited
Phone: +84 28 38202142
eMail: sales.lab-vietnam@ika.com

THAILAND
IKA Works (Thailand) Co. Ltd.
Phone: +662 1178150
eMail: sales.lab-thailand@ika.com

TURKEY
IKA Turkey A. Ş.
Phone: +90 216 584 54 65
eMail: info@ika.com

202305_Overhead Stirrers_Brochure_IWS_EN_94000450

www.ika.com/newsletter

IKAworldwide // #lookattheblue