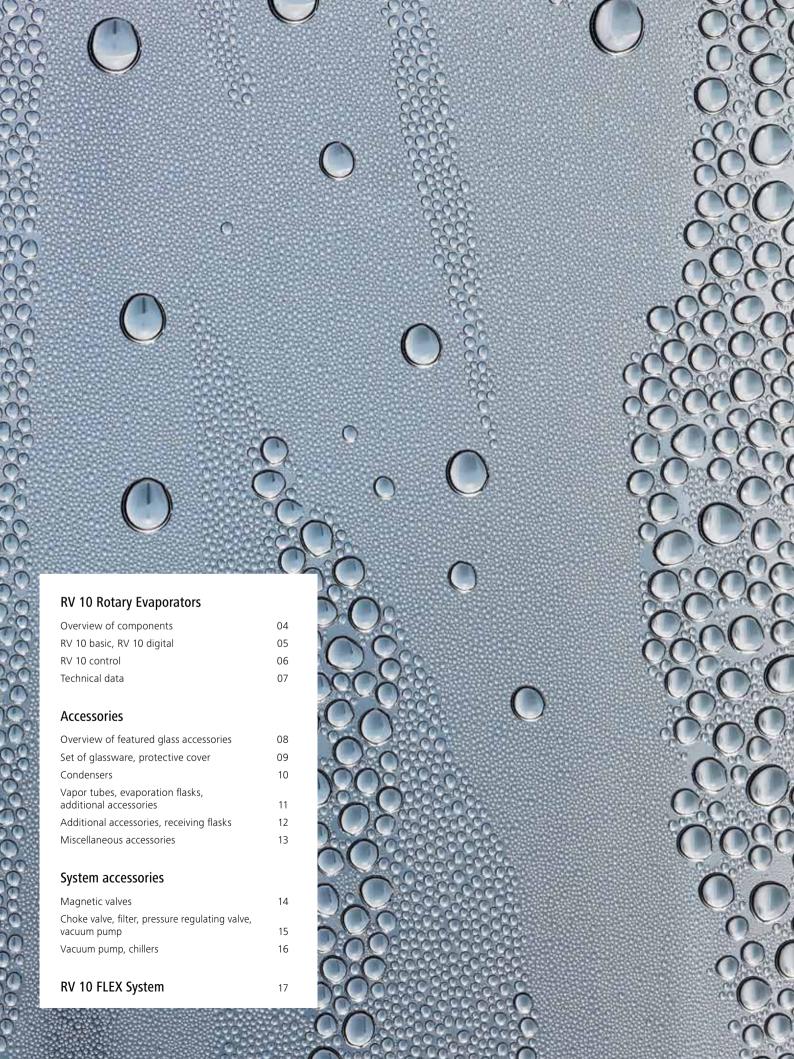


# **RV 10 Rotary Evaporators**





# You can change states of aggregation. Or the way you work with them.

With the new RV 10 range of rotary evaporators, IKA® has confirmed that there is always room for improvement, even when it comes to one of the oldest of chemical processes: distillation.

The RV 10 Rotary Evaporators set new standards for safety, efficiency and ease of use. Great attention is paid to the issue of safety, from the Basic version upwards. Every model features a lifting mechanism that raises the evaporator piston out of the heating bath in case of power failure. The comprehensive safety features also include interval operation, smooth start, end position recognition for the evaporator piston, and a timer function. The digital version also provides a digital temperature display and an RS 232 interface. For fully automated distillation, IKA® offers the control version complete with integrated vacuum controller, USB interface and graphical display.



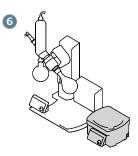
glassware and wearing parts excluded



### Overview of components

- 1 Vertical glassware (other options available)
- 2 Various flask sizes
- 3 Vacuum connection plus Woulf bottle Highly solvent-resistant PTFE seal
- 4 Adjustable safety stop
- 5 Two displays for optimal view

- 6 Heating bath can be used separately Ergonomic carrying handles on heating bath
- Can be moved by 150 mm to accommodate different flasks
- 8 Motorised height-adjustable lift Lift raised automatically in case of power outage
- 9 Choice of angle



### RV 10 basic and RV 10 digital

The basic and digital system



#### RV 10 basic

The RV 10 basic rotary evaporator with integrated HB 10 heating bath is the base system of IKA®'s new rotary evaporator line. The RV 10 basic is available with vertical glassware, either coated or uncoated.

- Analog heating bath with adjustable safety circuit, "stand alone" operation is possible, pivoting safety hood as an accessory
- Safe and simple operation by means of ergonomically shaped control unit in the front
- Motorized lift (stroke 140 mm) with "safety stop" function, if the power cuts out the evaporator flask is automatically lifted out of the heating bath
- Adjustable end position recognition to protect the glass from breaking
- Speed range from 20 to 280 rpm
- Smooth start from 100 rpm

- Digital speed display
- Rotates clockwise and counterclockwise in interval operation for the drying process
- Timer function for time lapse control
- Water/oil heating bath with integrated carrying handles for safe handling
- Heats up quickly because of optimised bath volumes
- Push-off mechanism to loosen tightly fitting flasks
- Suitable for DIN EN 12697-3 (Asphalt test for hot asphalt)
- 5 year warranty after registration

RV 10 basic		
Model	Description	Ident. No.
RV 10 basic V	with heating bath HB 10 basic and vertical glassware RV 10.1	8022300
RV 10 basic V-C	with heating bath HB 10 basic and vertical glassware, coated RV 10.10	8022900



### RV 10 digital

IKA®'s RV 10 digital is a combination of performance, reliability and versatility and offers users the precision of an accurate digitally controlled heating bath. The perfectly coordinated data transfer between the heating bath and the drive unit as well as the option of remote operation from a PC ensure results that can be reproduced any time.

Same properties as RV 10 basic, with the following additional functions:

- Digital water/oil heating bath with integrated carrying handles, "stand alone" operation is possible
- Temperature control of the heating bath by a micro controller
- Digital temperature display
- Infrared interface for data transfer from the heating bath to the drive unit
- RS 232 interface for PC remote operation with labworldsoft®
- Timer function shuts off heating bath at completion of timer sequence
- 5 year warranty after registration

RV 10 digital		
Model	Description	Ident. No.
RV 10 digital V	with heating bath HB 10 digital and vertical glassware RV 10.1	8022500
RV 10 digital V-C	with heating bath HB 10 digital and vertical glassware, coated RV 10.10	8023100
RV 10 digital FLEX	with heating bath HB 10 digital, incl. Woulff bottle	8031500

### The fully automated rotary evaporator



### **RV 10 control**

The RV 10 control is the flagship of the new rotary evaporator series by IKA®. It offers all the functions of the RV 10 digital. But the IKA® RV 10 control goes one step further. Like the RV 10 digital, it can be precisely controlled via the RS 232 interface for remote PC operation with IKA®'s labworldsoft® and is thus ideal for automatic operation - but that's not all; the control functions also enable completely automatic distillation both for volume-based processes and full drying depending on the area of application. The expandable solvent library also allows you to incorporate new processes.

### **Functions and benefits**

Same properties as RV 10 digital, with the following additional functions:

- Integrated vacuum controller with central display for automatic distilling and ramp programming
- Integrated solvent library, which can be extended by the user
- Distillation specific parameters stored for standard distillations
- Automatic transfer of measurements and distillation type with one key press
- Programmable volume controlled distillation
- Color graphic display for safe and comfortable operation
- Display of distillation curves
- Multiple languages

- Automatic ventilation at the end of each test
- Cooling water switched off automatically at the end of the test
- Integrated cooling water monitoring
- Heating bath safety management; automatic heating bath monitoring with distillation stop in case of temperature errors
- Heating bath switched off automatically at the end of the test
- USB interface
- 5 years warranty after registration
- New: Now RV 10.4002 Magnetic valve included in delivery

RV 10 control		
Model	Description	Ident. No.
RV 10 control V	with heating bath HB 10 control, vertical glassware RV 10.1 and RV 10.4002 Magnetic valve laboratory vacuum	8022700
RV 10 control V-C	with heating bath HB 10 control, vertical glassware, coated RV 10.10 and RV 10.4002 Magnetic valve laboratory vacuum	8023300
RV 10 control FLEX	with heating bath HB 10 control, incl. Woulff bottle and RV 10.4002 Magnetic valve laboratory vacuum	8031600

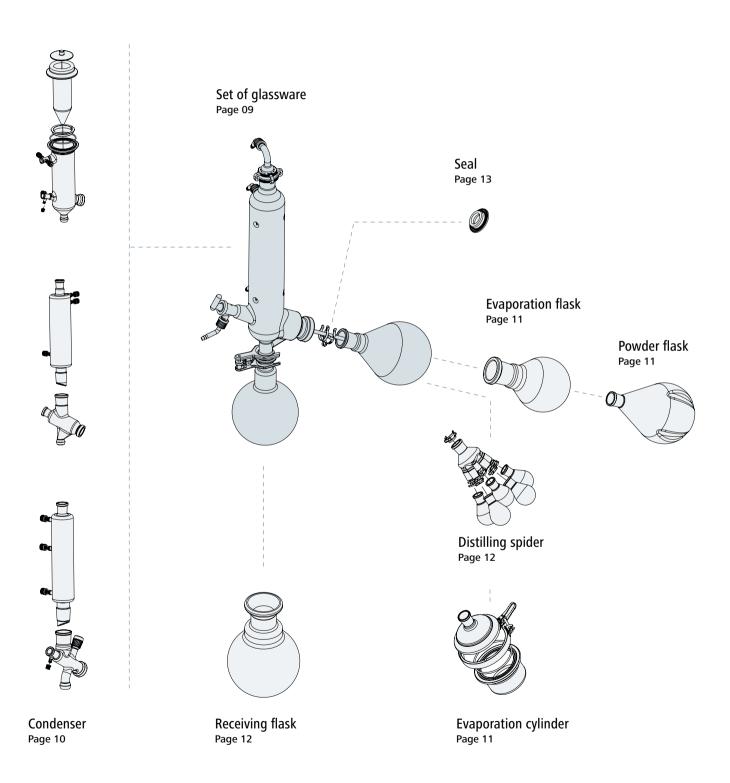
### Direct comparison

	RV 10 basic	RV 10 digital	RV 10 control
Packages with glassware	RV 10 basic V RV 10 basic V-C	RV 10 digital V RV 10 digital V-C	RV 10 control V RV 10 control V-C
Cooler type	V=vertical V-C=vertical coated D=diagonal D-C=diagonal coated	V=vertical V-C=vertical coated D=diagonal D-C=diagonal coated	V=vertical V-C=vertical coated D=diagonal D-C=diagonal coated
Cooling surface	1.200 cm <sup>2</sup>	1.200 cm <sup>2</sup>	1.200 cm <sup>2</sup>
Drive			
Motor type	brushless DC drive motor	brushless DC drive motor	brushless DC drive motor
Motor rating input	50 W	50 W	50 W
Speed range	20 to 280 rpm	20 to 280 rpm	20 to 280 rpm
Speed display	digital	digital	digital
	<del>-</del>		-
Clockwise and counter-clockwise interval operation	yes	yes	yes
Smooth start	yes 0 to 45°	yes 0 to 45°	yes O to 45°
Head angle adjustable			0 to 45°
Stroke displacement	140 mm, motorised	140 mm, motorised	140 mm, motorised
Setting of lower end stop	60 mm, contact-free	60 mm, contact-free	60 mm, contact-free
Vacuum controller	accessories	accessories	integrated
Heating bath	HB 10 basic	HB 10 digital	HB 10 control
Temperature range	RT to 180 °C	RT to 180 °C	RT to 180 °C
Heating power	1.300 W	1.300 W	1.300 W
Controller	capillary tube controller	micro controller	micro controller
Temperature display	scale	digital	digital
Setting accuracy	scale	1 K	1 K
Control deviation	± 5 K	± 1 K	± 1 K
Required accessories for an existing vacuum*			
In-house vacuum (industrial vacuum source for many users)	1)	1)	RV 10.4002 Magnetic valve **
Laboratory vacuum pump (multiple connections)	1)	1)	RV 10.4002 Magnetic valve **
Diaphragm vacuum pump (one single connection)	1)	1)	RV 10.4002 Magnetic valve **
General data			
	530 x 410 x 570 mm	530 x 410 x 570 mm	530 x 410 x 570 mm
Dimensions without glassware (W x D x H)  RV 10 diagonal (W x D x H)	890 x 410 x 670 mm	890 x 410 x 670 mm	890 x 410 x 570 mm
RV 10 vertical (W x D x H)	680 x 410 x 990 mm	680 x 410 x 990 mm	680 x 410 x 990 mm
Weight of evaporator incl. heating bath without glass parts	20 kg	20 kg	21,5 kg
Permisable ambient temperature	5 to 40 °C	5 to 40 °C	5 to 40 °C
Protection class acc. to DIN EN 60529	IP 20	IP 20	IP 20
ldent. No.			
	9022200	9022500	9022700
Package with vertical glassware, EU plug	8022300	8022500	8022700
Package with vertical coated glassware, EU plug	8022900	8023100	8023300
Package without glassware (FLEX)		8031500	8031600

<sup>\*</sup> Will be controlled by the vacuum controller of the RV 10 control rotary evaporator.

\*\* Magnetic valve now included with delivery of every RV 10 control.

Do No accessories required for vacuum pump connection (vacuum level must be controlled by external vacuum controller).



Set of glassware, protective cover

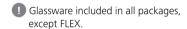
General data	
Condenser type	vertical
Cooling surface	1.200 cm <sup>2</sup>
Model	Ident. No.
RV 10.1 Set of glassware, vertical	3655300
RV 10 10 Set of glassware vertical coated	3755400

### RV 10.1 Set of glassware, vertical

Compact vertical condenser for all standard distillations. The solvent to be distilled can be continuously fed in through the PTFE inlet tube.

A 1.000 ml evaporator and 1.000 ml receiving flask are included.

Also available with coating. Condenser and receiving flask coated for shatter protection.





General data	
Condenser type	diagonal
Cooling surface	1.200 cm <sup>2</sup>
Model	Ident. No.
RV 10.2 Set of glassware, diagonal	3755300
RV 10.20 Set of glassware, diagonal, coated	3755500

### RV 10.2 Set of glassware, diagonal

Diagonal condenser for all standard distillations. A 1.000 ml evaporator and 1.000 ml receiving flask are included. Also available with coating. Condenser and receiving flask coated for shatter protection



General data	
Material	Polycarbonate
Model	Ident. No.
HB 10.1 Shield for heating bath HB 10	3641800

### HB 10.1 Shield for heating bath

For optimal protection against splashes of hot liquid.



General data	
Material	Polycarbonate
Model	Ident. No.
HB 10.2 Protective cover for heating bath HB 10	3641000

### HB 10.2 Protective cover for heating bath

Essential accessory if it is not possible to work in an extractor hood. Protects the user against splashes of hot liquid and in the event of the evaporator flask breaking.



### Condensers



### RV 10.3 Vertical-intensive condenser with manifold

Vertical-intensive condenser with double jacket and manifold for particularly efficient condensation. The solvent to be distilled can be continuously fed in at the manifold using the PTFE inlet tube.

Also available with coating for shatter protection

General data	
Condenser type	vertical-intensive
Cooling surface	1.400 cm <sup>2</sup>
Model	Ident. No.
RV 10.3 Vertical-intensive condenser with manifold	3741000
RV 10.30 Vertical-intensive condenser with manifold, coated	3741100



### RV 10.4 Dry ice condenser

Dry ice condenser for distilling low-boiling point solvents. The solvent to be distilled can be continuously fed in through the PTFE inlet tube. Cooling by dry ice, no cooling water required. Max. condensation thanks to low temperatures. Also available with coating for shatter protection.

Not possible with autodistillation mode on RV 10 control.

Dry ice condenser
620 cm <sup>2</sup>
Ident. No.
3742000
3742100



## RV 10.5 Vertical condenser with manifold and cut-off valve for reflux distillation

The solvent to be distilled can be continuously fed in through the PTFE inlet tube. Also available with coating for shatter protection.

Requires RV 10.74 Vapor tube short.

General data	
Condenser type	vertical
Cooling surface	1.200 cm <sup>2</sup>
Model	Ident. No.
RV 10.5 Vertical condenser with manifold and cut-off valve for reflux distillation	3743000
RV 10.50 Vertical condenser with manifold and cut- off valve for reflux distillation, coated	3743100



# RV 10.6 Vertical-intensive condenser with manifold and cut-off valve for reflux distillation

The manifold features a condensate cover and an outlet channel which prevent the condensate from coming into contact with the seal. The solvent to be distilled can be continuously fed in through the PTFE inlet tube. Also available with coating for shatter protection.

Requires RV 10.74 Vapor tube short.

General data	
Condenser type	vertical-intensive
Cooling surface	1.400 cm <sup>2</sup>
Model	Ident. No.
RV 10.6 Vertical-intensive condenser with manifold and cut-off valve for reflux distillation	3744000
RV 10.60 Vertical-intensive condenser with manifold and cut-off valve for reflux distillation, coated	3744100

Vapor tubes, evaporation flasks, additional accessories

General data	
Material	borosilicate glass
Model	Ident. No.

RV 10.70 Vapor tube

### RV 10.70 Vapor tube NS 29/32

For all glassware.

3812200

! Included with each RV 10 package.





# General data Material borosilicate glass Model Ident. No. RV 10.74 Vapor tube 3971700

# General data Volume (in ml) 50, 100, 250, 500, 1.000, 2.000, 3.000 Material borosilicate glass

Model	Ident. No.
RV 10.80 Evaporation flask, 50 ml	3740100
RV 10.81 Evaporation flask, 100 ml	3740200
RV 10.82 Evaporation flask, 250 ml	3740300
RV 10.83 Evaporation flask, 500 ml	3740400
RV 10.84 Evaporation flask, 1.000 ml	3740500
RV 10.85 Evaporation flask, 2.000 ml	3740600
RV 10.86 Evaporation flask, 3.000 ml	3740700

### Evaporation flask NS 29/32

The flask, which is made of high quality borosilicate glass, is available in seven different sizes.



General data	
Volume (in ml)	500, 1.000, 2.000
Material	borosilicate glass

Matchai	borosilicate glass
Model	Ident. No.
RV 10.300 Powder flask, 500 ml	3738200
RV 10.301 Powder flask, 1.000 ml	3738300
RV 10.302 Powder flask, 2.000 ml	3738400

### Powder flask NS 29/32

The flask, which is made of high quality borosilicate glass, is available in three different sizes. The powder flask optimizes powder drying applications by avoiding the accumulation of powder on the walls of the flask and makes full use of the clockwise and counterclockwise interval rotation.



General data	
Volume (in ml)	500, 1.500
Material	borosilicate glass

Model	Ident. No.
RV 10.400 Evaporation cylinder, 500 ml	3738800
RV 10.401 Evaporation cylinder, 1.500 ml	3738900

### Evaporation cylinder NS 29/32

The cylinder, which is made of high quality borosilicate glass, is available in two different sizes. Makes retrieval of viscous substances easy.

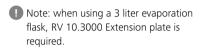


Additional accessories, receiving flasks



### RV 10.500 Foam brake NS 29/32

The rising foam produces bursts in the glass ball extension. This stops foam from entering the receiving flask.



borosilicate glass
Ident. No.
3739200



### Distilling spider with distilling sleeves NS 29/32

For simultaneous distillation in 6, 12 or 20 distilling sleeves, included with purchase.

General data	
Material	borosilicate glass
Model	Ident. No.
RV 10.600 Distilling spider with 6 distilling sleeves	3739400
RV 10.601 Distilling spider with 12 distilling sleeves	3739500
RV 10.602 Distilling spider with 20 distilling sleeves	3739600
RV 10.610 Distilling sleeve, 20 ml	3919400



### Distilling spider with 5 flasks NS 29/32

For simultaneous distillation in 5 evaporation flasks, included with purchase.

borosilicate glass
Ident. No.
3740800
3740900
3741200
3741300



### Receiving flask KS 35/20

The flask, which is made of high quality borosilicate glass, is available in six different sizes, either coated or uncoated.

General data	
Volume (in ml)	100, 250, 500, 1.000, 2.000, 3.000
Material	borosilicate glass uncoated/coated

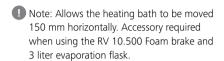
Model	Ident. No.
RV 10.100 Receiving flask, 100 ml	3742200
RV 10.101 Receiving flask, 250 ml	3742300
RV 10.102 Receiving flask, 500 ml	3742400
RV 10.103 Receiving flask, 1.000 ml	3742500
RV 10.104 Receiving flask, 2.000 ml	3742600
RV 10.105 Receiving flask, 3.000 ml	3742700
RV 10.200 Receiving flask, coated 100 ml	3743200
RV 10.201 Receiving flask, coated 250 ml	3743300
RV 10.202 Receiving flask, coated 500 ml	3743400
RV 10.203 Receiving flask, coated, 1.000 ml	3743500
RV 10.204 Receiving flask, coated, 2.000 ml	3743600
RV 10.205 Receiving flask, coated, 3.000 ml	3743700

### Miscellaneous accessories

General data	
Dimensions (W x D x H)	200 x 270 x 27 mm
Model	Ident. No.
RV 10 3000 Extension plate	3859000

### RV 10.3000 Extension plate

Accessories required when using RV 10.500 Foam brake.





General data	
Material	PTFE, stainless steel
Model	Ident. No.
RV 10.8001 Seal	3907000

### RV 10.8001 Seal

New airtight lip-seal from a PTFE compound with a built-in stainless steel spring.



### **RV 10 System accessories**

	RV 10 basic	RV 10 digital	RV 10 control
Required accessories for an existing vacuum			
Magnetic valve in-house vacuum system	1)	1)	RV 10.4002
Magnetic valve laboratory vacuum	1)	1)	RV 10.4002
Pump control incl. magnetic valve	1)	1)	RV 10.4003
Recommended accessories for tap water (faucet) c	onnection		
Choke water valve	-	-	RV 10.5001
Filter	-	_	RV 10.5002
Pressure regulating valve	RV 10.5003	RV 10.5003	RV 10.5003
Supplementary vacuum system			
Vacuum system	LVS 105 T - 10 ef	LVS 105 T - 10 ef	MPC 105 T
Additional chiller system			
for one rotary evaporator	KV 600	KV 600	KV 600
for two rotary evaporators	UC 006	UC 006	UC 006

<sup>1)</sup> no accessories required for vacuum pump connection (vacuum level must be controlled by external vacuum controller).



### RV 10.4002 Magnetic valve laboratory vacuum

For a single or multiple connection benchtop diaphragm vacuum pump.

Accessory required for an existing vacuum.
 New: now included with each RV 10 control system

General data	
Power	24 V / 9 W
Model	Ident. No.
RV 10.4002 Magnetic valve laboratory vacuum	3880300

Accessory for	
RV 10 control	



### RV 10.4003 Pump control

### incl. magnetic valve

One rotary evaporator at one pump / tabletop operation. Pump stops when the set vacuum is reached and automatically switches back on again.

 Accessory required for an existing vacuum.
 For non EU countries a plug adapter is required.

General data	
Power magnetic valve	24 V / 6 W
Power pump control	100-240 V, 50 / 60 Hz
Model	Ident. No.
RV 10.4003 Pump control incl. magnetic valve	3900200

### Accessory for

RV 10 control

### Choke valve, filter, pressure regulating valve, vacuum pump

General data	
Power	24 V / 6 W
Connection diameter	10 mm
Model	Ident. No.
RV 10.5001 Choke water valve	3902700
Accessory for	
RV 10 control	

### RV 10.5001 Choke water valve

To regulate the water flow. The integrated magnetic valve closes/opens the water circuit during automatic distillation.

Accessory recommended for tap water connection.



#### General data Mesh thickness 100 μm Connection diameter 10 mm Pressure max. 11 bar Model Ident. No. RV 10.5002 Filter 3903800

### RV 10.5002 Filter

To prevent contamination of the water pipes. With removable filter for easy cleaning.

Accessory recommended for tap water connection.



General data	
Connection diameter	10 mm
Pressure	max. input 25 bar, max. output 1 bar
Model	ldent. No.
RV10.5003 Pressure regulating valve	3907100
Accessory for	

RV 10 basic RV 10 digital RV 10 control

### RV 10.5003 Pressure regulating valve

For adjusting the cooling water pressure when connecting to a tap water system.

 Accessory recommended for tap water connection.



General data	
Pumping speed 50/60 Hz	1,2 m <sup>3</sup> / h
(DIN 28432 at speed of 1350 rpm)	20 l / min
Ultimate vacuum	< 2,0 mbar
Operating pressure	1 bar
Connectors for tube	ID 8 mm
Permissible ambient temperature	+10+40 °C
Voltage	90 - 240 V
Motor protection	IP 20
Power	830 W
Frequency	50/60 Hz
Weight	9 kg
Dimensions (W x D x H)	250 x 260 x 435 mm
Ports	RS 232 / SUB-D 9-pole
Model	Ident. No.
LVS 105 T 10-ef	4067800

### LVS 105 T 10-ef

- Compact, dry-running, chemical resistant pump systems, the ideal solution for many applications in chemical laboratories and research
- Fully automatic pump system with built-in solvent library
- Graphic display
- Close to 100% solvent recovery
- User-friendly operation
- Optimal stability
- Quick and easy maintenance
- Equipped with a speed regulated vacuum controller and a chemical resistant diaphragm pump. The pumping speed can be precisely controlled, e.g. for gentle distillations



### Accessory for

Accessory for RV 10 control

RV 10 basic RV 10 digital

### **RV 10 System accessories**

Vacuum pump, chillers



### MPC 105 T

- For dry, oil-free applications in the low vacuum
- Compact and space saving design
- Quiet running and long lifetime
- Easy to service and low operating costs
- Chemically resistant diaphragm pumps (MPC) are resistant to aggressive solvents and acidic vapors diaphragms and gas contacting parts consist of PTFE and PTFE compounds and the pumping and connection heads are carbon fiber reinforced with electrical conductibility.

General data	
Pumping speed 50/60 Hz	0,8 m³ / h
(DIN 28432 at speed of 1350 rpm)	13 l / min
Ultimate vacuum	< 2,0 mbar
Operating pressure	1 bar
Connectors for tube	ID 8 mm
Permissible ambient temperature	+10+40 °C
Voltage	115/230 V
Motor protection	IP 42
Power	68 W
Frequency	50/60 Hz
Weight	7,5 kg
Dimensions (W x D x H)	235 x 145 x 327 mm
Model	Ident. No.
MPC 105 T	4067700

### Accessory for

RV 10 control



### KV 600 digital

KV 600 digital is an actively cooled chiller with an air-cooled refrigeration system, featuring a user-friendly microprocessor controller with large temperature display. The temperature accuracy is  $\pm 1$  K.

General data	
Temperature range	-20 to 40 °C
Temperature display and setting	digital
Temperature sensor internal	PT 100
Refrigerant	R134a
Max. delivery capacity of pressure pump	12 l /min
Pump connection for hose	NW8/12
Bath volume	4
Dimensions (W x D x H)	225 x 360 x 380 mm
Power supply requirement	208 - 240 V 1 50/60 Hz
Min. ambient temperature	5 °C
Max. ambient temperature	32 °C
Model	Ident. No.
KV 600 digital (230 V 50/60 Hz)	3410500

### Accessory for

RV 10 basic RV 10 digital RV 10 control



### UC 006 Unichiller

- Chiller with air-cooled refrigerating unit and circulation pump
- Evaporator (cooler), tank, housing and pressuresuction pump made of stainless steel
- Digital temperature adjustment and digital temperature display
- Level indicator with sight glass
- Low-Cost-Controller: Modern and easy to use microprocessor controller with a large temperature display
- LED indicators for pump, cooling and heating
- Simple operation using only 3 keys

For connecting 2 rotary evaporators to one chiller.

General data	
Operating temperature range	-20 to 40 °C
Temperature display	digital
Cooling power at 15°C	0,6 kW
Refrigerant	R134a
Pump connection for hose	NW8/12
Min. filling capacity	1,25
Overall dimensions (W x D x H)	277 x 490 x 414 mm
Net weight	37 kg
Power supply requirement	230 V 50/60 Hz
Min. ambient temperature	5 °C
Max. ambient temperature	40 °C
Model	Ident. No.
UC 006 Unichiller (230 V 50 Hz)	3919000

### Accessory for

RV 10 basic RV 10 digital RV 10 control

### FLEX-ability with the new IKA® RV 10 FLEX Packages

The IKA® FLEX Packages enable the customer who requires speciality glassware the FLEX-ability of customizing their glassware setup for their specific application.

RV 10 FLEX		
Package	Description	Ident. No.
RV 10 digital FLEX	RV 10 digital drive, HB 10 digital heating bath, RV 10.70 vapor tube NS 29/32, clamps for glassware, Woulff bottle	8031500
RV 10 control FLEX	RV 10 control drive, HB 10 control heating bath, RV 10.70 vapor tube NS 29/32, clamps for glassware, Woulff bottle, RV 10.4002 Magnetic valve laboratory vacuum	8031600

Only three steps to configure your personalized rotary evaporator system:

Step 1 Choose your FLEX base model



Step 2 Select individual glassware:

- condenser
- evaporation flask
- receiving flask

Step 3 Configured RV 10 FLEX Package with selected glassware





